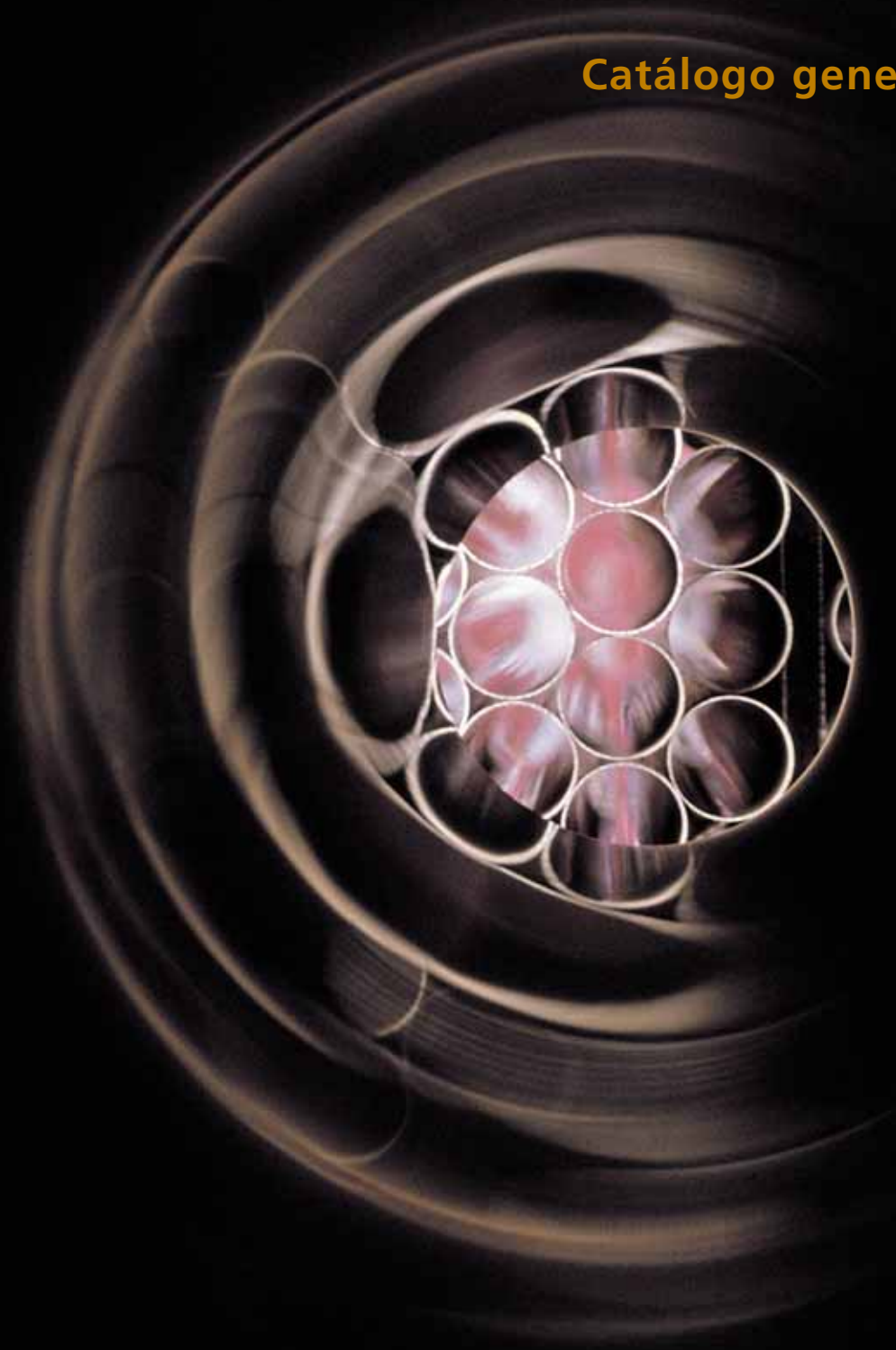


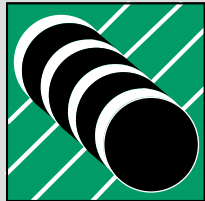
Aceros inoxidable y aleaciones especiales

Catálogo general



Hastinik, S.A.

GRUPO HASTINIK



**Hastinik, S.A.**



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**Hastinik** es una empresa dedicada a la distribución de aceros inoxidable y de aleaciones especiales de níquel y de titanio en sus diferentes formas de productos como tuberías, accesorios, bridas, barras, pletinas, perfiles y chapas con destino a múltiples aplicaciones en la industria química, petroquímica, alimentaria, farmacéutica, papeleras, producción de energía, construcción y decoración.

**Hastinik** forma parte de un grupo de empresas junto con **Inox Ibérica**, **Aerotécnica** y **Tubasol**, con sede en Santa Perpetua de Mogoda (Barcelona) y delegaciones en Ciempozuelos (Madrid), Chiva (Valencia), Murga (Alava), Alcalá de Guadaíra (Sevilla), Porriño (Pontevedra) y Aiguaviva (Girona). Sus instalaciones, oficinas y almacenes son compartidas por las empresas del grupo y su gestión comercial se realiza a través de un sistema informático conectado en todo el país a tiempo real.

Todas las empresas del grupo poseen la certificación de registro de calidad según la norma UNE-EN-ISO-9002-94 para garantizar el suministro de materiales y los servicios facilitados a todos nuestros clientes.

El presente catálogo es un resumen con carácter general de la gama de productos que se pueden adquirir a través de nuestro departamento comercial. Sin embargo en caso de precisar información más detallada sobre cada uno de los productos, no duden en solicitarla a nuestro departamento comercial.

## El grupo de empresas certificadas s/UNE-EN-ISO-9002-94



### **Tubasol, S.A.**

- Tubos soldados y s/s acero al carbono
- Tubos soldados cuadrados
- Tubos soldados rectangulares
- Tubos soldados ASTM y accesorios
- Accesorios, curvas, reducciones, tes, bridas, etc. en acero al carbono
- Válvulas
- Acoplamientos ranurados Grinnell
- Tubos de cobre, accesorios maleables, etc.
- Tubos y Accesorios Pressfitting Galvanizado



### **Inox Ibérica, S.A.**

- Tornillos métricos inoxidable A-2 y A-4
- Espárragos - tuercas - arandelas - cadenas A-2 y A-4
- Autorroscantes inoxidable A-2 y A-4
- Tornillos madera A-2 y A-4
- Tornillería especial bajo plano A-2 y A-4
- Tornillería, de aleaciones especiales, titanio, hastelloy, monel, incolloy, etc



### **Aerotécnica, S.A.**

- Fijaciones insertables PEM (tuercas, pernos, separadores, pasadores, tornillos cautivos, tornillos para panel, prensas)
- Cierres Camloc (cierres de 1/4 de vuelta, cierres de palanca, cierres de panel, insertos)
- Specitubes (tubos especiales para circuitos hidráulicos)
- Resortes de gas (Arvin)
- Tuercas remachables

*Nota: Si desean información detallada de los productos del grupo, no duden en consultarnos o solicitar catálogos o boletines específicos. Estamos para atender sus necesidades.*

**fecha edición: Julio 2002**



# Aceros inoxidables

## Calidades estandar

Denominación. Composición química

| TIPO             | Denominación |                 |          | Composición química nominal % |           |           |         |                            |
|------------------|--------------|-----------------|----------|-------------------------------|-----------|-----------|---------|----------------------------|
|                  | AISI         | AFNOR           | DIN/W.Nr | C max                         | Cr        | Ni        | Mo      | Otros                      |
| Martensítico     | 410          | Z 10 C 13       | 1.4006   | 0,15                          | 11,5/13,5 | 0,75 max  | -       | -                          |
|                  | 420          | Z 20 C 13       | 1.4021   | 0,25                          | 12/14     | -         | -       | -                          |
| Ferrítico        | 409          | Z 3CT12         | 1.4512   | 0,03                          | 10,5/12,5 | -         | -       | Ti= 6 x%(c+N)<br>max: 0,65 |
|                  | 430          | Z 8 C 17        | 1.4016   | 0,08                          | 16/18     | -         | -       | -                          |
| Austenítico      | 304          | Z 7 CN 18.09    | 1.4301   | 0,07                          | 17/19,5   | 8/10,5    | -       | N≤0,11                     |
|                  | 304 L        | Z 3 CN 18.10    | 1.4306   | 0,03                          | 18/20     | 10/12     | -       | N≤0,11                     |
|                  | 321          | Z 6 CNT 18.10   | 1.4541   | 0,08                          | 17/19     | 9/12      | -       | Ti= 5 x%C<br>max: 0,70     |
|                  | 347          | Z6CNNb 18.10    | 1.4550   | 0,08                          | 17/19     | 9/12      | -       | Nb= 10 x%C<br>Max:1        |
|                  | 316          | Z 7 CND 17.1102 | 1.4401   | 0,07                          | 16,5/18,5 | 10/13     | 2/2,5   | N≤0,11                     |
|                  | 316 L        | Z 3 CND 17.1102 | 1.4404   | 0,03                          | 16,5/18,5 | 10/13     | 2/2,5   | N≤0,11                     |
|                  | 316 L        | Z 3 CND 17.1203 | 1.4435   | 0,03                          | 17/19     | 12,5/15   | 2,5/3   | N≤0,11                     |
|                  | 316 Ti       | Z 6 CNDT 17.12  | 1.4571   | 0,08                          | 16,5/18,5 | 10,5/13,5 | 2/2,5   | Ti= 5 x%C<br>max: 0,70     |
|                  | 310/314      | Z 15 CNS 25.20  | 1.4841   | 0,20                          | 24/26     | 19/22     | -       | N≤0,11                     |
|                  | 904 L        | Z2NCDU25.20     | 1.4539   | 0,02                          | 19/21     | 24/26     | 4/5     | N≤0,15<br>Cu: 1,2-2,0      |
| Duplex<br>(2205) | -            | Z3 CND 22-05AZ  | 1.4462   | 0,03                          | 21/23     | 4,5/6,5   | 2,5/3,5 | N:0,10-0,22                |

Composición química de acuerdo con "La llave del acero 2001"





# Aceros inoxidables

## Calidades estandard

Características mecánicas y físicas

| Propiedades mecánicas a 20° |             |               |          |  |                                      |   |
|-----------------------------|-------------|---------------|----------|--|--------------------------------------|---|
| TIPO                        | AISI        | AFNOR         | DIN W.NR | Límite elástico Rp 0,2% N/mm <sup>2</sup> mínimo | Carga de rotura Rm N/mm <sup>2</sup> | Alargamiento Después de rotura % mínimo |
| Martensítico                | 410         | Z10C3         | 1.4006   | 450  | 650-850                              | 15                                      |
|                             | 420         | Z20C13        | 1.4021   | 500  | 700-850                              | 13                                      |
| Ferrítico                   | 409         | Z3CT12        | 1.4512   | 220  | 390-650                              | 20                                      |
|                             | 430         | Z8C17         | 1.4016   | 240  | 400-630                              | 20                                      |
| Austenítico                 | 304         | Z7CN18.09     | 1.4301   | 190  | 500-700                              | 45                                      |
|                             | 304 L       | Z3CN18.10     | 1.4306   | 180  | 460-680                              | 45                                      |
|                             | 321         | Z6CNT18.10    | 1.4541   | 190  | 500-700                              | 40                                      |
|                             | 347         | Z6CNNb18.10   | 1.4550   | 205  | 510-740                              | 40                                      |
|                             | 316         | Z7CND17.11.02 | 1.4401   | 200  | 500-700                              | 40                                      |
|                             | 316 L       | Z3CND17.11.02 | 1.4404   | 200  | 500-700                              | 40                                      |
|                             | 316 Ti      | Z6CNDT17.12   | 1.4571   | 200  | 500-700                              | 40                                      |
|                             | 310/314     | Z15CNS25.20   | 1.4841   | 230  | 550-750                              | 30                                      |
| 904 L                       | Z2NCDU25.20 | 1.4539        | 230      | 530-730  | 35                                   |   |
| Duplex (2205)               | -           | Z3CND22.05AZ  | 1.4462   | 450  | 650-880                              | 25                                      |

| Propiedades físicas a 20°C |             |               |          |                                    |   |   |   |  |                     |
|----------------------------|-------------|---------------|----------|------------------------------------|---|---|---|--|---------------------|
| TIPO                       | AISI        | AFNOR         | DIN W.NR | Densidad (20°C) kg/dm <sup>3</sup> | Resistividad eléctrica (20°C) $\frac{\Omega \cdot \text{mm}^2}{\text{m}}$ | Coef. de dilatación Térmica media (0-100°C) $10^{-6} \cdot \text{K}^{-1}$ | Conductividad térmica (20°C) $\frac{\text{W}}{\text{K} \cdot \text{m}}$ | Calor específico (20°C) $\frac{\text{J}}{\text{g} \cdot \text{K}}$ | Dureza HB 30 mínimo |
| Martensítico               | 410         | Z10C3         | 1.4006   | 7,7                                | 0,60  | 10,5  | 30  | 0,46   | 220 (recocido)      |
|                            | 420         | Z20C13        | 1.4021   | 7,7                                | 0,60  | 10,5  | 30  | 0,46   | 230 (recocido)      |
| Ferrítico                  | 409         | Z3CT12        | 1.4512   | 7,7                                | 0,60  | 10,5  | 25  | 0,46   | 180                 |
|                            | 430         | Z8C17         | 1.4016   | 7,7                                | 0,60  | 10,0  | 25  | 0,46   | 200                 |
| Austenítico                | 304         | Z7CN18.09     | 1.4301   | 7,9                                | 0,73  | 16,0  | 15  | 0,50   | 215                 |
|                            | 304 L       | Z3CN18.10     | 1.4306   | 7,9                                | 0,73  | 16,0  | 15  | 0,50   | 215                 |
|                            | 321         | Z6CNT18.10    | 1.4541   | 7,9                                | 0,73  | 16,0  | 15  | 0,50   | 215                 |
|                            | 347         | Z6CNNb18.10   | 1.4550   | 7,9                                | 0,73  | 16,0  | 15  | 0,50   | 230                 |
|                            | 316         | Z7CND17.11.02 | 1.4401   | 8,0                                | 0,75  | 16,0  | 15  | 0,50   | 215                 |
|                            | 316 L       | Z3CND17.11.02 | 1.4404   | 8,0                                | 0,75  | 16,0  | 15  | 0,50   | 215                 |
|                            | 316 Ti      | Z6CNDT17.12   | 1.4571   | 8,0                                | 0,75  | 16,5  | 15  | 0,50   | 215                 |
|                            | 310/314     | Z15CNS25.20   | 1.4841   | 7,9                                | 0,90  | 17,0  | 15  | 0,50   | 223                 |
| 904 L                      | Z2NCDU25.20 | 1.4539        | 8,0      | 1,00                               | 15,8  | 12  | 0,45  | 230  |                     |
| Duplex (2205)              | -           | Z3CND22.05AZ  | 1.4462   | 7,8                                | 0,80  | 13,0  | 15  | 0,50   | 270                 |

Datos de acuerdo con "La llave del acero 2001"





## Calidades estandar Utilización

| TIPO         | AISI (W.Nr)    | TEMPERATURA AMBIENTE  | A ELEVADAS TEMPERATURAS   | LIMITES DE UTILIZACION  | FABRICACION  | PRINCIPALES APLICACIONES   |
|--------------|----------------|---|---|---|--|--|
| Martensítico | 410 (1.4006)   | Buena resistencia a los ácidos diluidos o débiles, ácidos clorados o agua desgasificada.  | Buena resistencia a la oxidación hasta una temperatura de 700°C (1292°F).   | Susceptible al ataque de cloruros particularmente en ambientes oxidantes. Propiedades mecánicas aceptables a altas temperaturas. Quebradizo a bajas temperaturas  | Soldable en ciertas condiciones (precalentar, evitar altas aportaciones de calor).                                 | Tuberías, cambiadores de calor en industria petroquímica, recuperadores de calor, componentes de quemadores.                                   |
|              | 420 (1.4021)   | Buena resistencia a los ácidos diluidos o débiles (condensados con alto contenido CO <sub>2</sub> ), agua desgasificada o ligeramente clorada. Excelentes propiedades mecánicas después de templado y revenido. | Buena resistencia a la oxidación de alta temperatura hasta 700°C (1292°F).  | Susceptible al ataque de cloruros particularmente en ambientes oxidantes. Propiedades mecánicas aceptables a altas temperaturas. Quebradizo a bajas temperaturas.   | Difícil de soldar. No recomendable.  | Tubería roscada para aceites contaminados con CO <sub>2</sub> .  |
| Ferrítico    | 409 (1.4512)   | Es una aleación de estructura ferrítica estabilizada con titanio. Ha sido estudiada para la fabricación de silenciadores para automóviles.  | Las características mecánicas a temperaturas superiores al ambiente, presentan una resistencia a la oxidación en caliente cuanto mayor es su contenido de cromo, pero exenta de níquel. | La ausencia de puntos de transformación de esta aleación supone la imposibilidad práctica de mejorar las características mecánicas mediante tratamientos térmicos.  | Es una aleación fácilmente conformable por deformación plástica en frío. Produce soldaduras bastante tenaces.      | Fabricación de silenciadores de automóviles.   |
|              | 430 (1.4016)   | Mejor resistencia a la corrosión que el 410 y 420. Buena resistencia a los ácidos oxidantes no clorados. No es susceptible a la corrosión por tensiones.  | Buena resistencia a la oxidación de alta temperatura hasta 800°C (1472°F).  | Susceptible al ataque de cloruros particularmente en ambiente oxidante. Quebradizo a bajas temperaturas.  | La soldadura es posible pero no es fácil. Es necesario el templado especialmente para uso en ambientes corrosivos. | Alta temperatura, ambientes no húmedos. Cambiadores de calor en industria petroquímica. Recuperadores de calor.                                |
| Austenítico  | 304 (1.4301)   | Grado básico de inoxidable. Buena resistencia a la corrosión atmosférica, ambientes húmedos neutros, corrosión alcalina, ambientes ácidos no clorados. Dúctil a todas las temperaturas                          | Buena resistencia a la oxidación de alta temperatura hasta 900°C (1652°F). Buena resistencia mecánica a la tensión y a la deformación permanente.                                       | Susceptible a la corrosión intergranular por cloruros a temperaturas entre 600-800°C (1112-1471°F) especialmente en ambientes oxidantes, y a la rotura por corrosión bajo tensiones en ambientes húmedos y calientes. | Soldable (TIG o MMA) pero con posibilidad de ataque intergranular. Se puede doblar y expandir.                     | Tuberías y cambiadores de calor para industria química, petroquímica, criogénica y calderas. Industria alimentaria, construcción y decoración. |
|              | 304 L (1.4306) | Versión del 304 con bajo contenido en carbono lo cual evita la corrosión intergranular. En particular posee una buena resistencia al ácido nítrico.   | Buena resistencia a la oxidación de alta temperatura hasta 900°C (1652°F). La resistencia a la deformación no se garantiza por encima de 500°C (932°F).                                 | Susceptible a la corrosión por cloruros particularmente en ambientes oxidantes y a la rotura por corrosión bajo tensiones.  | Soldable sin tratamiento térmico. Puede doblarse y expandirse.   | Tuberías y cambiadores de calor para industrias químicas, petroquímica y de alimentación.  |
|              | 321 (1.4541)   | Características generales ante la corrosión similar al 304. Por estabilización con titanio se elimina en muchos casos la corrosión intergranular. Dúctil a todas las temperaturas.                              | Buena resistencia a la oxidación de alta temperatura hasta 900°C (1652°F). Buena resistencia mecánica y a la deformación.   | Susceptible a la rotura por corrosión bajo tensiones y a los cloruros en condiciones oxidantes.   | Soldable (TIG o MMA) sin tratamiento térmico. Se puede doblar y expandir.  | Tuberías y cambiadores de calor en plantas químicas. Calderas (recalentadores).  |
|              | 347 (1.4550)   | Versión estabilizada con Nb. Propiedades similares a las del 321. Dúctil a todas las temperaturas.  | Buena resistencia a la oxidación de alta temperatura hasta 900°C (1652°F). Buena resistencia mecánica y a la deformación.   | Susceptible a la rotura por corrosión bajo tensiones y a los cloruros en condiciones oxidantes.   | Soldable (TIG o MMA) sin tratamiento térmico. Se puede doblar y expandir.  | Tuberías y cambiadores de calor en plantas químicas. Calderas (recalentadores).  |

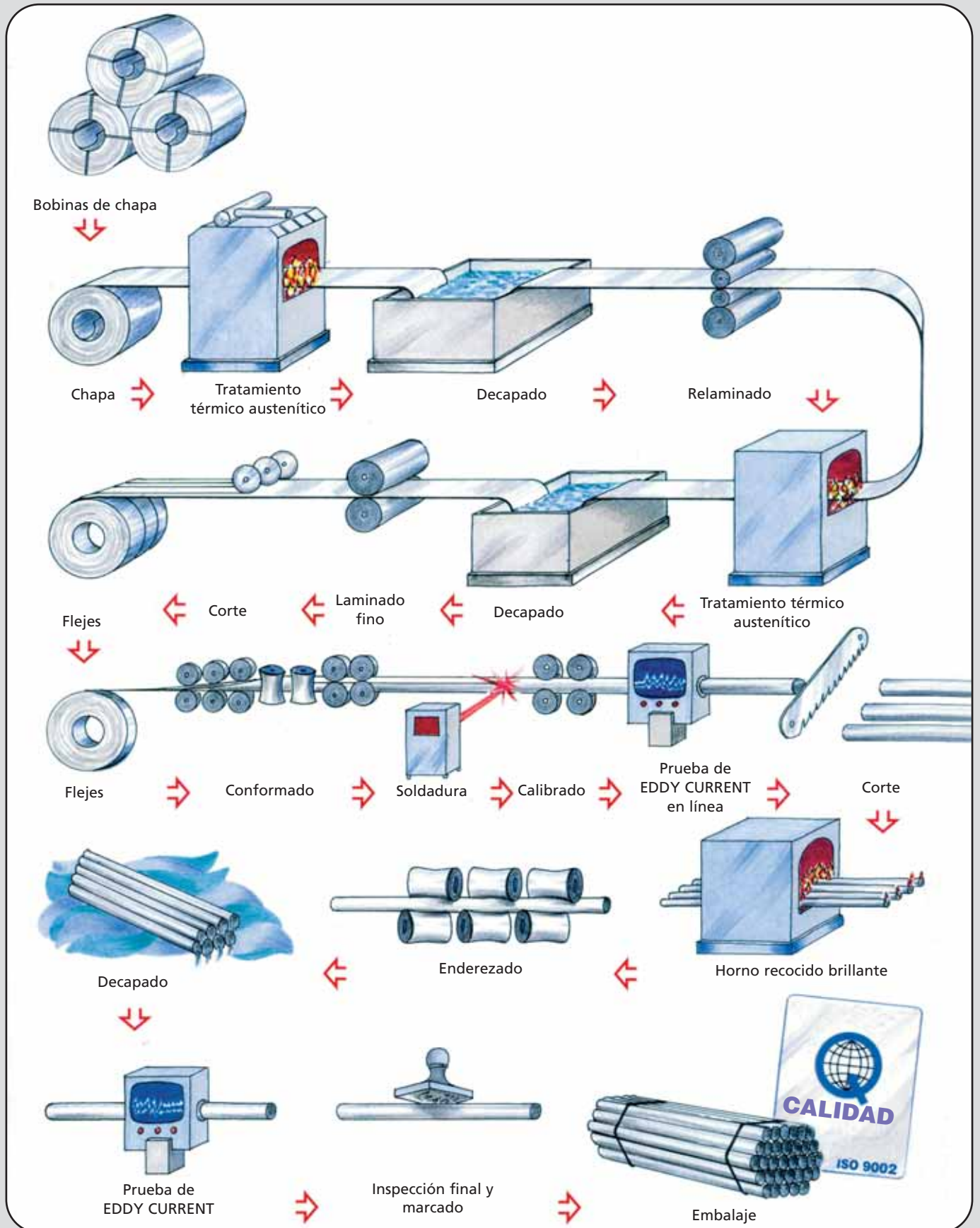


## Calidades estandar Utilización

| TIPO          | AISI (W.Nr)      | TEMPERATURA AMBIENTE  | A ELEVADAS TEMPERATURAS   | LIMITES DE UTILIZACION  | FABRICACION   | PRINCIPALES APLICACIONES   |
|---------------|------------------|---|---|---|---|--|
| Austenítico   | 316 (1.4401)     | La presencia de Mo produce un mejor comportamiento en ambientes clorados húmedos que el 304. Dúctil a todas las temperaturas.   | Buena resistencia a la oxidación hasta una temperatura de 900°C (1652°F). Muy buena resistencia mecánica y a la deformación a temperatura alta.               | Susceptible a la rotura por corrosión bajo tensiones y a la corrosión intergranular.  | Soldable (TIG o MMA) pero con posibilidad de corrosión intergranular. Se puede doblar y expandir.   | Tuberías, cambiadores de calor tubulares, en plantas químicas y petroquímicas. Calderas, industria alimentaria.  |
|               | 316 L (1.4404)   | Similar al AISI 316 pero con bajo contenido de carbono lo que evita la corrosión intergranular. Dúctil a todas las temperaturas.  | Buena resistencia a la oxidación hasta una temperatura de 900°C (1652°F) pero no se garantizan las propiedades a la deformación por encima de 500°C (932° F). | Susceptible a la rotura por corrosión bajo tensiones. Propiedades mecánicas más bajas que el 316.   | Soldable (TIG o MMA) sin tratamiento térmico. Se puede doblar y expandir.   | Tubos de cambiador de calor en plantas químicas, petroquímicas y alimentarias.   |
|               | 316 L (1.4435)   | Bajo contenido de carbono. No produce corrosión intergranular. Dúctil a todas las temperaturas. Mejor resistencia a los cloruros que el 316. Alto contenido en Ni y Mo.   | Buena resistencia a la oxidación hasta una temperatura de 900°C (1652°F) pero no se garantizan las propiedades a la deformación por encima de 500°C (932° F). | Susceptible a la rotura por corrosión bajo tensiones pero menos que el 316. Propiedades mecánicas más bajas que el 316.   | Soldable (TIG o MMA) sin tratamiento térmico. Se puede doblar y expandir.   | Tubería y cambiadores de calor en plantas químicas petroquímicas y alimentarias.   |
|               | 316 Ti (1.4571)  | 316 estabilizado con titanio. Propiedades generales de resistencia a la corrosión similares a la del 316 pero no es susceptible a la corrosión intergranular. Dúctil a todas las temperaturas.  | Buena resistencia a la oxidación hasta una temperatura de 900°C (1652°F). Buenas características de resistencia a la deformación.                             | Comportamiento similar al 316 respecto a la rotura por corrosión bajo tensiones.  | Soldable (TIG o MMA) sin tratamiento térmico. Se puede doblar y expandir.   | Tubería y cambiadores de calor en plantas químicas petroquímicas y alimentarias. Calderas y hornos.  |
|               | 310/314 (1.4841) | Inoxidable 25/20.310 L con bajo contenido en carbono. Es preferible para ambiente húmedo a temperatura media.   | Refractario típico. Excelente resistencia a la oxidación hasta 1100° C (2012° F). Buenas propiedades a la deformación hasta 800° C (1472°F).                  | Una exposición prolongada a 800-900° C (1472-1652° F) puede dar origen a formación de fase sigma. La sensibilización puede hacerlo susceptible a la corrosión intergranular.                                      | Soldable pero con posibilidad de corrosión intergranular.   | Tubería y tubos de cambiador de calor en plantas químicas, petroquímicas, tubos de hornos, rodillos, soplantes.  |
|               | 904 L (1.4539)   | Debido al alto contenido de cromo y níquel, combinado con molibdeno y cobre, la aleación posee una excelente resistencia general a la corrosión en ácidos reductores ácido fosfórico y ácido sulfúrico y en medios que contienen cloruros.    | Esta aleación ha sido aprobada para componentes en recipientes de presión hasta una temperatura de 300° C.  | No es completamente resistente a la prueba de laboratorio de cloruro magnésico al 42 % en ebullición. Buena resistencia a las corrosiones por picaduras y corrosiones bajo tensiones.                             | Se trabaja muy bien tanto en frío como en caliente. Sin embargo requiere máquinas de alta potencia debido a su alta resistencia. Es soldable tanto en TIG como en los otros sistemas.   | Evaporadores, intercambiadores de calor y equipos en la fabricación de ácido fosfórico. Equipos y tuberías para trasiego de ácido sulfúrico. Condensadores para centrales con agua contaminada. Cisternas de camiones para transporte de ácidos minerales. |
| Duplex (2205) | (1.4462)         | Esta aleación posee una microestructura equilibrada de las fases austenítica y ferrítica que le confiere mayor resistencia a la corrosión que los aceros 316 o 317 y un límite elástico superior al doble de los austeníticos convencionales. | Esta aleación ha sido aprobada para componentes de tuberías a presión hasta una temperatura de 316 °C, S/ASME VIII.   | Esta aleación puede sufrir a bajas temperaturas una transición a fase quebradiza cuando se somete a cargas de impacto. Si se utilizan procedimientos impropios de soldadura se puede aumentar el efecto anterior. | Esta aleación se puede conformar muy bien en frío. Sin embargo se necesitan mayores potencias debido a su alta resistencia. Se puede doblar con mejores radios que los materiales austeníticos. Deben utilizarse metales de aportación adecuados durante la soldadura, evitando una soldadura totalmente ferrítica. | Equipos de intercambiador de calor en plataformas marinas petrolíferas. Tuberías en pozos de gas con contenidos de H <sub>2</sub> S.   |



## Proceso de fabricación del tubo soldado





## Proceso de fabricación del tubo soldado

La fabricación de los tubos soldados de acero inoxidable se realiza de la siguiente manera:

- Partiendo de la materia prima que consiste en bobinas de chapa de acero inoxidable de la calidad seleccionada, previamente tratadas térmicamente, decapadas y laminadas se someten al proceso de corte longitudinal para formar los flejes que servirán para la fabricación del tubo.

- El fleje obtenido de esta manera, se conforma en una batería de configuración para darle la forma tubular pasando a continuación a la estación de soldadura en línea. La soldadura de los tubos se puede realizar mediante los siguientes sistemas:

a) Soldadura TIG (Tungsten Inert Gas) que utiliza un arco eléctrico que salta entre un electrodo no fusible de tungsteno contenido en el soplete y los bordes del fleje, sin necesidad de aportación material y con protección de gas inerte tanto en el exterior como en el interior del tubo. El gas inerte utilizado es generalmente argón.

b) Soldadura por LASER (LIGHT AMPLIFICATION BY STIMULATED EMISSION OF RADIATION) que utiliza un rayo láser como fuente de energía para provocar la fusión de los bordes a soldar. Se emplea este método cuando se requieren velocidades elevadas de soldadura y dependiendo de la aplicación.

c) La soldadura de ALTA FRECUENCIA se realiza mediante el calentamiento debido a la generación de una corriente inducida. Esta soldadura por inducción se aplica generalmente en sentido longitudinal de los tubos mediante un proceso en continuo y automático, obteniéndose altos rendimientos asociados a una velocidad elevada de unos 100 metros/minuto. La corriente inducida se aplica a los bordes del fleje previamente conformado y una vez alcanzada la temperatura de fusión, se comprimen los bordes mediante rodillos perpendiculares al eje de traslación del tubo, produciéndose la extrusión del material y efectuándose el soldado del tubo.

Este proceso se caracteriza por una aportación de calor concentrado solamente en la superficie de los bordes a unir, obteniéndose un cordón de soldadura con iguales características físicas del material base.

Después del proceso de soldadura, los tubos pasan a la instalación de calibrado dimensional y a continuación se someten a una prueba de Eddy Current en línea que consiste en una prueba electrónica de los tubos mediante corrientes parásitas o corrientes de Foucault que controlan el tubo soldado al 100 % en toda su longitud y que está conectada con la instalación de corte donde se procede a cortar el tubo si ha superado la prueba de control ó a descartar automáticamente los eventuales defectos que se pudieran encontrar.

Los tubos una vez cortados se someten a un tratamiento térmico en el horno de recocido brillante y posteriormente se pasan por un tren de enderezado para conseguir su rectitud longitudinal. Después los tubos se pasan por una instalación de decapado y limpieza. A continuación los tubos se someten a una segunda prueba de Eddy Current y posteriormente se pasan a la sección de inspección final, seguida de la fase de marcado y embalaje para su distribución.

Las pruebas electrónicas mencionadas están previstas para eliminar defectos aún muy pequeños como grietas de soldadura, irregularidades de espesores, fisuras, etc. En paralelo se efectúan las pruebas destructivas sobre muestras de tubos tomadas con intervalos regulares durante la fabricación. Estas pruebas son, la deformación con un cono de 60° hasta la rotura que debe producirse con alargamientos superiores al 30 % del diámetro, y la prueba de plegado al revés que consiste en abrir el tubo y plegarlo al revés a lo largo del cordón de soldadura sin provocar roturas.

## Acabados

Los tubos se pueden suministrar con los siguientes acabados:

- ESTANDARD: • Tubo soldado sin recocer. Los tubos producidos se regirán en base a las características de la norma de producción, no obstante a nivel de acabado superficial, dependiendo del fabricante, el suministro puede variar entre mate, esmerilado o semi-brillante.

- BAJO PEDIDO PREVIO

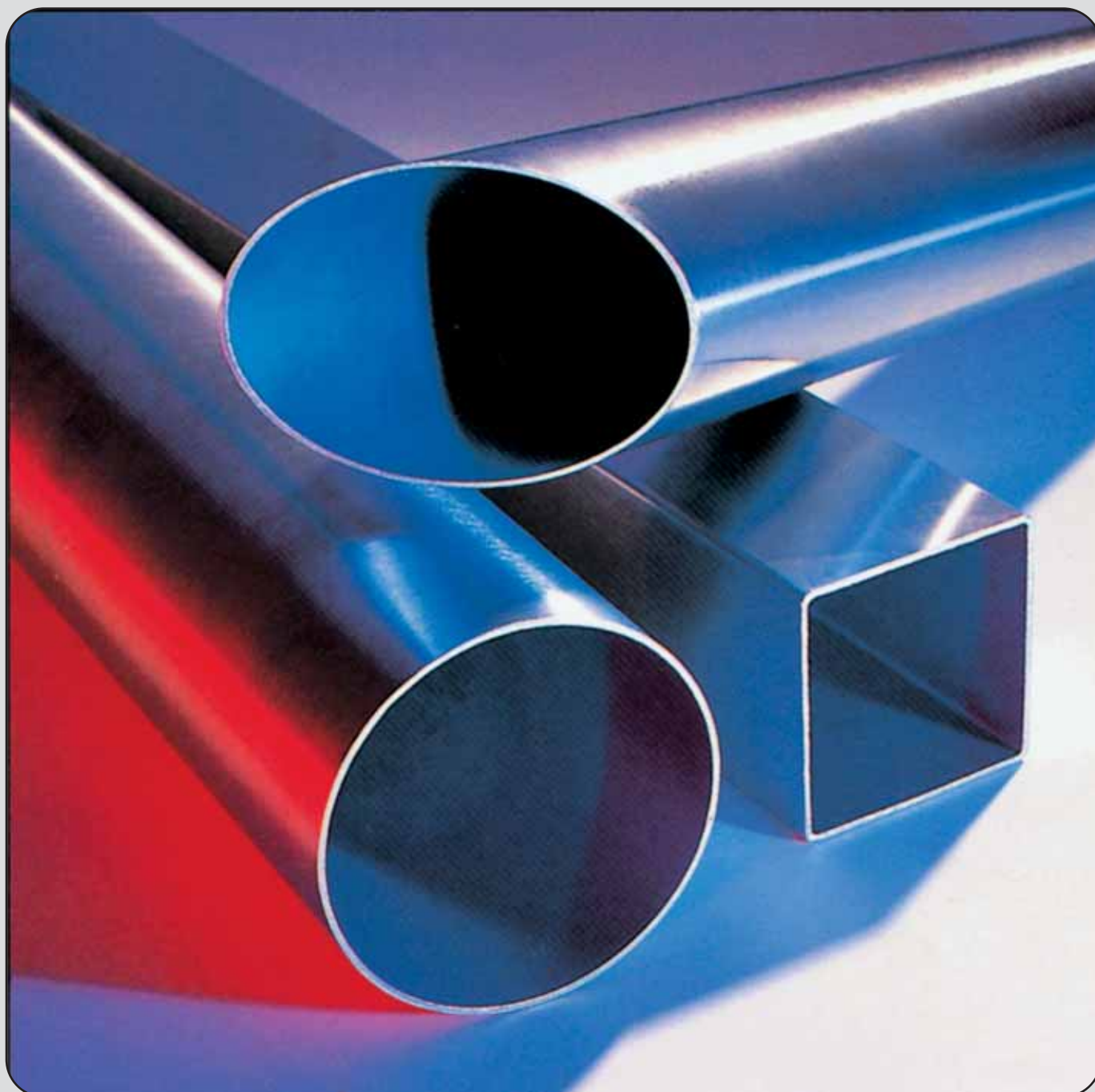
- a) Recocidos a 1050°.
- b) Esmerilado exterior standard, grano 320.
- c) Satinado exterior.
- d) Scotch brite exterior.
- e) Esmerilado exterior vertical.
- f) Pulido exterior / satinado interior.
- g) Satinado interior.
- h) Esmerilado exterior, granos: 60-80-120-180-220-240-280-320-400
- i) Pulido brillante exterior.





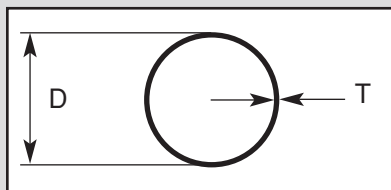


# Gama milimétrica de acero inoxidable





# Gama milimétrica



## Tubos soldados milimétricos de acero inoxidable

Peso teórico de los tubos Kg/m

| Diámetro ext. mm | Espesor mm |       |       |       |       |       |       |       |       |       |       |       |  |
|------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                  | 1          | 1,25  | 1,5   | 1,65  | 2     | 2,3   | 2,5   | 2,6   | 3     | 3,2   | 3,6   | 4     |  |
| 6*               | 0,125      |       |       |       |       |       |       |       |       |       |       |       |  |
| 8*               | 0,175      |       |       |       |       |       |       |       |       |       |       |       |  |
| 10*              | 0,225      |       |       |       |       |       |       |       |       |       |       |       |  |
| 12*              | 0,275      | 0,336 | 0,394 |       | 0,503 |       |       |       |       |       |       |       |  |
| 13*              | 0,300      | 0,367 | 0,431 |       |       |       |       |       |       |       |       |       |  |
| 14*              | 0,326      | 0,399 | 0,470 |       | 0,601 |       |       |       |       |       |       |       |  |
| 15*              | 0,351      | 0,430 | 0,507 |       |       |       |       |       |       |       |       |       |  |
| 16*              | 0,376      | 0,462 | 0,545 | 0,593 | 0,701 |       |       |       |       |       |       |       |  |
| 18               | 0,426      | 0,524 | 0,620 | 0,676 | 0,801 | 0,904 | 0,970 |       |       |       |       |       |  |
| 20               | 0,476      | 0,587 | 0,695 | 0,758 | 0,901 | 1,019 | 1,096 | 1,133 | 1,277 |       |       |       |  |
| 22               | 0,526      | 0,625 | 0,770 | 0,817 | 1,002 |       |       |       |       |       |       |       |  |
| 23               | 0,550      | 0,680 | 0,806 | 0,880 | 1,050 |       |       |       |       |       |       |       |  |
| 25               | 0,601      | 0,743 | 0,883 | 0,965 | 1,152 | 1,307 | 1,409 | 1,458 | 1,653 |       |       |       |  |
| 28               | 0,676      | 0,837 | 0,995 | 1,089 | 1,302 |       |       |       |       |       |       |       |  |
| 30               | 0,726      | 0,900 | 1,070 | 1,171 | 1,402 | 1,595 | 1,722 | 1,784 |       |       |       |       |  |
| 32*              | 0,776      | 0,962 | 1,146 | 1,254 | 1,502 | 1,710 | 1,847 | 1,914 | 2,178 |       |       |       |  |
| 33               | 0,800      | 0,994 | 1,183 | 1,295 | 1,552 |       |       |       |       |       |       |       |  |
| 35               | 0,851      | 1,056 | 1,258 | 1,378 | 1,653 | 1,883 | 2,035 |       |       |       |       |       |  |
| 38               | 0,926      | 1,150 | 1,371 | 1,502 | 1,803 | 2,056 | 2,222 | 2,305 | 2,629 |       |       |       |  |
| 42*              | 1,025      | 1,275 | 1,521 | 1,667 | 2,003 |       |       |       |       |       |       |       |  |
| 43               | 1,052      | 1,307 | 1,559 | 1,708 | 2,053 | 2,344 | 2,535 |       |       |       |       |       |  |
| 44,5             | 1,089      | 1,301 | 1,615 | 1,719 | 2,128 |       | 2,629 | 2,728 | 3,117 |       |       |       |  |
| 50*              | 1,227      | 1,526 | 1,822 | 1,998 | 2,404 | 2,747 | 2,974 | 3,086 | 3,531 | 3,750 | 4,183 | 4,607 |  |
| 50,8             | 1,247      | 1,551 | 1,582 | 2,031 | 2,444 | 2,793 | 3,024 | 3,138 | 3,591 | 3,814 | 4,255 | 4,687 |  |
| 53               | 1,302      | 1,620 | 1,934 | 2,122 | 2,554 | 2,920 | 3,161 | 3,281 | 3,756 | 3,990 |       |       |  |
| 54*              | 1,327      | 1,651 | 1,972 | 2,163 | 2,604 | 2,978 | 3,224 | 3,346 | 3,831 | 4,071 |       |       |  |

\* Estas medidas marcadas no tienen accesorios.

Calidad de material: AISI 304, 304 L 316 L  
Composición química: ver pág 2

Normas de fabricación:

DIN: 17455  
DIN: 17457

Longitudes estandard

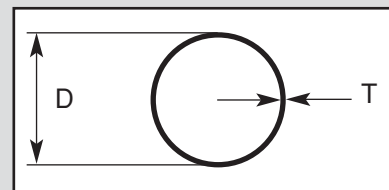
6 metros, otros largos bajo pedido especial.

Aspecto superficial

Todos los tubos se suministran con el cordón de soldadura externo laminado hasta 256 mm. A petición del cliente la superficie exterior puede ser de acuerdo con los acabados indicados en la página 3.



## Tubos soldados milimétricos de acero inoxidable



| Peso teórico de los tubos Kg/m |            |       |       |       |        |        |        |        |        |        |        |        |
|--------------------------------|------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Diámetro ext. mm               | Espesor mm |       |       |       |        |        |        |        |        |        |        |        |
|                                | 1          | 1,25  | 1,5   | 1,65  | 2      | 2,3    | 2,5    | 2,6    | 3      | 3,2    | 3,6    | 4      |
| 57*                            | 1,402      | 1,745 | 2,085 | 2,287 | 2,754  | 3,150  | 3,412  | 3,542  | 4,056  | 4,311  | 4,814  | 5,308  |
| 63,5                           |            | 1,948 | 2,329 | 2,555 | 3,080  | 3,525  | 3,819  | 3,965  | 4,545  | 4,832  | 5,400  | 5,960  |
| 73                             |            | 2,243 | 2,628 | 2,944 | 3,551  | 4,066  | 4,408  | 4,577  | 5,251  | 5,586  | 6,248  | 6,902  |
| 76                             |            | 2,337 | 2,795 | 3,068 | 3,701  | 4,239  | 4,595  | 4,772  | 5,477  | 5,826  | 6,518  | 7,202  |
| 80*                            |            | 2,465 | 2,948 | 3,237 | 3,906  | 4,475  | 4,852  | 5,039  | 5,784  | 6,154  | 6,887  | 7,612  |
| 83*                            |            | 2,559 | 3,061 | 3,361 | 4,056  | 4,648  | 5,039  | 5,234  | 6,010  | 6,394  | 7,157  | 7,913  |
| 84                             |            | 2,590 | 3,099 | 3,402 | 4,107  | 4,705  | 5,102  | 5,299  | 6,085  | 6,474  | 7,248  | 8,013  |
| 103*                           |            |       | 3,812 | 4,187 | 5,058  | 5,800  | 6,291  | 6,536  | 7,512  | 7,997  | 8,960  | 9,916  |
| 104                            |            |       | 3,850 | 4,229 | 5,108  | 5,857  | 6,354  | 6,602  | 7,587  | 8,077  | 9,050  | 10,016 |
| 108*                           |            |       | 4,000 | 4,394 | 5,308  | 6,087  | 6,604  | 6,862  | 7,888  | 8,397  | 9,411  | 10,417 |
| 127*                           |            |       | 4,714 | 5,179 | 6,260  | 7,182  | 7,794  | 8,099  | 9,315  | 9,920  | 11,124 | 12,320 |
| 129                            |            |       | 4,789 | 5,262 | 6,360  | 7,297  | 7,919  | 8,229  | 9,465  | 10,080 | 11,304 | 12,520 |
| 153                            |            |       | 5,69  |       |        |        |        |        |        |        |        |        |
| 154                            |            |       |       |       | 7,612  | 8,737  | 9,484  | 9,857  | 11,343 | 12,083 | 13,558 | 15,024 |
| 156                            |            |       |       |       | 7,712  | 8,852  | 9,609  | 9,987  | 11,493 | 12,244 | 13,738 | 15,224 |
| 204                            |            |       |       |       | 10,116 | 11,616 | 12,614 | 13,112 | 15,099 | 16,090 | 18,065 | 20,032 |
| 206                            |            |       |       |       | 10,216 | 11,731 | 12,739 | 13,242 | 15,249 | 16,250 | 18,245 | 20,232 |
| 254                            |            |       |       |       | 12,620 | 14,496 | 15,744 | 16,367 | 18,855 | 20,096 | 22,572 | 25,040 |
| 255                            |            |       |       |       |        |        | 15,806 | 16,435 | 18,930 | 20,176 | 22,662 | 25,140 |
| 256                            |            |       |       |       | 12,720 | 14,611 | 15,869 | 16,497 | 19,005 | 20,256 | 22,752 | 25,240 |
| 304                            |            |       |       |       | 15,124 | 17,370 | 18,874 | 19,622 | 22,611 | 24,103 | 27,079 | 30,048 |
| 306                            |            |       |       |       | 15,224 | 17,491 | 18,999 | 19,753 | 22,761 | 24,263 | 27,260 | 30,248 |
| 354                            |            |       |       |       | 17,605 | 20,228 | 21,975 | 22,848 | 26,333 | 28,072 | 31,545 | 35,010 |
| 406                            |            |       |       |       |        |        |        |        | 30,234 | 32,233 | 36,226 | 40,211 |
| 456                            |            |       |       |       |        |        |        |        | 33,985 | 36,234 | 40,728 | 45,213 |
| 506                            |            |       |       |       |        |        |        |        | 37,736 | 40,235 | 45,229 | 50,214 |

\* Estas medidas marcadas no tienen accesorios.

Tolerancias  
de fabricación  
ISO-1127

D. Ext ≤ 114,3  
D. Ext > 114,3

### Tolerancia D. Ext

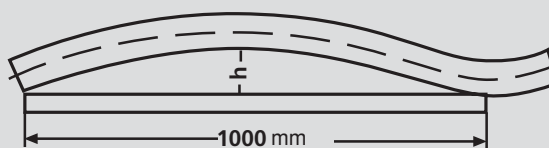
± 0,75% (D3) Mínimo ± 0,3 mm  
± 1% (D2) Mínimo ± 0,5 mm

### Tolerancia de espesor

± 10% (T3) Mínimo ± 0,2 mm  
± 10% (T3) Mínimo ± 0,2 mm

### Flecha h

D. Ext ≤ 114,3 - 2 mm  
D. Ext > 114,3 - 2,5 mm







## Tubos soldados (espesor de pared < 1 mm)

| Peso teórico de los tubos (Kg/m) |            |       |       |       |       |       |       |       |
|----------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|
| Ø ext.<br>mm                     | Espesor mm |       |       |       |       |       |       |       |
|                                  | 0,40       | 0,45  | 0,50  | 0,60  | 0,70  | 0,75  | 0,80  | 0,90  |
| 6,00                             | 0,056      | 0,063 | 0,069 | 0,081 |       |       |       |       |
| 7,50                             | 0,072      | 0,080 | 0,088 | 0,104 |       |       |       |       |
| 8,00                             | 0,077      | 0,085 | 0,094 | 0,112 | 0,128 | 0,137 | 0,145 | 0,161 |
| 9,50                             | 0,091      | 0,102 | 0,113 | 0,134 | 0,155 | 0,165 | 0,175 |       |
| 10,00                            | 0,097      | 0,108 | 0,119 | 0,142 | 0,164 | 0,175 | 0,185 | 0,206 |
| 12,00                            | 0,117      |       | 0,145 | 0,172 | 0,199 | 0,212 | 0,225 | 0,251 |
| 12,70                            | 0,124      |       | 0,153 | 0,182 | 0,211 | 0,225 |       |       |
| 13,00                            | 0,127      |       | 0,156 | 0,186 | 0,215 | 0,230 | 0,244 | 0,272 |
| 13,30                            | 0,130      |       | 0,161 | 0,192 | 0,222 | 0,237 | 0,251 | 0,280 |
| 13,50                            | 0,132      |       | 0,163 | 0,195 | 0,225 | 0,240 | 0,255 | 0,285 |
| 14,00                            | 0,137      |       | 0,170 | 0,202 | 0,234 | 0,250 | 0,265 | 0,296 |
| 14,80                            | 0,145      |       | 0,180 | 0,214 | 0,248 | 0,265 |       |       |
| 15,00                            | 0,147      |       | 0,182 | 0,217 | 0,252 | 0,269 | 0,286 | 0,319 |
| 15,70                            | 0,154      |       | 0,191 | 0,228 | 0,264 | 0,282 | 0,300 | 0,335 |
| 16,00                            | 0,157      |       | 0,195 | 0,232 | 0,269 | 0,287 | 0,306 | 0,342 |
| 16,50                            | 0,162      |       | 0,200 | 0,238 | 0,276 | 0,295 | 0,314 | 0,351 |
| 17,00                            | 0,167      |       | 0,207 | 0,247 | 0,287 | 0,306 | 0,326 | 0,364 |
| 17,20                            | 0,168      |       | 0,209 | 0,249 | 0,289 | 0,309 | 0,329 | 0,367 |
| 18,00                            | 0,177      |       | 0,220 | 0,262 | 0,304 | 0,325 | 0,346 | 0,387 |
| 19,00                            | 0,187      |       | 0,232 | 0,277 | 0,322 | 0,344 | 0,366 | 0,409 |
| 19,05                            | 0,187      |       | 0,232 | 0,277 | 0,322 | 0,344 | 0,366 | 0,409 |
| 20,00                            | 0,197      |       | 0,245 | 0,293 | 0,340 | 0,363 | 0,386 | 0,432 |
| 21,00                            | 0,207      |       | 0,258 | 0,308 | 0,357 | 0,382 | 0,406 | 0,455 |
| 21,30                            | 0,210      |       | 0,261 | 0,312 | 0,362 | 0,387 | 0,412 | 0,461 |
| 22,00                            | 0,217      |       | 0,270 | 0,323 | 0,375 | 0,401 | 0,426 | 0,477 |

Norma de fabricación: DIN-17455  
17457

### TOLERANCIAS ESTANDAR

**Diámetro exterior:** de 6,00 a 15,00: ± 0,08mm  
de 15,70 a 22: ± 0,10mm  
**Espesores:** ± 10%

### Acabado:

Según lo indicado en la página 11.

Calidad de material: AISI-304, 304 L  
316, 316 L, 316 Ti, 321

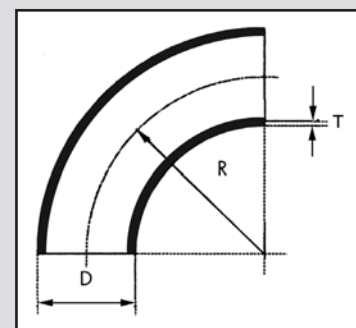
Aleaciones: 600, 800

Composición química y características mecánicas ver páginas 6 y 7.



## Codos 90° soldados

### Accesorios de acero inoxidable para soldar



| Diámetro exterior<br>D<br>mm | Radio<br>R<br>mm | Espesor<br>T<br>mm | Peso<br>Kg |
|------------------------------|------------------|--------------------|------------|
| 18                           | 23               | 1,5                | 0,02       |
| 20                           | 26               | 1,5                | 0,03       |
| 23                           | 30               | 1,5                | 0,04       |
| 25                           | 37               | 1,5                | 0,05       |
| 28                           | 37               | 1,5                | 0,06       |
| 30                           | 38               | 1,5                | 0,07       |
| 33                           | 45               | 1,5                | 0,08       |
| 35                           | 50               | 1,5                | 0,09       |
| 38                           | 52               | 1,5                | 0,12       |
| 43                           | 60               | 1,5                | 0,15       |
| 44                           | 51               | 2,0                | 0,21       |
| 50,8                         | 75               | 1,5                | 0,22       |
| 53                           | 75               | 1,5                | 0,24       |
| 63,5                         | 90               | 1,5                | 0,34       |
| 73                           | 95               | 1,5                | 0,46       |
| 76                           | 95               | 1,5                | 0,50       |
| 84                           | 120              | 2,0                | 0,81       |
| 104                          | 150              | 2,0                | 1,25       |
| 129                          | 188              | 2,0                | 1,93       |
| 154                          | 225              | 2,0                | 2,76       |
| 156                          | 225              | 3                  | 3,60       |
| 204                          | 300              | 2,0                | 4,80       |
| 206                          | 300              | 2,0                | 7,71       |
| 254                          | 350              | 2,0                | 6,92       |
| 255                          | 350              | 2,5                | 8,69       |
| 256                          | 350              | 3,0                | 10,42      |
| 304                          | 400              | 2,0                | 9,50       |
| 306                          | 400              | 3,0                | 14,30      |
| 355                          | 450              | 2,5                | 15,60      |
| 356                          | 450              | 3,0                | 18,74      |
| 406                          | 500              | 3,0                | 23,78      |
| 456                          | 550              | 3,0                | 29,40      |
| 506                          | 600              | 3,0                | 35,51      |

#### TOLERANCIAS

RADIO =  $\pm 2\%$  con un mínimo de 1,5 mm.

ESPESOR = - 12,5 % del espesor nominal.

#### DIAMETRO INTERIOR

| Ø mm    | Tolerancia (mm) |
|---------|-----------------|
| 15-80   | $\pm 1,0$       |
| 100-200 | $\pm 1,5$       |
| 250-350 | $\pm 3,0$       |
| 400-600 | $\pm 4,0$       |

**Calidad del material:** AISI-304, 316, 304 L, 316 L

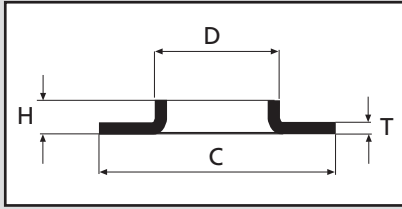
**Composición química:** ver página 6.

**Características mecánicas:** ver página 7.

RADIO = 1,5 Di (hasta Ø154)

RADIO = DN+100 ( $\geq 204$  mm)





## Valonas

Accesorios de acero inoxidable para soldar

| D ext | C mm | T mm | H mm | Peso Kg |
|-------|------|------|------|---------|
| 18    | 51   | 1,5  | 6    | 0,024   |
| 20    |      |      |      |         |
| 23    | 58   | 1,5  | 7    | 0,039   |
| 25    |      |      |      |         |
| 28    | 68   | 1,5  | 7    | 0,054   |
| 30    |      |      | 8    |         |
| 33    |      |      | 8    |         |
| 38    | 78   | 1,5  | 8    | 0,069   |
| 43    | 88   | 1,5  | 10   | 0,087   |
| 50,8  | 105  | 1,5  | 10   | 0,108   |
| 53    |      |      | 11   |         |
| 63,5  |      |      | 11   |         |
| 73    | 122  | 1,5  | 12   | 0,149   |
| 76    |      |      |      |         |
| 84    | 138  | 2    | 13   | 0,191   |
| 104   | 158  | 2    | 16   | 0,227   |
| 129   | 188  | 2    | 15   | 0,308   |
| 154   | 212  | 2    | 19   | 0,352   |
| 204   | 268  | 2    | 21   | 0,502   |
| 254   | 320  | 2    | 24   | 0,593   |
| 304   | 372  | 2    | 20   | 0,707   |
| 354   | 430  | 2    | 21   | 0,845   |
| 406   | 482  | 3    | 21   | 1,850   |
| 456   | 535  | 3    | 45   | 2,980   |
| 506   | 585  | 3    | 25   | 3,360   |

### TOLERANCIAS :

**Diámetro (D):**  $\pm 0,75\%$  con un mínimo de 0,5mm.

**Altura (H):** - 1mm / + 2mm.

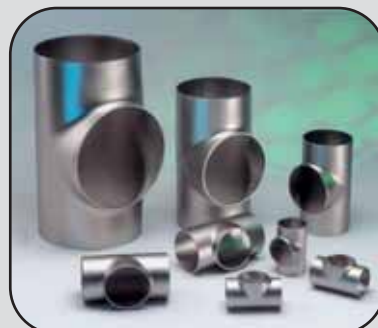
**Espesor:** - 12,5% del espesor nominal.

Diámetro (C) { Hasta Dext 204:  $\pm 1,5$ mm.  
Mayor de Dext 204: +1mm/-3mm.

**Calidad del material:** AISI-304/304-L, 316/316-L.

**Composición química:** Ver página 6.

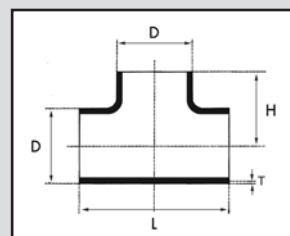
**Características mecánicas:** Ver página 7.





## Tes iguales

Accesorios de acero inoxidable para soldar

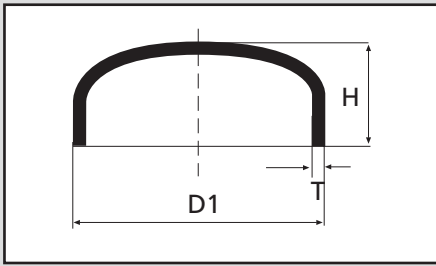


| Diámetro exterior D mm | Espesor T mm | Longitud L mm | Altura H mm | Peso Kg |
|------------------------|--------------|---------------|-------------|---------|
| 18                     | 1.5          | 51            | 25,5        | 0,040   |
| 20                     | 1.5          | 51            | 25,5        | 0,040   |
| 23                     | 1.5          | 51            | 28,5        | 0,050   |
| 25                     | 1.5          | 88            | 28,5        | 0,060   |
| 28                     | 1.5          | 76            | 38.0        | 0,090   |
| 30                     | 1.5          | 76            | 38.0        | 0,100   |
| 33                     | 1.5          | 76            | 38.0        | 0,110   |
| 38                     | 1.5          | 95            | 47,5        | 0,160   |
| 43                     | 1.5          | 95            | 47,5        | 0,170   |
| 50,8                   | 1.5          | 114           | 57.0        | 0,210   |
| 53                     | 1.5          | 114           | 57.0        | 0,250   |
| 63,5                   | 1.5          | 127           | 63,5        | 0,300   |
| 73                     | 1.5          | 152           | 76.0        | 0,450   |
| 76                     | 1.5          | 152           | 76.0        | 0,500   |
| 84                     | 2.0          | 171           | 85,5        | 0,800   |
| 104                    | 2.0          | 210           | 105         | 1,200   |
| 129                    | 2.0          | 248           | 124         | 1,850   |
| 154                    | 2.0          | 286           | 143         | 2,640   |
| 204                    | 2.0          | 356           | 178         | 3,928   |
| 254                    | 2.0          | 432           | 216         | 7,230   |
| 304                    | 2.0          | 508           | 254         | 10,380  |
| 354                    | 2.0          | 559           | 280         | 14,090  |
| 406                    | 3.0          | 610           | 305         | 27,640  |
| 456                    | 3.0          | 686           | 343         | 43,160  |
| 506                    | 3.0          | 762           | 381         | 50,120  |

| TOLERANCIAS            |                                 |                        |
|------------------------|---------------------------------|------------------------|
| Diámetro exterior D mm | Tolerancia diámetro interior mm | Tolerancia altura H mm |
| Hasta 84               | ± 1                             |                        |
| 104                    | ± 2                             | ± 2                    |
| 129-154                | ± 3                             |                        |
| 204-506                | ± 4                             | ± 3                    |

Calidad del material: AISI-304/304-L, 316/316-L.  
 Composición química: Ver página 6.  
 Características mecánicas: Ver página 7.

Espesor: - 12,5% del espesor nominal



## Caps

Accesorios de acero inoxidable para soldar

| D1 Exterior mm | Espesor T mm | H mm  | Peso Kgs |
|----------------|--------------|-------|----------|
| 18             | 2            | 13    | 0,010    |
| 20             |              | 13    | 0,012    |
| 23             |              | 15    | 0,014    |
| 25             |              | 15    | 0,015    |
| 28             |              | 11    | 0,022    |
| 30             |              | 11    | 0,023    |
| 33             |              | 12    | 0,025    |
| 38             |              | 12    | 0,032    |
| 43             |              | 16    | 0,043    |
| 50,8           |              | 17    | 0,050    |
| 53             |              | 17    | 0,054    |
| 63,5           |              | 18    | 0,076    |
| 73             |              | 21    | 0,100    |
| 76             |              | 21    | 0,128    |
| 84             |              | 20    | 0,200    |
| 104            |              | 24    | 0,300    |
| 129            |              | 34    | 0,400    |
| 154            |              | 41    | 0,500    |
| 204            | 50           | 0,900 |          |
| 254            | 55           | 1,300 |          |
| 304            | 68           | 2,200 |          |
| 354            | 84           | 3,000 |          |
| 406            | 3            | 96    | 4,700    |
| 456            |              | 106   | 6,300    |
| 506            |              | 120   | 7,200    |

### TOLERANCIAS:

**Diámetro:** ± 1% con un mínimo de 0,5mm.

**H:** ± 2mm hasta Dext 104.

± 3mm hasta Dext 254.

± 4mm hasta Dext 506

**Espesor:** -12,5% del espesor nominal.

**Calidad del material:** AISI-304/304-L, 316/316-L.

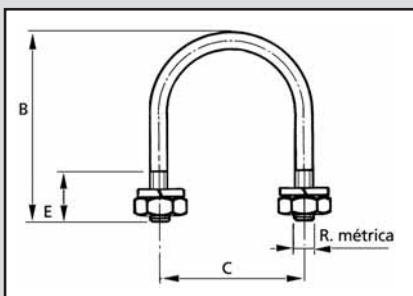
**Composición química:** Ver página 6.

**Características mecánicas:** Ver página 7.

**Radio mayor =** Diámetro interior

**Radio menor =** Diámetro interior ± 10

## Abarcones



**Material:** Acero inoxidable.

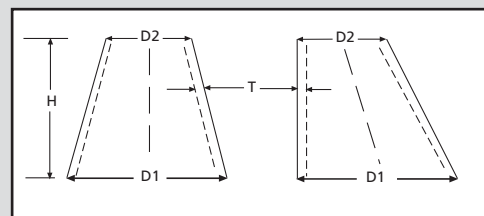
Bajo pedido pueden suministrarse con tuerca y contratuerca en lugar de arandela Groover

| Dimens. Nominal | B     | C     | E  | R        |
|-----------------|-------|-------|----|----------|
| 1/8"            | 29    | 14,5  | 13 | 4 x 70   |
| 1/4"            | 32    | 20    | 14 | 6 x 100  |
| 3/8"            | 37    | 23,5  | 15 | 6 x 100  |
| 1/2"            | 42    | 28    | 17 | 6 x 100  |
| 3/4"            | 50    | 34    | 19 | 6 x 100  |
| 1"              | 62    | 41    | 24 | 6 x 100  |
| 1 1/4"          | 71    | 49    | 24 | 6 x 100  |
| 1 1/2"          | 80    | 57    | 26 | 8 x 125  |
| 2"              | 91    | 70    | 26 | 8 x 125  |
| 2 1/2"          | 117,5 | 85    | 35 | 10 x 150 |
| 3"              | 130,5 | 100,5 | 35 | 10 x 150 |
| 3 1/2"          | 143   | 114   | 35 | 10 x 150 |
| 4"              | 155   | 127   | 35 | 10 x 150 |
| 5"              | 186   | 154   | 40 | 10 x 150 |
| 6"              | 213   | 181   | 40 | 10 x 150 |
| 8"              | 264   | 232   | 40 | 10 x 150 |
| 10"             | 318   | 286   | 40 | 10 x 150 |
| 12"             | 378   | 339   | 50 | 14 x 200 |
| 14"             | 410   | 372   | 50 | 14 x 200 |
| 16"             | 470   | 422   | 60 | 14 x 200 |
| 18"             | 532   | 476   | 70 | 16 x 200 |
| 20"             | 585   | 529   | 70 | 16 x 200 |



## Reducciones concéntricas y excéntricas

Accesorios de acero inoxidable para soldar



| D1<br>mm | D2<br>mm | H<br>mm | PESO<br>Kg |
|----------|----------|---------|------------|
| 23       | 18       | 20      | 0,016      |
| 28       | 18       | 25      | 0,022      |
|          | 23       |         | 0,032      |
| 33       | 18       | 25      | 0,029      |
|          | 23       |         | 0,048      |
|          | 28       |         | 0,054      |
| 38       | 18       | 32      | 0,038      |
|          | 23       |         | 0,051      |
|          | 28       |         | 0,060      |
| 43       | 18       | 40      | 0,054      |
|          | 23       |         | 0,045      |
|          | 28       |         | 0,049      |
|          | 33       |         | 0,063      |
|          | 38       |         | 0,076      |
| 50,8     | 28       | 50      | 0,060      |
|          | 33       |         | 0,067      |
|          | 38       |         | 0,070      |
|          | 43       |         | 0,079      |
| 53       | 23       | 50      | 0,094      |
|          | 28       |         | 0,071      |
|          | 38       |         | 0,078      |
|          | 43       |         | 0,086      |
| 63,5     | 43       | 65      | 0,107      |
|          | 50,8     |         | 0,126      |
|          | 53       |         | 0,133      |
| 73       | 43       | 65      | 0,138      |
|          | 50,8     |         | 0,142      |
|          | 53       |         | 0,160      |
|          | 63       |         | 0,171      |
| 76       | 43       | 65      | 0,144      |
|          | 50,8     |         | 0,152      |
|          | 53       |         | 0,167      |
|          | 63,5     |         | 0,180      |
| 84       | 28       | 80      | 0,280      |
|          | 38       |         | 0,270      |
|          | 43       |         | 0,261      |
|          | 50,8     |         | 0,246      |
|          | 53       |         | 0,259      |
|          | 63,5     |         | 0,261      |
| 73       | 0,308    |         |            |

Espesores T: Hasta 354 mm diámetro → 2 mm  
Superior a 354 mm → 3 mm

D1 y D2 son diámetros exteriores

**Calidad del material:** AISI-304/304-L, 316/316-L.

**Composición química:** Ver página 6.

**Características mecánicas:** Ver página 7.

### TOLERANCIAS :

D1 y D2= ±1% con un mínimo de ±1mm

H= Tolerancia mínima: ±3mm

H= Tolerancia máxima: ±2%

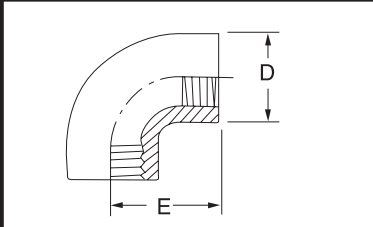
Espesor= -12,5% del espesor nominal

| D1<br>mm | D2<br>mm | H<br>mm | PESO<br>Kg |
|----------|----------|---------|------------|
| 104      | 28       | 100     | 0,440      |
|          | 38       |         | 0,425      |
|          | 43       |         | 0,415      |
|          | 50,8     |         | 0,403      |
|          | 53       |         | 0,385      |
|          | 63,5     |         | 0,407      |
|          | 73       |         | 0,395      |
| 129      | 84       | 125     | 0,433      |
|          | 43       |         | 0,539      |
|          | 50,8     |         | 0,550      |
|          | 53       |         | 0,565      |
|          | 63,5     |         | 0,590      |
|          | 73       |         | 0,612      |
| 154      | 84       | 150     | 0,634      |
|          | 104      |         | 0,656      |
|          | 53       |         | 0,730      |
|          | 63,5     |         | 0,810      |
|          | 73       |         | 0,850      |
|          | 84       |         | 0,868      |
| 204      | 104      | 200     | 0,907      |
|          | 129      |         | 0,970      |
|          | 84       |         | 1,409      |
|          | 104      |         | 1,552      |
|          | 129      |         | 1,594      |
| 254      | 154      | 250     | 1,770      |
|          | 84       |         | 1,850      |
|          | 104      |         | 2,091      |
|          | 129      |         | 2,380      |
|          | 154      |         | 2,596      |
|          | 204      |         | 2,736      |
| 304      | 129      | 300     | 3,010      |
|          | 154      |         | 3,280      |
|          | 204      |         | 3,750      |
|          | 254      |         | 4,220      |
|          | 154      |         | 4,800      |
| 354      | 204      | 350     | 5,090      |
|          | 254      |         | 5,640      |
|          | 304      |         | 6,190      |
|          | 254      |         | 9,000      |
| 406      | 304      | 400     | 10,000     |
|          | 354      |         | 10,800     |
|          | 304      |         | 10,660     |
|          | 354      |         | 11,370     |
| 456      | 406      | 450     | 12,080     |
|          | 354      |         | 14,200     |
|          | 456      |         | 14,990     |

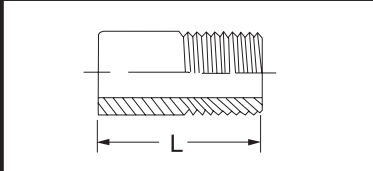


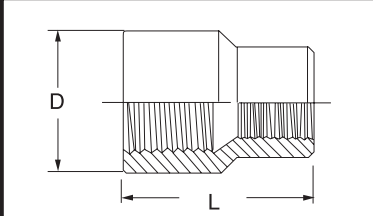
## Accesorio roscado de acero inoxidable.

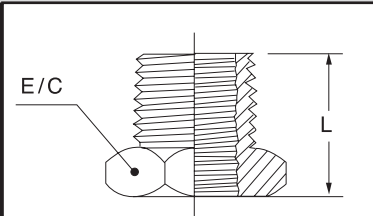
Medidas de fabricación • Roscas según ISO 7/1 (DIN 2999 parte 1)

|  | Codo roscado figura 90 |      |      |      |      |    |        |        |    |        |    |    |
|---|------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   | 1/8"                   | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| D   | -                      | 19   | 23   | 27   | 33   | 41 | 50     | 56     | 69 | 84     | 98 | -  |
| E   | -                      | 21   | 25   | 28   | 33   | 38 | 45     | 50     | 58 | 70     | 80 | -  |

|  | Te roscada figura 130 |      |      |      |      |    |        |        |     |        |     |    |
|--|-----------------------|------|------|------|------|----|--------|--------|-----|--------|-----|----|
|  | 1/8"                  | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | 3"  | 4" |
| L  | -                     | 42   | 50   | 56   | 66   | 76 | 90     | 100    | 116 | 140    | 160 | -  |
| D  | -                     | 19   | 23   | 27   | 33   | 41 | 50     | 56     | 69  | 84     | 98  | -  |
| E  | -                     | 21   | 25   | 28   | 33   | 38 | 45     | 50     | 58  | 70     | 80  | -  |

|  | Entronque figura 149 |      |      |      |      |    |        |        |    |        |    |    |
|---|----------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   | 1/8"                 | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | 20                   | 24   | 26   | 27   | 29   | 32 | 35     | 38     | 42 | 47     | 50 | 55 |

|  | Reduccion hembra - hembra figura 240 |      |      |      |      |    |        |        |    |        |     |    |
|---|--------------------------------------|------|------|------|------|----|--------|--------|----|--------|-----|----|
|   | 1/8"                                 | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3"  | 4" |
| L   | -                                    | -    | 26   | 27   | 33   | 34 | 41     | 45     | 55 | 60     | 65  | -  |
| D   | -                                    | -    | 22   | 27   | 32   | 40 | 50     | 60     | 70 | 85     | 100 | -  |

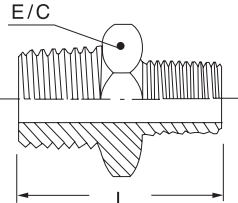
|  | Reduccion macho - hembra figura 241 |      |      |      |      |    |        |        |    |        |    |    |
|---|-------------------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   | 1/8"                                | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | -                                   | 15   | 15   | 18   | 20   | 23 | 25     | 30     | 31 | 35     | 39 | -  |
| E/C   | -                                   | 14   | 17   | 22   | 27   | 36 | 46     | 55     | 65 | 85     | 93 | -  |

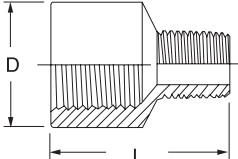
Calidad del material: AISI 316 L (también se puede suministrar en AISI 304)

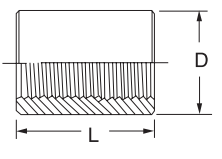


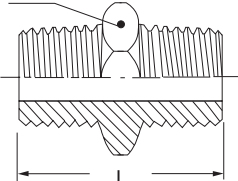
## Accesorio roscado de acero inoxidable.

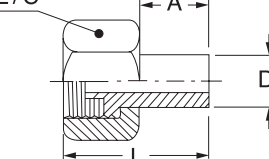
Medidas de fabricación • Roscas según ISO 7/1 (DIN 2999 parte 1)

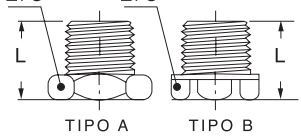
|  | Reduccion macho - macho figura 245 |      |      |      |      |    |        |        |    |        |    |    |
|---|------------------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   | 1/8"                               | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | -                                  | 26   | 26   | 30   | 34   | 38 | 40     | 45     | 50 | -      | -  | -  |
| E/C   | -                                  | 14   | 17   | 22   | 27   | 36 | 46     | 50     | 64 | -      | -  | -  |

|  | Reduccion hembra - macho figura 246 |      |      |      |      |    |        |        |    |        |    |    |
|---|-------------------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   | 1/8"                                | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | -                                   | -    | 25   | 28   | 34   | 35 | -      | -      | -  | -      | -  | -  |
| D   | -                                   | -    | 22   | 28   | 32   | 40 | -      | -      | -  | -      | -  | -  |

|  | Manguito rosca interior figura 270 |      |      |      |      |    |        |        |    |        |     |     |
|---|------------------------------------|------|------|------|------|----|--------|--------|----|--------|-----|-----|
|   | 1/8"                               | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3"  | 4"  |
| L   | 20                                 | 24   | 25   | 27   | 29   | 32 | 35     | 39     | 42 | 46     | 49  | 53  |
| D   | 14                                 | 18   | 22   | 28   | 35   | 40 | 50     | 55     | 70 | 85     | 100 | 125 |

|  | Machon figura 280 |      |      |      |      |    |        |        |    |        |    |     |
|---|-------------------|------|------|------|------|----|--------|--------|----|--------|----|-----|
|   | 1/8"              | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4"  |
| L   | 20                | 26   | 28   | 30   | 33   | 38 | 40     | 45     | 50 | 60     | 62 | 72  |
| E/C   | 13                | 14   | 17   | 22   | 27   | 26 | 46     | 50     | 64 | 80     | 99 | 125 |

|  | Medio enlace figura 287 |      |      |      |      |    |        |        |    |        |     |    |
|---|-------------------------|------|------|------|------|----|--------|--------|----|--------|-----|----|
|   | 1/8"                    | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3"  | 4" |
| L   | -                       | 23   | 26   | 36   | 36   | 41 | 47     | 49     | 55 | 57     | 70  | -  |
| D   | -                       | 8    | 12   | 15   | 20   | 25 | 35     | 41     | 52 | 65     | 77  | -  |
| A   | -                       | 11   | 12   | 20   | 20   | 21 | 25     | 27     | 32 | 33     | 45  | -  |
| E/C   | -                       | 17   | 22   | 27   | 32   | 41 | 46     | 55     | 68 | 90     | 100 | -  |

|  | Tapon figura 290 |      |      |      |      |    |        |        |    |        |    |     |
|---|------------------|------|------|------|------|----|--------|--------|----|--------|----|-----|
|   | 1/8"             | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4"  |
|   | TIPO A           |      |      |      |      |    |        |        |    | TIPO B |    |     |
| L   | 13               | 17   | 17   | 18   | 21   | 26 | 28     | 30     | 32 | 34     | 39 | 50  |
| E/C   | 14               | 14   | 17   | 22   | 24   | 26 | 46     | 50     | 65 | 76     | 94 | 115 |





## Accesorio roscado de acero inoxidable.

Medidas de fabricación • Roscas según ISO 7/1 (DIN 2999 parte 1)

|     |    | Tapa figura 300 |      |      |      |      |    |        |        |    |        |     |    |
|-----|----|-----------------|------|------|------|------|----|--------|--------|----|--------|-----|----|
|     |    | 1/8"            | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3"  | 4" |
| L   | 12 | 12              | 14   | 15   | 16   | 20   | 21 | 22     | 22     | 24 | 24     | 36  |    |
| E/C | 15 | 17              | 22   | 27   | 32   | 41   | 50 | 55     | 69     | 90 | 100    | 125 |    |

|     |   | Tuerca figura 312 |      |      |      |      |    |        |        |    |        |    |    |
|-----|---|-------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|     |   | 1/8"              | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | - | 6                 | 6    | 7    | 8    | 8    | 10 | 10     | 10     | 13 | 13     | -  |    |
| E/C | - | 17                | 22   | 27   | 32   | 41   | 50 | 62     | 72     | 90 | 100    | -  |    |

|     |   | Enlace rosca hembra - hembra figura 340 |      |      |      |      |    |        |        |     |        |    |    |
|-----|---|---|------|------|------|------|----|--------|--------|-----|--------|----|----|
|     |   | 1/8"                                    | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | 3" | 4" |
| L   | - | 33                                      | 37   | 41   | 44   | 49   | 56 | 57     | 62     | 62  | 66     | -  |    |
| E/C | - | 30                                      | 36   | 41   | 46   | 54   | 66 | 73     | 90     | 106 | 120    | -  |    |

|     |   | Enlace rosca macho - hembra figura 341 |      |      |      |      |    |        |        |     |        |    |    |
|-----|---|--|------|------|------|------|----|--------|--------|-----|--------|----|----|
|     |   | 1/8"                                   | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2"  | 2 1/2" | 3" | 4" |
| L   | - | 45                                     | 49   | 53   | 58   | 63   | 73 | 76     | 83     | 87  | 87     | -  |    |
| E/C | - | 30                                     | 36   | 41   | 46   | 54   | 66 | 73     | 90     | 106 | 120    | -  |    |

|     |       | Entronque manguera figura 399 |      |      |      |      |    |        |        |    |        |    |    |
|-----|-------|-------------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|     |       | 1/8"                          | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L   | -     | 38,5                          | 42   | 47   | 50   | 56   | 65 | 72     | 85     | 97 | 107    | -  |    |
| D   | -     | 12                            | 15   | 19   | 25   | 30   | 40 | 50     | 60     | 76 | 86     | -  |    |
| E/C | -     | 14                            | 17   | 22   | 27   | 36   | 46 | 54     | 65     | 85 | 98     | -  |    |
|     | 399 R | 10                            | 12   | 15   | 20   | 25   |    |        |        |    |        |    |    |

|   |   | Manguito rosca exterior figura 531 |      |      |      |      |    |        |        |    |        |    |    |
|---|---|------------------------------------|------|------|------|------|----|--------|--------|----|--------|----|----|
|   |   | 1/8"                               | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" |
| L | - | 24                                 | 25   | 26   | 29   | 33   | 35 | 39     | 42     | 47 | 50     | 56 |    |



# Gama ISO

de acero inoxidable





# Gama ISO

## Tubería de acero inoxidable Dimensiones según ISO 1127

| Diámetro nominal |        | Diámetro exterior | Tolerancia           | Espesor (mm) |       |       |       |       |      |      |      |      |
|------------------|--------|-------------------|----------------------|--------------|-------|-------|-------|-------|------|------|------|------|
| DN               | Pulg.  |                   |                      | mm           | 1.0   | 1.2   | 1.6   | 2.0   | 2.3  | 2.6  | 2.9  | 3.2  |
| 6                | 1/8"   | 10,2              | D3/T3<br>ISO<br>1127 | 0,233        | 0,274 | 0,349 |       |       |      |      |      |      |
| 8                | 1/4"   | 13,5              |                      | 0,315        | 0,372 | 0,480 |       | 0,645 |      |      |      |      |
| 10               | 3/8"   | 17,2              |                      | 0,408        | 0,484 | 0,629 | 0,766 | 0,863 |      |      |      |      |
| 15               | 1/2"   | 21,3              |                      | 0,513        | 0,610 | 0,797 | 0,976 | 1,11  | 1,23 |      |      |      |
| 20               | 3/4"   | 26,9              |                      | 0,654        | 0,779 | 1,02  | 1,26  | 1,43  | 1,59 |      |      |      |
| 25               | 1"     | 33,7              |                      | 0,825        | 0,983 | 1,29  | 1,60  | 1,82  | 2,04 |      | 2,45 |      |
| 32               | 1 1/4" | 42,4              |                      | 1,04         | 1,25  | 1,65  | 2,04  | 2,32  | 2,61 | 2,89 | 3,14 |      |
| 40               | 1 1/2" | 48,3              |                      | 1,19         | 1,43  | 1,89  | 2,34  | 2,67  | 3,00 | 3,32 | 3,64 | 4,06 |
| 50               | 2"     | 60,3              |                      | 1,50         | 1,79  | 2,37  | 2,94  | 3,36  | 3,78 | 4,20 | 4,61 | 5,15 |
| 65               | 2 1/2" | 76,1              |                      | 1,90         | 2,27  | 2,99  | 3,74  | 4,28  | 4,82 | 5,36 | 5,89 | 6,58 |
| 80               | 3"     | 88,9              |                      | 2,22         | 2,65  | 3,52  | 4,38  | 5,02  | 5,66 | 6,29 | 6,91 | 7,74 |
| 90               | 3 1/2" | 101,6             |                      | 2,54         | 3,04  | 4,03  | 4,99  | 5,76  | 6,49 | 7,22 | 7,94 | 8,90 |
| 100              | 4"     | 114,3             |                      |              | 3,42  | 4,55  | 5,66  | 6,50  | 7,32 | 8,15 | 8,96 | 10,0 |
| 125              | 5"     | 139,7             |                      |              | 4,19  | 5,57  | 6,94  | 7,97  | 8,99 | 10,0 | 11,0 | 12,4 |
| 150              | 6"     | 168,3             |                      |              | 5,06  | 6,73  | 8,39  | 9,63  | 10,9 | 12,1 | 13,3 | 14,9 |
| 200              | 8"     | 219,1             |                      |              | 8,78  | 10,9  | 12,6  | 14,2  | 15,8 | 17,4 | 19,6 |      |
| 250              | 10"    | 273,0             |                      |              | 11,0  | 13,7  | 15,7  | 17,7  | 19,8 | 21,8 | 24,5 |      |
| 300              | 12"    | 323,9             |                      |              |       | 16,2  | 18,7  | 21,1  | 23,5 | 25,9 | 29,1 |      |
| 350              | 14"    | 355,6             | D2/T3<br>ISO<br>1127 |              |       |       | 17,8  | 20,5  | 23,1 | 25,8 | 28,4 | 32,0 |
| 400              | 16"    | 406,4             |                      |              |       |       | 20,4  | 23,4  | 26,5 | 29,5 | 32,5 | 36,6 |
| 450              | 18"    | 457,2             |                      |              |       |       | 23,0  | 26,4  | 29,8 | 33,2 | 36,6 | 41,2 |
| 500              | 20"    | 508               |                      |              |       |       | 25,5  | 29,3  | 33,1 | 36,9 | 40,7 | 45,8 |
| 600              | 24"    | 609,6             |                      |              |       |       | 30,6  | 35,2  | 39,8 | 44,4 | 48,9 | 55,0 |
| 700              | 28"    | 711,2             |                      |              |       |       |       |       |      |      | 57,1 | 64,2 |
| 800              | 32"    | 812,8             |                      |              |       |       |       |       |      |      | 65,3 | 73,5 |
| 900              | 36"    | 914,4             |                      |              |       |       |       |       |      |      |      |      |
| 1000             | 40"    | 1016              |                      |              |       |       |       |       |      |      |      |      |

Normas de fabricación: DIN-17455  
DIN-17457



# Tubería de acero inoxidable

Dimensiones según ISO 1127

| Espesor (mm) |      |      |      |      |      |      |      | Diámetro exterior mm |
|--------------|------|------|------|------|------|------|------|----------------------|
| 4.0          | 4.5  | 5.0  | 5.6  | 6.3  | 8.0  | 10.0 | 12.5 |                      |
| Peso (Kg/m)  |      |      |      |      |      |      |      |                      |
|              |      |      |      |      |      |      |      | 10,2                 |
|              |      |      |      |      |      |      |      | 13,5                 |
|              |      |      |      |      |      |      |      | 17,2                 |
|              |      |      |      |      |      |      |      | 21,3                 |
|              |      |      |      |      |      |      |      | 26,9                 |
|              |      |      |      |      |      |      |      | 33,7                 |
|              |      |      |      |      |      |      |      | 42,4                 |
|              |      |      |      |      |      |      |      | 48,3                 |
| 5,68         | 6,26 | 6,92 | 7,64 | 8,54 |      |      |      | 60,3                 |
| 7,28         | 8,04 | 8,90 | 9,85 | 11,0 |      |      |      | 76,1                 |
| 8,56         | 9,47 | 10,5 | 11,6 | 13,1 | 16,1 |      |      | 88,9                 |
| 9,84         | 10,9 | 12,1 | 13,4 | 15,1 | 18,7 | 22,9 |      | 101,6                |
| 11,1         | 12,3 | 13,7 | 15,2 | 17,1 | 21,2 | 26,1 | 32,1 | 114,3                |
| 13,7         | 15,2 | 16,9 | 18,7 | 21,1 | 26,3 | 32,5 | 40,1 | 139,7                |
| 16,6         | 18,4 | 20,4 | 22,7 | 25,6 | 32,0 | 39,6 | 49,1 | 168,3                |
| 21,7         | 24,1 | 26,8 | 29,8 | 33,7 | 42,1 | 52,3 | 65,1 | 219,1                |
| 27,1         | 30,1 | 33,5 | 37,3 | 42,2 | 52,8 | 65,8 | 82,1 | 273,0                |
| 32,3         | 35,8 | 39,9 | 44,4 | 50,3 | 63,0 | 78,6 | 98,1 | 323,9                |
| 35,5         | 39,4 | 43,9 | 48,9 | 55,3 | 69,3 | 86,5 | 108  | 355,6                |
| 40,6         | 45,1 | 50,2 | 55,9 | 63,3 | 79,4 | 99,2 | 124  | 406,4                |
| 45,7         | 50,8 | 56,6 | 63,0 | 71,4 | 89,6 | 112  | 140  | 457,2                |
| 50,8         | 56,5 | 63,0 | 70,1 | 79,4 | 99,7 | 125  | 156  | 508                  |
| 61,1         | 67,9 | 75,7 | 84,3 | 95,5 | 120  | 150  | 188  | 609,6                |
| 71,3         | 79,3 | 88,4 | 98,5 | 112  | 140  | 176  | 220  | 711,2                |
| 81,6         | 90,7 | 101  | 113  | 128  | 160  | 201  | 252  | 812,8                |
| 91,8         | 102  | 114  | 127  | 144  | 181  | 226  | 284  | 914,4                |
| 102          | 114  | 127  | 141  | 160  | 201  | 252  | 316  | 1016                 |

## Tolerancias según ISO 1127

### Diámetro exterior

| designación | desviación           |
|-------------|----------------------|
| D1          | ± 1,5% min: ±0,75 mm |
| D2          | ± 1% min: ±0,5 mm    |
| D3          | ± 0,75% min: ±0,3 mm |
| D4          | ± 0,5% min: ±0,1 mm  |

NOTA: Las tolerancias del diámetro exterior incluyen la ovalidad

### Espesor

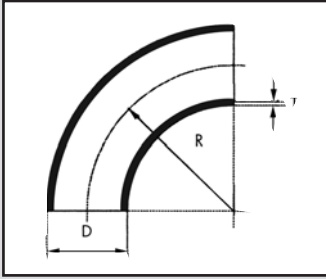
| designación | desviación            |
|-------------|-----------------------|
| T1          | ± 15% min: ± 0,6 mm   |
| T2          | ± 12,5% min: ± 0,4 mm |
| T3          | ± 10% min: ± 0,2 mm   |
| T4          | ± 7,5% min: ± 0,15 mm |
| T5          | ± 5% min: ± 0,1 mm    |

NOTA: Las tolerancias del espesor incluyen la excentricidad

Calidad del material: AISI-304, 304-L, 316-L, 316 Ti, 321

Composición química: Ver página 6

Características mecánicas: Ver página 7



## Codos 90° soldados • ISO

Accesorios de acero inoxidable para soldar

| diámetro nominal |        | diámetro D<br>mm. | Radio R<br>mm. | espesor T<br>mm. | peso<br>Kg. |
|------------------|--------|-------------------|----------------|------------------|-------------|
| DN               | pulg.  |                   |                |                  |             |
| 15               | 1/2"   | 21,3              | 28             | 1,6/2            | 0,03/0,04   |
| 20               | 3/4"   | 26,9              | 29             | 1,6/2            | 0,05/0,06   |
| 25               | 1"     | 33,7              | 38             | 1,6/2            | 0,08/0,09   |
| 32               | 1 1/4" | 42,4              | 48             | 1,6/2            | 0,14/0,20   |
| 40               | 1 1/2" | 48,3              | 57             | 1,6/2            | 0,19/0,21   |
| 50               | 2"     | 60,3              | 76             | 1,6/2            | 0,29/0,40   |
| 65               | 2 1/2" | 76,1              | 95             | 1,6/2            | 0,56/0,60   |
| 80               | 3"     | 88,9              | 114            | 2/3              | 0,78/1,16   |
| 100              | 4"     | 114,3             | 152            | 2/3              | 1,35/2,01   |
| 125              | 5"     | 139,7             | 190            | 2/3              | 2,07/3,1    |
| 150              | 6"     | 168,3             | 229            | 2/3              | 3,3/4,9     |
| 200              | 8"     | 219,1             | 305            | 2/3              | 5,2/7,8     |
| 250              | 10"    | 273               | 381            | 2/3              | 8,25/12,4   |
| 300              | 12"    | 323,9             | 457            | 2/3              | 11,7/17,75  |
| 350              | 14"    | 355,6             | 533,5          | 3/4              | 22/29,4     |
| 400              | 16"    | 406,4             | 609,5          | 3/4              | 29/38       |
| 450              | 18"    | 457,2             | 686            | 3/4              | 37/49       |
| 500              | 20"    | 508               | 762            | 3/4              | 45/60       |
| 600              | 24"    | 609,6             | 914            | 3/4              | 65/86,5     |
| 700              | 28"    | 711,2             | 1070           | 4/5              | 119/149     |
| 800              | 32"    | 812,8             | 1220           | 4/5              | 156/195     |
| 900              | 36"    | 914,4             | 1372           | 4/5              | 206/246     |
| 1000             | 40"    | 1016              | 1525           | 4/5              | 243/304     |

Radio = 1,5 veces diámetro nominal en pulgadas convertido a mm.

Calidad del material: AISI-304, 304 L y 316 L.

Composición química: Ver página 6.

Características mecánicas: Ver página 7.

Bajo consulta se pueden fabricar en otros espesores.

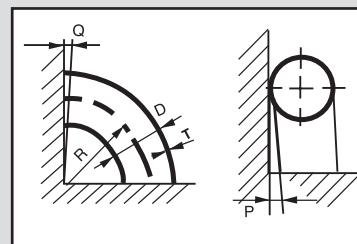
### TOLERANCIAS:

Espesor: -12,5 % del espesor nominal

### Diámetro

| desviaciones     |                      |                      |
|------------------|----------------------|----------------------|
| diámetro nominal | diámetro exterior mm | diámetro interior mm |
| 1/2"-2 1/2"      | ± 1                  | ± 0,8                |
| 3"-3 1/2"        | ± 1                  | ± 1,6                |
| 4"               | +2-1                 | ± 1,6                |
| 5"-6"            | +3-1                 | ± 1,6                |
| 8"               | ± 2                  | ± 1,6                |
| 10"-18"          | +4-3                 | ± 3,2                |
| 20"-24"          | +6-5                 | ± 4,8                |
| 26"-48"          | +7-5                 | ± 4,8                |

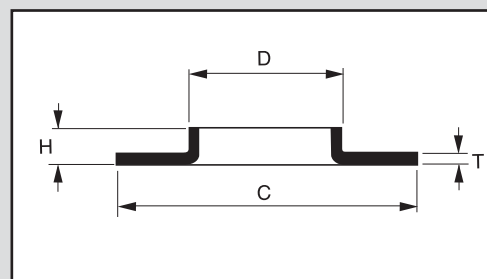
| desviaciones     |      |      |
|------------------|------|------|
| diámetro nominal | Q mm | P mm |
| 1/2"-4"          | ± 1  | ± 2  |
| 5"-8"            | ± 2  | ± 4  |
| 10"-12"          | ± 3  | ± 5  |
| 14"-16"          | ± 3  | ± 7  |
| 18"-24"          | ± 4  | ± 10 |
| 26"-30"          | ± 5  | ± 10 |
| 32"-42"          | ± 5  | ± 12 |
| 44"-48"          | ± 5  | ± 20 |





## Collarines según Norma ISO

### Accesorios de acero inoxidable para soldar



| diámetro nominal |        | D mm. | C mm. | T mm. | H mm. | peso Kg. |
|------------------|--------|-------|-------|-------|-------|----------|
| DN               | pulg.  |       |       |       |       |          |
| 15               | 1/2"   | 21,3  | 47    | 2     | 7     | 0,027    |
|                  |        |       |       | 3     | 7     | 0,036    |
| 20               | 3/4"   | 26,9  | 58    | 2     | 8     | 0,039    |
|                  |        |       |       | 3     | 8     | 0,058    |
| 25               | 1"     | 33,7  | 68    | 2     | 10    | 0,054    |
|                  |        |       |       | 3     | 10    | 0,080    |
| 32               | 1 1/4" | 42,4  | 78    | 2     | 12    | 0,068    |
|                  |        |       |       | 3     | 12    | 0,103    |
| 40               | 1 1/2" | 48,3  | 88    | 2     | 15    | 0,087    |
|                  |        |       |       | 3     | 15    | 0,133    |
| 50               | 2"     | 60,3  | 102   | 2     | 20    | 0,115    |
|                  |        |       |       | 3     | 20    | 0,173    |
| 65               | 2 1/2" | 76,1  | 122   | 2     | 20    | 0,153    |
|                  |        |       |       | 3     | 20    | 0,238    |
| 80               | 3"     | 88,9  | 138   | 2     | 25    | 0,189    |
|                  |        |       |       | 3     | 25    | 0,330    |
| 100              | 4"     | 114,3 | 158   | 2     | 25    | 0,237    |
|                  |        |       |       | 3     | 25    | 0,368    |
| 125              | 5"     | 139,7 | 188   | 2     | 125   | 0,312    |
|                  |        |       |       | 3     | 125   | 0,477    |
| 150              | 6"     | 168,3 | 212   | 2     | 25    | 0,348    |
|                  |        |       |       | 3     | 25    | 0,569    |

| diámetro nominal |       | D mm. | C mm. | T mm. | H mm. | peso Kg. |
|------------------|-------|-------|-------|-------|-------|----------|
| DN               | pulg. |       |       |       |       |          |
| 200              | 8"    | 219,1 | 268   | 2     | 30    | 0,481    |
|                  |       |       |       | 3     | 30    | 0,777    |
| 250              | 10"   | 273,0 | 320   | 2     | 30    | 0,687    |
|                  |       |       |       | 3     | 30    | 0,856    |
| 300              | 12"   | 323,9 | 370   | 2     | 35    | 0,961    |
|                  |       |       |       | 3     | 35    | 1,017    |
| 350              | 14"   | 355,6 | 430   | 3     | 35    | 1,704    |
|                  |       |       |       | 4     | 35    | 2,860    |
| 400              | 16"   | 406,4 | 482   | 3     | 40    | 2,380    |
|                  |       |       |       | 4     | 40    | 2,630    |
| 450              | 18"   | 457,2 | 532   | 3     | 45    | 3,000    |
|                  |       |       |       | 4     | 45    | 3,400    |
| 500              | 20"   | 508   | 585   | 3     | 45    | 3,490    |
|                  |       |       |       | 4     | 45    | 3,770    |
| 600              | 24"   | 609,6 | 685   | 3     | 45    | 4,440    |
|                  |       |       |       | 4     | 45    | 5,270    |
| 700              | 28"   | 711,2 | 805   | 4     | 54    | 8,7      |
|                  |       |       |       | 5     | 55    | 11,4     |
| 800              | 32"   | 812,8 | 880   | 4     | 64    | 9,9      |
|                  |       |       |       | 5     | 65    | 13,3     |
| 900              | 36"   | 914,4 | 980   | 4     | 64    | 11       |
|                  |       |       |       | 5     | 65    | 14,9     |
| 1000             | 40"   | 1016  | 1080  | 4     | 64    | 12,2     |
|                  |       |       |       | 5     | 65    | 17       |

Calidad del material: AISI-304, 304 L y 316 L

Composición química: Ver página 6.

Características mecánicas: Ver página 7.

Bajo consulta se pueden fabricar en otros espesores.

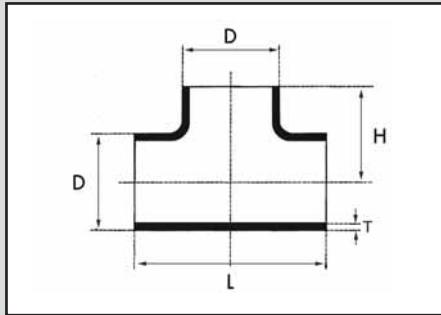
#### TOLERANCIAS:

Esesor (T) = -12,5% del esesor nonimal

Altura (H) = -1 mm a + 2 mm

Diámetro (D) =  $\pm 0,75\%$  con un mínimo de 0,5 mm

Diámetro (C) =  $\pm 1,5$  mm hasta 8" diámetro  
(+1 mm - 3 mm: superior a 8" diámetro)



## Tes iguales • ISO

Accesorios de acero inoxidable para soldar

| diámetro nominal |          | D<br>mm | T<br>mm | L<br>mm | Altura<br>H<br>mm | Peso<br>Kgs |
|------------------|----------|---------|---------|---------|-------------------|-------------|
| DN               | Pulgadas |         |         |         |                   |             |
| 15               | 1/2"     | 21,3    | 2       | 51      | 25,5              | 0,05        |
| 20               | 3/4"     | 26,9    | 2       | 57      | 28,5              | 0,08        |
| 25               | 1"       | 33,7    | 2       | 76      | 38                | 0,12        |
| 32               | 1 1/4"   | 42,4    | 2       | 95      | 47,5              | 0,19        |
| 40               | 1 1/2"   | 48,3    | 2       | 114     | 57                | 0,25        |
| 50               | 2"       | 60,3    | 2       | 127     | 63,5              | 0,38        |
| 65               | 2 1/2"   | 76,1    | 2       | 152     | 76                | 0,60        |
| 80               | 3"       | 88,9    | 2       | 171     | 85,5              | 0,80        |
| 100              | 4"       | 114,3   | 2       | 210     | 105               | 1,30        |
| 125              | 5"       | 139,7   | 2       | 248     | 124               | 2,01        |
| 150              | 6"       | 168,3   | 2       | 286     | 143               | 3,20        |
| 200              | 8"       | 219,1   | 2       | 356     | 178               | 4,81        |
| 250              | 10"      | 273     | 2       | 432     | 216               | 7,33        |
| 300              | 12"      | 323,9   | 3       | 508     | 254               | 15,37       |
| 350              | 14"      | 355,6   | 3       | 558     | 279               | 18,55       |
| 400              | 16"      | 406,4   | 3       | 610     | 305               | 23,20       |
| 450              | 18"      | 457,2   | 3       | 686     | 343               | 29,37       |
| 500              | 20"      | 508     | 3       | 762     | 381               | 36,13       |
| 600              | 24"      | 609,6   | 4       | 864     | 432               | 65,64       |
| 700              | 28"      | 711,2   | 4       | 1042    | 521               | 92,57       |
| 800              | 32"      | 812,8   | 4       | 1194    | 597               | 121,37      |
| 900              | 36"      | 914,4   | 4       | 1346    | 673               | 154,02      |
| 1000             | 40"      | 1016    | 4       | 1498    | 749               | 190,53      |

### TOLERANCIAS:

Esesor: - 12,5 % del esesor nominal

### Diámetro y altura

| Desviaciones                 |                         |                   |
|------------------------------|-------------------------|-------------------|
| diámetro nominal<br>pulgadas | diámetro exterior<br>mm | Altura<br>H<br>mm |
| 1/2"-3 1/2 "                 | ±1                      | ± 2               |
| 4"                           | ± 2                     | ± 2               |
| 5"-6"                        | ±3                      | ± 2               |
| 8"-10"                       | ±4                      | ± 2               |
| 12"-30"                      | ± 4                     | ± 3               |
| 32"-48"                      | ±4                      | ± 5               |

Calidad del material: AISI-304, 304L y 316L.

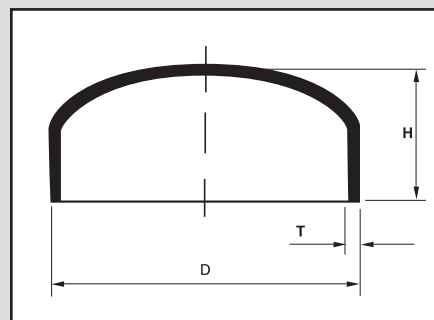
Composición química: Ver página 6.

Características mecánicas: Ver página 7.



## CAPS • ISO

Accesorios de acero inoxidable para soldar



### TOLERANCIAS:

**Espesor**= -12,5% del espesor nominal

**Diámetro**= ±1% con un mínimo de 0,5mm

**Altura**= ± 2mm hasta 100 mm Ø

± 3mm hasta 250 mm Ø

± 4mm hasta 600 mm Ø

**Calidad del material:** AISI-304, 304L y 316L.

**Radio mayor**=  $(D-2T)$

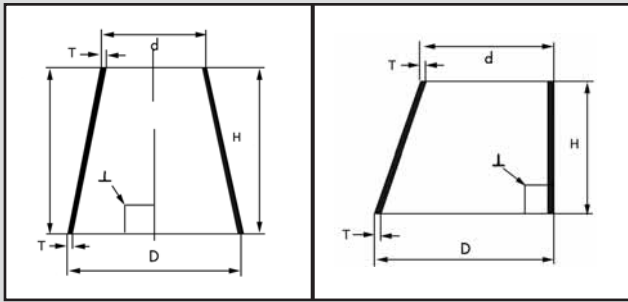
**Radio pequeño**=  $\frac{(D-2T)}{10}$

**Composición química:** Ver página 6.

**Características mecánicas:** Ver página 7.

| Diámetro Nominal |          | diámetro exterior<br>D<br>mm | Espesor<br>T<br>mm | Altura<br>H<br>mm | Peso<br>Kgs |
|------------------|----------|------------------------------|--------------------|-------------------|-------------|
| DN               | pulgadas |                              |                    |                   |             |
| 15               | 1/2"     | 21,3                         | 2                  | 15                | 0,023       |
| 20               | 3/4"     | 26,9                         | 2                  | 11                | 0,022       |
| 25               | 1"       | 33,7                         | 2                  | 13                | 0,026       |
| 32               | 1 1/4"   | 42,4                         | 2                  | 17                | 0,036       |
| 40               | 1 1/2"   | 48,3                         | 2                  | 17                | 0,051       |
| 50               | 2"       | 60,3                         | 2                  | 21                | 0,066       |
| 65               | 2 1/2"   | 76,1                         | 2                  | 27                | 0,124       |
| 80               | 3"       | 88,9                         | 2                  | 28                | 0,138       |
| 100              | 4"       | 114,3                        | 2                  | 31                | 0,200       |
| 125              | 5"       | 139,7                        | 2                  | 35                | 0,269       |
| 150              | 6"       | 168,3                        | 2                  | 42                | 0,378       |
| 200              | 8"       | 219,1                        | 2                  | 50                | 0,618       |
| 250              | 10"      | 273                          | 2                  | 60                | 0,906       |
| 300              | 12"      | 323,9                        | 3                  | 72                | 1,963       |
| 350              | 14"      | 355,6                        | 3                  | 84                | 2,773       |
| 400              | 16"      | 406,4                        | 3                  | 96                | 4,172       |
| 450              | 18"      | 457,2                        | 3                  | 106               | 5,204       |
| 500              | 20"      | 508                          | 3                  | 120               | 5,690       |
| 600              | 24"      | 609,6                        | 4                  | 140               | 10,595      |
| 700              | 28"      | 711,2                        | 4                  | 170               | -           |
| 800              | 32"      | 812,8                        | 4                  | 190               | -           |
| 900              | 36"      | 914,4                        | 4                  | 200               | -           |
| 1000             | 40"      | 1016                         | 4                  | 230               | -           |





## Reducciones concéntricas • ISO

## Reducciones excéntricas • ISO

Accesorios de acero inoxidable para soldar

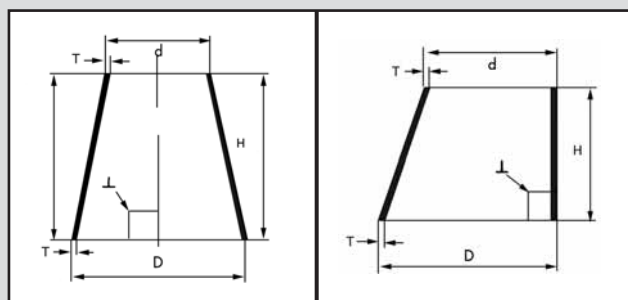
| diámetro nominal |                 | Diámetro<br>D<br>mm | Diámetro<br>d<br>mm | Altura<br>H<br>mm | Espesor<br>T<br>mm | Peso<br>Aprox<br>Kgs |
|------------------|-----------------|---------------------|---------------------|-------------------|--------------------|----------------------|
| DN               | pulg.           |                     |                     |                   |                    |                      |
| 20 x 15          | 3/4" x 1/2"     | 26,9                | 21,3                | 38                | 2                  | 0,10                 |
| 25 x 15          | 1" x 1/2"       | 33,7                | 21,3                | 51                | 2                  | 0,10                 |
| 25 x 20          | 1" x 3/4"       | 33,7                | 26,9                | 51                | 2                  | 0,10                 |
| 32 x 15          | 1 1/4" x 1/2"   | 42,4                | 21,3                | 51                | 2                  | 0,10                 |
| 32 x 20          | 1 1/4" x 3/4"   | 42,4                | 26,9                | 51                | 2                  | 0,10                 |
| 32 x 25          | 1 1/4" x 1"     | 42,4                | 33,7                | 51                | 2                  | 0,10                 |
| 40 x 15          | 1 1/2" x 1/2"   | 48,3                | 21,3                | 64                | 2                  | 0,10                 |
| 40 x 20          | 1 1/2" x 3/4"   | 48,3                | 26,9                | 64                | 2                  | 0,10                 |
| 40 x 25          | 1 1/2" x 1"     | 48,3                | 33,7                | 64                | 2                  | 0,10                 |
| 40 x 32          | 1 1/2" x 1 1/4" | 48,3                | 42,4                | 64                | 2                  | 0,10                 |
| 50 x 20          | 2" x 3/4"       | 60,3                | 26,9                | 76                | 2                  | 0,20                 |
| 50 x 25          | 2" x 1"         | 60,3                | 33,7                | 76                | 2                  | 0,20                 |
| 50 x 32          | 2" x 1 1/4"     | 60,3                | 42,4                | 76                | 2                  | 0,20                 |
| 50 x 40          | 2" x 1 1/2"     | 60,3                | 48,3                | 76                | 2                  | 0,20                 |
| 65 x 40          | 2 1/2" x 1 1/2" | 76,1                | 48,3                | 89                | 2                  | 0,30                 |
| 65 x 50          | 2 1/2" x 2"     | 76,1                | 60,3                | 89                | 2                  | 0,30                 |
| 80 x 40          | 3" x 1 1/2"     | 88,9                | 48,3                | 89                | 2                  | 0,30                 |
| 80 x 50          | 3" x 2"         | 88,9                | 60,3                | 89                | 2                  | 0,30                 |
| 80 x 65          | 3" x 2 1/2"     | 88,9                | 76,1                | 89                | 2                  | 0,30                 |
| 100 x 50         | 4" x 2"         | 114,3               | 60,3                | 102               | 2                  | 0,50                 |
| 100 x 65         | 4" x 2 1/2"     | 114,3               | 76,1                | 102               | 2                  | 0,50                 |
| 100 x 80         | 4" x 3"         | 114,3               | 88,9                | 102               | 2                  | 0,50                 |
| 125 x 80         | 5" x 3"         | 139,7               | 88,9                | 127               | 2                  | 1,10                 |
| 125 x 100        | 5" x 4"         | 139,7               | 114,3               | 127               | 2                  | 1,10                 |
| 150 x 80         | 6" x 3"         | 168,3               | 88,9                | 140               | 2                  | 1,00                 |
| 150 x 100        | 6" x 4"         | 168,3               | 114,3               | 140               | 2                  | 1,00                 |
| 150 x 125        | 6" x 5"         | 168,3               | 139,7               | 140               | 2                  | 1,10                 |
| 200 x 100        | 8" x 4"         | 219,1               | 114,3               | 152               | 2                  | 1,30                 |
| 200 x 125        | 8" x 5"         | 219,1               | 139,7               | 152               | 2                  | 1,30                 |
| 200 x 150        | 8" x 6"         | 219,1               | 168,3               | 152               | 2                  | 1,50                 |
| 250 x 150        | 10" x 6"        | 273                 | 168,3               | 178               | 2                  | 2,00                 |
| 250 x 200        | 10" x 8"        | 273                 | 219,1               | 178               | 2                  | 2,20                 |
| 300 x 150        | 12" x 6"        | 323,9               | 168,3               | 203               | 3                  | 3,70                 |
| 300 x 200        | 12" x 8"        | 323,9               | 219,1               | 203               | 3                  | 4,20                 |
| 300 x 250        | 12" x 10"       | 323,9               | 273                 | 203               | 3                  | 4,60                 |



## Reducciones concéntricas • ISO

## Reducciones excéntricas • ISO

Accesorios de acero inoxidable para soldar



| diámetro nominal |           | Diámetro D<br>mm | Diámetro d<br>mm | Altura H<br>mm | Espesor e<br>mm | Peso Aprox<br>Kgs |
|------------------|-----------|------------------|------------------|----------------|-----------------|-------------------|
| DN               | pulg.     |                  |                  |                |                 |                   |
| 350 x 200        | 14" x 8"  | 355,6            | 219,1            | 330            | 3               | 7,00              |
| 350 x 250        | 14" x 10" | 355,6            | 273              | 330            | 3               | 7,70              |
| 350 x 300        | 14" x 12" | 355,6            | 323,9            | 330            | 3               | 8,40              |
| 400 x 250        | 16" x 10" | 406,4            | 273              | 356            | 3               | 9,00              |
| 400 x 300        | 16" x 12" | 406,4            | 323,9            | 356            | 3               | 9,70              |
| 400 x 350        | 16" x 14" | 406,4            | 355,6            | 356            | 3               | 10,20             |
| 450 x 300        | 18" x 12" | 457,2            | 323,9            | 381            | 3               | 11,20             |
| 450 x 350        | 18" x 14" | 457,2            | 355,6            | 381            | 3               | 11,50             |
| 450 x 400        | 18" x 16" | 457,2            | 406,4            | 381            | 3               | 12,40             |
| 500 x 350        | 20" x 14" | 508              | 355,6            | 508            | 3               | 16,40             |
| 500 x 400        | 20" x 16" | 508              | 406,4            | 508            | 3               | 17,40             |
| 500 x 450        | 20" x 18" | 508              | 457,2            | 508            | 3               | 18,30             |
| 600 x 400        | 24" x 16" | 609,6            | 406,4            | 508            | 4               | 25,70             |
| 600 x 450        | 24" x 18" | 609,6            | 457,2            | 508            | 4               | 27,00             |
| 600 x 500        | 24" x 20" | 609,6            | 508              | 508            | 4               | 28,30             |
| 700 x 500        | 28" x 20" | 711,2            | 508              | 700            | 4               | 46,79             |
| 700 x 600        | 28" x 24" | 711,2            | 609,6            | 700            | 4               | 46,48             |
| 800 x 600        | 32" x 24" | 812,8            | 609,6            | 800            | 4               | 57,20             |
| 800 x 700        | 32" x 28" | 812,8            | 711,2            | 800            | 4               | 61,20             |
| 900 x 700        | 36" x 28" | 914,4            | 711,2            | 900            | 4               | 73,44             |
| 900 x 800        | 36" x 32" | 914,4            | 812,8            | 900            | 4               | 78,03             |
| 1000 x 800       | 40" x 32" | 1016             | 812,8            | 1000           | 4               | 91,80             |
| 1000 x 900       | 40" x 36" | 1016             | 914,4            | 1000           | 4               | 98,66             |

Calidad del material: AISI-304, 304L y 316L.

Composición química: Ver página 6.

Características mecánicas: Ver página 7.

Bajo consulta se pueden fabricar en otros diámetros y espesores.

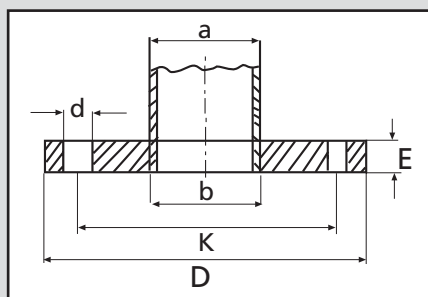
| diámetro nominal | diámetro exterior mm | Altura H mm |
|------------------|----------------------|-------------|
| 1/2"-2 "         | ± 1                  | ± 3         |
| 3"- 4"           | ± 1,5                | ± 3         |
| 5"-8"            | ± 2                  | ± 3         |
| 10"              | ± 2                  | ± 4         |
| 12"-18"          | ± 3                  | ± 4         |
| 20"-30"          | ± 4                  | ± 4         |
| 32"-40"          | ± 4                  | ± 5         |

**TOLERANCIAS:**

Espesor: - 12,5 % del espesor nominal



# Bridas DIN



## DIN-2576

Bridas planas de acero inoxidable

Presión nominal 10 Kg/cm<sup>2</sup> (PN 16 Kg/cm<sup>2</sup> Ø ≤ DN 150)

| Tubo             |        | Brida   |         |         |         |         | Tornillos |       |      | Peso aprox.<br>Kg |         |
|------------------|--------|---------|---------|---------|---------|---------|-----------|-------|------|-------------------|---------|
| Diámetro Nominal |        | a<br>mm | b<br>mm | D<br>mm | E<br>mm | K<br>mm | Cant.     | Rosca |      |                   | d<br>mm |
| DN               | Pulg.  |         |         |         |         |         |           |       |      |                   |         |
| 15               | 1/2"   | 18      | 19      | 95      | 14      | 65      | 4         | M12   | 1/2" | 14                | 0,684   |
|                  |        | 20      | 21      |         |         |         |           |       |      |                   | 0,675   |
|                  |        | 21,3*   | 22      |         |         |         |           |       |      |                   | 0,669   |
| 20               | 3/4"   | 23      | 24      | 105     | 16      | 75      | 4         | M12   | 1/2" | 14                | 0,965   |
|                  |        | 25,4    | 26      |         |         |         |           |       |      |                   | 0,947   |
|                  |        | 26,9*   | 27,6    |         |         |         |           |       |      |                   | 0,936   |
| 25               | 1"     | 28      | 29      | 115     | 16      | 85      | 4         | M12   | 1/2" | 14                | 1,15    |
|                  |        | 30      | 31      |         |         |         |           |       |      |                   | 1,14    |
|                  |        | 33,7*   | 34,7    |         |         |         |           |       |      |                   | 1,11    |
| 32               | 1 1/4" | 38      | 39      | 140     | 16      | 100     | 4         | M16   | 5/8" | 18                | 1,66    |
|                  |        | 42,4*   | 43,1    |         |         |         |           |       |      |                   | 1,62    |
| 40               | 1 1/2" | 43      | 44      | 150     | 16      | 110     | 4         | M16   | 5/8" | 18                | 1,90    |
|                  |        | 44,5    | 45,5    |         |         |         |           |       |      |                   | 1,89    |
|                  |        | 48,3*   | 49      |         |         |         |           |       |      |                   | 1,86    |
| 50               | 2"     | 50,8    | 51,8    | 165     | 18      | 125     | 4         | M16   | 5/8" | 18                | 2,58    |
|                  |        | 53      | 54      |         |         |         |           |       |      |                   | 2,56    |
|                  |        | 60,3*   | 61,1    |         |         |         |           |       |      |                   | 2,47    |
|                  |        | 63,5    | 64,5    |         |         |         |           |       |      |                   | 2,43    |
| 65               | 2 1/2" | 73      | 74      | 185     | 18      | 145     | 4         | M16   | 5/8" | 18                | 3,2     |
|                  |        | 76,1*   | 77      |         |         |         |           |       |      |                   | 3,0     |
| 80               | 3"     | 84      | 85      | 200     | 20      | 160     | 4/8       | M16   | 5/8" | 18                | 3,91    |
|                  |        | 88,9*   | 90,3    |         |         |         |           |       |      |                   | 3,79    |
| 100              | 4"     | 104     | 105     | 220     | 20      | 180     | 8         | M16   | 5/8" | 18                | 4,31    |
|                  |        | 114,3*  | 115,9   |         |         |         |           |       |      |                   | 4,03    |
| 125              | 5"     | 129     | 130,5   | 250     | 22      | 210     | 8         | M16   | 5/8" | 18                | 5,86    |
|                  |        | 139,7*  | 141,6   |         |         |         |           |       |      |                   | 5,46    |
| 150              | 6"     | 154     | 155,5   | 285     | 22      | 240     | 8         | M20   | 3/4" | 22                | 6,8     |
|                  |        | 168,3*  | 170,5   |         |         |         |           |       |      |                   | 6,57    |
| 200              | 8"     | 204     | 206     | 340     | 24      | 295     | 8         | M20   | 3/4" | 22                | 10,23   |
|                  |        | 219,1*  | 221,8   |         |         |         |           |       |      |                   | 9,31    |
| 250              | 10"    | 254     | 256     | 395     | 26      | 350     | 12        | M20   | 3/4" | 22                | 13,8    |
|                  |        | 273*    | 276,2   |         |         |         |           |       |      |                   | 11,9    |
| 300              | 12"    | 304     | 307     | 445     | 26      | 400     | 12        | M20   | 3/4" | 22                | 14,8    |
|                  |        | 323,9*  | 327,6   |         |         |         |           |       |      |                   | 13,8    |
| 350              | 14"    | 355,6   | 359,7   | 505     | 28      | 460     | 16        | M20   | 3/4" | 22                | 20,6    |
| 400              | 16"    | 406,4   | 411     | 565     | 32      | 515     | 16        | M24   | 7/8" | 26                | 27,9    |
| 450              | 18"    | 457,2   | 462,5   | 615     | 38      | 565     | 20        | M24   | 7/8" | 26                | 35,6    |
| 500              | 20"    | 508*    | 513,6   | 670     | 38      | 620     | 20        | M24   | 7/8" | 26                | 41,1    |

\* Estas dimensiones corresponden a ISO.

Bajo consulta se puede fabricar bridas con espesor reducido, y en presiones nominales PN-6 (DIN 2573), PN-16 (DIN-2502) y PN-25-40 (DIN-2503)

Calidad del material: AISI-304, 316, 304-L, 316-L

Composición química: Ver página 6.

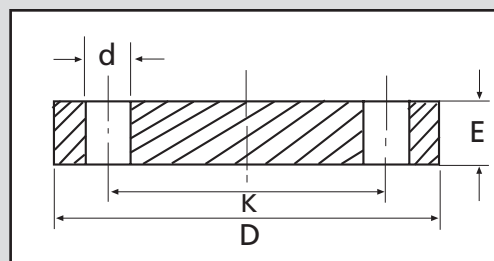
Características mecánicas: Ver página 7.

Tolerancias: Ver página 44.



## DIN-2527

### Bridas ciegas de acero inoxidable



Presión nominal 10 Kg/cm<sup>2</sup> (PN 16 Kg/cm<sup>2</sup> Ø ≤ DN 150)

| Tubo             |        | Brida |      |      | Tornillos |       |      | Peso aprox. Kgs |      |
|------------------|--------|-------|------|------|-----------|-------|------|-----------------|------|
| Diámetro Nominal |        | D mm  | E mm | K mm | Cant      | Rosca |      |                 | d mm |
| DN               | Pulg   |       |      |      |           |       |      |                 |      |
| 15               | 1/2"   | 95    | 14   | 65   | 4         | M12   | 1/2" | 14              | 0,72 |
| 20               | 3/4"   | 105   | 16   | 75   | 4         | M12   | 1/2" | 14              | 1,01 |
| 25               | 1"     | 115   | 16   | 85   | 4         | M12   | 1/2" | 14              | 1,23 |
| 32               | 1 1/4" | 140   | 16   | 100  | 4         | M16   | 5/8" | 18              | 1,80 |
| 40               | 1 1/2" | 150   | 16   | 110  | 4         | M16   | 5/8" | 18              | 2,09 |
| 50               | 2"     | 165   | 18   | 125  | 4         | M16   | 5/8" | 18              | 2,88 |
| 65               | 2 1/2" | 185   | 18   | 145  | 4         | M16   | 5/8" | 18              | 3,66 |
| 80               | 3"     | 200   | 20   | 160  | 4/8       | M16   | 5/8" | 18              | 4,77 |
| 100              | 4"     | 220   | 20   | 180  | 8         | M16   | 5/8" | 18              | 5,65 |
| 125              | 5"     | 250   | 22   | 210  | 8         | M16   | 5/8" | 18              | 8,42 |
| 150              | 6"     | 285   | 22   | 240  | 8         | M20   | 3/4" | 22              | 10,4 |
| 200              | 8"     | 340   | 24   | 295  | 8         | M20   | 3/4" | 22              | 16,5 |
| 250              | 10"    | 395   | 26   | 350  | 12        | M20   | 3/4" | 22              | 24,0 |
| 300              | 12"    | 445   | 26   | 400  | 12        | M20   | 3/4" | 22              | 30,9 |
| 350              | 14"    | 505   | 26   | 460  | 16        | M20   | 3/4" | 22              | 40,6 |
| 400              | 16"    | 565   | 26   | 515  | 16        | M24   | 7/8" | 26              | 49,4 |
| 450              | 18"    | 615   | 26   | 565  | 20        | M24   | 7/8" | 26              | 63   |
| 500              | 20"    | 670   | 28   | 620  | 20        | M24   | 7/8" | 26              | 75,0 |

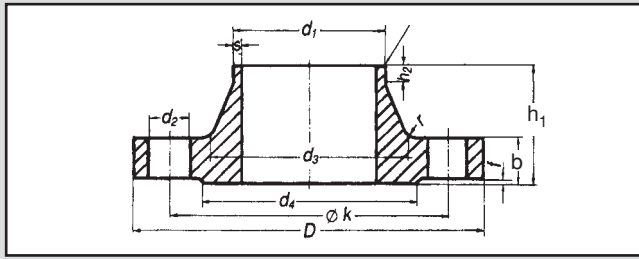
Calidad del material: AISI-304, 316, 304-L, 316-L

Composición química: Ver página 6.

Características mecánicas: Ver página 7.

Tolerancias: Ver página 44.

Bajo consulta se pueden fabricar en: PN-6, PN-16, PN-25 y PN-40



## Bridas con cuello de acero inoxidable

**Presión nominal 10 DIN 2632**

| Tubo  | Brida |                       | Cuello |     |    |                | Resalte        |    | Tornillos |                | Peso/U.<br>(7,85<br>kg/dm <sup>3</sup> )<br>kg ≈ |                |    |       |       |                |
|---|-------|-----------------------|--------|-----|----|----------------|----------------|----|-----------|----------------|--|----------------|----|-------|-------|----------------|
|   | DN    | d <sub>1</sub><br>ISO | D      | b   | k  | h <sub>1</sub> | d <sub>3</sub> | s  | r         | h <sub>2</sub> |  | d <sub>4</sub> | f  | Cant. | Rosca | d <sub>2</sub> |
| 10 a 150 Los diámetros nominales de 10 a 150, son iguales que la tabla DIN 2633, Presión nominal 16 |       |                       |        |     |    |                |                |    |           |                |  |                |    |       |       |                |
| 200   | 219,1 | 340                   | 24     | 295 | 62 | 235            | 5,9            | 10 |           |                | 268  |                | 3  | 8     |       | 11,3           |
| 250   | 273   | 395                   |        | 350 |    | 292            | 6,3            |    |           |                | 320  |                | 12 | M20   | 22    | 14,7           |
| 300   | 323,9 | 445                   |        | 400 | 68 | 344            |                |    |           |                | 370  |                | 16 |       |       | 17,4           |
| 350   | 355,6 | 505                   |        | 460 |    | 385            |                |    |           |                | 430  |                | 4  |       |       | 23,6           |
| 400   | 406,4 | 565                   |        | 515 | 72 | 440            | 7,1            |    |           |                | 482  |                | 16 |       |       | 28,6           |
| 450   | 457,2 | 615                   | 28     | 565 | 72 | 488            |                | 12 |           | 16             | 532  |                | 20 | M24   | 26    | 31,5           |
| 500   | 508   | 670                   |        | 620 | 75 | 542            |                |    |           |                | 585  |                |    |       |       | 38,1           |

**Presión nominal 25 DIN 2634**

| Tubo  | Brida |                       | Cuello |     |     |                | Resalte        |    | Tornillos |                | Peso/U.<br>(7,85<br>kg/dm <sup>3</sup> )<br>kg ≈ |                |    |       |       |                |      |
|---|-------|-----------------------|--------|-----|-----|----------------|----------------|----|-----------|----------------|--|----------------|----|-------|-------|----------------|------|
|   | DN    | d <sub>1</sub><br>ISO | D      | b   | k   | h <sub>1</sub> | d <sub>3</sub> | s  | r         | h <sub>2</sub> |  | d <sub>4</sub> | f  | Cant. | Rosca | d <sub>2</sub> |      |
| 10 a 150 Los diámetros nominales de 10 a 150, son iguales que la tabla DIN 2635, Presión nominal 40 |       |                       |        |     |     |                |                |    |           |                |  |                |    |       |       |                |      |
| 200   | 219,1 | 360                   | 30     | 310 | 80  | 244            | 6,3            | 10 |           | 16             | 278  |                | 3  | 12    | M24   | 26             | 17,0 |
| 250   | 273   | 425                   | 32     | 370 | 88  | 298            | 7,1            |    |           | 18             | 335  |                |    |       | M27   | 30             | 24,4 |
| 300   | 323,9 | 485                   | 34     | 430 | 92  | 352            |                |    |           | 8              | 395  |                |    |       |       |                | 31,2 |
| 350   | 355,6 | 555                   | 38     | 490 | 100 | 398            |                |    |           |                | 450  |                | 16 |       | M30   | 33             | 47,2 |
| 400   | 406,4 | 620                   | 40     | 550 | 110 | 452            |                |    |           | 8,8            | 505  |                |    |       |       |                | 61,7 |
| 450   | 457,2 | 670                   | 42     | 600 | 125 | 500            |                | 12 |           | 20             | 550  |                | 4  |       | M33   | 36             | 71,9 |
| 500   | 508   | 730                   | 44     | 660 |     | 558            | 10             |    |           |                | 615  |                |    |       |       |                | 89,6 |

**Presión nominal 16 DIN 2633**

| Tubo | Brida |                       | Cuello |     |    |                | Resalte        |   | Tornillos |                | Peso/U.<br>(7,85<br>kg/dm <sup>3</sup> )<br>kg ≈ |                |    |       |       |                |       |
|------|-------|-----------------------|--------|-----|----|----------------|----------------|---|-----------|----------------|--|----------------|----|-------|-------|----------------|-------|
|      | DN    | d <sub>1</sub><br>ISO | D      | b   | k  | h <sub>1</sub> | d <sub>3</sub> | s | r         | h <sub>2</sub> |  | d <sub>4</sub> | f  | Cant. | Rosca | d <sub>2</sub> |       |
| 10   | 17,2  | 90                    |        | 60  | 35 | 28             | 1,8            |   |           |                | 40   |                |    |       |       | 0,580          |       |
| 15   | 21,3  | 95                    | 14     | 65  |    | 32             | 2              |   | 4         |                | 45   |                |    |       | M12   | 14             | 0,648 |
| 20   | 26,9  | 105                   |        | 75  |    | 40             | 2,3            |   |           | 6              | 58   |                | 2  |       |       |                | 0,952 |
| 25   | 33,7  | 115                   |        | 85  |    | 45             |                |   |           |                | 68   |                |    |       |       |                | 1,14  |
| 32   | 42,4  | 140                   | 16     | 100 | 40 | 56             | 2,6            |   |           |                | 78   |                | 4  |       |       |                | 1,69  |
| 40   | 48,3  | 150                   |        | 110 | 42 | 64             |                |   |           | 6              | 88   |                |    |       |       |                | 1,86  |
| 50   | 60,3  | 165                   |        | 125 | 45 | 75             | 2,9            |   |           |                | 102  |                |    |       |       |                | 2,53  |
| 65   | 76,1  | 185                   | 18     | 145 |    | 90             |                |   |           |                | 122  |                |    |       | M16   | 18             | 3,06  |
| 80   | 88,9  | 200                   |        | 160 | 50 | 105            | 3,2            |   |           |                | 138  |                |    |       |       |                | 3,70  |
| 100  | 114,3 | 220                   | 20     | 180 | 52 | 131            | 3,6            |   |           | 8              | 158  |                | 3  |       |       |                | 4,62  |
| 125  | 139,7 | 250                   |        | 210 | 55 | 156            | 4              |   |           |                | 188  |                |    |       |       |                | 6,30  |
| 150  | 168,3 | 285                   | 22     | 240 |    | 184            | 4,5            |   |           | 10             | 212  |                |    |       |       |                | 7,75  |
| 200  | 219,1 | 340                   | 24     | 295 | 62 | 235            | 5,9            |   |           |                | 268  |                |    |       | M20   | 22             | 11,0  |
| 250  | 273   | 405                   | 26     | 355 | 70 | 292            | 6,3            |   |           |                | 320  |                | 12 |       |       |                | 15,6  |
| 300  | 323,9 | 460                   | 28     | 410 | 78 | 344            | 7,1            |   |           |                | 378  |                |    |       | M24   | 26             | 22,0  |
| 350  | 355,6 | 520                   | 30     | 470 | 82 | 390            |                |   |           | 16             | 438  |                |    |       |       |                | 31,2  |
| 400  | 406,4 | 580                   | 32     | 525 | 85 | 445            | 8              |   |           |                | 490  |                | 16 |       |       |                | 39,3  |
| 450  | 457,2 | 640                   |        | 585 |    | 490            |                |   |           |                | 550  |                | 20 |       |       |                | 44,3  |
| 500  | 508   | 715                   | 34     | 650 | 90 | 548            |                |   |           |                | 610  |                |    |       | M30   | 33             | 61,0  |

**Presión nominal 40 DIN 2635**

| Tubo | Brida |                       | Cuello |     |     |                | Resalte        |   | Tornillos |                | Peso/U.<br>(7,85<br>kg/dm <sup>3</sup> )<br>kg ≈ |                |    |       |       |                |       |
|------|-------|-----------------------|--------|-----|-----|----------------|----------------|---|-----------|----------------|--|----------------|----|-------|-------|----------------|-------|
|      | DN    | d <sub>1</sub><br>ISO | D      | b   | k   | h <sub>1</sub> | d <sub>3</sub> | s | r         | h <sub>2</sub> |  | d <sub>4</sub> | f  | Cant. | Rosca | d <sub>2</sub> |       |
| 10   | 17,2  | 90                    |        | 60  | 35  | 28             | 1,8            |   |           |                | 40   |                |    |       |       |                | 0,661 |
| 15   | 21,3  | 95                    | 16     | 65  |     | 32             | 2              |   |           | 4              | 45   |                |    |       | M12   | 14             | 0,746 |
| 20   | 26,9  | 105                   |        | 75  |     | 40             | 2,3            |   |           | 6              | 58   |                | 2  |       |       |                | 1,06  |
| 25   | 33,7  | 115                   |        | 85  |     | 45             |                |   |           |                | 68   |                | 4  |       |       |                | 1,29  |
| 32   | 42,4  | 140                   | 18     | 100 | 42  | 56             | 2,6            |   |           |                | 78   |                |    |       |       |                | 1,88  |
| 40   | 48,3  | 150                   |        | 110 | 45  | 64             |                |   |           | 6              | 88   |                |    |       |       |                | 2,33  |
| 50   | 60,3  | 165                   | 20     | 125 | 48  | 75             | 2,9            |   |           |                | 102  |                |    |       | M16   | 18             | 2,82  |
| 65   | 76,1  | 185                   | 22     | 145 | 52  | 90             |                |   |           |                | 122  |                |    |       |       |                | 3,74  |
| 80   | 88,9  | 200                   |        | 160 | 58  | 105            | 3,2            |   |           |                | 138  |                |    |       |       |                | 4,75  |
| 100  | 114,3 | 235                   | 24     | 190 | 65  | 134            | 3,6            |   |           | 8              | 162  |                | 3  | 8     | M20   | 22             | 6,52  |
| 125  | 139,7 | 270                   | 26     | 220 | 68  | 162            | 4              |   |           | 12             | 188  |                |    |       | M24   | 26             | 9,07  |
| 150  | 168,3 | 300                   | 28     | 250 | 75  | 192            | 4,5            |   |           | 10             | 218  |                |    |       |       |                | 11,8  |
| 200  | 219,1 | 375                   | 34     | 320 | 88  | 244            | 6,3            |   |           |                | 285  |                |    |       |       |                | 21,5  |
| 250  | 273   | 450                   | 38     | 385 | 105 | 306            | 7,1            |   |           | 18             | 345  |                | 12 |       |       |                | 34,9  |
| 300  | 323,9 | 515                   | 42     | 450 | 115 | 362            | 8              |   |           |                | 410  |                |    |       | M30   | 33             | 49,7  |
| 350  | 355,6 | 580                   | 46     | 510 | 125 | 408            | 8,8            |   |           | 12             | 465  |                | 16 |       | M33   | 36             | 68,1  |
| 400  | 406,4 | 660                   |        | 585 |     | 462            | 11             |   |           | 20             | 535  |                |    |       |       |                | 96,5  |
| 450  | 457,2 | 685                   | 50     | 610 | 135 | 500            | 12,5           |   |           |                | 560  |                | 20 |       |       |                | 99,7  |
| 500  | 508   | 755                   | 52     | 670 | 140 | 562            | 14,2           |   |           |                | 615  |                |    |       | M39   | 42             | 117   |

Calidad del material: AISI-304, 304-L, 316 y 316-L

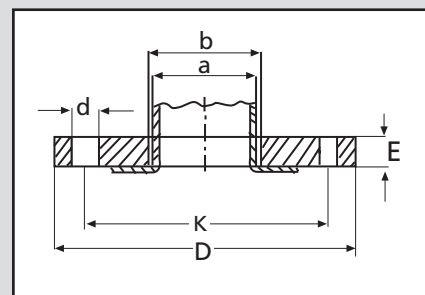
Composición química: Ver página 6.

Características mecánicas: Ver página 7.

Tolerancias: Ver página 44.



## Bridas locas cadmiadas - DIN 2642



Presión nominal 10 Kg/cm<sup>2</sup> (PN 16 Kg/cm<sup>2</sup> Ø ≤ DN 150)

| Tubo |           | Brida                       |                      |      |      |      | Tornillos |       |      | Peso aprox. Kg |      |
|------|-----------|-----------------------------|----------------------|------|------|------|-----------|-------|------|----------------|------|
| DN   | Pulg.     | a mm                        | b mm                 | D mm | E mm | K mm | Cant.     | Rosca | d mm |                |      |
| 15   | 1/2"      | 18<br>20<br>21,3*           | 20<br>22<br>23,3     | 95   | 14   | 65   | 4         | M12   | 1/2" | 14             | 0,69 |
| 20   | 3/4"<br>" | 23<br>25,4<br>26,9*         | 26<br>28,4<br>29,9   | 105  | 14   | 75   | 4         | M12   | 1/2" | 14             | 0,82 |
| 25   | 1"        | 28<br>30<br>33,7*           | 31<br>33<br>36,7     | 115  | 16   | 85   | 4         | M12   | 1/2" | 14             | 1,12 |
| 32   | 1 1/4"    | 38<br>42,4*                 | 42<br>46,4           | 140  | 16   | 100  | 4         | M16   | 5/8" | 18             | 1,66 |
| 40   | 1 1/2"    | 43<br>48,3*                 | 50<br>54             | 150  | 16   | 110  | 4         | M16   | 5/8" | 18             | 1,88 |
| 50   | 2"        | 50,8<br>53<br>60,3*<br>63,5 | 56<br>58<br>65<br>68 | 165  | 16   | 125  | 4         | M16   | 5/8" | 18             | 2,23 |
| 65   | 2 1/2"    | 73<br>76,1*                 | 78<br>81             | 185  | 16   | 145  | 4         | M16   | 5/8" | 18             | 2,66 |
| 80   | 3"        | 84<br>88,9*                 | 89<br>94             | 200  | 18   | 160  | 4/8       | M16   | 5/8" | 18             | 3,36 |
| 100  | 4"        | 104<br>114,3*               | 109<br>119,3         | 220  | 18   | 180  | 8         | M16   | 5/8" | 18             | 3,7  |
| 125  | 5"        | 129<br>139,7*               | 134<br>145           | 250  | 18   | 210  | 8         | M16   | 5/8" | 18             | 4,6  |
| 150  | 6"        | 154<br>168,3*               | 159<br>173           | 285  | 18   | 240  | 8         | M20   | 3/4" | 22             | 5,7  |
| 200  | 8"        | 204<br>219,1*               | 210<br>225           | 340  | 20   | 295  | 8         | M20   | 3/4" | 22             | 7,5  |
| 250  | 10"       | 254<br>273*                 | 260<br>279           | 395  | 22   | 350  | 12        | M20   | 3/4" | 22             | 10,4 |
| 300  | 12"       | 304<br>323,9*               | 312<br>329           | 445  | 26   | 400  | 12        | M20   | 3/4" | 22             | 14,0 |
| 350  | 14"       | 354<br>355,6*               | 360<br>362           | 505  | 28   | 460  | 16        | M20   | 3/4" | 22             | 18,5 |
| 400  | 16"       | 406,4*                      | 413                  | 565  | 32   | 515  | 16        | M24   | 7/8" | 26             | 25,0 |
| 450  | 18"       | 457,2                       | 467                  | 615  | 38   | 565  | 20        | M24   | 7/8" | 26             | 30,6 |
| 500  | 20"       | 508*                        | 517                  | 670  | 38   | 620  | 20        | M24   | 7/8" | 26             | 37,0 |

\* Estas dimensiones corresponden a ISO.

Calidad del material: Acero St. 37.2 cadmiado.

Composición química: Ver página 6.

Características mecánicas: Ver página 7.

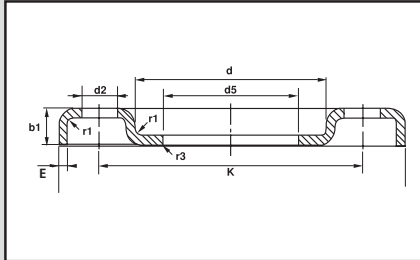
Tolerancias: Ver página 44.

\* Bajo pedido se pueden suministrar en las siguientes calidades: A-304L - 316L.

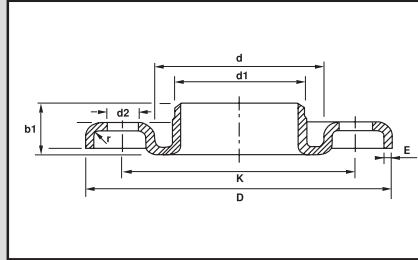


## Bridas prensadas de acero inoxidable

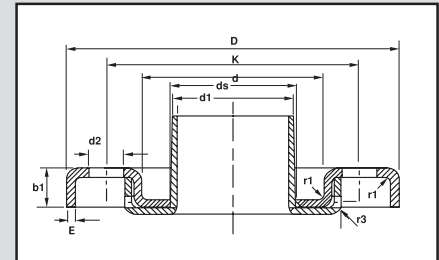
### DIN 2642 • DIN 2633



**Brida loca prensada**  
acero inox. DIN 2642  
PN 10/200°C



**Brida prensada para soldar**  
acero inox. DIN 2633  
PN 16/200°C  
HASTA DN 100



**Brida prensada con collarin**  
acero inox. DIN 2633  
PN 40/200°C - hasta DN 80  
PN 25/200°C - DN 100-200  
PN 10/16, 300°C-DN-250-300

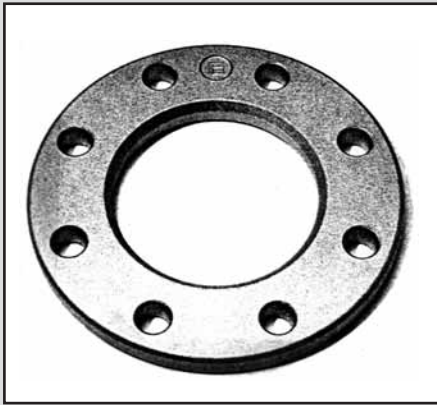
| Tubo |        | Brida |      |      |       |      |       |       | Altura | Espesor | Tornillos |       |       | Peso 2642 | Peso 2633      |
|------|--------|-------|------|------|-------|------|-------|-------|--------|---------|-----------|-------|-------|-----------|----------------|
| DN   | pulg.  | d1 mm | D mm | d mm | d5 mm | K mm | r1 mm | r3 mm | b1 mm  | E mm    | cant.     | rosca | d2 mm | Kg        | PN 16/40-25 Kg |
| 15   | 1/2"   | 21,3  | 95   | 38   | 24    | 65   | 3     | 3     | 11,5   | 3       | 4         | M12   | 13,5  | 0,20      | 0,26/0,30      |
| 20   | 3/4"   | 26,9  | 105  | 48   | 30    | 75   | 3     | 3     | 14,0   | 3       | 4         | M12   | 13,5  | 0,25      | 0,33/0,40      |
| 25   | 1"     | 33,7  | 115  | 53   | 38    | 85   | 3     | 3     | 16,0   | 3       | 4         | M12   | 13,5  | 0,30      | 0,38/0,50      |
| 32   | 1 1/4" | 42,4  | 140  | 68   | 46    | 100  | 3     | 3,5   | 16,5   | 3       | 4         | M16   | 17,5  | 0,45      | 0,50/0,70      |
| 40   | 1 1/2" | 48,3  | 150  | 77   | 54    | 110  | 3     | 3,5   | 18     | 4       | 4         | M16   | 17,5  | 0,62      | 0,88/0,93      |
| 50   | 2"     | 60,3  | 165  | 91   | 65    | 125  | 3     | 4     | 20     | 4       | 4         | M16   | 17,5  | 0,90      | 1,03/1,30      |
| 65   | 2 1/2" | 76,1  | 185  | 108  | 81    | 145  | 4,5   | 5     | 22     | 5       | 4         | M16   | 17,5  | 1,20      | 1,50/1,80      |
| 80   | 3"     | 88,9  | 200  | 123  | 94    | 160  | 4,5   | 5     | 23     | 5       | 8         | M16   | 17,5  | 1,30      | 1,85/2,00      |
| 100  | 4"     | 114,3 | 220  | 141  | 119   | 180  | 5     | 5     | 24     | 6       | 8         | M16   | 17,5  | 1,75      | 2,35/2,95      |
| 125  | 5"     | 139,7 | 250  | 168  | 145   | 210  | 4,5   | 5     | 25,5   | 6       | 8         | M16   | 17,5  | 2,20      | 3,50           |
| 150  | 6"     | 168,3 | 285  | 192  | 173   | 240  | 4,5   | 5     | 27     | 6       | 8         | M20   | 21,5  | 2,70      | 4,20           |
| 200  | 8"     | 219,1 | 340  | 245  | 225   | 295  | 5     | 5     | 31     | 8       | 8         | M20   | 21,5  | 4,60      | 7,35           |
| 250  | 10"    | 273   | 395  | 295  | 276   | 350  | 5     | 5     | 34     | 8       | 12        | M20   | 21,5  | 6,10      | 10,20          |
| 300  | 12"    | 323,9 | 445  | 345  | 329   | 400  | 5     | 5     | 38     | 8       | 12        | M20   | 21,5  | 7,70      | 13,50          |

**Materiales:** AISI-304, 321, 316 Ti (DIN 2642)  
AISI-304L, 316L, 321, 316 Ti (DIN 2633)

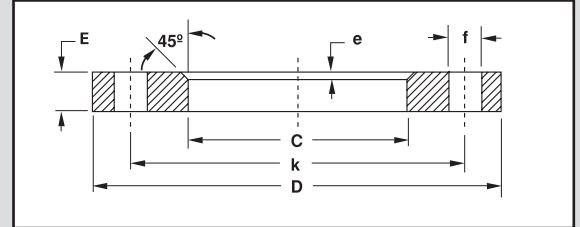
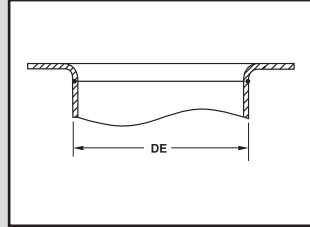
**Composición química:** Ver página 6.  
**Características mecánicas:** Ver página 7.  
**Tolerancias:** Ver página 44.







## Bridas locas de Aluminio PN 10 - DIN 2642



| Diámetro Nominal |        | Tubo    | TUBERIA ESPESOR 1 A 3 mm |      |    |          |     |     |     | TUBERIA S/ISO R64 |                  |        |           | peso aprox. Kg |        |
|------------------|--------|---------|--------------------------|------|----|----------|-----|-----|-----|-------------------|------------------|--------|-----------|----------------|--------|
| DN               | pulg.  |         | Brida                    |      |    | Agujeros |     |     |     | Peso              | Diámetro Nominal |        | Tubo      |                | Brida  |
| DN               | pulg.  | DE      | Ø C                      | Ø D  | E  | e        | Ø K | Ø f | nr. | Kg.               | DN               | Pulg.  | DE        | Ø C            |        |
| 15               | 1/2"   | 18-20   | 24                       | 95   | 12 | 4        | 65  | 14  | 4   | 0,190             | 15               | 1/2"   | 21,3      | 24             | 0,190  |
| 20               | 3/4"   | 23-25   | 30                       | 105  | 12 | 4        | 75  | 14  | 4   | 0,220             | 20               | 3/4"   | 26,9      | 30             | 0,220  |
| 25               | 1"     | 28-30   | 34                       | 115  | 12 | 4        | 85  | 14  | 4   | 0,270             | 25               | 1"     | 33,7      | 36             | 0,270  |
| 32               | 1 1/4" | 35-38   | 40                       | 140  | 16 | 4        | 100 | 18  | 4   | 0,540             | 32               | 1 1/4" | 42,2      | 46             | 0,530  |
| 40               | 1 1/2" | 43-44,5 | 48                       | 150  | 16 | 4        | 110 | 18  | 4   | 0,610             | 40               | 1 1/2" | 48,3      | 54             | 0,590  |
| 50               | 2"     | 50,8-53 | 58                       | 165  | 16 | 4        | 125 | 18  | 4   | 0,730             | 50               | 2"     | 60,3-63,5 | 65             | 0,700  |
| 65               | 2 1/2" | 73      | 77                       | 185  | 16 | 4        | 145 | 18  | 4   | 0,900             | 65               | 2 1/2" | 76,1      | 81             | 0,870  |
| 80               | 3"     | 84-86   | 90                       | 200  | 18 | 5        | 160 | 18  | 8   | 1,080             | 80               | 3"     | 88,9      | 94             | 1,050  |
| 100              | 4"     | 104-106 | 110                      | 220  | 18 | 5        | 180 | 18  | 8   | 1,230             | 100              | 4"     | 114,3     | 119            | 1,160  |
| 125              | 5"     | 129-131 | 135                      | 250  | 18 | 5        | 210 | 18  | 8   | 1,520             | 125              | 5"     | 139,7     | 144            | 1,450  |
| 150              | 6"     | 154-156 | 160                      | 285  | 18 | 5        | 240 | 22  | 8   | 1,900             | 150              | 6"     | 168,3     | 173            | 1,700  |
| 200              | 8"     | 204-206 | 212                      | 340  | 20 | 5        | 295 | 22  | 8   | 2,710             | 200              | 8"     | 219,1     | 225            | 2,500  |
| 250              | 10"    | 254-256 | 262                      | 395  | 22 | 5        | 350 | 22  | 12  | 3,700             | 250              | 10"    | 273       | 279            | 3,250  |
| 300              | 12"    | 304-306 | 312                      | 445  | 22 | 5        | 400 | 22  | 12  | 4,250             | 300              | 12"    | 323,9     | 329            | 3,800  |
| 350              | 14"    | 354     | 362                      | 505  | 22 | 5        | 460 | 22  | 16  | 5,250             | 350              | 14"    | 355,6     | 362            | 5,250  |
| 400              | 16"    | 406     | 413                      | 565  | 25 | 6        | 515 | 25  | 16  | 7,200             | 400              | 16"    | 406,4     | 413            | 7,200  |
| 450              | 18"    | 456     | 466                      | 615  | 25 | 6        | 565 | 25  | 20  | 7,600             | 450              | 18"    | 457,2     | 467            | 7,600  |
| 500              | 20"    | 506     | 517                      | 670  | 28 | 6        | 620 | 25  | 20  | 9,600             | 500              | 20"    | 508       | 517            | 9,600  |
| 600              | 24"    | 606     | 620                      | 780  | 30 | 6        | 725 | 30  | 20  | 12,750            | 600              | 24"    | 610       | 620            | 12,750 |
| 700              | 28"    | 706     | 721                      | 895  | 32 | 6        | 840 | 30  | 24  | 17,000            | 700              | 28"    | 711       | 721            | 17,100 |
| 800              | 32"    | 806     | 824                      | 1015 | 36 | 7        | 950 | 33  | 24  | 25,600            | 800              | 32"    | 813       | 824            | 25,600 |

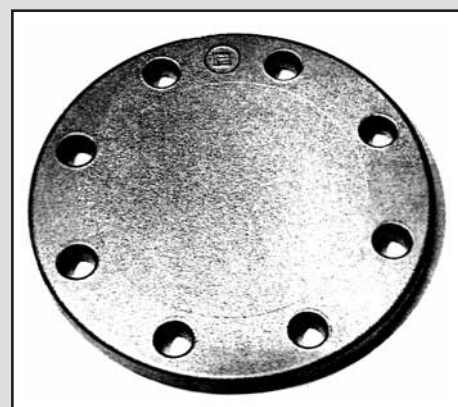
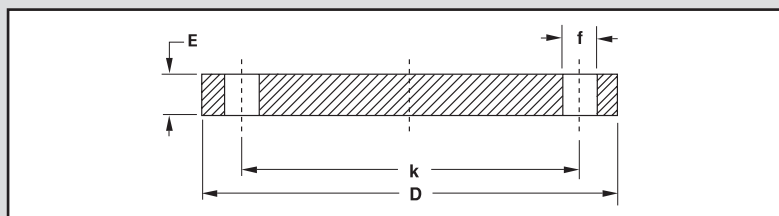
**Calidad del material:** Ver composición en página 41.

**Acabado:** Ver página 41.

Las dimensiones de las bridas son iguales tanto para tubería métrica como tubería ISO, exceptuando el diámetro interior que se indica en la tabla.



## Bridas ciegas de aluminio - DIN 2527- PN 10



| Diámetro Nominal |        | Brida  |      | Agujeros |        |     | Peso   |
|------------------|--------|--------|------|----------|--------|-----|--------|
| DN               | pulg.  | Ø D mm | E mm | Ø K mm   | Ø f mm | nr. | Kg.    |
| 15               | 1/2"   | 95     | 12   | 65       | 14     | 4   | 0,200  |
| 20               | 3/4"   | 105    | 12   | 75       | 14     | 4   | 0,270  |
| 25               | 1"     | 115    | 12   | 85       | 14     | 4   | 0,300  |
| 32               | 1 1/4" | 140    | 16   | 100      | 18     | 4   | 0,600  |
| 40               | 1 1/2" | 150    | 16   | 110      | 18     | 4   | 0,700  |
| 50               | 2"     | 165    | 16   | 125      | 18     | 4   | 0,850  |
| 65               | 2 1/2" | 185    | 16   | 145      | 18     | 4   | 1,080  |
| 80               | 3"     | 200    | 18   | 160      | 18     | 8   | 1,350  |
| 100              | 4"     | 220    | 18   | 180      | 18     | 8   | 1,700  |
| 125              | 5"     | 250    | 18   | 210      | 18     | 8   | 2,210  |
| 150              | 6"     | 285    | 18   | 240      | 22     | 8   | 2,900  |
| 200              | 8"     | 340    | 20   | 295      | 22     | 8   | 4,600  |
| 250              | 10"    | 395    | 22   | 350      | 22     | 12  | 6,700  |
| 300              | 12"    | 445    | 22   | 400      | 22     | 12  | 8,600  |
| 350              | 14"    | 505    | 22   | 460      | 22     | 16  | 10,700 |
| 400              | 16"    | 565    | 25   | 515      | 25     | 16  | 14,500 |
| 450              | 18"    | 615    | 25   | 565      | 25     | 20  | 16,000 |
| 500              | 20"    | 670    | 28   | 620      | 25     | 20  | 22,400 |

## Bridas de aluminio

Calidad del material: aleación GAI Si 12 CuFe

### Composición química

|                |            |
|----------------|------------|
| Si= 11,5-13,5% | Zn ≤ 0,5%  |
| Cu ≤ 0,8%      | Ni ≤ 0,3%  |
| Fe ≤ 0,8%      | Ti ≤ 0,15% |
| Mn= 0,2-0,4%   | Sn ≤ 0,10% |
| Mg ≤ 0,3%      | Pb ≤ 0,15% |
| Al: resto      |            |

**Acabado:** Cuando las bridas se instalan en ambientes húmedos, enterradas o se quiere evitar oxidación por razones estéticas, se suelen recubrir con un esmalte compuesto por polvos aplicados electrostáticamente y recocidas en horno formando una película adhesiva, muy resistente. Antes de aplicar estos polvos, las bridas se someten a una limpieza superficial por medios mecánicos y químicos.

Acabados:

- 1) Gris
- 2) Epoxy-Poliéster

Tipo de recubrimiento: EPOXY-POLIÉSTER  
Propiedades mecánicas del recubrimiento:

- **Espesor:** 60-80 micras
- **Adherencia (ISO 2409):** GTO
- **Dureza (ASTM D3363):** H-2H
- **Resistencia a la colisión (ECCA T8):** ≥ 2,5 Nm
- **Conformado (ISO 1520):** ≥ 5 mm
- **Doblado (ISO 1519):** 5 mm
- **Brillo:** 82-92 GLOSS
- **Resistencia a la niebla salina (ASTM B117):** 200 HRS
- **Resistencia al agua desmineralizada (ASTM B870):** 500 HRS
- **Resistencia Kesternich (ISO 3231):** 10 ciclos
- **Temperatura de utilización:** -25° hasta 90°C
- **Color estándar:** RAL 7031

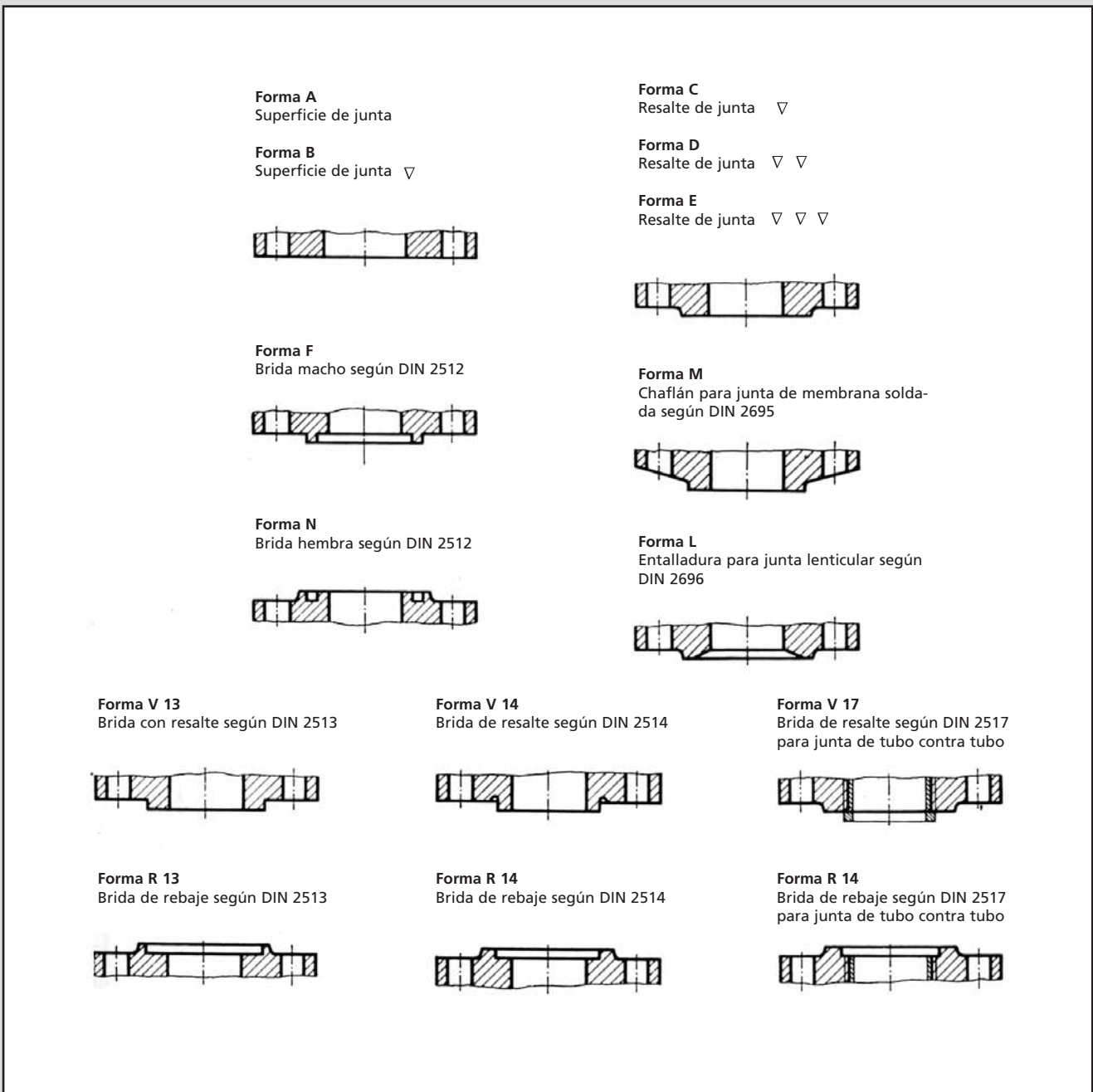


## Bridas - Formas de las superficies de junta

### S/ DIN 2526

#### Campo de aplicación

Esta norma contiene las denominaciones y abreviaturas de las formas de las superficies de juntas necesarias para cada una de las clases de junta.



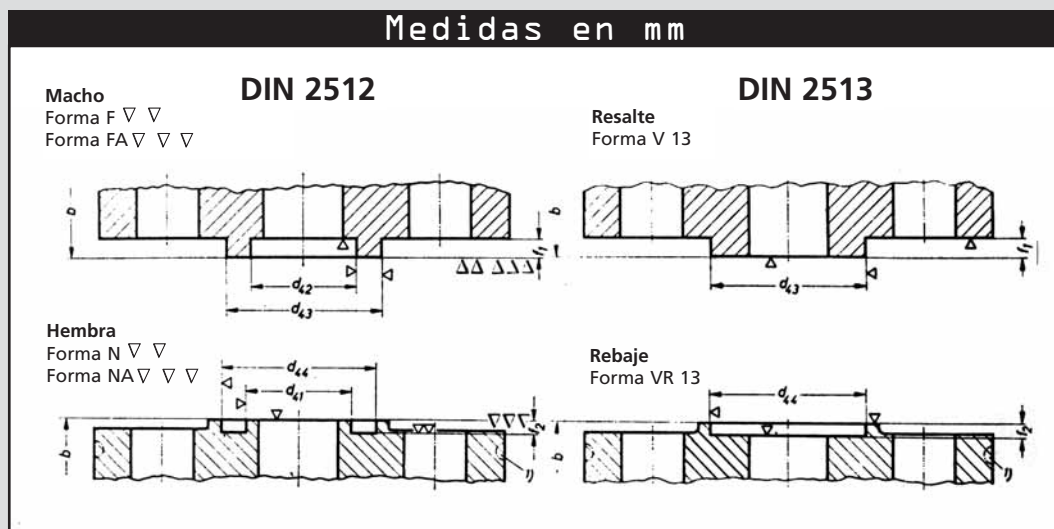
Indicar en los pedidos la forma de la cara de junta.



## Bridas - Caras de junta con encaje

S/ DIN 2512-2513 / PN 10 a 100 Kg/cm<sup>2</sup>

Medidas de construcción



| Diámetro nominal | Macho o resalte |              |            | Hembra o rebaje |              |            |
|------------------|-----------------|--------------|------------|-----------------|--------------|------------|
|                  | d 42<br>+0,5    | d 43<br>-0,5 | f1<br>+0,5 | d 41<br>-0,5    | d 44<br>+0,5 | f2<br>-0,5 |
| 4/6 *            | 20              | 30           | 4          | 19              | 31           | 3          |
| 8*               | 22              | 32           | 4          | 21              | 33           | 3          |
| 10               | 24              | 34           | 4          | 23              | 35           | 3          |
| 15               | 29              | 39           | 4          | 28              | 40           | 3          |
| 20               | 36              | 50           | 4          | 35              | 51           | 3          |
| 25               | 43              | 57           | 4          | 42              | 58           | 3          |
| 32               | 51              | 65           | 4          | 50              | 66           | 3          |
| 40               | 61              | 75           | 4          | 60              | 76           | 3          |
| 50               | 73              | 87           | 4          | 72              | 88           | 3          |
| 65               | 95              | 109          | 4          | 94              | 110          | 3          |
| 80               | 106             | 120          | 4          | 105             | 121          | 3          |
| 100              | 129             | 149          | 4,5        | 128             | 150          | 3,5        |
| 125              | 155             | 175          | 4,5        | 154             | 176          | 3,5        |
| 150              | 183             | 203          | 4,5        | 182             | 204          | 3,5        |
| (175)            | 213             | 233          | 4,5        | 212             | 234          | 3,5        |
| 200              | 239             | 259          | 4,5        | 238             | 260          | 3,5        |
| 250              | 292             | 312          | 4,5        | 291             | 313          | 3,5        |
| 300              | 343             | 363          | 4,5        | 342             | 364          | 3,5        |
| 350              | 395             | 421          | 5          | 394             | 422          | 4          |
| 400              | 447             | 473          | 5          | 446             | 474          | 4          |
| 500              | 549             | 575          | 5          | 548             | 576          | 4          |
| 600              | 649             | 675          | 5          | 648             | 676          | 4          |
| 700              | 751             | 777          | 5          | 750             | 778          | 4          |
| 800              | 856             | 882          | 5          | 855             | 883          | 4          |
| 900              | 961             | 987          | 5          | 960             | 988          | 4          |
| 1000             | 1061            | 1091         | 5          | 1060            | 1092         | 5          |

Las medidas nominales entre paréntesis deben evitarse.

\* Sólo para técnica del frío.

1) Las bridas hembra o de rebaje pueden ser marcadas a petición del cliente con una ranura de torno en el borde exterior.

b= Esta medida es la de la norma de la brida.



## Tolerancias dimensionales para bridas en mm. S/ DIN 2519

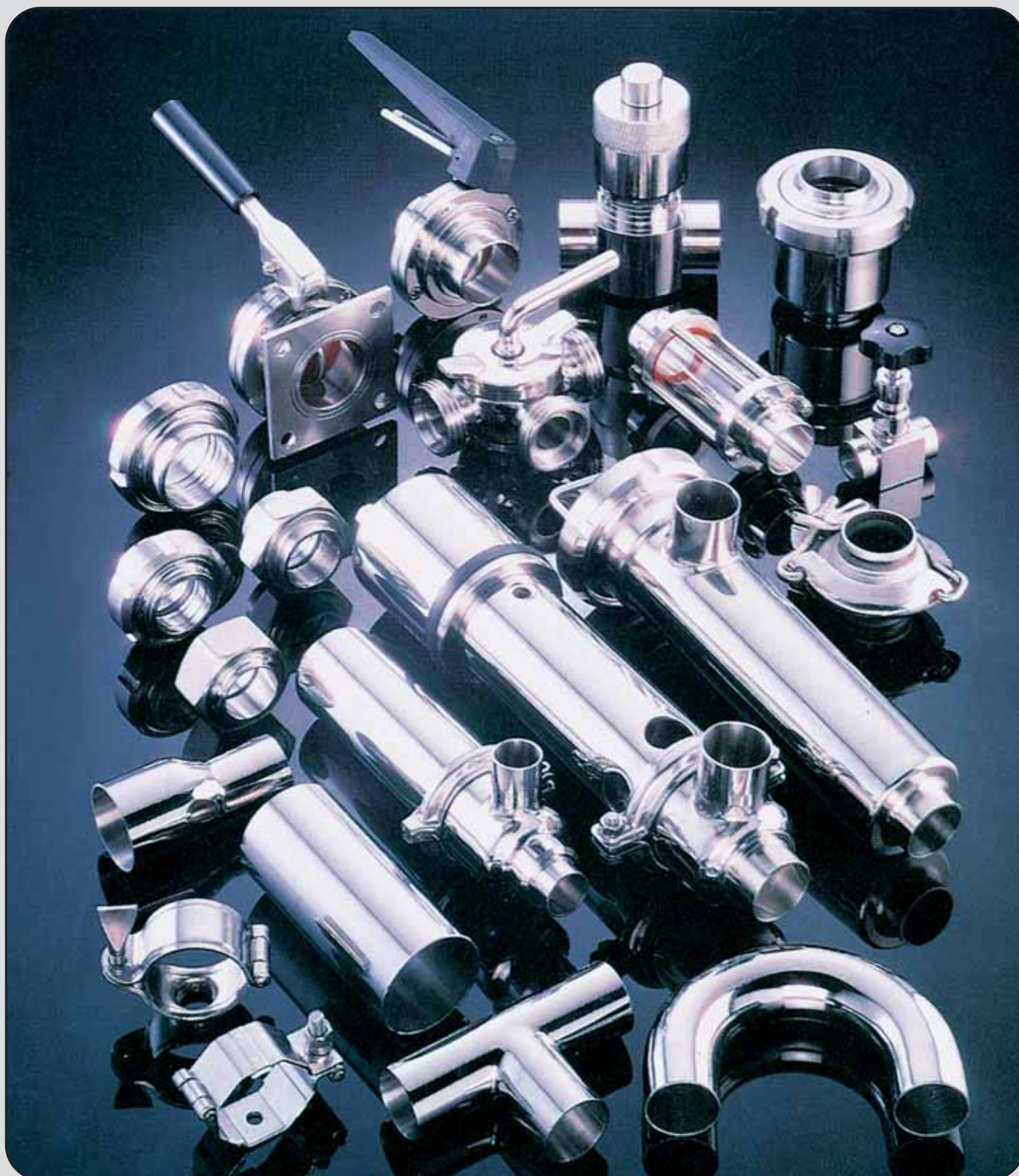
| Medidas                             | Dimensiones   | Tolerancia                     |  |                  |
|-------------------------------------|---|--------------------------------|--|------------------|
|                                     |   | Mecanizada                     | Sin mecanizar                            |                  |
| Diámetro exterior                   | Hasta 200 mm  | $\pm 1$                        | $\pm 2$                                  |                  |
|                                     | De 200 a 300 mm   | $\pm 1,5$                      | $\pm 2$                                  |                  |
|                                     | De 300 a 400 mm   | $\pm 2$                        | $\pm 3$                                  |                  |
|                                     | Más de 400 mm   | $\pm 2$                        | $\pm 5$                                  |                  |
| Agujero central                     | Hasta 100 mm  | Las demás<br>$+ 0,5$           | Bridas con cuello para soldar<br>$- 1,0$ |                  |
|                                     | De 100 a 400 mm   | $+ 1$                          | $- 1,5$                                  |                  |
|                                     | Más de 400 mm   | $+ 1,5$                        | $- 2,0$                                  |                  |
| Espesor de la brida                 | Hasta 10 mm   | Ambas superficies<br>$\pm 0,5$ | Una superficie<br>$\pm 0,1$              | $+ 1,5$<br>$- 1$ |
|                                     | De 10 hasta 20 mm   | $\pm 0,8$                      | $\pm 1,3$                                | $+ 2$<br>$- 1,5$ |
|                                     | De 20 hasta 30 mm   | $\pm 1$                        | $\pm 1,5$                                | $+ 3$<br>$- 2$   |
|                                     | De 30 hasta 50 mm   | $\pm 1$                        | $\pm 1,5$                                | $+ 4$<br>$- 3$   |
|                                     | Más de 50 mm  | $\pm 1,5$                      | $\pm 2$                                  | $+ 5$<br>$- 4$   |
| Altura                              | Hasta DN 80   | $\pm 1,5$                      |  |                  |
|                                     | De DN 80 hasta DN 250   | $\pm 2$                        |  |                  |
|                                     | Más de DN 250   | $\pm 3$                        |  |                  |
| Espesor del cuello                  | Hasta DN 100  | $+ 1,0$                        | $+ 1,5$                                  |                  |
|                                     | De DN 100 hasta DN 400  | $+ 1,5$                        | $+ 2,0$                                  |                  |
|                                     | Más de DN 400   | $+ 2,0$                        | $+ 2,5$                                  |                  |
| Diámetro de resalte                 | Hasta DN 80   | $- 1$                          |  |                  |
|                                     | De DN 80 hasta DN 300   | $- 2$                          |  |                  |
|                                     | Más de DN 300   | $- 3$                          |  |                  |
| Diámetro entre centros de orificios | Para juntas de forma se ha de garantizar la concetricidad del círculo de orificios y del agujero central. Las tolerancias para el diámetro del círculo de orificios, distancia entre orificios y diámetro de orificios de tornillos, vienen dadas por la diferencia entre el diámetro del tornillo roscado y el orificio. |                                |  |                  |





# Gama alimentaria

de acero inoxidable





# Gama alimentaria

## Tubo para industria alimentaria

Soldado sin recocer. Según DIN 11850 y ASTM A-270.

| diámetro exterior |          | PESO Kg/m        |      |       |      |      |
|-------------------|----------|------------------|------|-------|------|------|
|                   |          | espesor pared mm |      |       |      |      |
| mm                | pulgadas | 1.0              | 1.25 | 1.5   | 1.63 | 2.0  |
| 12                |          | 0,27             |      |       |      |      |
| 12,7              | 1/2"     |                  | 0,36 |       |      |      |
| 18                |          | 0,43             |      |       |      |      |
| 19,05             | 3/4"     |                  | 0,54 |       | 0,71 |      |
| 22                |          | 0,53             |      |       |      |      |
| 25,4              | 1"       |                  | 0,73 |       | 0,96 |      |
| 28                |          | 0,7              |      |       |      |      |
| 31,75             | 1 1/4"   |                  | 0,92 |       | 1,22 |      |
| 34                |          | 0,83             |      |       |      |      |
| 38                |          |                  |      | 1,38* |      |      |
| 38,1              | 1 1/2"   |                  | 1,12 |       | 1,48 |      |
| 40                |          | 1                |      | 1,45  |      |      |
| 50,8              | 2"       |                  | 1,50 | 1,85* | 1,99 |      |
| 52                |          | 1,28             |      | 1,90  |      |      |
| 63,5              | 2 1/2"   |                  |      | 2,33* | 2,51 |      |
| 70                |          |                  |      | 2,57* |      | 3,4  |
| 76                |          |                  |      | 2,80* |      |      |
| 76,1              | 3"       |                  |      |       | 3,02 |      |
| 85                |          |                  |      | 3,14* |      | 4,2  |
| 101,6             | 4"       |                  |      |       |      | 5,02 |
| 104               |          |                  |      |       |      | 5,14 |
| 129               |          |                  |      |       |      | 6,4  |
| 154               |          |                  |      |       |      | 7,66 |

\* Estas dimensiones sólo se corresponden con la norma IDF (FIL).

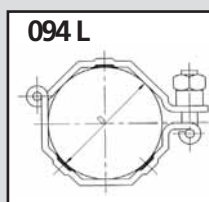
Calidad del material: 304 y 316 L

|                                    |  | TOLERANCIAS (mm) |    |    |        |               |       |    |       |               |     |       |               |  |  |  |
|------------------------------------|--|------------------|----|----|--------|---------------|-------|----|-------|---------------|-----|-------|---------------|--|--|--|
| DIN 11850                          | Diámetro exterior  | 12               | 18 | 22 | 28     | 34            | 40    | 52 | 70    | 85            | 104 | 129   | 154           |  |  |  |
|                                    | Tolerancia   | ± 0,12           |    |    | ± 0,15 |               | ± 0,2 |    | ± 0,3 |               |     | ± 0,4 |               |  |  |  |
|                                    | Tolerancia del espesor   | ± 10%            |    |    |        |               |       |    |       |               |     |       |               |  |  |  |
| ASTM A-270                         | Espesor < 1,24 mm: Las tolerancias sobre diámetros se acordarán entre fabricante y comprador |                  |    |    |        |               |       |    |       |               |     |       |               |  |  |  |
|                                    | Espesor ≥ 1,24 mm  |                  |    |    |        |               |       |    |       |               |     |       |               |  |  |  |
|                                    | Diámetro exterior  | 25,4 - 38,1      |    |    |        | 50,8 - 63,5   |       |    |       | 76,2          |     |       | 101,6         |  |  |  |
|                                    | Tolerancia   | +0,05 / -0,20    |    |    |        | +0,05 / -0,28 |       |    |       | +0,08 / -0,30 |     |       | +0,08 / -0,38 |  |  |  |
|                                    | Tolerancia en longitud:  | + 3,2 / -0       |    |    |        |               |       |    |       |               |     |       |               |  |  |  |
| Tolerancia sobre el espesor medio: |  | < ± 12,5%        |    |    |        |               |       |    |       |               |     |       |               |  |  |  |

### ABRAZADERAS PARA TUBERIA

Nuestras abrazaderas garantizan con su solidez un soporte seguro y eficaz. Además, conforme a las posibilidades de ajuste de la fijación, permiten la dilatación de las tuberías. La superficie es normalmente electropulida.

Calidad del material: A-304



| Para tubo DIN 11850 |       |     |
|---------------------|-------|-----|
| DN                  | D     | gr  |
| 25                  | 28,0  | 110 |
| 32                  | 34,0  | 120 |
| 40                  | 40,0  | 130 |
| 50                  | 52,0  | 160 |
| 65                  | 70,0  | 210 |
| 80                  | 85,0  | 220 |
| 100                 | 104,0 | 270 |

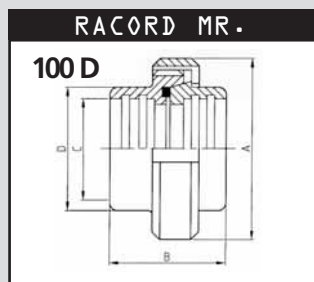
| Para tubo A-270 |       |     |
|-----------------|-------|-----|
| DN              | D     | gr  |
| 1"              | 25,4  | 110 |
| 1 1/2"          | 38,1  | 130 |
| 2"              | 50,8  | 160 |
| 2 1/2"          | 63,5  | 200 |
| 3"              | 76,1  | 220 |
| 4"              | 101,6 | 270 |



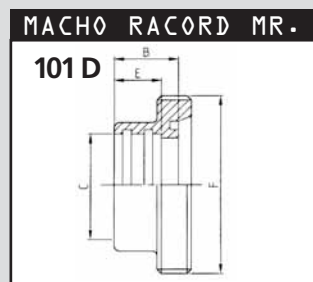


## Accesorios para industria alimentaria

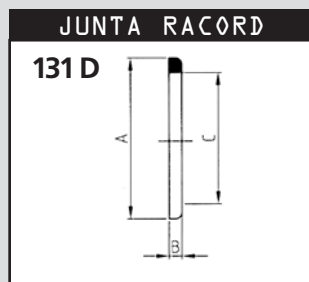
Según norma DIN-11851



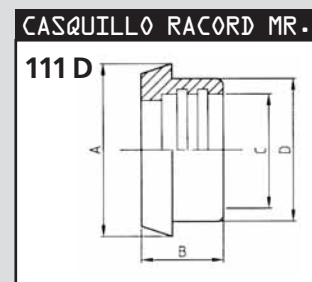
| DN  | A     | B    | C     | D     | gr    |
|-----|-------|------|-------|-------|-------|
| 10  | 38,0  | 35,0 | 12,0  | 18,0  | 135   |
| 15  | 44,0  | 35,0 | 18,0  | 24,0  | 184   |
| 20  | 54,0  | 37,0 | 22,0  | 30,0  | 319   |
| 25  | 63,0  | 45,0 | 28,0  | 35,0  | 377   |
| 32  | 70,0  | 51,0 | 34,0  | 41,0  | 470   |
| 40  | 78,0  | 53,0 | 40,0  | 48,0  | 585   |
| 50  | 92,0  | 57,0 | 52,0  | 61,0  | 800   |
| 65  | 112,0 | 65,0 | 70,0  | 79,0  | 1.215 |
| 80  | 127,0 | 75,0 | 85,0  | 93,0  | 1.750 |
| 100 | 148,0 | 89,0 | 104,0 | 114,0 | 2.770 |



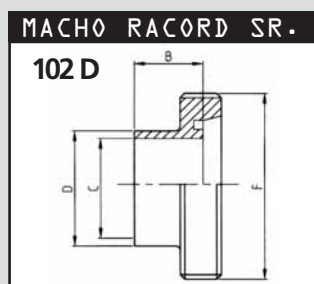
| DN  | B    | C     | E    | F     | gr    |
|-----|------|-------|------|-------|-------|
| 10  | 17,0 | 12,0  | 12,0 | 28-8  | 40    |
| 15  | 17,0 | 18,0  | 12,0 | 34-8  | 55    |
| 20  | 18,0 | 22,0  | 12,0 | 44-6  | 110   |
| 25  | 22,0 | 28,0  | 15,0 | 52-6  | 130   |
| 32  | 25,0 | 34,0  | 18,0 | 58-6  | 170   |
| 40  | 26,0 | 40,0  | 20,0 | 65-6  | 210   |
| 50  | 28,0 | 52,0  | 22,0 | 78-6  | 280   |
| 65  | 32,0 | 70,0  | 25,0 | 95-6  | 380   |
| 80  | 37,0 | 85,0  | 28,0 | 110-4 | 600   |
| 100 | 44,0 | 104,0 | 35,0 | 130-4 | 1.000 |



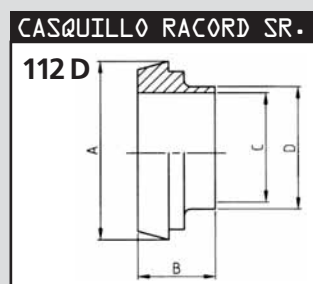
| DN  | A     | B   | C     |
|-----|-------|-----|-------|
| 10  | 20,0  | 4,0 | 12,0  |
| 15  | 26,0  | 4,0 | 18,0  |
| 20  | 33,0  | 4,0 | 23,0  |
| 25  | 40,0  | 5,0 | 30,0  |
| 32  | 46,0  | 5,0 | 36,0  |
| 40  | 52,0  | 5,0 | 42,0  |
| 50  | 64,0  | 5,0 | 54,0  |
| 65  | 81,0  | 5,0 | 71,0  |
| 80  | 95,0  | 5,0 | 85,0  |
| 100 | 114,0 | 5,0 | 104,0 |



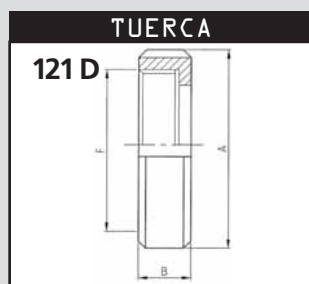
| DN  | A     | B    | C     | D     | gr  |
|-----|-------|------|-------|-------|-----|
| 10  | 22,0  | 17,0 | 12,0  | 18,0  | 25  |
| 15  | 28,0  | 17,0 | 18,0  | 24,0  | 30  |
| 20  | 36,0  | 18,0 | 22,0  | 30,0  | 60  |
| 25  | 44,0  | 22,0 | 28,0  | 35,0  | 85  |
| 32  | 50,0  | 25,0 | 34,0  | 41,0  | 110 |
| 40  | 56,0  | 26,0 | 40,0  | 48,0  | 135 |
| 50  | 68,0  | 28,0 | 52,0  | 61,0  | 200 |
| 65  | 86,0  | 32,0 | 70,0  | 79,0  | 295 |
| 80  | 100,0 | 37,0 | 85,0  | 93,0  | 380 |
| 100 | 121,0 | 44,0 | 104,0 | 114,0 | 780 |



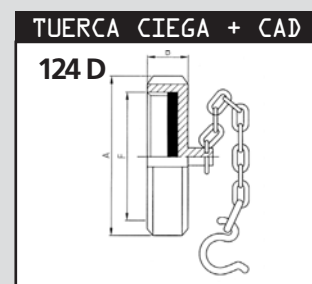
| DN  | B    | C     | D     | F     | gr  |
|-----|------|-------|-------|-------|-----|
| 10  | 17,0 | 10,0  | 12,0  | 28-8  | 30  |
| 15  | 17,0 | 16,0  | 18,0  | 34-8  | 50  |
| 20  | 18,0 | 20,0  | 22,0  | 44-6  | 100 |
| 25  | 22,0 | 25,0  | 28,0  | 52-6  | 120 |
| 32  | 25,0 | 31,0  | 34,0  | 58-6  | 150 |
| 40  | 26,0 | 37,0  | 40,0  | 65-6  | 180 |
| 50  | 28,0 | 49,0  | 52,0  | 78-6  | 240 |
| 65  | 32,0 | 66,0  | 70,0  | 95-6  | 340 |
| 80  | 37,0 | 81,0  | 85,0  | 110-4 | 540 |
| 100 | 44,0 | 100,0 | 104,0 | 130-4 | 740 |



| DN  | A     | B    | C     | D     | gr  |
|-----|-------|------|-------|-------|-----|
| 10  | 22,0  | 17,0 | 10,0  | 12    | 20  |
| 15  | 28,0  | 17,0 | 16,0  | 18    | 30  |
| 20  | 36,0  | 18,0 | 20,0  | 22    | 60  |
| 25  | 44,0  | 22,0 | 25,0  | 28    | 90  |
| 32  | 50,0  | 25,0 | 31,0  | 34    | 100 |
| 40  | 56,0  | 26,0 | 37,0  | 40    | 120 |
| 50  | 68,0  | 28,0 | 49,0  | 52    | 180 |
| 65  | 86,0  | 32,0 | 66,0  | 70    | 280 |
| 80  | 100,0 | 37,0 | 81,0  | 85    | 380 |
| 100 | 121,0 | 44,0 | 100,0 | 104,0 | 660 |



| DN  | A     | B    | F     | gr  |
|-----|-------|------|-------|-----|
| 10  | 38,0  | 18,0 | 28-8  | 70  |
| 15  | 44,0  | 18,0 | 34-8  | 98  |
| 20  | 54,0  | 21,0 | 44-6  | 150 |
| 25  | 63,0  | 21,0 | 52-6  | 160 |
| 32  | 70,0  | 21,0 | 58-6  | 190 |
| 40  | 78,0  | 21,0 | 65-6  | 240 |
| 50  | 92,0  | 22,0 | 78-6  | 320 |
| 65  | 112,0 | 25,0 | 95-6  | 540 |
| 80  | 127,0 | 30,0 | 110-4 | 770 |
| 100 | 148,0 | 31,0 | 130-4 | 990 |



| DN  | A     | B    | F     | gr    |
|-----|-------|------|-------|-------|
| 10  | 38,0  | 18,0 | 28-8  | 100   |
| 15  | 44,0  | 18,0 | 34-8  | 120   |
| 20  | 54,0  | 21,0 | 44-6  | 180   |
| 25  | 63,0  | 21,0 | 52-6  | 200   |
| 32  | 70,0  | 21,0 | 58-6  | 250   |
| 40  | 78,0  | 21,0 | 65-6  | 290   |
| 50  | 92,0  | 22,0 | 78-6  | 370   |
| 65  | 112,0 | 25,0 | 95-6  | 700   |
| 80  | 127,0 | 30,0 | 110-4 | 970   |
| 100 | 148,0 | 31,0 | 130-4 | 1.400 |

Se fabrican con piezas estampadas en caliente o con material laminado. Las roscas se han realizado con mucho esmero para eliminar el gripaje durante su acoplamiento. Las partes finales de las roscas se eliminan con operaciones mecánicas para evitar accidentes cuando se manejan.

**Acabado estándar:** pulido exterior y satinado interior.

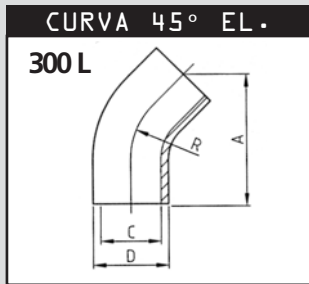
**Calidad del material:** De DN 25 a DN 100 = A-304 L. De DN 10 a DN 100 = A-316 L.

Bajo consulta se pueden suministrar estos accesorios s/normas SMS o IDF (FIL)

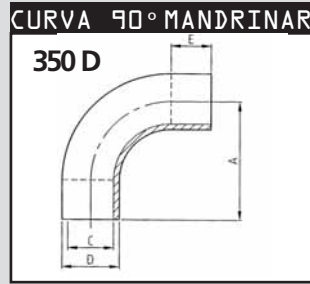


## Accesorios para industria alimentaria

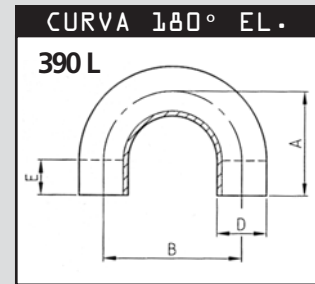
Según norma DIN-11851



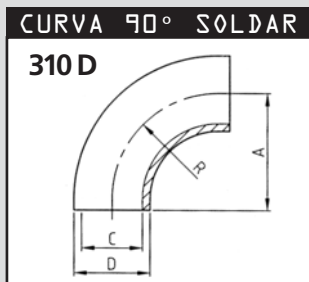
| DN  | A     | C     | D     | R     | gr  |
|-----|-------|-------|-------|-------|-----|
| 10  | 45,0  | 10,0  | 12,0  | 26,0  | 40  |
| 15  | 60,0  | 16,0  | 18,0  | 35,0  | 50  |
| 20  | 65,0  | 20,0  | 22,0  | 40,0  | 60  |
| 25  | 73,0  | 25,0  | 28,0  | 50,0  | 62  |
| 32  | 83,0  | 31,0  | 34,0  | 55,0  | 85  |
| 40  | 89,0  | 37,0  | 40,0  | 60,0  | 120 |
| 50  | 103,0 | 49,0  | 52,0  | 70,0  | 190 |
| 65  | 108,0 | 66,0  | 70,0  | 80,0  | 390 |
| 80  | 120,0 | 81,0  | 85,0  | 90,0  | 470 |
| 100 | 137,0 | 100,0 | 104,0 | 100,0 | 930 |



| DN  | A     | C     | D     | E    | gr    |
|-----|-------|-------|-------|------|-------|
| 10  | 38,0  | 10,0  | 12,0  | 12,0 | 30    |
| 15  | 47,0  | 16,0  | 18,0  | 12,0 | 55    |
| 20  | 52,0  | 20,0  | 22,0  | 12,0 | 60    |
| 25  | 70,0  | 25,0  | 28,0  | 20,0 | 110   |
| 32  | 78,0  | 31,0  | 34,0  | 23,0 | 160   |
| 40  | 85,0  | 37,0  | 40,0  | 25,0 | 215   |
| 50  | 97,0  | 49,0  | 52,0  | 27,0 | 300   |
| 65  | 110,0 | 66,0  | 70,0  | 30,0 | 570   |
| 80  | 123,0 | 81,0  | 85,0  | 33,0 | 780   |
| 100 | 140,0 | 100,0 | 104,0 | 40,0 | 1.200 |



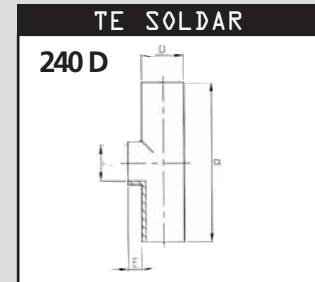
| DN  | A     | B     | D     | E    | gr    |
|-----|-------|-------|-------|------|-------|
| 10  | 38,0  | 52,0  | 12,0  | 12,0 | 60    |
| 15  | 47,0  | 70,0  | 18,0  | 12,0 | 110   |
| 20  | 52,0  | 80,0  | 22,0  | 12,0 | 120   |
| 25  | 70,0  | 100,0 | 28,0  | 20,0 | 185   |
| 32  | 78,0  | 110,0 | 34,0  | 23,0 | 240   |
| 40  | 85,0  | 120,0 | 40,0  | 25,0 | 350   |
| 50  | 97,0  | 140,0 | 52,0  | 27,0 | 410   |
| 65  | 110,0 | 160,0 | 70,0  | 30,0 | 970   |
| 80  | 123,0 | 180,0 | 85,0  | 33,0 | 1.500 |
| 100 | 140,0 | 220,0 | 104,0 | 40,0 | 2.400 |



| DN  | A     | C     | D     | R     | gr  |
|-----|-------|-------|-------|-------|-----|
| 10  | 26,0  | 10,0  | 12,0  | 26,0  | 18  |
| 15  | 35,0  | 16,0  | 18,0  | 35,0  | 20  |
| 20  | 40,0  | 20,0  | 22,0  | 40,0  | 50  |
| 25  | 50,0  | 25,0  | 28,0  | 50,0  | 65  |
| 32  | 55,0  | 31,0  | 34,0  | 55,0  | 100 |
| 40  | 60,0  | 37,0  | 40,0  | 60,0  | 150 |
| 50  | 70,0  | 49,0  | 52,0  | 70,0  | 190 |
| 65  | 80,0  | 66,0  | 70,0  | 80,0  | 410 |
| 80  | 90,0  | 81,0  | 85,0  | 90,0  | 530 |
| 100 | 100,0 | 100,0 | 104,0 | 100,0 | 810 |



| DN  | A     | B     | C     | D     | gr    |
|-----|-------|-------|-------|-------|-------|
| 10  | 26,0  | 52,0  | 10,0  | 12,0  | 35    |
| 15  | 35,0  | 70,0  | 16,0  | 18,0  | 75    |
| 20  | 40,0  | 80,0  | 20,0  | 22,0  | 95    |
| 25  | 50,0  | 100,0 | 25,0  | 28,0  | 120   |
| 32  | 55,0  | 110,0 | 31,0  | 34,0  | 175   |
| 40  | 60,0  | 120,0 | 37,0  | 40,0  | 240   |
| 50  | 70,0  | 140,0 | 49,0  | 52,0  | 310   |
| 65  | 80,0  | 160,0 | 66,0  | 70,0  | 650   |
| 80  | 90,0  | 180,0 | 81,0  | 85,0  | 1.070 |
| 100 | 100,0 | 200,0 | 100,0 | 104,0 | 1.850 |



| DN  | B     | C     | D     | E   | gr    |
|-----|-------|-------|-------|-----|-------|
| 10  | 52    | 10,0  | 12,0  | 3,0 | 35    |
| 15  | 70,0  | 16,0  | 18,0  | 3,0 | 75    |
| 20  | 80,0  | 20,0  | 22,0  | 3,0 | 95    |
| 25  | 100,0 | 25,0  | 28,0  | 3,0 | 120   |
| 32  | 110,0 | 31,0  | 34,0  | 3,0 | 175   |
| 40  | 120,0 | 37,0  | 40,0  | 3,0 | 240   |
| 50  | 140,0 | 49,0  | 52,0  | 3,0 | 310   |
| 65  | 160,0 | 66,0  | 70,0  | 3,0 | 650   |
| 80  | 180,0 | 81,0  | 85,0  | 3,0 | 1.070 |
| 104 | 200,0 | 100,0 | 104,0 | 3,0 | 1.850 |
| 125 | 248,0 | 125,0 | 129,0 | 9,5 | 2.000 |

Accesorios para soldar obtenidos a partir de tubos soldados electricamente. Laminados en frío y solubilizados. Calibrados interior y exteriormente.

**Acabado estándar:** pulido exterior y satinado interior grano 120.

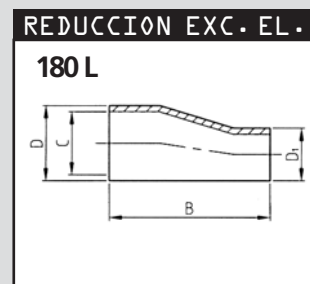
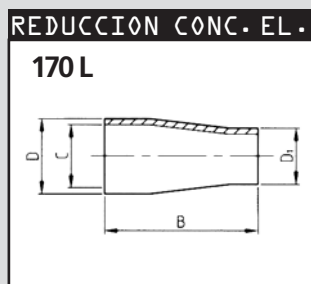
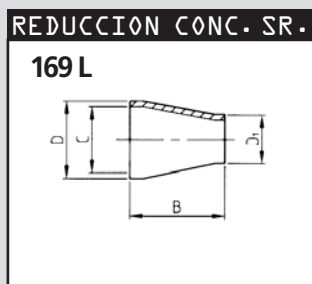
**Calidad del material:** A-304L y A-316-L

Bajo consulta se pueden suministrar estos accesorios s/normas SMS o IDF (FIL)



## Accesorios para industria alimentaria

Según norma DIN-11851



| DN     | B    | C     | D     | D <sub>1</sub> | gr  |
|--------|------|-------|-------|----------------|-----|
| 32/25  | 67,0 | 31,0  | 34,0  | 28,0           | 60  |
| 40/25  | 67,0 | 37,0  | 40,0  | 28,0           | 60  |
| 40/32  | 67,0 | 37,0  | 40,0  | 34,0           | 60  |
| 50/25  | 67,0 | 49,0  | 52,0  | 28,0           | 100 |
| 50/32  | 67,0 | 49,0  | 52,0  | 34,0           | 100 |
| 50/40  | 67,0 | 49,0  | 52,0  | 40,0           | 110 |
| 65/40  | 67,0 | 66,0  | 70,0  | 40,0           | 120 |
| 65/50  | 67,0 | 66,0  | 70,0  | 52,0           | 160 |
| 80/50  | 67,0 | 81,0  | 85,0  | 52,0           | 190 |
| 80/65  | 67,0 | 81,0  | 85,0  | 70,0           | 240 |
| 100/65 | 67,0 | 100,0 | 104,0 | 70,0           | 260 |
| 100/80 | 67,0 | 100,0 | 104,0 | 85,0           | 280 |

| DN     | B     | C     | D     | D <sub>1</sub> | gr  |
|--------|-------|-------|-------|----------------|-----|
| 32/25  | 80,0  | 31,0  | 34,0  | 28,0           | 90  |
| 40/25  | 102,0 | 37,0  | 40,0  | 28,0           | 120 |
| 40/32  | 88,0  | 37,0  | 40,0  | 34,0           | 120 |
| 50/25  | 115,0 | 49,0  | 52,0  | 28,0           | 155 |
| 50/32  | 129,0 | 49,0  | 52,0  | 34,0           | 210 |
| 50/40  | 113,0 | 49,0  | 52,0  | 40,0           | 180 |
| 65/40  | 117,0 | 66,0  | 70,0  | 40,0           | 220 |
| 65/50  | 135,0 | 66,0  | 70,0  | 52,0           | 270 |
| 80/50  | 120,0 | 81,0  | 85,0  | 52,0           | 430 |
| 80/65  | 120,0 | 81,0  | 85,0  | 70,0           | 500 |
| 100/65 | 127,0 | 100,0 | 104,0 | 70,0           | 525 |
| 100/80 | 120,0 | 100,0 | 104,0 | 85,0           | 550 |

| DN     | B    | C     | D     | D <sub>1</sub> | gr  |
|--------|------|-------|-------|----------------|-----|
| 32/25  | 67,0 | 31,0  | 34,0  | 28,0           | 60  |
| 40/25  | 67,0 | 37,0  | 40,0  | 28,0           | 60  |
| 40/32  | 67,0 | 37,0  | 40,0  | 34,0           | 60  |
| 50/25  | 67,0 | 49,0  | 52,0  | 28,0           | 100 |
| 50/32  | 67,0 | 49,0  | 52,0  | 34,0           | 100 |
| 50/40  | 67,0 | 49,0  | 52,0  | 40,0           | 110 |
| 65/40  | 67,0 | 66,0  | 70,0  | 40,0           | 120 |
| 65/50  | 67,0 | 66,0  | 70,0  | 52,0           | 160 |
| 80/50  | 67,0 | 81,0  | 85,0  | 52,0           | 190 |
| 80/65  | 67,0 | 81,0  | 85,0  | 70,0           | 240 |
| 100/65 | 67,0 | 100,0 | 104,0 | 70,0           | 260 |
| 100/80 | 67,0 | 100,0 | 104,0 | 85,0           | 280 |

| DN     | B     | C     | D     | D <sub>1</sub> | gr  |
|--------|-------|-------|-------|----------------|-----|
| 32/25  | 102,0 | 31,0  | 34,0  | 28,0           | 120 |
| 40/25  | 110,0 | 37,0  | 40,0  | 28,0           | 120 |
| 40/32  | 102,0 | 37,0  | 40,0  | 34,0           | 130 |
| 50/25  | 130,0 | 49,0  | 52,0  | 28,0           | 160 |
| 50/32  | 120,0 | 49,0  | 52,0  | 34,0           | 200 |
| 50/40  | 110,0 | 49,0  | 52,0  | 40,0           | 160 |
| 65/40  | 153,0 | 66,0  | 70,0  | 40,0           | 230 |
| 65/50  | 130,0 | 66,0  | 70,0  | 52,0           | 240 |
| 80/50  | 153,0 | 81,0  | 85,0  | 52,0           | 430 |
| 80/65  | 120,0 | 81,0  | 85,0  | 70,0           | 500 |
| 100/65 | 153,0 | 100,0 | 104,0 | 70,0           | 520 |
| 100/80 | 118,0 | 100,0 | 104,0 | 85,0           | 580 |

Accesorios para soldar obtenidos a partir de tubos soldados eléctricamente, laminados en frío y solubilizados, calibrados interior y exteriormente.

**Acabado estándar:** pulido exterior y satinado interior, grano 120.

**Calidad del material:** AISI-304 L y 316-L

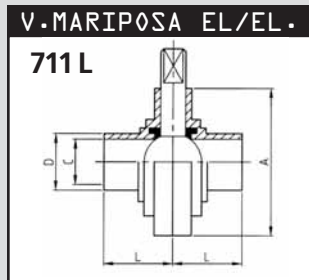
*Bajo consulta se pueden suministrar estos accesorios sin normas SMS o IDF (FIL)*



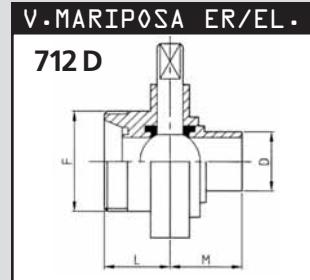


## Válvulas para industria alimentaria

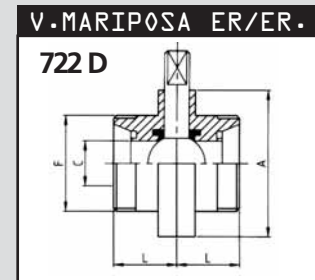
Según norma DIN-11851



| DN  | A     | C     | D     | L    | gr    |
|-----|-------|-------|-------|------|-------|
| 25  | 79,0  | 25,0  | 28,0  | 34,0 | 725   |
| 32  | 85,0  | 31,0  | 34,0  | 38,0 | 805   |
| 40  | 92,0  | 37,0  | 40,0  | 38,0 | 990   |
| 50  | 105,0 | 49,0  | 52,0  | 40,0 | 1,270 |
| 65  | 125,0 | 66,0  | 70,0  | 41,0 | 1,755 |
| 80  | 137,0 | 81,0  | 85,0  | 42,0 | 2,300 |
| 100 | 157,0 | 100,0 | 104,0 | 44,0 | 2,300 |



| DN  | D     | F     | L    | M    | gr    |
|-----|-------|-------|------|------|-------|
| 25  | 28,0  | 52-6  | 34,0 | 34,0 | 845   |
| 32  | 34,0  | 58-6  | 34,0 | 38,0 | 1,015 |
| 40  | 40,0  | 65-6  | 38,0 | 38,0 | 1,220 |
| 50  | 52,0  | 78-6  | 38,0 | 40,0 | 1,570 |
| 65  | 70,0  | 95-6  | 38,0 | 41,0 | 2,000 |
| 80  | 85,0  | 110-4 | 41,5 | 42,0 | 2,750 |
| 100 | 104,0 | 130-4 | 44,0 | 44,0 | 3,390 |



| DN  | A     | C     | F     | L    | gr    |
|-----|-------|-------|-------|------|-------|
| 25  | 79,0  | 25,0  | 52-6  | 34,0 | 965   |
| 32  | 85,0  | 31,0  | 58-6  | 34   | 1,225 |
| 40  | 92,0  | 37,0  | 65-6  | 38,0 | 1,450 |
| 50  | 105,0 | 49,0  | 78-6  | 38   | 1,870 |
| 65  | 125,0 | 66,0  | 95-6  | 38   | 2,255 |
| 80  | 137,0 | 81,0  | 110-4 | 41,5 | 3,200 |
| 100 | 157,0 | 100,0 | 130-4 | 44,0 | 3,940 |

### VALVULAS DE MARIPOSA

- Obtenidas a partir de piezas estampadas en caliente y solubilizadas. A-304-L y A-316-L.
- Obturadores obtenidos de piezas de acero inoxidable AISI 316L estampadas en caliente y solubilizada, trabajadas mecánicamente en todas las superficies y rectificadas en las partes giratorias.
- Aplicación estándar de 2 camisas de PTFE en los ejes de los obturadores para eliminar el rozamiento en las rotaciones.
- Juntas producidas mediante estampado bajo compresión y con elastómeros de óptima calidad. Estándar silicona; bajo pedido, EPDM, viton, viton revestido PTFE, PTFE + silicona.
- Posibilidad de intercambio entre las distintas unificaciones.
- Amplia gama de mandos manuales para satisfacer exigencias de las instalaciones (Ver pág. 51)
- Simplicidad, seguridad y fiabilidad de maniobras.
- Mandos neumáticos horizontales y verticales de simple efecto, doble efecto y de regulación del flujo que se pueden equipar con microsensores, microinterruptor (eléctrico o neumático), electroválvula (24 V CA, 24 V CC, 48 V CA, 48 V CC), conector.
- Producción estándar: de DN 25 a DN 250.
- Acabado estándar: pulido exterior y satinado interior grano 120. Bajo pedido, se pueden suministrar otros acabados.
- Máxima presión de trabajo: 7 bares; para juntas en PTFE: 2 bares.
- Suministro estándar de maneta, modelo 7 M8 (ver pág. 51)



| DIAM    | A     | B    | L     |
|---------|-------|------|-------|
| 25/28   | 43,6  | 23,2 | 27,0  |
| 34/38   | 52,3  | 23,2 | 35,0  |
| 40      | 55,6  | 23,2 | 39,0  |
| 51/52   | 66,0  | 23,2 | 49,0  |
| 60/63   | 76,4  | 23,4 | 59,5  |
| 70/76   | 88,8  | 25,4 | 69,5  |
| 85      | 99,0  | 25,4 | 79,5  |
| 101/104 | 119,0 | 25,4 | 100,0 |

**Calidad del material:**

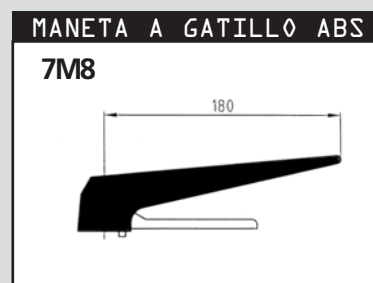
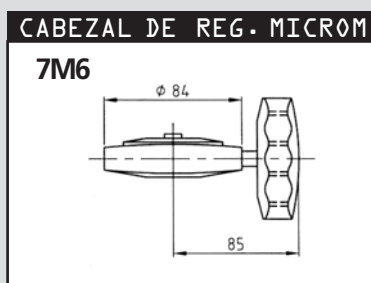
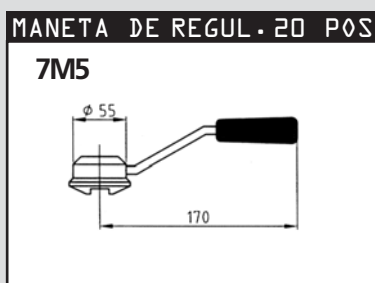
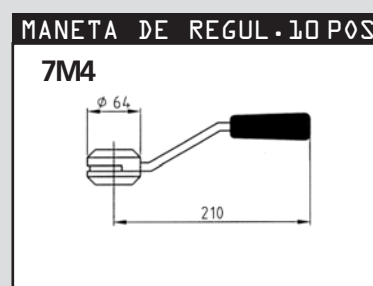
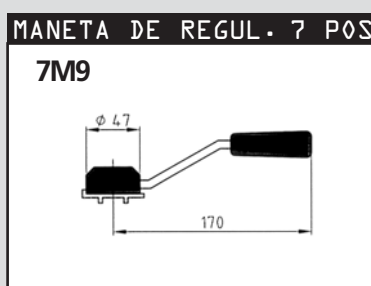
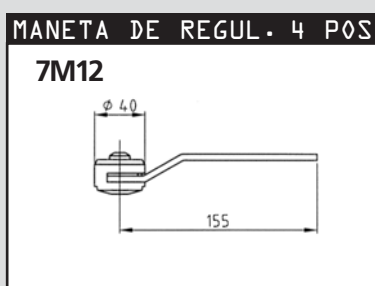
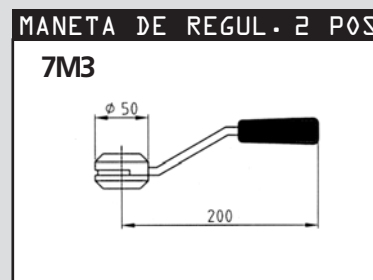
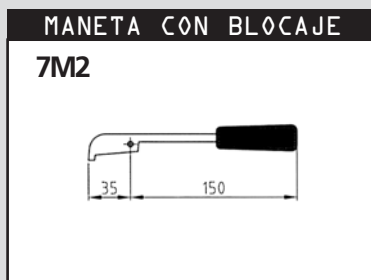
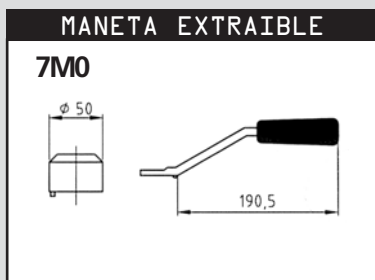
Silicona, EPDM, FTM=VITON, PTFE=TEFLON



## Accesorios para industria alimentaria

Según norma DIN-11851

### MANETAS PARA VALVULAS DE MARIPOSA





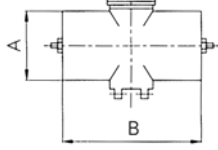
# Accesorios para industria alimentaria

Según norma DIN-11851

## CILINDROS DE ACCIONAMIENTO PARA VALVULAS DE MARIPOSA

### CIL. NEUMATICO DE.

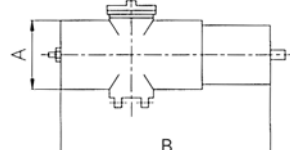
7C1 L



| DN      | A    | B     | gr    |
|---------|------|-------|-------|
| 25/52   | 60,0 | 138,5 | 1.460 |
| 63,5/85 | 76,0 | 161,0 | 2.100 |
| 101/104 | 89,0 | 180,0 | 2.960 |

### CIL. NEUMATICO SE.

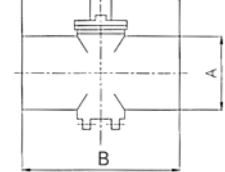
7C2 L



| DN      | A    | B     | gr    |
|---------|------|-------|-------|
| 25/52   | 76,0 | 240,0 | 2.190 |
| 63,5/85 | 89,0 | 260,0 | 3.150 |

### CIL. NEUM. REGULACION

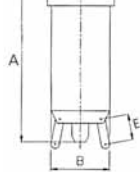
7C1L M



| DN     | A    | B     | gr    |
|--------|------|-------|-------|
| 25/104 | 89,0 | 180,0 | 4.160 |

### CIL. NEUM. SE. VERTICAL

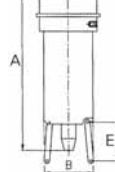
7C4 L



| DN       | A     | B    | E    | gr    |
|----------|-------|------|------|-------|
| 25/52    | 241,0 | 76,0 | 64,0 | 3.700 |
| 63,5/104 | 235,0 | 76,0 | 58,0 | 3.700 |

### CIL. NEUM. UNIDAD CONTR.

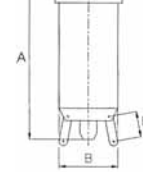
7C4 UC



| DN       | A     | B    | E    | gr    |
|----------|-------|------|------|-------|
| 25/52    | 241,0 | 76,0 | 64,0 | 3.900 |
| 63,5/104 | 235,0 | 76,0 | 58,0 | 3.900 |

### CIL. NEUM. DE. VERTICAL

7C5 L

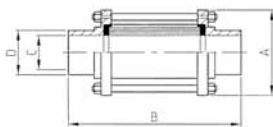


| DN       | A     | B    | E    | gr    |
|----------|-------|------|------|-------|
| 25/52    | 241,0 | 76,0 | 64,0 | 3.700 |
| 63,5/104 | 235,0 | 76,0 | 58,0 | 3.700 |

## MIRILLAS

### MIRILLA EL.

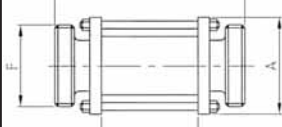
450 L



| DN  | A     | B     | C     | D     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 60,0  | 143,0 | 25,0  | 28,0  | 400   |
| 32  | 65,0  | 149,0 | 31,0  | 34,0  | 500   |
| 40  | 70,0  | 153,0 | 37,0  | 40,0  | 680   |
| 50  | 85,0  | 157,0 | 49,0  | 52,0  | 860   |
| 65  | 100,0 | 163,0 | 66,0  | 70,0  | 1.090 |
| 80  | 115,0 | 169,0 | 81,0  | 85,0  | 1.280 |
| 100 | 140,0 | 173,0 | 100,0 | 104,0 | 2.760 |

### MIRILLA ER/ER.

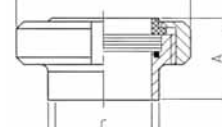
452 D



| DN  | A     | B     | F     | L    | gr    |
|-----|-------|-------|-------|------|-------|
| 25  | 60,0  | 157,0 | 52-6  | 83,0 | 610   |
| 32  | 65,0  | 157,0 | 58-6  | 83,0 | 700   |
| 40  | 70,0  | 157,0 | 65-6  | 83,0 | 920   |
| 50  | 85,0  | 157,0 | 78-6  | 83,0 | 1.230 |
| 65  | 100,0 | 161,0 | 95-6  | 83,0 | 1.520 |
| 80  | 115,0 | 171,0 | 110-4 | 83,0 | 1.700 |
| 100 | 140,0 | 171,0 | 130-4 | 83,0 | 3.370 |

### MIRILLA PLANA ES.

441 D



| DN  | A    | B     | C     | D     | gr    |
|-----|------|-------|-------|-------|-------|
| 25  | 35,0 | 63,0  | 25,0  | 28,0  | 350   |
| 32  | 38,0 | 70,0  | 31,0  | 34,0  | 420   |
| 40  | 39,0 | 78,0  | 37,0  | 40,0  | 530   |
| 50  | 42,0 | 92,0  | 49,0  | 52,0  | 730   |
| 65  | 47,0 | 112,0 | 66,0  | 70,0  | 1.110 |
| 80  | 52,0 | 127,0 | 81,0  | 85,0  | 1.590 |
| 100 | 62,0 | 148,0 | 100,0 | 104,0 | 2.380 |

Piezas que permiten observar el fluido a través de la parte visible. El cristal es de pirex y puede soportar presiones de hasta 15 a 20 Kgs/cm<sup>2</sup>

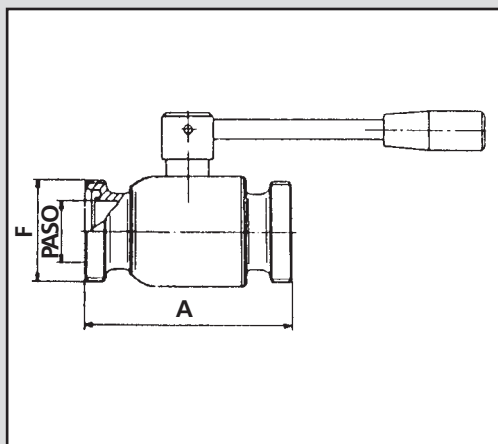
Calidad del material: A-304 L y A-316 L



## Accesorios para industria alimentaria

Según norma DIN-11851

### VALVULAS DE BOLA



| DN  | A   | F          | Paso |
|-----|-----|------------|------|
| 25  | 110 | 52 X 1/6"  | 25   |
| 32  | 110 | 58 X 1/6"  | 32   |
| 40  | 125 | 65 X 1/6"  | 40   |
| 50  | 130 | 78 X 1/6"  | 50   |
| 65  | 135 | 95 X 1/6"  | 65   |
| 80  | 170 | 110 X 1/4" | 80   |
| 100 | 190 | 130 X 1/4" | 100  |
| 125 | 250 | 160 X 1/4" | 120  |

- Válvulas de bola de esfera hueca, construidas a partir de tubo.  
Características técnicas: Probadas con presiones desde 0 hasta 10 ATM y desde 10 hasta 0 ATM. La temperatura de trabajo es de -20° a + 150°C.

- Válvulas de bola de esfera maciza, construidas a partir de barra.  
Características técnicas: Probadas con presiones desde 0 hasta 30 ATM y desde 30 a 0 ATM. La temperatura de trabajo es de -20°C a + 150°C

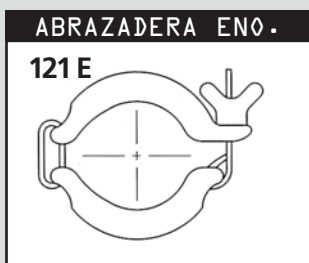
Apertura: 180°, las partes son desmontables para sustitución de un componente,

La maneta está hecha de redondo macizo en acero inoxidable.

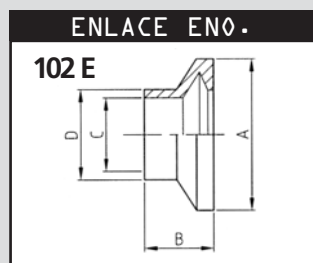
Las juntas de la válvula son de teflon puro.

Calidad del material: AISI-304 - 316

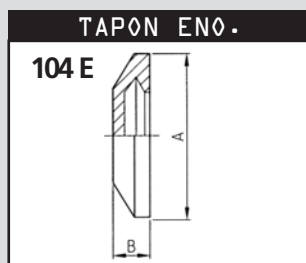
### SERIE ENOLOGICA



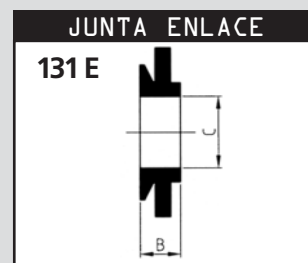
| DN  | gr  |
|-----|-----|
| 40  | 200 |
| 50  | 250 |
| 60  | 300 |
| 70  | 350 |
| 80  | 400 |
| 100 | 450 |



| DN  | A     | B    | C    | D     | gr  |
|-----|-------|------|------|-------|-----|
| 40  | 65,0  | 25,0 | 37,0 | 40,0  | 130 |
| 50  | 75,0  | 30,0 | 49,0 | 52,0  | 160 |
| 60  | 86,0  | 32,0 | 57,0 | 60,0  | 210 |
| 70  | 98,0  | 38,0 | 66,0 | 70,0  | 260 |
| 80  | 109,0 | 38,0 | 81,0 | 85,0  | 300 |
| 100 | 128,0 | 38,0 | 97,4 | 101,6 | 350 |



| DN  | A     | B    | gr  |
|-----|-------|------|-----|
| 40  | 65,0  | 15,0 | 100 |
| 50  | 75,0  | 17,0 | 150 |
| 60  | 86,0  | 17,0 | 250 |
| 70  | 98,0  | 17,0 | 300 |
| 80  | 109,0 | 17,0 | 325 |
| 100 | 128,0 | 17,0 | 350 |



| DN  | B    | C   |
|-----|------|-----|
| 40  | 13,0 | 40  |
| 50  | 13,0 | 50  |
| 60  | 13,0 | 60  |
| 70  | 14,0 | 70  |
| 80  | 14,0 | 80  |
| 100 | 14,0 | 100 |

- Obtenidos a partir de piezas estampadas en frío y con acabado mecanizado en su extremidad.
- Acabado estandar: pulido exterior y satinado interior grano 120.
- Calidad del material: enlace y tapón: A-304-L y A-316-L.
- Abrazadera: A304-L
- Juntas: EPDM

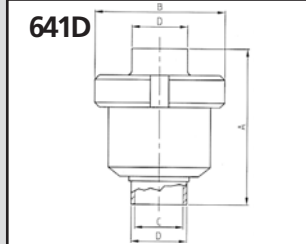




## Válvulas para industria alimentaria

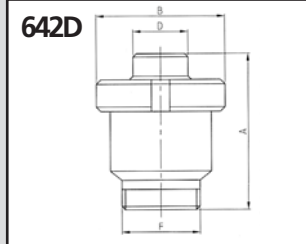
Según norma DIN-11851

### VALVULA RETENCIÓN ES.



| DN  | A     | B     | C     | D     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 87,0  | 78,0  | 25,0  | 28,0  | 1.100 |
| 32  | 89,0  | 92,0  | 31,0  | 34,0  | 1.530 |
| 40  | 97,0  | 92,0  | 37,0  | 40,0  | 1.650 |
| 50  | 101,5 | 112,0 | 49,0  | 52,0  | 2.440 |
| 65  | 119,5 | 138,0 | 66,0  | 70,0  | 4.010 |
| 80  | 132,0 | 148,0 | 81,0  | 85,0  | 5.340 |
| 100 | 118,0 | 148,0 | 100,0 | 104,0 | 6.330 |

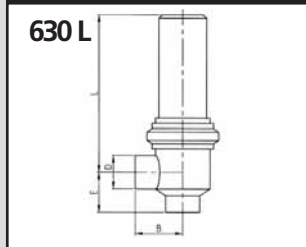
### V. RETENCIÓN ER./C.MR



| DN  | A     | B     | D     | F     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 89,0  | 78,0  | 35,0  | 52-6  | 1.120 |
| 32  | 94,0  | 92,0  | 41,0  | 58-6  | 1.670 |
| 40  | 105,0 | 92,0  | 48,0  | 65-6  | 1.560 |
| 50  | 109,5 | 112,0 | 61,0  | 78-6  | 2.500 |
| 65  | 132,5 | 138,0 | 79,0  | 95-6  | 4.170 |
| 80  | 133,5 | 148,0 | 93,0  | 110-4 | 5.550 |
| 100 | 126,0 | 158,0 | 114,0 | 130-4 | 7.050 |

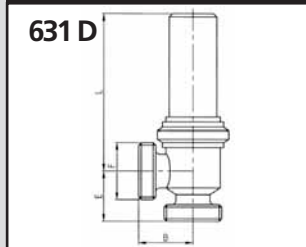
- Fabricación sólida y robusta, puesto que se obtienen a partir de un lingote de acero inoxidable. AISI 304-L ó 316-L
- Amplia abertura del diafragma para permitir el paso de sustancias sólidas.
- Junta de PTFE, bajo pedido, otros elastómeros.
- Equipadas con muelles de baja presión que permiten el funcionamiento de la válvula tanto en posición vertical como horizontal.
- Acabado estándar: pulido exterior y satinado interior grano 120. Bajo pedido, se pueden suministrar otros acabados.
- Máxima presión de trabajo: 15 bares.

### V.SEGURIDAD EL.



| DN | B    | D    | E    | L     | gr    |
|----|------|------|------|-------|-------|
| 25 | 60,0 | 28,0 | 38,0 | 158,0 | 2.185 |
| 32 | 60,0 | 34,0 | 43,0 | 163,0 | 2.160 |
| 40 | 60,0 | 40,0 | 45,0 | 165,0 | 2.280 |
| 50 | 70,0 | 52,0 | 51,0 | 175,0 | 2.910 |
| 65 | 80,0 | 70,0 | 65,0 | 200,0 | 4.650 |
| 80 | 82,0 | 85,0 | 83,0 | 210,0 | 6.200 |

### V.SEGURIDAD ER.



| DN | B    | E    | F     | L     | gr    |
|----|------|------|-------|-------|-------|
| 25 | 74,0 | 52,0 | 52-6  | 158,0 | 2.445 |
| 32 | 74,0 | 57,0 | 58-6  | 163,0 | 2.500 |
| 40 | 73,0 | 58,0 | 65-6  | 165,0 | 3.300 |
| 50 | 83,0 | 64,0 | 78-6  | 175,0 | 3.470 |
| 65 | 95,0 | 80,0 | 95-6  | 200,0 | 5.410 |
| 80 | 99,0 | 99,0 | 110-4 | 210,0 | 7.400 |

- Tuerca de regulación de la presión situada en el interior del cuerpo de la válvula para impedir que se produzcan maniobras accidentales.
- Acabado estándar: pulido exterior y satinado interior grano 120. Bajo pedido, se pueden suministrar otros acabados.
- Fabricadas en material A-304-L y A-316-L



## Accesorios para industria alimentaria

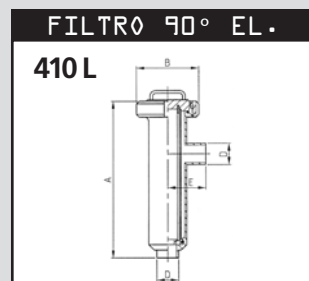
Según norma DIN 11851



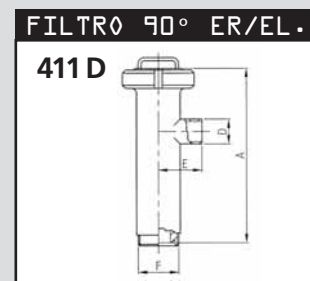
| DN  | A     | B     | D     | L     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 320,0 | 112,0 | 28,0  | 70,0  | 3,000 |
| 32  | 320,0 | 112,0 | 34,0  | 70,0  | 3,000 |
| 40  | 320,0 | 112,0 | 40,0  | 70,0  | 3,000 |
| 50  | 420,0 | 112,0 | 52,0  | 70,0  | 3,300 |
| 65  | 516,0 | 127,0 | 70,0  | 85,0  | 4,650 |
| 80  | 575,0 | 148,0 | 85,0  | 102,0 | 5,700 |
| 100 | 700,0 | 148,0 | 104,0 | 129,9 | 7,000 |



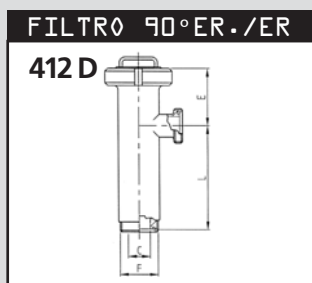
| DN  | A     | C     | D     | F     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 320,0 | 25,0  | 28,0  | 52-6  | 3,130 |
| 32  | 320,0 | 31,0  | 34,0  | 58-6  | 3,170 |
| 40  | 320,0 | 37,0  | 40,0  | 65-6  | 3,210 |
| 50  | 420,0 | 49,0  | 52,0  | 78-6  | 3,580 |
| 65  | 521,0 | 66,0  | 70,0  | 95-6  | 5,030 |
| 80  | 584,0 | 81,0  | 85,0  | 110-4 | 6,300 |
| 100 | 690,0 | 100,0 | 104,0 | 130-4 | 8,000 |



| DN  | A     | B     | D     | E     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 306,0 | 112,0 | 28,0  | 70,0  | 3,100 |
| 32  | 306,0 | 112,0 | 34,0  | 70,0  | 3,100 |
| 40  | 306,0 | 112,0 | 40,0  | 70,0  | 3,100 |
| 50  | 406,0 | 112,0 | 52,0  | 72,0  | 3,400 |
| 65  | 503,0 | 127,0 | 70,0  | 85,0  | 4,800 |
| 80  | 561,0 | 148,0 | 85,0  | 96,0  | 5,900 |
| 100 | 662,0 | 148,0 | 104,0 | 117,0 | 7,200 |



| DN  | A     | D     | E     | F     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 300,0 | 28,0  | 70,0  | 52-6  | 3.230 |
| 32  | 300,0 | 34,0  | 70,0  | 58-6  | 3.270 |
| 40  | 300,0 | 40,0  | 70,0  | 65-6  | 3.310 |
| 50  | 398,0 | 52,0  | 72,0  | 78-6  | 3.680 |
| 65  | 495,0 | 70,0  | 85,0  | 95-6  | 5.180 |
| 80  | 553,0 | 85,0  | 96,0  | 110-4 | 6.700 |
| 100 | 642,0 | 104,0 | 117,0 | 130-4 | 8.200 |



| DN  | C     | E     | F     | L     | gr    |
|-----|-------|-------|-------|-------|-------|
| 25  | 25,0  | 100,0 | 52-6  | 200,0 | 3,360 |
| 32  | 31,0  | 100,0 | 58-6  | 200,0 | 3,440 |
| 40  | 37,0  | 100,0 | 65-6  | 200,0 | 3,520 |
| 50  | 49,0  | 115,0 | 78-6  | 283,0 | 3,960 |
| 65  | 66,0  | 117,0 | 95-6  | 378,0 | 5,560 |
| 80  | 81,0  | 131,0 | 110-4 | 422,0 | 7,100 |
| 100 | 100,0 | 120,0 | 130-4 | 522,0 | 9,200 |



| DN      | MESH    |     |     |     |
|---------|---------|-----|-----|-----|
| 25/40   | 100/200 | 300 | 400 | 500 |
| 51/52   | 100/200 | 300 | 400 | 500 |
| 63/70   | 100/200 | 300 | 400 | 500 |
| 76/85   | 100/200 | 300 | 400 | 500 |
| 101/104 | 100/200 | 300 | 400 | 500 |



| DN      | A     |
|---------|-------|
| 25/40   | 271,0 |
| 51/52   | 371,0 |
| 63/70   | 466,0 |
| 76/85   | 516,0 |
| 101/104 | 621,0 |



| DN      | A     |
|---------|-------|
| 25/40   | 278,0 |
| 51/52   | 378,0 |
| 63/70   | 473,0 |
| 76/85   | 527,0 |
| 101/104 | 636,0 |

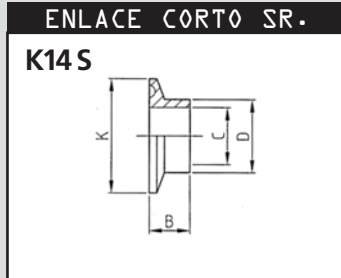
### FILTROS

- Las piezas filtrantes se pueden extraer fácilmente.
- Producción estándar: cartuchos filtrantes de chapa con orificios de 1 mm. Bajo pedido, se pueden suministrar con orificios de 0,5 mm, 2 mm o 3 mm y, eventualmente, con cobertura de red metálica de 80 a 500 mesh.
- Acabado estándar: pulido exterior y satinado interior grano 120. Bajo pedido, se pueden suministrar otros acabados.
- Máxima presión de trabajo: 5 bares.

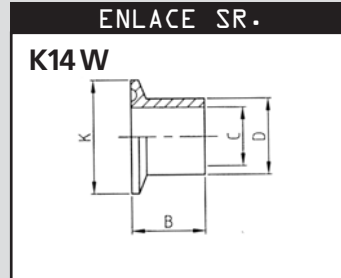


## Accesorios para industria farmacéutica

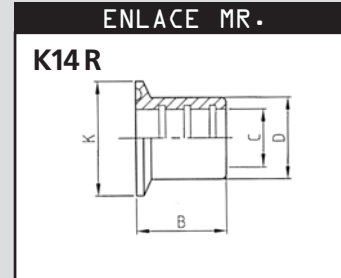
### Gama Clamp



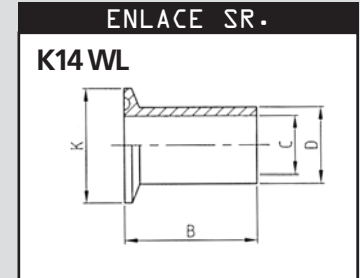
| DN     | K   | B     | C    | D    | gr    |     |
|--------|-----|-------|------|------|-------|-----|
| 1/2"   | 12  | 25,4  | 12,7 | 9,4  | 12,7  | 16  |
| 3/4"   | 19  | 25,4  | 12,7 | 15,7 | 19,0  | 14  |
| 1"     | 25  | 50,5  | 12,7 | 22,1 | 25,4  | 60  |
| 1 1/2" | 38  | 50,5  | 12,7 | 34,8 | 38,1  | 40  |
| 2"     | 51  | 64,0  | 12,7 | 47,5 | 50,8  | 60  |
| 2 1/2" | 63  | 77,5  | 12,7 | 60,2 | 63,5  | 75  |
| 3"     | 76  | 91,0  | 12,7 | 72,9 | 76,2  | 95  |
| 4"     | 101 | 119,0 | 15,8 | 97,4 | 101,6 | 180 |



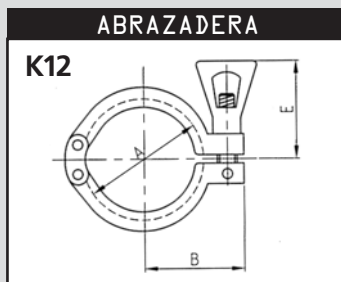
| DN     | K   | B     | C    | D    | gr    |     |
|--------|-----|-------|------|------|-------|-----|
| 1/2"   | 12  | 25,0  | 21,0 | 9,4  | 12,7  | 19  |
| 3/4"   | 19  | 25,0  | 21,0 | 15,7 | 19,0  | 20  |
| 1"     | 25  | 50,5  | 28,6 | 22,1 | 25,4  | 80  |
| 1 1/2" | 38  | 50,5  | 28,6 | 34,8 | 38,1  | 60  |
| 2"     | 51  | 64,0  | 28,6 | 47,5 | 50,8  | 95  |
| 2 1/2" | 63  | 77,5  | 28,6 | 60,2 | 63,5  | 115 |
| 3"     | 76  | 91,0  | 28,6 | 72,9 | 76,2  | 150 |
| 4"     | 101 | 119,0 | 28,6 | 97,4 | 101,6 | 250 |



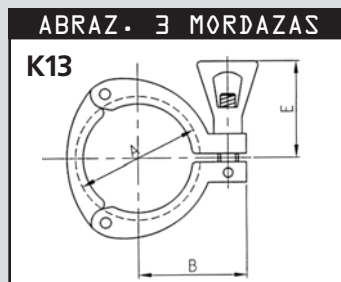
| DN     | K   | B     | C    | D     | gr    |     |
|--------|-----|-------|------|-------|-------|-----|
| 1"     | 25  | 50,5  | 19,0 | 29,6  | 25,4  | 60  |
| 1 1/2" | 38  | 50,5  | 28,6 | 42,6  | 38,1  | 65  |
| 2"     | 51  | 64,0  | 33,4 | 55,8  | 50,8  | 105 |
| 2 1/2" | 63  | 77,5  | 35,0 | 68,8  | 63,5  | 145 |
| 3"     | 76  | 91,0  | 36,5 | 82,0  | 76,2  | 190 |
| 4"     | 101 | 119,0 | 38,0 | 110,0 | 101,6 | 300 |



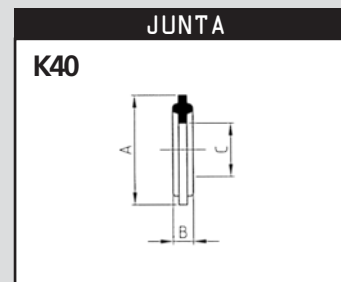
| DN     | K   | B     | C     | D    | gr    |     |
|--------|-----|-------|-------|------|-------|-----|
| 1"     | 25  | 50,5  | 76,2  | 22,1 | 25,4  | 120 |
| 1 1/2" | 38  | 50,5  | 76,2  | 34,8 | 38,1  | 130 |
| 2"     | 51  | 64,0  | 76,2  | 47,5 | 50,8  | 180 |
| 2 1/2" | 63  | 77,5  | 76,2  | 60,2 | 63,5  | 280 |
| 3"     | 76  | 91,0  | 101,6 | 72,9 | 76,2  | 380 |
| 4"     | 101 | 119,0 | 101,6 | 97,4 | 101,6 | 560 |



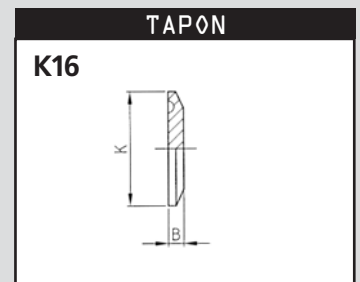
| DN     | A     | B     | E    | gr |     |
|--------|-------|-------|------|----|-----|
| 1/2"   | 12/19 | 27,0  | 27,0 | 35 | 120 |
| 3/4"   | 12/19 | 27,0  | 27,0 | 35 | 120 |
| 1"     | 25    | 53,4  | 43,0 | 53 | 220 |
| 1 1/2" | 38    | 53,4  | 43,0 | 53 | 220 |
| 2"     | 51    | 67,0  | 50,0 | 53 | 260 |
| 2 1/2" | 63    | 80,4  | 56,5 | 53 | 330 |
| 3"     | 76    | 94,0  | 65,0 | 53 | 400 |
| 4"     | 101   | 122,0 | 85,0 | 53 | 500 |



| DN     | A   | B     | E    | gr   |     |
|--------|-----|-------|------|------|-----|
| 1"     | 25  | 53,4  | 45,0 | 53,0 | 270 |
| 1 1/2" | 38  | 53,4  | 45,0 | 53,0 | 270 |
| 2"     | 51  | 67,0  | 51,5 | 53,0 | 330 |
| 2 1/2" | 63  | 80,4  | 58,2 | 53,0 | 395 |
| 3"     | 76  | 94,0  | 65,0 | 53,0 | 425 |
| 4"     | 101 | 122,0 | 81,0 | 53,0 | 540 |



| DN     | A   | C     | B    |     |
|--------|-----|-------|------|-----|
| 1/2"   | 12  | 21,8  | 10,0 | 4.5 |
| 3/4"   | 19  | 21,8  | 16,5 | 4.5 |
| 1"     | 25  | 49,5  | 23,2 | 5.3 |
| 1 1/2" | 38  | 49,5  | 36,2 | 5.3 |
| 2"     | 51  | 63,0  | 49,2 | 5.3 |
| 2 1/2" | 63  | 76,5  | 60,5 | 5.3 |
| 3"     | 76  | 90,0  | 73,1 | 5.3 |
| 4"     | 101 | 118,0 | 97,6 | 5.3 |



| DN     | B   | K   | gr    |     |
|--------|-----|-----|-------|-----|
| 1/2"   | 12  | 4,7 | 25,4  | 16  |
| 3/4"   | 19  | 4,7 | 25,4  | 16  |
| 1"     | 25  | 6,4 | 50,5  | 70  |
| 1 1/2" | 38  | 6,4 | 50,5  | 70  |
| 2"     | 51  | 6,4 | 64,0  | 140 |
| 2 1/2" | 63  | 6,4 | 77,5  | 200 |
| 3"     | 76  | 6,4 | 91,0  | 410 |
| 4"     | 101 | 7,9 | 119,0 | 570 |

Obtenidos a partir de piezas estampadas en caliente y solubilizadas, o de material laminado. Cierre rápido en conformidad con las normas 3-A.  
**Producción estándar:** 1/2"-4"; bajo pedido, dimensiones hasta 8". Bajo pedido se pueden fabricar según normas ISO.

**Calidad del material:**

Enlaces: A-316-L

Abrazaderas: A-304

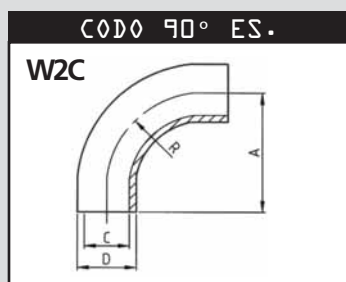
Juntas: EPDM (K40E), SILICONA (K40S), PTFE (K40T), VITON (K40V)

Acabado estándar: pulido exterior y satinado interior, gr 150

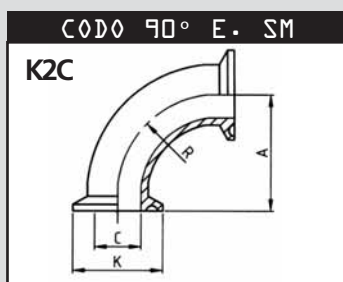


## Accesorios para industria farmacéutica

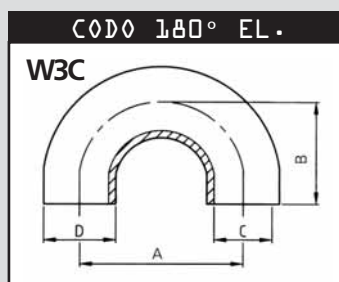
### Gama Clamp



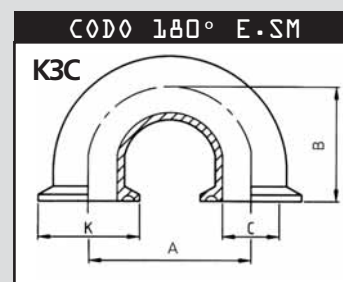
| DN     | A   | C     | D    | R     | gr    |       |
|--------|-----|-------|------|-------|-------|-------|
| 1/2"   | 12  | 76,2  | 9,4  | 12,7  | 44,4  | 56    |
| 3/4"   | 19  | 76,2  | 15,7 | 19,0  | 66,5  | 95    |
| 1"     | 25  | 52,4  | 22,1 | 25,4  | 38,1  | 160   |
| 1 1/2" | 38  | 74,6  | 34,8 | 38,1  | 57,2  | 180   |
| 2"     | 51  | 103,2 | 47,5 | 50,8  | 76,2  | 340   |
| 2 1/2" | 63  | 131,8 | 60,2 | 63,5  | 95,3  | 460   |
| 3"     | 76  | 160,3 | 72,9 | 76,2  | 114,3 | 700   |
| 4"     | 101 | 211,1 | 97,4 | 101,6 | 152,4 | 1.300 |



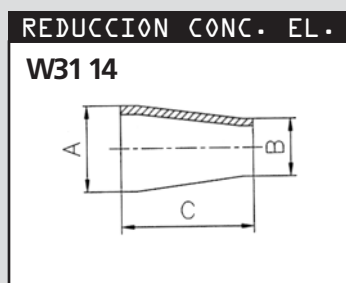
| DN     | A   | C     | K    | R     | gr    |       |
|--------|-----|-------|------|-------|-------|-------|
| 1/2"   | 12  | 88,9  | 9,4  | 25,4  | 44,4  | 90    |
| 3/4"   | 19  | 88,9  | 15,7 | 25,4  | 66,5  | 120   |
| 1"     | 25  | 50,8  | 22,1 | 50,5  | 38,1  | 170   |
| 1 1/2" | 38  | 69,9  | 34,8 | 50,5  | 57,2  | 200   |
| 2"     | 51  | 88,9  | 47,5 | 64,0  | 76,2  | 370   |
| 2 1/2" | 63  | 108,0 | 60,2 | 77,5  | 95,3  | 500   |
| 3"     | 76  | 127,0 | 72,9 | 91,0  | 114,3 | 910   |
| 4"     | 101 | 168,3 | 97,4 | 119,0 | 152,4 | 1.660 |



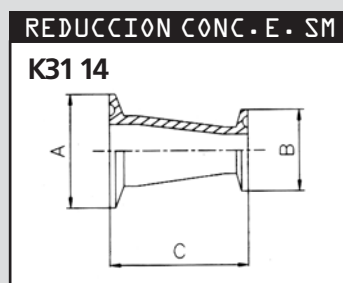
| DN     | A   | B     | C     | D    | gr    |       |
|--------|-----|-------|-------|------|-------|-------|
| 1/2"   | 25  | 81,0  | 75,0  | 22,1 | 25,4  | 170   |
| 1 1/2" | 38  | 104   | 90,0  | 34,8 | 38,1  | 320   |
| 2"     | 51  | 143,0 | 100,0 | 47,5 | 50,8  | 500   |
| 2 1/2" | 63  | 168,0 | 115,0 | 60,2 | 63,5  | 740   |
| 3"     | 76  | 171,0 | 130,0 | 72,9 | 76,2  | 1.180 |
| 4"     | 101 | 220,0 | 150,0 | 97,4 | 101,6 | 1.980 |



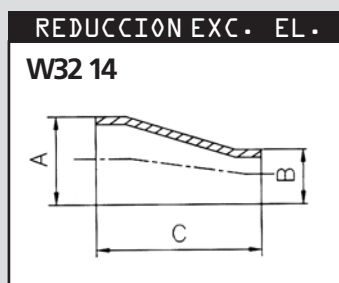
| DN     | A   | B     | C     | K    | gr    |       |
|--------|-----|-------|-------|------|-------|-------|
| 1/2"   | 25  | 81,0  | 87,7  | 22,1 | 50,5  | 340   |
| 1 1/2" | 38  | 104   | 102,7 | 34,8 | 50,5  | 400   |
| 2"     | 51  | 143,0 | 112,7 | 47,5 | 64,0  | 740   |
| 2 1/2" | 63  | 168,0 | 112,7 | 60,2 | 77,5  | 1.000 |
| 3"     | 76  | 171,0 | 142,7 | 72,9 | 91,0  | 1.820 |
| 4"     | 101 | 220,0 | 165,7 | 97,4 | 119,0 | 3.320 |



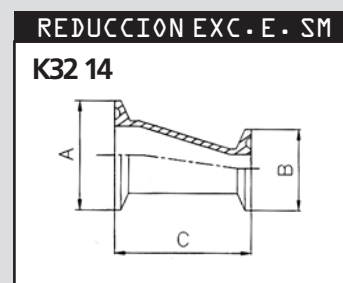
| DN        | A      | B     | C    | gr   |     |
|-----------|--------|-------|------|------|-----|
| 3/4"-1/2" | 19/12  | 19,0  | 12,7 | 25,4 | 50  |
| 1"-3/4"   | 25/19  | 25,4  | 19,0 | 25,4 | 80  |
| 1 1/2"-1" | 38/25  | 38,1  | 25,4 | 67,0 | 100 |
| 2"-1 1/2" | 51/38  | 50,8  | 38,1 | 67,0 | 140 |
| 2 1/2"-2" | 63/51  | 63,5  | 50,8 | 67,0 | 160 |
| 3"-2"     | 76/51  | 76,2  | 50,8 | 67,0 | 180 |
| 3"-2 1/2" | 76/63  | 76,2  | 63,5 | 67,0 | 220 |
| 4"-3"     | 101/76 | 101,6 | 76,2 | 67,0 | 280 |



| DN        | A      | B     | C    | gr   |     |
|-----------|--------|-------|------|------|-----|
| 3/4"-1/2" | 19/12  | 25,4  | 25,4 | 50,8 | 80  |
| 1"-3/4"   | 25/19  | 50,5  | 25,4 | 50,8 | 160 |
| 1 1/2"-1" | 38/25  | 50,5  | 50,5 | 92,4 | 240 |
| 2"-1 1/2" | 51/38  | 64,0  | 50,5 | 92,4 | 250 |
| 2 1/2"-2" | 63/51  | 77,5  | 64,0 | 92,4 | 300 |
| 3"-2"     | 76/51  | 91,0  | 64,0 | 92,4 | 390 |
| 3"-2 1/2" | 76/63  | 91,0  | 77,5 | 92,4 | 400 |
| 4"-3"     | 101/76 | 119,0 | 91,0 | 92,4 | 775 |



| DN        | A      | B     | C    | gr   |     |
|-----------|--------|-------|------|------|-----|
| 3/4"-1/2" | 19/12  | 19,0  | 12,7 | 25,4 | 50  |
| 1"-3/4"   | 25/19  | 25,4  | 19,0 | 25,4 | 80  |
| 1 1/2"-1" | 38/25  | 38,1  | 25,4 | 67,0 | 110 |
| 2"-1 1/2" | 51/38  | 50,8  | 38,1 | 67,0 | 150 |
| 2 1/2"-2" | 63/51  | 63,5  | 50,8 | 67,0 | 170 |
| 3"-2"     | 76/51  | 76,2  | 50,8 | 67,0 | 230 |
| 3"-2 1/2" | 76/63  | 76,2  | 63,5 | 67,0 | 250 |
| 4"-3"     | 101/76 | 101,6 | 76,2 | 67,0 | 510 |



| DN        | A      | B     | C    | gr   |     |
|-----------|--------|-------|------|------|-----|
| 3/4"-1/2" | 19/12  | 25,4  | 25,4 | 50,8 | 80  |
| 1"-3/4"   | 25/19  | 50,5  | 25,4 | 50,8 | 160 |
| 1 1/2"-1" | 38/25  | 50,5  | 50,5 | 92,4 | 250 |
| 2"-1 1/2" | 51/38  | 64,0  | 50,5 | 92,4 | 260 |
| 2 1/2"-2" | 63/51  | 77,5  | 64,0 | 92,4 | 300 |
| 3"-2"     | 76/51  | 91,0  | 64,0 | 92,4 | 400 |
| 3"-2 1/2" | 76/63  | 91,0  | 77,5 | 92,4 | 500 |
| 4"-3"     | 101/76 | 119,0 | 91,0 | 92,4 | 790 |

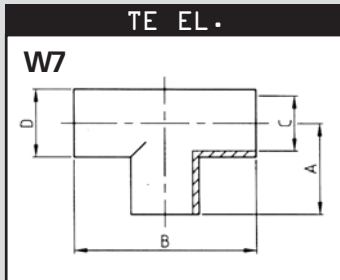
- Obtenidos a partir de tubos unidos eléctricamente, laminados en frío y tratados térmicamente.
- Calibrados interior y exteriormente con la finalidad de obtener una forma circular perfecta.
- Provistos de muescas en los extremos para asegurar la perfecta ortogonalidad de las superficies.
- Producción estándar: 1/2"-4". Bajo pedido, dimensiones hasta 8".
- Bajo pedido, producción según normas ISO.

**Calidad del material:** A-316-L  
**Acabado estándar:** pulido exterior y satinado interior, gr 150.

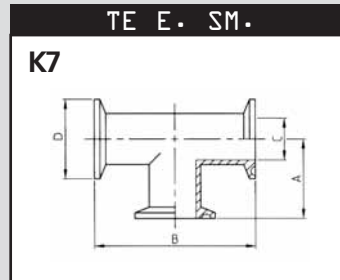


## Accesorios para industria farmacéutica

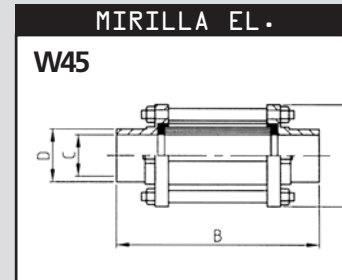
### Gama Clamp



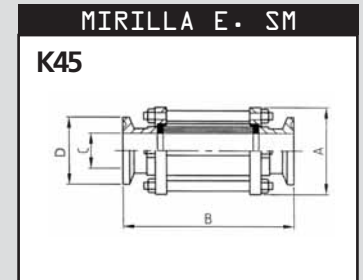
| DN     | A   | B    | C     | D    | gr    |     |
|--------|-----|------|-------|------|-------|-----|
| 1/2"   | 12  | 53,9 | 107,8 | 9,4  | 12,7  | 56  |
| 3/4"   | 19  | 53,9 | 107,8 | 15,7 | 19,0  | 98  |
| 1"     | 25  | 28,6 | 57,2  | 22,1 | 25,4  | 80  |
| 1 1/2" | 38  | 42,1 | 84,2  | 34,8 | 38,1  | 160 |
| 2"     | 51  | 52,4 | 104,8 | 47,5 | 50,8  | 235 |
| 2 1/2" | 63  | 59,5 | 119,0 | 60,2 | 63,5  | 340 |
| 3"     | 76  | 65,9 | 131,8 | 72,9 | 76,2  | 500 |
| 4"     | 101 | 87,3 | 174,6 | 97,4 | 101,6 | 900 |



| DN     | A   | B     | C     | D    | gr    |       |
|--------|-----|-------|-------|------|-------|-------|
| 1/2"   | 12  | 66,6  | 133,2 | 9,4  | 25,4  | 104   |
| 3/4"   | 19  | 66,6  | 133,2 | 15,7 | 25,4  | 150   |
| 1"     | 25  | 60,3  | 120,6 | 22,1 | 50,5  | 175   |
| 1 1/2" | 38  | 69,9  | 139,8 | 34,8 | 50,5  | 315   |
| 2"     | 51  | 88,9  | 177,8 | 47,5 | 64,0  | 628   |
| 2 1/2" | 63  | 88,9  | 177,8 | 60,2 | 77,5  | 780   |
| 3"     | 76  | 95,3  | 190,6 | 72,9 | 91,0  | 1.135 |
| 4"     | 101 | 114,3 | 228,6 | 97,4 | 119,0 | 1.760 |



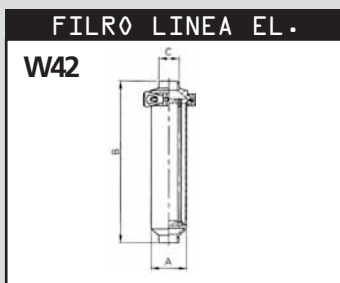
| DN     | A   | B     | C     | D    | gr    |       |
|--------|-----|-------|-------|------|-------|-------|
| 1"     | 25  | 55,0  | 165,0 | 22,1 | 25,4  | 402   |
| 1 1/2" | 38  | 70,0  | 165,0 | 34,8 | 38,1  | 622   |
| 2"     | 51  | 85,0  | 165,0 | 47,5 | 50,8  | 862   |
| 2 1/2" | 63  | 95,0  | 165,0 | 60,2 | 63,5  | 952   |
| 3"     | 76  | 105,0 | 165,0 | 72,9 | 76,2  | 1.102 |
| 4"     | 101 | 140,0 | 165,0 | 97,4 | 101,6 | 2.762 |



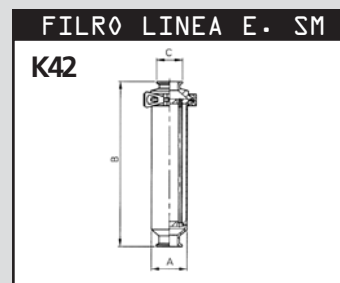
| DN     | A   | B     | D     | C    | gr    |       |
|--------|-----|-------|-------|------|-------|-------|
| 1"     | 25  | 55,0  | 165,0 | 22,1 | 50,5  | 562   |
| 1 1/2" | 38  | 70,0  | 165,0 | 34,8 | 50,5  | 762   |
| 2"     | 51  | 85,0  | 165,0 | 47,5 | 64,0  | 1.052 |
| 2 1/2" | 63  | 95,0  | 165,0 | 60,2 | 77,5  | 1.182 |
| 3"     | 76  | 105,0 | 165,0 | 72,9 | 91,0  | 1.402 |
| 4"     | 101 | 140,0 | 165,0 | 97,4 | 119,0 | 3.262 |

#### MIRILLAS

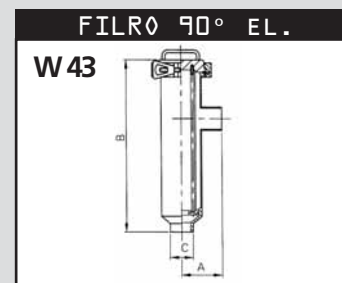
- De sólida y robusta construcción.
- Vidrio pyrex. Bajo pedido, protección exterior de plexiglás.
- Equipadas con tirantes especiales y con juntas para eliminar las presiones de carga y las vibraciones sobre el vidrio.
- Máxima presión de operación: 10 BAR
- Cuerpo: A-316-L



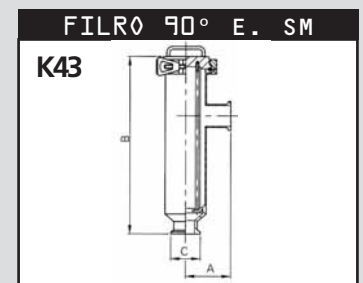
| DN     | A  | B     | C     | gr   |       |
|--------|----|-------|-------|------|-------|
| 1"     | 25 | 70,0  | 329,0 | 25,4 | 3.000 |
| 1 1/2" | 38 | 70,0  | 329,0 | 38,1 | 3.000 |
| 2"     | 51 | 70,0  | 429,0 | 50,8 | 3.300 |
| 2 1/2" | 63 | 85,0  | 524,0 | 63,5 | 4.650 |
| 3"     | 76 | 101,0 | 574,0 | 76,2 | 5.700 |



| DN     | A  | B     | C     | gr   |       |
|--------|----|-------|-------|------|-------|
| 1"     | 25 | 70,0  | 329,0 | 50,5 | 3.170 |
| 1 1/2" | 38 | 70,0  | 329,0 | 50,5 | 3.300 |
| 2"     | 51 | 70    | 429,0 | 64,0 | 3.620 |
| 2 1/2" | 63 | 85,0  | 524,0 | 77,5 | 5.190 |
| 3"     | 76 | 101,0 | 574,0 | 91,0 | 6.400 |



| DN     | A  | B    | C     | gr   |       |
|--------|----|------|-------|------|-------|
| 1"     | 25 | 70,0 | 304,0 | 25,4 | 3.100 |
| 1 1/2" | 38 | 70,0 | 304,0 | 38,1 | 3.100 |
| 2"     | 51 | 72   | 404,0 | 50,8 | 3.400 |
| 2 1/2" | 63 | 85,0 | 500,0 | 63,5 | 4.800 |
| 3"     | 76 | 96   | 550,0 | 76,2 | 5.900 |



| DN     | A  | B     | C     | gr   |       |
|--------|----|-------|-------|------|-------|
| 1"     | 25 | 82,7  | 304,0 | 50,5 | 3.240 |
| 1 1/2" | 38 | 82,7  | 304,0 | 50,5 | 3.500 |
| 2"     | 51 | 84,7  | 404,0 | 64,0 | 3.850 |
| 2 1/2" | 63 | 97,7  | 500,0 | 77,5 | 5.590 |
| 3"     | 76 | 108,7 | 550,0 | 91,0 | 6.900 |

#### FILTROS

- Las piezas filtrantes se pueden extraer fácilmente.
- Producción estándar:  
Cartuchos filtrantes de chapa con orificios de 0,5 mm, 2 mm ó 3 mm y, eventualmente, de cobertura de red metálica de 80 a 500 mesh.
- Máxima presión de operación: 5 BAR

Calidad del material: A-304 -L, A-316-L



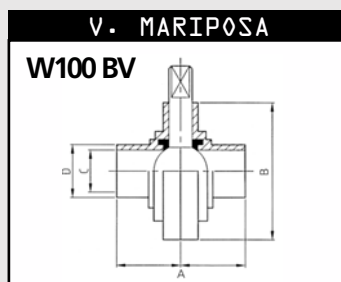
## Válvulas para la industria farmacéutica

### Gama Clamp

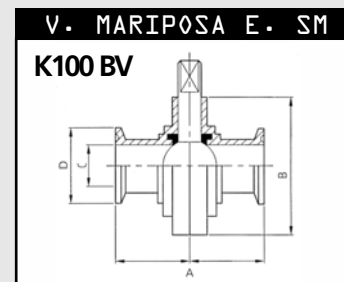


#### VÁLVULAS DE MARIPOSA

- Obtenidas a partir de piezas estampadas en caliente y tratadas térmicamente. Material 316-L.
- Obturadores obtenidos de piezas estampadas en caliente y tratadas térmicamente, trabajadas mecánicamente en todas las superficies y rectificadas en las partes rotatorias.
- Aplicación estándar de 2 camisas en PTFE en los ejes de los obturadores para eliminar el rozamiento en las rotaciones.
- Juntas producidas mediante estampado bajo compresión y con elastómeros de óptima calidad. Estándar silicona; bajo pedido, EPDM, viton, viton revestido PTFE, PTFE+ silicona.
- Posibilidad de intercambio entre las distintas unificaciones.
- Amplia gama de mandos manuales, seguros y fiables, para satisfacer las distintas exigencias de las instalaciones.
- Simplicidad, seguridad y fiabilidad de las maniobras.
- Mandos neumáticos horizontales y verticales de simple efecto, doble efecto y de regulación del flujo que se pueden equipar con microsensor, microinterruptor (eléctrico o neumático), electroválvula (24 V CA, 24 V CC, 48 V CA, 48 V CC), conector.
- Máxima presión de operación: 7 BAR; para juntas en PTFE: 2 BAR.
- Producción estándar: de DN 25 a DN 250.



| DN     | A   | B    | C     | D     | gr    |        |
|--------|-----|------|-------|-------|-------|--------|
| 1"     | 25  | 68,0 | 79,0  | 22,1  | 25,4  | 725    |
| 1 1/2" | 38  | 76,0 | 85,0  | 34,8  | 38,1  | 805    |
| 2"     | 51  | 80,0 | 105,0 | 47,5  | 50,8  | 1.270  |
| 2 1/2" | 63  | 80,0 | 112,0 | 60,2  | 63,5  | 1.460  |
| 3"     | 76  | 82,0 | 125,0 | 72,9  | 76,2  | 1.755  |
| 4"     | 101 | 88,0 | 157,0 | 97,4  | 101,6 | 2.480  |
| 5"     | 127 | 80,0 | 180,0 | 122,0 | 127,0 | 4.100  |
| 6"     | 152 | 80,0 | 212,0 | 147,4 | 152,4 | 6.000  |
| 8"     | 203 | 90,0 | 256,5 | 198,2 | 203,2 | 7.800  |
| 10"    | 254 | 90,0 | 306,6 | 249,0 | 254,0 | 17.000 |

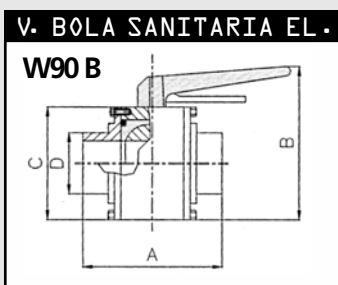


| DN     | A   | B    | C     | D     | gr    |        |
|--------|-----|------|-------|-------|-------|--------|
| 1"     | 25  | 69,8 | 79,0  | 22,1  | 50,5  | 950    |
| 1 1/2" | 38  | 75,4 | 85,0  | 34,8  | 50,5  | 995    |
| 2"     | 51  | 80,0 | 105,0 | 47,5  | 64,0  | 1.200  |
| 2 1/2" | 63  | 80,0 | 112,0 | 60,2  | 77,5  | 1.600  |
| 3"     | 76  | 85,7 | 125,0 | 72,9  | 91,0  | 1.950  |
| 4"     | 101 | 87,6 | 157,0 | 97,4  | 119,0 | 3.450  |
| 5"     | 127 | 82,0 | 180,0 | 122,0 | 144,5 | 4.300  |
| 6"     | 152 | 82,0 | 212,0 | 147,4 | 166,0 | 6.200  |
| 8"     | 203 | 90,0 | 256,5 | 198,2 | 217,0 | 8.100  |
| 10"    | 254 | 90,0 | 306,6 | 249,0 | 268,0 | 17.400 |

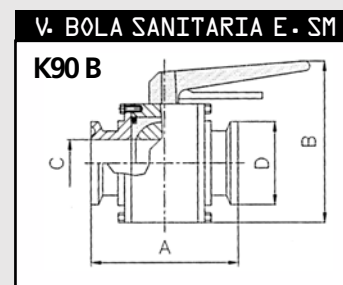


#### VÁLVULAS DE BOLA

- De fabricación sólida y robusta. Material 316-L
- Fácilmente esterilizables. Los elementos internos son fácilmente accesibles durante las fases de lavado CIP en el modelo K51.
- Se pueden desmontar fácilmente. Desmontaje en línea en los modelos K90 y K91.
- Bola alojada en el interior de las bridas con consiguiente aligeramiento de la estructura y reducción de las dimensiones de la válvula en el modelo K71.
- Equipadas con mandos manuales o neumáticos.
- Mandos neumáticos horizontales y verticales de simple efecto, doble efecto y de regulación del flujo que se pueden equipar con microsensor, microinterruptor (eléctrico o neumático), electroválvula (24 V CA, 24 V CC, 48 V CA, 48 V CC), conector.
- Junta sanitaria en el modelo K90.
- Máxima presión de operación: 10 BAR.



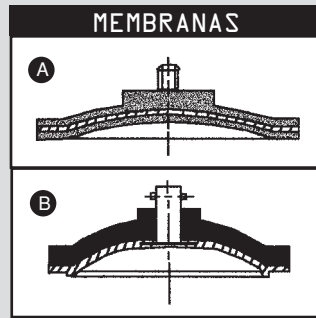
| DN     | A  | B     | C     | D     | gr   |       |
|--------|----|-------|-------|-------|------|-------|
| 1/2"   | 12 | 74,5  | 100,0 | 55,0  | 12,7 | 760   |
| 3/4"   | 19 | 74,5  | 100,0 | 55,0  | 19,0 | 760   |
| 1"     | 25 | 95,5  | 105,0 | 60,0  | 25,4 | 1.130 |
| 1 1/2" | 38 | 108,0 | 125,0 | 80,0  | 38,1 | 2.070 |
| 2"     | 51 | 123,0 | 140,0 | 95,0  | 50,8 | 2.800 |
| 2 1/2" | 63 | 135,0 | 160,0 | 115,0 | 63,5 | 4.840 |
| 3"     | 76 | 158,0 | 175,0 | 130,0 | 76,2 | 7.480 |



| DN     | A  | B     | C     | D    | gr   |       |
|--------|----|-------|-------|------|------|-------|
| 1/2"   | 12 | 80,5  | 100,0 | 55,0 | 25,4 | 780   |
| 3/4"   | 19 | 80,5  | 100,0 | 55,0 | 25,4 | 780   |
| 1"     | 25 | 95,0  | 105,0 | 22,0 | 50,5 | 1.150 |
| 1 1/2" | 38 | 108,0 | 125,0 | 35,0 | 50,5 | 2.100 |
| 2"     | 51 | 123,0 | 140,0 | 47,5 | 64,0 | 2.850 |
| 2 1/2" | 63 | 135,0 | 160,0 | 60,0 | 77,5 | 4.900 |
| 3"     | 76 | 158,0 | 175,0 | 72,0 | 91,0 | 7.550 |

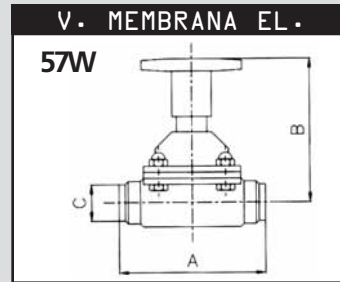


## Válvulas para la industria farmacéutica Gama Clamp

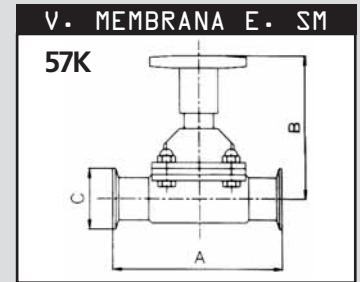


**A** EPDM (57 08 E)  
-40°C + 150°C  
-40°F + 300°F

**B** PTFE (57 08 T)  
-10°C + 150°C  
+15°F + 300°F



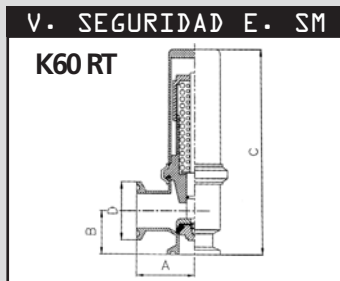
| DN     | A  | B     | C     | gr   |       |
|--------|----|-------|-------|------|-------|
| 1/2"   | 12 | 89,0  | 78,0  | 12,7 | 840   |
| 3/4"   | 19 | 102,0 | 79,0  | 19,0 | 1.200 |
| 1"     | 25 | 114,0 | 92,0  | 25,4 | 1.680 |
| 1 1/2" | 38 | 140,0 | 112,0 | 38,1 | 3.140 |
| 2"     | 51 | 159,0 | 135,0 | 50,8 | 5.040 |



| DN     | A  | B     | C     | gr   |       |
|--------|----|-------|-------|------|-------|
| 1/2"   | 12 | 89,0  | 78,0  | 25,4 | 840   |
| 3/4"   | 19 | 102,0 | 79,0  | 25,4 | 1.200 |
| 1"     | 25 | 114,0 | 92,0  | 50,5 | 1.680 |
| 1 1/2" | 38 | 140,0 | 112,0 | 50,5 | 3.140 |
| 2"     | 51 | 159,0 | 135,0 | 64,0 | 5.040 |

### VÁLVULAS DE MEMBRANA

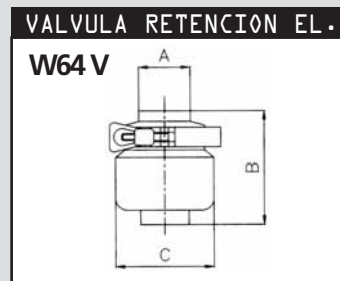
- Realizadas respetando rigurosamente los criterios y los tests establecidos por las normas 3-A.
- Cuerpo realizado mediante estampado en caliente, tratado térmicamente, trabajado mecánicamente y pulido. Material 316-L.
- Mandos manuales y neumáticos de acero inoxidable AISI 316L para esterilizaciones a elevadas temperaturas.
- Membranas de EPDM o PTFE. Membranas de EPDM y soportes elásticos para las membranas de PTFE entretelados para otorgar mayor resistencia mecánica.
- Cierre perfecto y aislamiento completo de factores contaminantes exteriores.
- Autodrenaje completo de todas las piezas interiores durante las fases de lavado CIP.
- Mantenimientos reducidos "top entry" con facilidad de acceso y sin necesidad de desmontar la válvula de la instalación



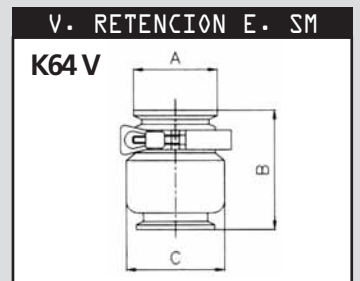
| DN     | A  | B     | C     | D     | gr   |       |
|--------|----|-------|-------|-------|------|-------|
| 1"     | 25 | 72,7  | 55,7  | 218,7 | 50,5 | 2.300 |
| 1 1/2" | 38 | 72,7  | 61,2  | 229,7 | 50,5 | 2.350 |
| 2"     | 51 | 82,7  | 66,7  | 244,7 | 64,0 | 3.030 |
| 2 1/2" | 63 | 92,7  | 84,7  | 291,7 | 77,5 | 4.710 |
| 3"     | 76 | 102,7 | 102,7 | 312,7 | 91,0 | 6.280 |



| DN     | A  | B    | C    | D     | gr   |       |
|--------|----|------|------|-------|------|-------|
| 1"     | 25 | 60,0 | 43,0 | 206,0 | 25,4 | 2.185 |
| 1 1/2" | 38 | 60,0 | 48,5 | 217,0 | 38,1 | 2.270 |
| 2"     | 51 | 70,0 | 54,0 | 232,0 | 50,8 | 2.910 |
| 2 1/2" | 63 | 80,0 | 72,0 | 279,0 | 63,5 | 4.550 |
| 3"     | 76 | 90,0 | 90,0 | 300,0 | 76,2 | 6.100 |



| DN     | A   | B     | C     | gr    |       |
|--------|-----|-------|-------|-------|-------|
| 1/2"   | 12  | 12,7  | 73,0  | 40,0  | 240   |
| 3/4"   | 19  | 19,0  | 73,0  | 40,0  | 520   |
| 1"     | 25  | 25,4  | 95,0  | 50,5  | 880   |
| 1 1/2" | 38  | 38,1  | 95,0  | 64,0  | 1.070 |
| 2"     | 51  | 50,8  | 102,0 | 77,5  | 1.750 |
| 2 1/2" | 63  | 63,5  | 111,0 | 91,0  | 2.140 |
| 3"     | 76  | 76,2  | 125,0 | 119,0 | 3.950 |
| 4"     | 101 | 101,6 | 136,0 | 131,0 | 4.900 |



| DN     | A   | B     | C     | gr    |       |
|--------|-----|-------|-------|-------|-------|
| 1/2"   | 12  | 25,4  | 73,0  | 40,0  | 260   |
| 3/4"   | 19  | 25,4  | 73,0  | 40,0  | 540   |
| 1"     | 25  | 50,5  | 95,0  | 50,5  | 900   |
| 1 1/2" | 38  | 50,5  | 95,0  | 64,0  | 1.100 |
| 2"     | 51  | 64,0  | 102,0 | 77,5  | 1.800 |
| 2 1/2" | 63  | 77,5  | 111,0 | 91,0  | 2.200 |
| 3"     | 76  | 91,0  | 125,0 | 119,0 | 4.020 |
| 4"     | 101 | 119,0 | 136,0 | 131,0 | 5.000 |

### VÁLVULAS DE SEGURIDAD

- Elemento de regulación de la presión situado en el interior del cuerpo de la válvula para asegurar la imposibilidad de maniobras accidentales.
- Se pueden regular de 0 a 5 BAR; bajo pedido, se pueden regular hasta 10 BAR.

### VÁLVULAS DE RETENCIÓN

- De sólida y robusta construcción, obtenidas de un bloque de acero inoxidable.
- Amplia apertura de diafragma para permitir el paso de sustancias sólidas.
- Junta estanca de PTFE o, bajo pedido, otros elastómeros.
- Equipadas con muelles de baja presión que permiten el funcionamiento de la válvula tanto en posición vertical como en horizontal.
- Máxima presión de ejercicio: 15 BAR





## Puertas de depósito de acero inoxidable



Puerta ovalada, servicio pesado.  
Dimensiones internas: 350 x 450 mm - Espesor 2,5 mm.  
Apertura hacia el interior.- Provista de bastidor exterior.

Solo la puerta, con accesorio pero sin bastidor.



Puerta rectangular con bastidor plano exterior.  
Dimensiones internas: 420 x 310 mm.  
Apertura hacia el interior.



Puerta rectangular para barricas de vino  
Dimensiones internas: 530 x 410 mm.  
Apertura vertical hacia fuera.



Puerta superior, bastidor plano 40 x 4 mm.  
Apertura externa.  
Disponible en diámetros 220, 300, 400 y 500 mm.



Puerta superior.  
Bastidor en chapa laminada 100mm.  
Apertura externa.  
Disponible en diámetros 220, 300, 400 y 500 mm.



Puerta superior. Tapa atornillada con 4,5 ó 6 mecanismos de sujeción.  
Apertura externa.  
Bastidor exterior en acero inoxidable sólido de 50 x 4 mm.  
Disponible en diámetros 220, 300, 400, 500 y 600 mm.



Puerta superior. Bastidor exterior en chapa laminada. Mecanismo de cierre por abrazadera.  
Apertura externa.  
Dimensiones internas. Diámetro 460 mm - altura 100 mm.







# Gama Pressfitting

de acero inoxidable





# Gama Pressfitting



EL SISTEMA DE PRENSADO RÁPIDO PARA UNIÓN DE TUBERÍAS CON ACCESORIOS  
EN ACERO INOXIDABLE Y ACERO AL CARBONO GALVANIZADO HASTA Ø 108 MM.



HOMOLOGACIONES:





## PRESSFITTING

*Chibro Pressfitting* es un sistema rápido, eficaz y seguro para unión de tuberías y accesorios, mediante prensado, en acero inoxidable y acero al carbono galvanizado en el campo civil, industrial y naval, evitando el proceso laborioso de soldar o roscar.

*Chibro Pressfitting* es la solución actual para instalaciones nuevas y también proyectos de rehabilitación de sistemas antiguos en diámetros desde 15 mm hasta 108 mm. Este sistema permite un gran ahorro de tiempos de montaje, en comparación con otros sistemas convencionales.

Para conseguir este resultado, además de un acabado perfecto, solo hay que asegurar una correcta deformación de tubería y accesorio durante el prensado.

El sistema *Chibro Pressfitting* ofrece la gama completa de productos para conseguir este objetivo:

- Accesorios
- Tubos
- Juntas tóricas
- Máquinas para realizar el prensado

## INOXIDABLE

- El acero inoxidable se considera un material higiénico, como se demuestra en la mayoría de las aplicaciones en la industria alimentaria y farmacéutica.
- Mínima pérdida de carga, obteniéndose mayores velocidades del fluido.
- Excelente acabado decorativo evitando costos adicionales de pinturas o protecciones exteriores.
- Menor conductividad térmica que otros materiales.
- Apto para conducción de aire comprimido, gases inertes y ciertos productos químicos (ácidos, derivados del petróleo, etc...).

## ACERO GALVANIZADO

- Para circuitos cerrados de calefacción, refrigeración y aire comprimido.
- Tubos disponibles revestidos de polipropileno para evitar condensaciones.

## CUPRO-NIQUEL 90/10

- Para conducciones de agua salada.
- Industria naval y astilleros (refrigeración de motor, sentina, contraincendios, etc.).
- Plantas desalinizadoras de agua de mar.

Para cualquier necesidad de tuberías y accesorios en cupro-níquel, consulten con nuestro departamento comercial





## Un sistema práctico, seguro y rápido

### Secuencia del montaje



### Una unión a presión que forma una sola unidad inseparable

Por la presión aplicada en el resalte de la pieza, ésta y el tubo inox forman una unidad inseparable. La junta de elastómero EPDM, realiza el cierre y es inofensiva higiénicamente.

Hay disponibles juntas de diversos materiales para aplicaciones especiales tales como conducción de derivados del petróleo, ácidos, etc... Se recomienda contactar con Hastinik para más información.

### le ofrece:

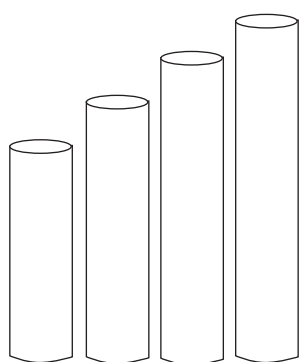


- Una unión segura y rápida en frío; no se pierde tiempo soldando.
- Fiabilidad en la instalación incluso en condiciones de uso severas.
- Reducción de mano de obra especializada.
- No es necesario tomar medidas preventivas contra incendios.
- No hay que manipular botellas de gas.
- No es preciso limpiar la tubería.
- Instalaciones empotradas.



## Tubos sanitarios para unión con accesorios Pressfitting mediante sistema de prensado rápido

| TUBO SOLDADO ACERO INOXIDABLE 316 L (1.4404) |            |            |                    |           |
|--|------------|------------|--------------------|-----------|
| Dimensiones                                  |            |            |                    |           |
| Ø Ext. mm                                    | Espesor mm | Longitud m | Contenido Agua L/M | Peso Kg/m |
| -  | -          | -          | -                  | -         |
| 15   | 1          | 6          | 0.133              | 0,351     |
| 18   | 1          | 6          | 0.201              | 0,426     |
| 22   | 1,2        | 6          | 0.302              | 0,625     |
| 28   | 1,2        | 6          | 0.515              | 0,805     |
| 35   | 1,5        | 6          | 0.804              | 1,258     |
| 42   | 1,5        | 6          | 1.195              | 1,521     |
| 54   | 1,5        | 6          | 2.043              | 1,972     |
| 76,1   | 2          | 6          | 4.083              | 3,711     |
| 88,9   | 2          | 6          | 5.662              | 4,352     |
| 108  | 2          | 6          | 8.496              | 5,308     |



### Límites de aplicación

Temperatura de trabajo -20°+120°C

Temperatura máxima (pico) 150°C

Presión máxima de trabajo para líquidos:

|         |         |
|---------|---------|
| 15 mm   | 120 bar |
| 18 mm   | 100 bar |
| 22 mm   | 70 bar  |
| 28 mm   | 50 bar  |
| 35 mm   | 40 bar  |
| 42 mm   | 35 bar  |
| 54 mm   | 25 bar  |
| 76,1 mm | 20 bar  |
| 88,9 mm | 18 bar  |
| 108 mm  | 16 bar  |

Presión máxima para gases inertes: 16 bar

Depresión máxima: -0,95 bar

### Propiedades mecánicas

|   |     |
|---|-----|
| Límite elástico Mínimo (N/mm <sup>2</sup> ) | 240 |
| Alargamiento Mínimo %                       | 40  |
| Carga de rotura Mínimo (N/mm <sup>2</sup> ) | 530 |

### Propiedades físicas

|   |                           |
|---|---------------------------|
| Densidad                                      | 8000 Kg/m <sup>3</sup>    |
| Calor específico (20° C)                      | 500 J/Kg.K                |
| Conductividad térmica (20° C)                 | 15 W/m.K                  |
| Coefficiente de dilatación lineal (20÷200° C) | 16,5 10 <sup>-6</sup> /K  |
| Módulo de elasticidad (20° C)                 | 200 KN/mm <sup>2</sup>    |
| Resistividad eléctrica (20° C)                | 0,75 Ω mm <sup>2</sup> /m |

### Composición química

| C % Max. | Mn % Max. | P % Max. | S % Max. | Si % Max. | Cr %      | Ni %      | Mo %    |
|----------|-----------|----------|----------|-----------|-----------|-----------|---------|
| 0,03     | 2,0       | 0,045    | 0,03     | 1,0       | 16,0-18,5 | 11,0-14,0 | 2,0-2,5 |

Para materiales de acero galvanizado y cupro-níquel consulten con nuestro departamento comercial.





## Accesorios Pressfitting

| CURVA 90° M-H INOX R= 1,5D |    |     |     | Figura 1H |
|----------------------------|----|-----|-----|-----------|
| Dimensiones                |    |     |     | Peso<br>g |
| Ø mm                       | A  | H   | L   |           |
| 15                         | 20 | 58  | 49  | 55        |
| 18                         | 21 | 62  | 53  | 68        |
| 22                         | 22 | 73  | 63  | 103       |
| 28                         | 24 | 79  | 72  | 145       |
| 35                         | 21 | 133 | 130 | 300       |
| 42                         | 32 | 174 | 170 | 500       |
| 54                         | 38 | 220 | 215 | 775       |
| 76,1                       | 55 | 277 | 270 | 1600      |
| 88,9                       | 64 | 328 | 320 | 2150      |
| 108                        | 79 | 389 | 380 | 3250      |

| CURVA 90° H-H INOX R= 1,5D |    |     |     | Figura 2H |
|----------------------------|----|-----|-----|-----------|
| Dimensiones                |    |     |     | Peso<br>g |
| Ø mm                       | A  | L   | L   |           |
| 15                         | 20 | 49  | 49  | 50        |
| 18                         | 21 | 53  | 53  | 60        |
| 22                         | 22 | 63  | 63  | 85        |
| 28                         | 24 | 72  | 72  | 114       |
| 35                         | 27 | 121 | 130 | 180       |
| 42                         | 32 | 155 | 170 | 263       |
| 54                         | 38 | 165 | 215 | 490       |
| 76,1                       | 55 | 237 | 270 | 1325      |
| 88,9                       | 64 | 276 | 320 | 1880      |
| 108                        | 79 | 345 | 380 | 2760      |

| CURVA 45° M-H INOX R= 1,5D |    |     |     | Figura 40H |
|----------------------------|----|-----|-----|------------|
| Dimensiones                |    |     |     | Peso<br>g  |
| Ø mm                       | A  | H   | L   |            |
| 15                         | 20 | 44  | 35  | 48         |
| 18                         | 21 | 45  | 36  | 58         |
| 22                         | 22 | 49  | 41  | 83         |
| 28                         | 24 | 54  | 47  | 115        |
| 35                         | 27 | 98  | 95  | 200        |
| 42                         | 32 | 111 | 107 | 300        |
| 54                         | 38 | 155 | 150 | 500        |
| 76,1                       | 55 | 212 | 205 | 1400       |
| 88,9                       | 64 | 243 | 235 | 1850       |
| 108                        | 79 | 289 | 280 | 2750       |

| CURVA 45° H-H INOX R= 1,5D |    |     |      | Figura 41H |
|----------------------------|----|-----|------|------------|
| Dimensiones                |    |     |      | Peso<br>g  |
| Ø mm                       | A  | L   | L    |            |
| 15                         | 20 | 35  | 48   | 48         |
| 18                         | 21 | 36  | 58   | 58         |
| 22                         | 22 | 41  | 83   | 83         |
| 28                         | 24 | 47  | 115  | 115        |
| 35                         | 27 | 95  | 200  | 200        |
| 42                         | 32 | 107 | 313  | 313        |
| 54                         | 38 | 150 | 500  | 500        |
| 76,1                       | 55 | 205 | 1350 | 1350       |
| 88,9                       | 64 | 235 | 1900 | 1900       |
| 108                        | 79 | 280 | 2800 | 2800       |



## Accesorios Pressfitting

| CURVA CORTA 90° M-H INOX R= 1 D |    |     |     |        | Figura 1HC |
|---------------------------------|----|-----|-----|--------|------------|
| Dimensiones                     |    |     |     | Peso g |            |
| Ø mm                            | A  | H   | L   |        |            |
| 35                              | 27 | 75  | 72  | 210    |            |
| 42                              | 32 | 87  | 84  | 315    |            |
| 54                              | 38 | 109 | 103 | 480    |            |
| 76,1                            | 55 | 147 | 142 | 1170   |            |
| 88,9                            | 64 | 177 | 161 | 1670   |            |
| 108                             | 79 | 214 | 197 | 2600   |            |

| CURVA CORTA 90° H-H INOX R= 1 D |    |     |     |        | Figura 2HC |
|---------------------------------|----|-----|-----|--------|------------|
| Dimensiones                     |    |     |     | Peso g |            |
| Ø mm                            | A  | L   | L   |        |            |
| 35                              | 27 | 70  | 70  | 220    |            |
| 42                              | 32 | 84  | 84  | 330    |            |
| 54                              | 38 | 103 | 103 | 500    |            |
| 76,1                            | 55 | 142 | 142 | 1200   |            |
| 88,9                            | 64 | 160 | 160 | 1700   |            |
| 108                             | 79 | 197 | 197 | 2650   |            |

| CURVA CORTA 45° M-H INOX R= 1 D |    |     |     |        | Figura 40HC |
|---------------------------------|----|-----|-----|--------|-------------|
| Dimensiones                     |    |     |     | Peso g |             |
| Ø mm                            | A  | H   | L   |        |             |
| 35                              | 27 | 49  | 51  | 195    |             |
| 42                              | 32 | 61  | 60  | 290    |             |
| 54                              | 38 | 76  | 69  | 440    |             |
| 76,1                            | 55 | 94  | 102 | 970    |             |
| 88,9                            | 64 | 134 | 113 | 1360   |             |
| 108                             | 79 | 141 | 139 | 2200   |             |

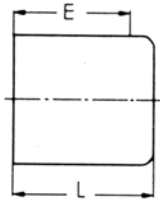
| CURVA CORTA 45° H-H INOX R= 1 D |    |     |     |        | Figura 41HC |
|---------------------------------|----|-----|-----|--------|-------------|
| Dimensiones                     |    |     |     | Peso g |             |
| Ø mm                            | A  | L   | L   |        |             |
| 35                              | 27 | 51  | 51  | 200    |             |
| 42                              | 32 | 60  | 60  | 300    |             |
| 54                              | 38 | 69  | 69  | 460    |             |
| 76,1                            | 55 | 102 | 102 | 1000   |             |
| 88,9                            | 64 | 113 | 113 | 1400   |             |
| 108                             | 79 | 139 | 139 | 2250   |             |

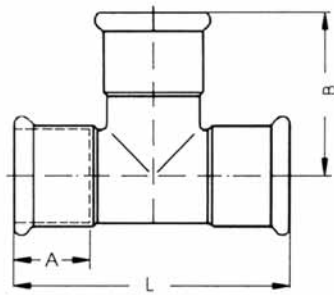
| CODO H-ROSCA H INOX |    |    |    |        | Figura 90H |
|---------------------|----|----|----|--------|------------|
| Dimensiones         |    |    |    | Peso g |            |
| Ø mm                | A  | H  | L  |        |            |
| 15-Rp1/2"           | 20 | 57 | 37 | 135    |            |
| 18-Rp1/2"           | 21 | 57 | 37 | 140    |            |
| 22-Rp3/4"           | 22 | 60 | 46 | 180    |            |
| 28-Rp1"             | 24 | 67 | 54 | 310    |            |
| 35-Rp1 1/4"         | 27 | 75 | 63 | 450    |            |

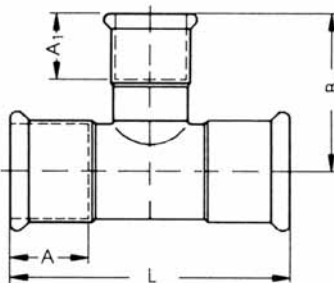
| CODO H-ROSCA M INOX |    |    |    |        | Figura 92H |
|---------------------|----|----|----|--------|------------|
| Dimensiones         |    |    |    | Peso g |            |
| Ø mm                | A  | H  | L  |        |            |
| 15-Rp1/2"           | 20 | 57 | 37 | 140    |            |
| 18-Rp1/2"           | 21 | 57 | 39 | 150    |            |
| 22-Rp3/4"           | 22 | 60 | 39 | 180    |            |
| 28-Rp1"             | 24 | 67 | 54 | 290    |            |
| 35-Rp1 1/4"         | 27 | 75 | 63 | 440    |            |
| 42-Rp1 1/2"         | 32 | 84 | 67 | 610    |            |
| 54-R2"              | 38 | 95 | 78 | 830    |            |



## Accesorios Pressfitting

| TAPA INOX   |     |     |        | Figura 300H  |
|-------------|-----|-----|--------|--|
| Dimensiones |     |     | Peso g |  |
| Ø mm        | L   | E   |        |  |
| 15          | 87  | 70  | 20     |  |
| 18          | 88  | 70  | 25     |  |
| 22          | 90  | 72  | 32     |  |
| 28          | 102 | 83  | 50     |  |
| 35          | 107 | 86  | 62     |  |
| 42          | 133 | 110 | 95     |  |
| 54          | 140 | 115 | 150    |  |
| 76,1        | 199 | 180 | 350    |  |
| 88,9        | 219 | 200 | 480    |  |
| 108         | 259 | 240 | 650    |  |

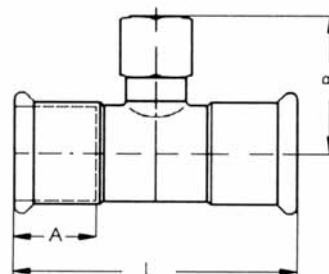
| TE IGUAL H-H INOX |    |     |     |        | Figura 130H   |
|-------------------|----|-----|-----|--------|---|
| Dimensiones       |    |     |     | Peso g |  |
| Ø mm              | A  | B   | L   |        |   |
| 15                | 20 | 41  | 66  | 63     |   |
| 18                | 21 | 42  | 70  | 78     |   |
| 22                | 22 | 46  | 82  | 103    |   |
| 28                | 24 | 52  | 88  | 140    |   |
| 35                | 27 | 56  | 104 | 200    |   |
| 42                | 32 | 57  | 116 | 288    |   |
| 54                | 38 | 80  | 142 | 425    |   |
| 76,1              | 55 | 120 | 242 | 1200   |   |
| 88,9              | 64 | 132 | 260 | 1600   |   |
| 108               | 79 | 157 | 310 | 2300   |   |

| TE REDUCIDA H-H INOX |       |     |     |        | Figura 130H  |
|----------------------|-------|-----|-----|--------|--|
| Dimensiones          |       |     |     | Peso g |  |
| Ø mm                 | A/A1  | B   | L   |        |  |
| 18-15-18             | 21/20 | 42  | 70  | 75     |  |
| 22-15-22             | 22/20 | 47  | 82  | 95     |  |
| 22-18-22             | 22/21 | 44  | 82  | 98     |  |
| 28-15-28             | 24/20 | 49  | 88  | 125    |  |
| 28-18-28             | 24/21 | 47  | 88  | 125    |  |
| 28-22-28             | 24/22 | 52  | 88  | 135    |  |
| 35-15-35             | 27/20 | 57  | 104 | 170    |  |
| 35-18-35             | 27/21 | 51  | 104 | 170    |  |
| 35-22-35             | 27/22 | 58  | 104 | 180    |  |
| 35-28-35             | 27/24 | 62  | 104 | 185    |  |
| 42-22-42             | 32/22 | 57  | 116 | 238    |  |
| 42-28-42             | 32/24 | 61  | 116 | 250    |  |
| 42-35-42             | 38/27 | 63  | 116 | 263    |  |
| 54-22-54             | 38/22 | 66  | 142 | 350    |  |
| 54-28-54             | 38/24 | 70  | 142 | 350    |  |
| 54-35-54             | 38/27 | 72  | 142 | 375    |  |
| 54-42-54             | 38/32 | 76  | 142 | 400    |  |
| 76,1-22-76,1         | 55/22 | 75  | 242 | 1000   |  |
| 76,1-28-76,1         | 55/24 | 79  | 242 | 1000   |  |
| 76,1-35-76,1         | 55/27 | 81  | 242 | 1000   |  |
| 76,1-42-76,1         | 55/32 | 85  | 242 | 1010   |  |
| 76,1-54-76,1         | 55/38 | 91  | 242 | 1010   |  |
| 88,9-22-88,9         | 64/22 | 82  | 260 | 1250   |  |
| 88,9-28-88,9         | 64/24 | 86  | 260 | 1250   |  |
| 88,9-35-88,9         | 64/27 | 88  | 260 | 1300   |  |
| 88,9-42-88,9         | 64/32 | 92  | 260 | 1300   |  |
| 88,9-54-88,9         | 64/38 | 98  | 260 | 1350   |  |
| 88,9-76,1-88,9       | 64/55 | 126 | 260 | 1550   |  |
| 108-22-108           | 79/22 | 91  | 310 | 1850   |  |
| 108-28-108           | 79/24 | 95  | 310 | 1870   |  |
| 108-35-108           | 79/27 | 97  | 310 | 1870   |  |
| 108-42-108           | 79/32 | 101 | 310 | 1890   |  |
| 108-54-108           | 79/38 | 107 | 310 | 1920   |  |
| 108-76,1-108         | 79/55 | 135 | 310 | 2050   |  |
| 108-88,9-108         | 79/64 | 140 | 310 | 2150   |  |

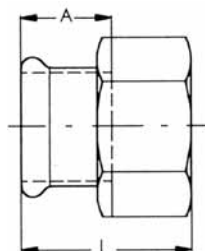


## Accesorios Pressfitting

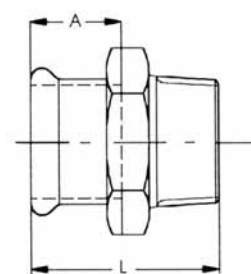
| TE SALIDA CENTRAL ROSCA H INOX |    |     |     | Figura 130HR |
|--------------------------------|----|-----|-----|--------------|
| Dimensiones                    |    |     |     | Peso<br>g    |
| Ø mm                           | A  | B   | L   |              |
| 15-Rp1/2"-15                   | 20 | 37  | 66  | 90           |
| 18-Rp1/2"-18                   | 21 | 43  | 70  | 98           |
| 22-Rp1/2"-22                   | 22 | 40  | 82  | 115          |
| 22-Rp3/4"-22                   | 22 | 48  | 82  | 145          |
| 28-Rp1/2"-28                   | 24 | 42  | 88  | 195          |
| 28-Rp3/4"-28                   | 24 | 52  | 88  | 175          |
| 35-Rp1/2"-35                   | 27 | 48  | 104 | 190          |
| 35-Rp3/4"-35                   | 27 | 55  | 104 | 220          |
| 42-Rp1/2"-42                   | 32 | 52  | 116 | 250          |
| 42-Rp3/4"-42                   | 32 | 58  | 116 | 288          |
| 54-Rp1/2"-54                   | 38 | 56  | 142 | 350          |
| 54-Rp3/4"-54                   | 38 | 65  | 142 | 400          |
| 54-Rp2"-54                     | 38 | 81  | 142 | 750          |
| 76,1-Rp3/4"-76,1               | 55 | 83  | 242 | 1000         |
| 88,9-Rp3/4"-88,9               | 64 | 95  | 260 | 1300         |
| 108-Rp3/4"-108                 | 79 | 112 | 310 | 1900         |
| 76,1-Rp2"-76,1                 | 55 | 93  | 242 | 1300         |
| 88,9-Rp2"-88,9                 | 64 | 100 | 260 | 1600         |
| 108-Rp2"-108                   | 79 | 109 | 310 | 2150         |



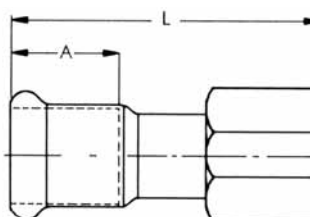
| ENTRONQUE HEMBRA INOX |    |    |  | Figura 149HH |
|-----------------------|----|----|--|--------------|
| Dimensiones           |    |    |  | Peso<br>g    |
| Ø mm                  | A  | L  |  |              |
| 15-Rp1/2"             | 20 | 37 |  | 43           |
| 18-Rp1/2"             | 21 | 37 |  | 60           |
| 22-Rp1/2"             | 22 | 38 |  | 103          |
| 22-Rp3/4"             | 22 | 39 |  | 90           |
| 28-Rp1"               | 24 | 44 |  | 155          |
| 35-Rp1 1/4"           | 27 | 49 |  | 230          |
| 42-Rp1 1/2"           | 32 | 53 |  | 263          |
| 54-Rp2"               | 38 | 69 |  | 538          |



| ENTRONQUE MACHO INOX |    |    |  | Figura 149HM |
|----------------------|----|----|--|--------------|
| Dimensiones          |    |    |  | Peso<br>g    |
| Ø mm                 | A  | L  |  |              |
| 15-Rp1/2"            | 20 | 41 |  | 55           |
| 18-Rp1/2"            | 21 | 42 |  | 75           |
| 18-Rp3/4"            | 21 | 43 |  | 93           |
| 22-Rp1/2"            | 22 | 42 |  | 82           |
| 22-Rp3/4"            | 22 | 44 |  | 100          |
| 28-Rp1"              | 24 | 48 |  | 130          |
| 35-Rp1 1/4"          | 27 | 53 |  | 215          |
| 42-Rp1 1/2"          | 32 | 57 |  | 275          |
| 54-Rp2"              | 38 | 69 |  | 363          |



| ENTRONQUE C/TUERCA H-H INOX |    |    |  | Figura 149HHL |
|-----------------------------|----|----|--|---------------|
| Dimensiones                 |    |    |  | Peso<br>g     |
| Ø mm                        | A  | L  |  |               |
| 15-Rp3/4"                   | 20 | 57 |  | 80            |
| 18-Rp3/4"                   | 21 | 57 |  | 80            |
| 22-Rp1"                     | 22 | 60 |  | 100           |
| 28-Rp1 1/4"                 | 24 | 65 |  | 165           |
| 35-Rp1 1/2"                 | 27 | 71 |  | 200           |
| 42-Rp2"                     | 32 | 78 |  | 265           |
| 54-Rp2"                     | 38 | 97 |  | 450           |





## Accesorios Pressfitting

| MANGUITO REDUCCIÓN M-H INOX |    |     |           | Figura 246H |
|-----------------------------|----|-----|-----------|-------------|
| Dimensiones                 |    |     | Peso<br>g |             |
| Ø mm                        | A  | L   |           |             |
| 18-15                       | 20 | 61  | 38        |             |
| 22-15                       | 20 | 67  | 43        |             |
| 22-18                       | 21 | 67  | 45        |             |
| 28-15                       | 20 | 71  | 55        |             |
| 28-18                       | 21 | 71  | 58        |             |
| 28-22                       | 22 | 73  | 63        |             |
| 35-22                       | 22 | 88  | 85        |             |
| 35-28                       | 24 | 91  | 88        |             |
| 42-22                       | 22 | 80  | 115       |             |
| 42-28                       | 24 | 96  | 125       |             |
| 42-35                       | 27 | 90  | 113       |             |
| 54-28                       | 24 | 101 | 180       |             |
| 54-35                       | 27 | 116 | 200       |             |
| 54-42                       | 32 | 106 | 275       |             |
| 76,1-42                     | 32 | 140 | 450       |             |
| 76,1-54                     | 38 | 150 | 450       |             |
| 88,9-54                     | 38 | 161 | 600       |             |
| 88,9-76,1                   | 55 | 175 | 700       |             |
| 108-54                      | 38 | 170 | 850       |             |
| 108-76,1                    | 55 | 190 | 1020      |             |
| 108-88,9                    | 64 | 196 | 1000      |             |

| MANGUITO H-H INOX |    |     |           | Figura 270H |
|-------------------|----|-----|-----------|-------------|
| Dimensiones       |    |     | Peso<br>g |             |
| Ø mm              | A  | L   |           |             |
| 15                | 20 | 53  | 35        |             |
| 18                | 21 | 55  | 40        |             |
| 22                | 22 | 57  | 55        |             |
| 28                | 24 | 62  | 70        |             |
| 35                | 27 | 68  | 105       |             |
| 42                | 32 | 80  | 137       |             |
| 54                | 38 | 94  | 200       |             |
| 76,1              | 55 | 144 | 600       |             |
| 88,9              | 64 | 158 | 850       |             |
| 108               | 79 | 184 | 1300      |             |

| MANGUITO DE ALARGO H-H INOX |    |     |           | Figura 270HL |
|-----------------------------|----|-----|-----------|--------------|
| Dimensiones                 |    |     | Peso<br>g |              |
| Ø mm                        | A  | L   |           |              |
| 15                          | 20 | 80  | 55        |              |
| 18                          | 21 | 80  | 65        |              |
| 22                          | 22 | 84  | 85        |              |
| 28                          | 24 | 92  | 113       |              |
| 35                          | 27 | 102 | 160       |              |
| 42                          | 32 | 120 | 225       |              |
| 54                          | 38 | 139 | 325       |              |
| 76,1                        | 55 | 224 | 950       |              |
| 88,9                        | 64 | 255 | 1200      |              |
| 108                         | 79 | 304 | 1850      |              |



## Accesorios Pressfitting

| SALVATUBO CENTRAL INOX |    |    |     |           | Figura 85 |
|------------------------|----|----|-----|-----------|-----------|
| Dimensiones            |    |    |     | Peso<br>g |           |
| Ø mm                   | C  | D  | L   |           |           |
| 15                     | 48 | 48 | 202 | 110       |           |
| 18                     | 50 | 50 | 210 | 140       |           |
| 22                     | 50 | 50 | 226 | 195       |           |
| 28                     | 51 | 51 | 272 | 285       |           |

| SALVATUBO LATERAL INOX |    |    |     |           | Figura 86 |
|------------------------|----|----|-----|-----------|-----------|
| Dimensiones            |    |    |     | Peso<br>g |           |
| Ø mm                   | C  | D  | L   |           |           |
| 15                     | 43 | 46 | 147 | 80        |           |
| 18                     | 48 | 45 | 150 | 100       |           |
| 22                     | 54 | 51 | 163 | 140       |           |
| 28                     | 61 | 54 | 192 | 200       |           |

| CODO PLACA INOX |       |      |          |           | Figura 93HR |
|-----------------|-------|------|----------|-----------|-------------|
| Dimensiones     |       |      |          | Peso<br>g |             |
| Ø mm            | B/Z   | D/X  | L/L1/L2  |           |             |
| 15-Rp1/2"       | 13/28 | 5/34 | 43/48/30 | 103       |             |
| 18-Rp1/2"       | 13/30 | 5/34 | 43/51/30 | 100       |             |
| 22-Rp3/4"       | 13/33 | 6/40 | 51/55/34 | 155       |             |

| CODO PLACA 3 VIAS C/SALIDA HR INOX |       |      |          |           | Figura 94HR |
|------------------------------------|-------|------|----------|-----------|-------------|
| Dimensiones                        |       |      |          | Peso<br>g |             |
| Ø mm                               | B/Z   | D/X  | L/L1/L2  |           |             |
| 15-Rp1/2"                          | 13/40 | 5/39 | 45/60/30 | 170       |             |

| COLLARIN PN 6 INOX |         |        |     |           | Figura 5 |
|--------------------|---------|--------|-----|-----------|----------|
| Dimensiones        |         |        |     | Peso<br>g |          |
| Ø mm               | A/D     | C/H    | S   |           |          |
| 22                 | 27/22   | 50/6   | 1,2 | 180       |          |
| 28                 | 32/28   | 60/6   | 1,2 | 220       |          |
| 35                 | 40/35   | 70/6   | 1,5 | 350       |          |
| 42                 | 46,5/42 | 80/6   | 1,5 | 420       |          |
| 54                 | 59/54   | 90/8   | 1,5 | 600       |          |
| 76,1               | 78/76,1 | 110/8  | 2   | 800       |          |
| 88,9               | 91/88,9 | 128/10 | 2   | 1150      |          |
| 108                | 110/108 | 148/10 | 2   | 1400      |          |

| COLLARÍN PN 10/16 INOX |         |        |     |           | Figura 6 |
|------------------------|---------|--------|-----|-----------|----------|
| Dimensiones            |         |        |     | Peso<br>g |          |
| Ø mm                   | A/D     | C/H    | S   |           |          |
| 22                     | 27/22   | 50/6   | 1,2 | 220       |          |
| 28                     | 32/28   | 60/6   | 1,2 | 290       |          |
| 35                     | 40/35   | 78/6   | 1,5 | 380       |          |
| 42                     | 46,5/42 | 88/6   | 1,5 | 460       |          |
| 54                     | 59/54   | 102/8  | 1,5 | 700       |          |
| 76,1                   | 78/76,1 | 122/8  | 2   | 950       |          |
| 88,9                   | 91/88,9 | 138/10 | 2   | 1300      |          |
| 108                    | 110/108 | 158/10 | 2   | 1560      |          |



## Accesorios Pressfitting

| MANGUITO C/BRIDA PN 6 INOX |       |          |         |           | Figura 4 |
|----------------------------|-------|----------|---------|-----------|----------|
| Dimensiones                |       |          |         | Peso<br>g |          |
| Ø mm                       | A/B   | D/G      | K/L     |           |          |
| 15                         | 20/12 | 80/11,5  | 55/53   | 490       |          |
| 18                         | 21/12 | 80/11,5  | 55/53   | 490       |          |
| 22                         | 22/14 | 90/11,5  | 65/57   | 670       |          |
| 28                         | 24/14 | 100/11,5 | 75/60   | 800       |          |
| 35                         | 27/14 | 120/14   | 90/63   | 1150      |          |
| 42                         | 32/14 | 130/14   | 100/67  | 1500      |          |
| 54                         | 38/14 | 140/14   | 110/73  | 1900      |          |
| 76,1                       | 55/14 | 160/14   | 130/105 | 2100      |          |
| 88,9                       | 64/16 | 190/18   | 150/110 | 3170      |          |
| 108                        | 79/16 | 210/18   | 170/125 | 3900      |          |

| MANGUITO C/BRIDA PN 10/16 INOX |       |        |         |           | Figura 7 |
|--------------------------------|-------|--------|---------|-----------|----------|
| Dimensiones                    |       |        |         | Peso<br>g |          |
| Ø mm                           | A/B   | D/G    | K/L     |           |          |
| 15                             | 20/14 | 95/14  | 65/55   | 550       |          |
| 18                             | 21/14 | 95/14  | 65/55   | 550       |          |
| 22                             | 22/16 | 105/14 | 75/59   | 750       |          |
| 28                             | 24/16 | 115/14 | 85/62   | 1100      |          |
| 35                             | 27/16 | 140/18 | 100/65  | 1700      |          |
| 42                             | 32/16 | 150/18 | 110/69  | 2000      |          |
| 54                             | 38/18 | 165/18 | 125/77  | 2700      |          |
| 76,1                           | 55/18 | 185/18 | 145/109 | 3500      |          |
| 88,9                           | 64/20 | 200/18 | 160/114 | 4200      |          |
| 108                            | 79/20 | 220/18 | 180/129 | 5100      |          |

| COMPENSADOR AXIAL INOX |    |     |     |           | Figura 8 |
|------------------------|----|-----|-----|-----------|----------|
| Dimensiones            |    |     |     | Peso<br>g |          |
| Ø mm                   | A  | C   | L   |           |          |
| 22                     | 22 | 110 | 230 | 250       |          |
| 28                     | 24 | 115 | 245 | 350       |          |
| 35                     | 27 | 122 | 272 | 540       |          |
| 42                     | 32 | 128 | 312 | 700       |          |
| 54                     | 38 | 190 | 400 | 1200      |          |
| 76,1                   | 55 | 190 | 580 | 3100      |          |
| 88,9                   | 64 | 190 | 640 | 4300      |          |
| 108                    | 79 | 220 | 760 | 6300      |          |

| VÁLVULA RETENCIÓN INOX |    |    |         |           | Figura 9 |
|------------------------|----|----|---------|-----------|----------|
| Dimensiones            |    |    |         | Peso<br>g |          |
| Ø mm                   | A  | C  | L/P     |           |          |
| 15                     | 20 | 20 | 110/45  | 550       |          |
| 18                     | 21 | 20 | 110/45  | 610       |          |
| 22                     | 22 | 24 | 118/47  | 720       |          |
| 28                     | 24 | 24 | 126/51  | 1000      |          |
| 35                     | 27 | 28 | 140/56  | 1450      |          |
| 42                     | 32 | 40 | 160/60  | 1890      |          |
| 54                     | 38 | 47 | 181/67  | 3010      |          |
| 76,1                   | 55 | 50 | 250/100 | 6000      |          |
| 88,9                   | 64 | 56 | 270/107 | 9300      |          |
| 108                    | 79 | 72 | 318/123 | 14270     |          |

| VÁLVULA BOLA H-H POMO INOX |     |         |    |           | Figura 10A |
|----------------------------|-----|---------|----|-----------|------------|
| Dimensiones                |     |         |    | Peso<br>g |            |
| Ø mm                       | L   | B       | C  |           |            |
| 15-1/2"                    | 116 | 25+/-44 | 93 | 500       |            |
| 18-1/2"                    | 101 | 25+/-44 | 93 | 500       |            |
| 22-3/4"                    | 129 | 28+/-47 | 98 | 625       |            |





## Accesorios Pressfitting

| VÁLVULA BOLA H-H PALANCA INOX |     |         |    |           | Figura 10B |
|-------------------------------|-----|---------|----|-----------|------------|
| Dimensiones                   |     |         |    | Peso<br>g |            |
| Ø mm                          | L   | B       | C  |           |            |
| 15-1/2"                       | 116 | 25+/-44 | 92 | 500       |            |
| 18-1/2"                       | 102 | 25+/-44 | 92 | 500       |            |
| 22-3/4"                       | 129 | 28+/-47 | 95 | 625       |            |

| VÁLVULA BOLA H-H CAP INOX |     |         |    |           | Figura 10C |
|---------------------------|-----|---------|----|-----------|------------|
| Dimensiones               |     |         |    | Peso<br>g |            |
| Ø mm                      | L   | B       | C  |           |            |
| 15-1/2"                   | 116 | 25+/-58 | 74 | 400       |            |
| 18-1/2"                   | 102 | 25+/-58 | 74 | 390       |            |
| 22-3/4"                   | 117 | 28+/-62 | 78 | 525       |            |

| VÁLVULA BOLA PASO TOTAL PN 16 INOX* |        |         |         |           | Figura 10D |
|-------------------------------------|--------|---------|---------|-----------|------------|
| Dimensiones                         |        |         |         | Peso<br>g |            |
| Ø mm                                | A/C    | L/L1    | H/M     |           |            |
| 15                                  | 20/24  | 114/45  | 57/143  | 600       |            |
| 18                                  | 21/24  | 114/45  | 57/145  | 700       |            |
| 22                                  | 22/30  | 124/47  | 70/143  | 850       |            |
| 28                                  | 24/30  | 134/52  | 70/168  | 1280      |            |
| 35                                  | 27/38  | 150/56  | 75/168  | 2020      |            |
| 42                                  | 32/56  | 180/62  | 98/193  | 2800      |            |
| 54                                  | 38/69  | 205/68  | 100/208 | 3940      |            |
| 76,1                                | 55/83  | 287/102 | 125/288 | 8750      |            |
| 88,9                                | 64/102 | 316/107 | 138/288 | 14200     |            |
| 108                                 | 79/122 | 370/124 | 172/338 | 23050     |            |

| V. BOLA PASO TOTAL CON CONEXION A MANGUERA INOX* |       |       |         |       | Figura 10E |
|--|-------|-------|---------|-------|------------|
| Dimensiones                                      |       |       |         |       |            |
| Ø mm   | A/A1  | C/H   | L/M     | L1/L2 |            |
| 22   | 22/42 | 30/68 | 144/143 | 46/68 |            |

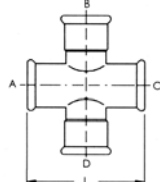
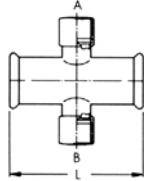
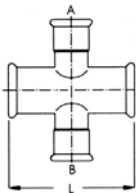
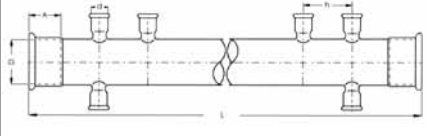
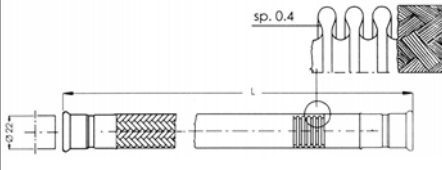
\* Las válvulas están formadas de tres piezas, montadas con tornillos. La parte central puede desmontarse para su sustitución sin necesidad de cortar la tubería, permitiendo así un mantenimiento rápido

| PASAMUROS INOX |      |           | Figura 11 |
|----------------|------|-----------|-----------|
| Dimensiones    |      | Peso<br>g |           |
| Ø mm           | D    |           |           |
| 15             | 25   | 400       |           |
| 18             | 30   | 440       |           |
| 22             | 33,7 | 720       |           |
| 28             | 38   | 850       |           |
| 35             | 45   | 1030      |           |
| 42             | 54   | 1400      |           |
| 54             | 70   | 2150      |           |
| 76,1           | 88,9 | 3100      |           |
| 88,9           | 108  | 4200      |           |
| 108            | 133  | 5850      |           |

\* Material del collarín: Fe 320-UNI 7947  
También disponible tipo macho-hembra con largo de 700 mm.



## Accesorios Pressfitting

|  |  |
|--|--|
| <p><b>CRUZ INOX</b></p> <p>Cruz (Ø28-108mm)<br/>           A=B=C=D<br/>           L = Dimensiones del manguito 270HL</p>   | <p>Figura 180A</p>   |
| <p><b>CRUZ INOX CON DERIV. ROSCADOS</b></p> <p>Cruz (Ø28-108mm)<br/>           A y B rosca M o H (Ø1 1/2"-2")<br/>           A y B pueden ser diferentes<br/>           L = Dimensiones del manguito 270HL</p> | <p>Figura 180B</p>   |
| <p><b>CRUZ REDUCIDA INOX</b></p> <p>Cruz reducida (Ø28-108mm)<br/>           A y B pueden ser diferentes<br/>           L = Dimensiones del manguito 270HL</p>   | <p>Figura 180R</p>  |
| <p><b>COLECTOR INOX</b></p> <p>Cruz reducida (Ø28-108mm)<br/>           L = no superior a 950 mm<br/>           N° de derivaciones, D, y h pueden variarse</p>   | <p>Figura 13</p>   |
| <p><b>LATIGUILLO INOX</b></p> <p>Fuelle: Acero inox 316<br/>           Malla: Acero inox 316<br/>           L = a petición</p>   | <p>Figura 14</p>   |
| <p><b>OTRAS FIGURAS INOX</b></p> <p>Hay disponibles bajo petición curvas de 60°, 30° y 15° en radio normal (R=1.5D) y radio corto (R=1.0D)</p>   |  |
| <p><b>FIGURAS ESPECIALES</b></p> <p>Pueden fabricarse figuras especiales bajo pedido.<br/>           Para más información no duden en consultar.</p>   |  |



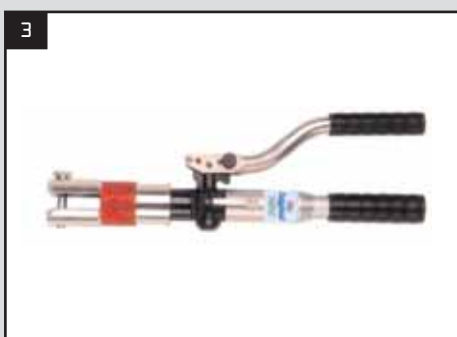
## Herramientas y accesorios



Herramienta eléctrica para  $\varnothing$  de 12 a 54 mm.



Herramienta eléctrica con acumulador para  $\varnothing$  de 12 a 54 mm.



Herramienta manual para  $\varnothing$  de 12 a 54 mm.



Mordazas desde  $\varnothing$  12 mm hasta 54 mm.



Escariador manual exterior/interior.  
Para tubos de  $\varnothing$  10 mm hasta 54 mm.



Cortatubos con cuchilla para acero/innox.



Herramienta electrohidráulica para  $\varnothing$  de 76.1 hasta 108 mm.







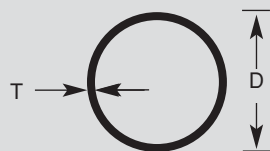
# Gama decoración y estructural de acero inoxidable







# Gama decoración y estructural



## Tubos redondos soldados por alta frecuencia de acero inoxidable

| Diámetro<br>mm | Peso (Kg/m)  |       |       |       |       |       |       |
|----------------|--------------|-------|-------|-------|-------|-------|-------|
|                | Espesor (mm) |       |       |       |       |       |       |
|                | 1            | 1,2   | 1,5   | 1,6   | 2     | 2,5   | 3     |
| 16             | 0,376        | 0,445 | 0,545 |       | 0,701 |       |       |
| 17,2           |              |       | 0,590 |       | 0,761 |       |       |
| 19,05          |              |       | 0,659 |       |       |       |       |
| 20             | 0,476        | 0,565 | 0,695 |       | 0,901 |       |       |
| 21,3           |              |       | 0,744 |       | 0,967 | 1,177 |       |
| 22             | 0,526        | 0,625 | 0,770 |       | 1,002 |       |       |
| 25             | 0,601        | 0,715 | 0,883 |       | 1,152 |       |       |
| 25,4           |              | 0,727 | 0,898 |       |       |       |       |
| 26,9           |              |       | 0,954 | 1,014 | 1,247 | 1,527 |       |
| 28             |              | 0,805 | 0,995 |       | 1,302 |       |       |
| 30             | 0,726        |       | 1,070 |       | 1,402 |       |       |
| 32             |              |       | 1,146 |       | 1,502 |       |       |
| 33,7           |              | 0,977 | 1,209 |       | 1,588 | 1,953 | 2,306 |
| 35             |              | 1,016 | 1,258 |       | 1,653 |       |       |
| 38             | 0,926        | 1,150 | 1,371 |       | 1,803 |       | 2,629 |
| 40             | 0,977        | 1,166 | 1,446 |       | 1,903 |       | 2,779 |
| 43             |              |       | 1,559 |       | 2,053 | 2,535 | 3,005 |
| 45             |              |       | 1,634 |       | 2,153 |       |       |
| 48,3           |              | 1,415 | 1,758 |       | 2,319 | 2,867 | 3,403 |
| 50             | 1,227        |       | 1,822 |       | 2,404 |       |       |
| 50,8           |              |       | 1,852 |       | 2,444 |       | 3,591 |
| 60,3           |              |       | 2,209 |       | 2,920 | 3,618 | 4,304 |
| 63,5           |              |       | 2,329 |       |       |       |       |
| 76,1           |              |       | 2,802 |       | 3,711 |       | 5,491 |
| 88,9           |              |       |       |       | 4,352 |       | 6,453 |
| 101,6          |              |       |       |       | 4,988 |       |       |
| 114,4          |              |       |       |       | 5,624 |       | 8,361 |

Normas de fabricación: DIN-17455 y ASTM A-554

Tolerancias: ISO-1127 y ASTM A-554

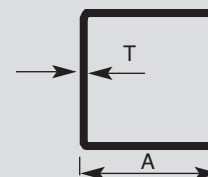
Calidad de material: AISI-304

Bajo pedido se puede fabricar en AISI-316 L

Acabados: Ver página 11.



## Tubos cuadrados de acero inoxidable



| Peso (Kg/m)       |            |       |       |       |       |        |        |        |        |   |
|-------------------|------------|-------|-------|-------|-------|--------|--------|--------|--------|---|
| Dimensiones<br>mm | Espesor mm |       |       |       |       |        |        |        |        |   |
|                   | AxA        | 1     | 1,2   | 1,5   | 2     | 2,5    | 3      | 4      | 5      | 6 |
| 10 x 10           | 0,275      |       |       |       |       |        |        |        |        |   |
| 12,7 x 12,7       |            | 0,450 | 0,550 |       |       |        |        |        |        |   |
| 15 x 15           | 0,453      | 0,538 | 0,661 |       |       |        |        |        |        |   |
| 16 x 16           | 0,485      | 0,576 | 0,709 |       |       |        |        |        |        |   |
| 20 x 20           | 0,613      | 0,729 | 0,901 | 1,176 |       |        |        |        |        |   |
| 25 x 25           | 0,772      | 0,921 | 1,140 | 1,495 |       |        | 2,167  |        |        |   |
| 30 x 30           | 0,932      | 1,112 | 1,379 | 1,814 |       |        | 2,645  |        |        |   |
| 35 x 35           | 1,091      | 1,304 | 1,618 | 2,133 |       |        | 3,124  |        |        |   |
| 40 x 40           | 1,251      | 1,495 | 1,858 | 2,452 | 3,033 | 3,602  | 4,703  |        |        |   |
| 45 x 45           |            |       | 2,097 | 2,771 |       |        |        |        |        |   |
| 50 x 50           |            |       | 2,336 | 3,090 | 3,831 | 4,559  | 5,979  | 7,349  |        |   |
| 60 x 60           |            |       | 2,814 | 3,728 | 4,628 | 5,516  | 7,255  | 8,943  |        |   |
| 70 x 70           |            |       |       | 4,366 |       | 6,473  | 8,531  |        |        |   |
| 80 x 80           |            |       | 3,771 | 5,004 |       | 7,430  | 9,807  | 12,133 |        |   |
| 100 x 100         |            |       |       | 6,279 |       | 9,344  | 12,359 | 15,323 |        |   |
| 120 x 120         |            |       |       | 7,555 | 9,413 | 11,258 | 14,910 | 18,513 | 22,065 |   |
| 140 x 140         |            |       |       |       |       | 13,172 | 17,462 | 21,703 | 25,893 |   |
| 150 x 150         |            |       |       |       |       | 14,129 | 18,738 | 23,298 | 27,807 |   |
| 200 x 200         |            |       |       |       |       | 18,913 | 25,118 | 31,272 | 37,376 |   |

Norma de fabricación: ASTM A-554

Tolerancias: ASTM A-554

Calidad del material: AISI 304, 316 L, 316 Ti

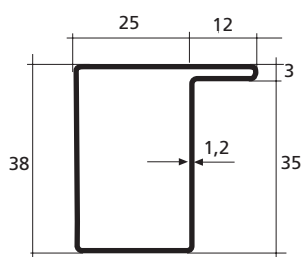
Acabados: Ver página 11.

Otras dimensiones consulten a nuestro departamento comercial.

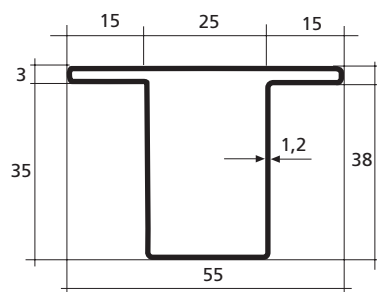
## Perfiles tubulares de acero inoxidable para puertas y ventanas

### Tubos especiales para ventanas y puertas

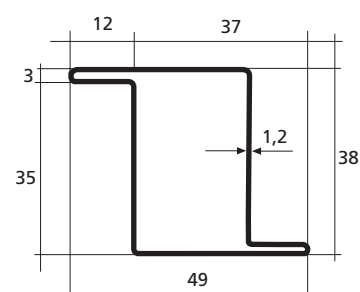
**1A** Kg ml 1,39



**1B** Kg ml 1,68

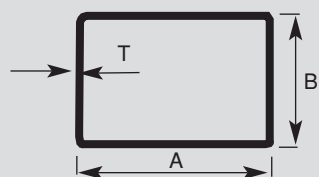


**1C** Kg ml 1,58



Calidad del material: AISI 304.






## Tubos rectangulares de acero inoxidable

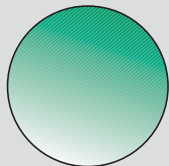
| Peso (Kg/m)      |              |       |       |       |       |        |        |        |        |
|------------------|--------------|-------|-------|-------|-------|--------|--------|--------|--------|
| Dimensiones (mm) | Espesor (mm) |       |       |       |       |        |        |        |        |
| A x B            | 1            | 1,2   | 1,5   | 2     | 2,5   | 3      | 4      | 5      | 6      |
| 20 x 10          | 0,453        | 0,538 | 0,661 |       |       |        |        |        |        |
| 20 x 15          | 0,533        | 0,634 | 0,781 | 1,016 |       |        |        |        |        |
| 25 x 10          | 0,533        | 0,634 | 0,781 |       |       |        |        |        |        |
| 25 x 15          | 0,613        | 0,729 | 0,901 | 1,176 |       |        |        |        |        |
| 30 x 10          | 0,613        | 0,729 | 0,901 | 1,176 |       |        |        |        |        |
| 30 x 15          | 0,693        | 0,825 | 1,020 | 1,335 |       |        |        |        |        |
| 30 x 20          | 0,772        | 0,921 | 1,140 | 1,495 |       |        |        |        |        |
| 35 x 20          | 0,852        | 1,017 | 1,259 | 1,654 |       |        |        |        |        |
| 40 x 15          | 0,852        | 1,017 | 1,259 | 1,654 |       |        |        |        |        |
| 40 x 20          | 0,932        | 1,112 | 1,379 | 1,814 |       |        |        |        |        |
| 40 x 27          | 1,044        | 1,246 | 1,547 | 2,037 |       |        |        |        |        |
| 40 x 30          | 1,091        | 1,304 | 1,618 | 2,133 |       | 3,124  |        |        |        |
| 50 x 20          | 1,091        | 1,304 | 1,618 | 2,133 |       | 3,124  |        |        |        |
| 50 x 25          | 1,171        | 1,399 | 1,738 | 2,292 |       | 3,363  |        |        |        |
| 50 x 30          | 1,251        | 1,495 | 1,858 | 2,452 |       | 3,602  |        |        |        |
| 50 x 40          |              |       | 2,097 | 2,771 |       | 4,081  |        |        |        |
| 60 x 20          |              | 1,495 | 1,858 | 2,452 |       | 3,602  |        |        |        |
| 60 x 30          |              | 1,686 | 2,097 | 2,771 | 3,432 | 4,081  |        |        |        |
| 60 x 40          |              | 1,88  | 2,34  | 3,09  | 3,831 | 4,559  | 5,979  |        |        |
| 70 x 40          |              |       | 2,575 | 3,409 | 4,229 | 5,038  |        |        |        |
| 80 x 40          |              |       | 2,814 | 3,728 | 4,628 | 5,516  | 7,255  | 8,943  | 10,582 |
| 80 x 60          |              |       |       | 4,366 |       | 6,473  | 8,531  | 10,538 | 12,496 |
| 100 x 40         |              |       | 3,293 | 4,366 |       | 6,473  | 8,531  | 10,538 | 12,496 |
| 100 x 50         |              |       |       | 4,685 |       | 6,952  | 9,169  | 11,336 | 13,453 |
| 100 x 60         |              |       |       | 5,004 |       | 7,430  | 9,807  | 12,133 | 14,410 |
| 100 x 80         |              |       |       | 5,641 |       | 8,387  | 11,083 | 13,728 | 16,324 |
| 120 x 40         |              |       |       | 5,004 |       | 7,430  | 9,807  | 12,133 | 14,410 |
| 120 x 60         |              |       |       | 5,641 |       | 8,387  | 11,083 | 13,728 | 16,324 |
| 120 x 80         |              |       |       | 6,279 |       | 9,344  | 12,359 | 15,323 | 18,237 |
| 140 x 80         |              |       |       |       |       | 10,301 | 13,635 | 16,918 | 20,151 |
| 150 x 50         |              |       |       |       |       | 9,344  | 12,359 | 15,323 | 18,237 |
| 150 x 100        |              |       |       |       |       | 11,736 | 15,548 | 19,310 | 23,022 |
| 160 x 80         |              |       |       |       |       | 11,258 | 14,910 | 18,513 | 22,065 |
| 200 x 100        |              |       |       |       |       | 14,129 | 18,738 | 23,298 | 27,807 |


**Norma de fabricación:** ASTM A-554  
**Calidad del material:** AISI 304, 316 L , 316 Ti  
**Tolerancias:** ASTM A-554  
**Acabados:** ver página 11.


 Otras dimensiones no indicadas, rogamos consulten.



## Barra redonda, cuadrada y hexagonal, de acero inoxidable

| Barra redonda  |  | Díametro mm | Peso Kg/m | Díametro mm | Peso Kg/m | Díametro mm | Peso Kg/m | Díametro mm | Peso Kg/m |
|--|--|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
| Tolerancia dimensional:<br>ISO h 7<br>ISO h 9<br> |  | 2           | 0,025     | 27          | 4,495     | 90          | 49,94     | 260         | 416,80    |
|  |  | 3           | 0,050     | 28          | 4,834     | 95          | 55,64     | 270         | 449,50    |
|  |  | 4           | 0,099     | 30          | 5,549     | 100         | 61,65     | 280         | 483,40    |
|  |  | 5           | 0,154     | 32          | 6,313     | 105         | 67,97     | 285         | 500,80    |
|  |  | 6           | 0,222     | 34          | 7,127     | 110         | 74,60     | 290         | 518,50    |
|  |  | 7           | 0,302     | 35          | 7,552     | 115         | 81,54     | 300         | 554,90    |
|  |  | 8           | 0,395     | 36          | 7,990     | 120         | 88,78     | 320         | 631,00    |
|  |  | 9           | 0,499     | 38          | 8,903     | 125         | 96,33     | 330         | 671,00    |
|  |  | 10          | 0,617     | 40          | 9,864     | 130         | 104,20    | 340         | 712,30    |
|  |  | 11          | 0,746     | 42          | 10,880    | 140         | 120,80    | 350         | 754,80    |
|  |  | 12          | 0,888     | 45          | 12,480    | 150         | 138,70    | 360         | 798,60    |
|  |  | 13          | 1,042     | 48          | 14,200    | 160         | 157,80    | 380         | 889,90    |
|  |  | 14          | 1,208     | 50          | 15,410    | 165         | 167,90    | 400         | 985,90    |
|  |  | 15          | 1,387     | 52          | 16,660    | 170         | 178,20    | 410         | 1035,00   |
|  |  | 16          | 1,578     | 55          | 18,650    | 180         | 199,80    | 420         | 1087,00   |
|  |  | 17          | 1,782     | 58          | 20,720    | 185         | 211,00    | 430         | 1139,00   |
|  |  | 18          | 1,998     | 60          | 22,200    | 190         | 222,60    | 440         | 1193,00   |
|  |  | 19          | 2,226     | 65          | 26,050    | 200         | 246,60    | 445         | 1220,00   |
|  |  | 20          | 2,466     | 68          | 28,490    | 210         | 271,90    | 460         | 1304,00   |
|  |  | 22          | 2,984     | 70          | 30,210    | 220         | 298,40    | 480         | 1420,00   |
|  |  | 24          | 3,551     | 75          | 34,680    | 230         | 326,10    | 500         | 1541,00   |
|  |  | 25          | 3,853     | 80          | 39,460    | 240         | 355,10    | 525         | 1699,00   |
|  |  | 26          | 4,168     | 85          | 44,520    | 250         | 385,30    | 550         | 1865,00   |

| Barra cuadrada  |  | Lado mm | Peso Kg/m | Lado mm | Peso Kg/m | Lado mm | Peso Kg/m | Lado mm | Peso Kg/m |
|---|--|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
|  |  | 5       | 0,196     | 14      | 1,539     | 25      | 4,906     | 45      | 15,900    |
|   |  | 6       | 0,283     | 15      | 1,766     | 30      | 7,065     | 50      | 19,630    |
|   |  | 8       | 0,502     | 16      | 2,010     | 32      | 8,038     | 55      | 23,750    |
|   |  | 10      | 0,785     | 20      | 3,140     | 35      | 9,616     | 60      | 28,260    |
|   |  | 12      | 1,130     | 22      | 3,799     | 40      | 12,560    | 70      | 38,460    |

| Barra hexagonal   |  | EC mm | Peso Kg/m | EC mm | Peso Kg/m | EC mm | Peso Kg/m | EC mm | Peso Kg/m |
|---|--|-------|-----------|-------|-----------|-------|-----------|-------|-----------|
|  |  | 5     | 0,170     | 13    | 1,149     | 27    | 4,956     | 60    | 24,470    |
|   |  | 6     | 0,245     | 14    | 1,332     | 30    | 6,118     | 65    | 28,720    |
|   |  | 7     | 0,333     | 15    | 1,530     | 32    | 6,961     | 70    | 33,320    |
|   |  | 8     | 0,435     | 16    | 1,740     | 36    | 8,810     | 75    | 38,240    |
|   |  | 9     | 0,551     | 17    | 1,965     | 41    | 11,430    | 80    | 43,510    |
|   |  | 10    | 0,680     | 19    | 2,454     | 46    | 14,390    | 90    | 55,080    |
|   |  | 11    | 0,823     | 22    | 3,290     | 50    | 17,000    | 95    | 61,360    |
|   |  | 12    | 0,979     | 24    | 3,916     | 55    | 20,570    | 100   | 67,980    |



## Pletinas de acero inoxidable

| DIN 1017 - EN 10 088 2 |            |      |      |      |      |       |       |       |       |       |       |       |       |       |       |
|------------------------|------------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ancho<br>(mm)          | Espesor mm |      |      |      |      |       |       |       |       |       |       |       |       |       |       |
|                        | 2          | 3    | 4    | 5    | 6    | 8     | 10    | 12    | 15    | 20    | 25    | 30    | 35    | 40    | 50    |
| 10                     | 0,16       | 0,24 | 0,32 | 0,40 |      |       |       |       |       |       |       |       |       |       |       |
| 12                     | 0,19       | 0,29 | 0,38 | 0,48 | 0,57 |       |       |       |       |       |       |       |       |       |       |
| 15                     | 0,24       | 0,36 | 0,48 | 0,60 | 0,72 | 0,94  | 1,18  |       |       |       |       |       |       |       |       |
| 20                     | 0,32       | 0,48 | 0,64 | 0,80 | 0,95 | 1,27  | 1,59  | 1,84  |       |       |       |       |       |       |       |
| 25                     | 0,40       | 0,60 | 0,80 | 0,99 | 1,19 | 1,59  | 1,99  | 2,35  |       |       |       |       |       |       |       |
| 30                     | 0,48       | 0,72 | 0,95 | 1,19 | 1,43 | 1,91  | 2,39  | 2,82  | 3,53  | 4,71  | 5,88  |       |       |       |       |
| 35                     | 0,56       | 0,83 | 1,11 | 1,39 | 1,67 | 2,23  | 2,78  | 3,29  | 4,12  | 5,50  |       |       |       |       |       |
| 40                     | 0,64       | 0,95 | 1,27 | 1,59 | 1,91 | 2,54  | 3,18  | 3,82  | 4,71  | 6,90  | 7,85  | 9,42  |       |       |       |
| 45                     | 0,72       | 1,07 | 1,43 | 1,79 | 2,15 | 2,86  | 3,58  | 4,29  |       |       |       |       |       |       |       |
| 50                     | 0,80       | 1,19 | 1,59 | 1,99 | 2,39 | 3,18  | 3,98  | 4,77  | 5,88  | 7,85  | 9,81  | 11,77 | 13,74 | 15,70 |       |
| 60                     |            | 1,43 | 1,91 | 2,39 | 2,86 | 3,82  | 4,77  | 5,72  | 7,06  | 9,42  | 11,77 | 14,13 | 16,48 | 18,84 |       |
| 65                     |            | 1,55 | 2,07 | 2,58 | 3,10 | 4,13  | 5,17  | 6,20  |       |       |       |       |       |       |       |
| 70                     |            | 1,67 | 2,23 | 2,78 | 3,34 | 4,45  | 5,57  | 6,68  | 8,24  | 10,99 | 13,74 | 16,49 | 19,23 | 21,98 | 27,48 |
| 75                     |            | 1,79 | 2,39 | 2,98 | 3,58 | 4,77  | 5,96  | 7,16  |       |       |       |       |       |       |       |
| 80                     |            | 1,91 | 2,54 | 3,18 | 3,32 | 5,09  | 6,36  | 7,63  | 9,42  | 12,56 | 15,70 | 18,84 | 21,98 | 25,12 | 31,40 |
| 90                     |            | 2,15 | 2,86 | 3,58 | 4,29 | 5,72  | 7,16  | 8,59  | 10,60 | 14,13 |       |       |       |       |       |
| 100                    |            | 2,39 | 3,18 | 3,98 | 4,77 | 6,36  | 7,95  | 9,54  | 11,77 | 15,70 | 19,62 | 23,15 | 27,47 | 31,40 | 39,25 |
| 110                    |            |      | 3,50 | 4,37 | 5,25 | 7,00  | 8,75  | 10,49 |       |       |       |       |       |       |       |
| 120                    |            |      | 3,82 | 4,77 | 5,72 | 7,63  | 9,54  | 11,45 | 14,13 | 18,84 | 23,55 | 28,26 |       |       |       |
| 130                    |            |      |      | 5,17 | 6,20 | 8,27  | 10,34 | 12,40 |       |       |       |       |       |       |       |
| 140                    |            |      |      | 5,57 | 6,68 | 8,90  | 11,13 | 13,36 |       |       |       |       |       |       |       |
| 150                    |            |      |      | 5,96 | 7,16 | 9,54  | 11,93 | 14,31 | 17,66 | 23,55 |       |       |       |       |       |
| 200                    |            |      |      | 7,95 | 9,54 | 12,72 | 15,90 | 19,08 | 23,55 | 31,40 |       |       |       |       |       |

Peso  
Kg/m



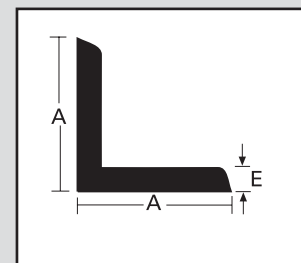
Acabados: Ver página 11.

Calidad del material: AISI 304, 304 L, 316 y 316 L.

Norma de fabricación: DIN 1016-1017-1543



## Angulos laminados en caliente de acero inoxidable



| Dimen-<br>siones<br>A X A<br>mm | Tolerancias<br>Lados<br>mm | Espesor mm |            |            |            |            |            |            |            |            |            |            |            |            |            |
|---------------------------------|----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                                 |                            | 3          |            | 4          |            | 5          |            | 6          |            | 7          |            | 8          |            | 10         |            |
|                                 |                            | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg | Tol.<br>mm | Peso<br>Kg |
| 20 x 20                         | ± 1.5                      | ± 0,4      | 0,89       |            |            |            |            |            |            |            |            |            |            |            |            |
| 25 x 25                         | ± 1.5                      | ± 0,5      | 1,13       |            |            |            |            |            |            |            |            |            |            |            |            |
| 30 x 30                         | ± 2.0                      | ± 0,5      | 1,37       | ± 0,5      | 1,77       |            |            |            |            |            |            |            |            |            |            |
| 40 x 40                         | ± 2.0                      | ± 0,6      | 1,85       | ± 0,6      | 2,45       | ± 0,6      | 2,98       |            |            |            |            |            |            |            |            |
| 50 x 50                         | ± 2.0                      |            |            | ± 0,6      | 3,09       | ± 0,6      | 3,81       | ± 0,6      | 4,48       |            |            |            |            |            |            |
| 60 x 60                         | ± 3.0                      |            |            |            |            |            |            | ± 0,6      | 5,50       |            |            |            |            |            |            |
| 70 x 70                         | ± 3.0                      |            |            |            |            |            |            |            |            | ± 0,7      | 7,50       |            |            |            |            |
| 80 x 80                         | ± 3.0                      |            |            |            |            |            |            |            |            |            |            | ± 0,7      | 9,80       |            |            |
| 100 x 100                       | ± 4.0                      |            |            |            |            |            |            |            |            |            |            |            |            | ± 0,8      | 15,10      |

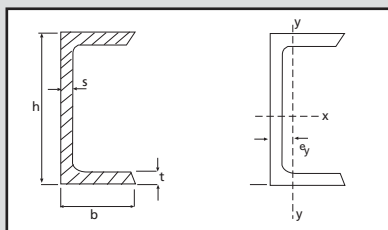
**Ejecución:** Laminados en caliente, tratados térmicamente y decapados.  
**Longitudes:** 6 metros  
**Tolerancias:** Según DIN 1028  
**Calidad del material:** AISI 304 y 316 L





## Perfiles en "U" y en "T", laminados en caliente de acero inoxidable

| Denominación | dimensiones mm<br>h x b x s x t | Peso Kg/m | Area cm <sup>2</sup> | e <sub>y</sub> cm | I <sub>x</sub> cm <sup>4</sup> | W <sub>x</sub> cm <sup>3</sup> | I <sub>y</sub> cm <sup>4</sup> | W <sub>y</sub> cm <sup>3</sup> |
|--------------|---------------------------------|-----------|----------------------|-------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 30           | 30 x 15 x 4 x 4,5               | 1,78      | 2,27                 | 0,53              | 2,57                           | 1,71                           | 0,40                           | 0,42                           |
|              | 40 x 20 x 3 x 3                 | 1,80      | 2,27                 | 0,59              | 5,22                           | 2,61                           | 0,78                           | 0,55                           |
| 40           | 40 x 20 x 4 x 4                 | 2,30      | 2,90                 | 0,63              | 6,44                           | 3,22                           | 0,97                           | 0,71                           |
|              | 50 x 25 x 3 x 3                 | 2,28      | 2,87                 | 0,72              | 10,64                          | 4,26                           | 1,60                           | 0,90                           |
| 50           | 50 x 25 x 5 x 6                 | 4,20      | 5,30                 | 0,84              | 17,60                          | 7,05                           | 2,74                           | 1,65                           |
|              | 60 x 30 x 6 x 6                 | 5,10      | 6,50                 | 0,96              | 32,80                          | 10,90                          | 5,08                           | 2,49                           |
| 80           | 80 x 40 x 3 x 3                 | 3,80      | 4,86                 | 1,06              | 48,69                          | 12,17                          | 7,10                           | 2,42                           |
|              | 80 x 40 x 4 x 4                 | 4,90      | 6,13                 | 1,13              | 59,20                          | 14,80                          | 8,90                           | 3,12                           |
|              | 80 x 40 x 5 x 5                 | 5,90      | 7,55                 | 1,16              | 71,10                          | 17,80                          | 10,90                          | 3,83                           |
|              | 80 x 40 x 6 x 6                 | 7,06      | 8,90                 | 1,19              | 81,70                          | 20,40                          | 12,40                          | 4,42                           |
|              | 80 x 45 x 6 x 8                 | 8,80      | 11,20                | 1,55              | 108,00                         | 27,10                          | 21,70                          | 7,38                           |
| 100          | 100 x 50 x 4 x 4                | 6,10      | 7,82                 | 1,36              | 121,00                         | 24,30                          | 18,10                          | 4,99                           |
|              | 100 x 50 x 5 x 5                | 7,65      | 9,64                 | 1,41              | 146,00                         | 29,20                          | 22,10                          | 6,16                           |
|              | 100 x 50 x 6 x 6                | 8,90      | 11,40                | 1,43              | 168,00                         | 33,70                          | 25,30                          | 7,09                           |
|              | 100 x 50 x 6 x 8,5              | 10,60     | 13,60                | 1,67              | 210,00                         | 41,90                          | 33,00                          | 9,90                           |
| 120          | 120 x 60 x 6 x 6                | 10,90     | 13,80                | 1,69              | 300,00                         | 50,00                          | 45,60                          | 10,60                          |
| 130          | 130 x 65 x 6 x 6                | 11,90     | 15,10                | 1,80              | 390,00                         | 60,00                          | 58,90                          | 12,50                          |
|              | 130 x 65 x 9 x 9                | 17,40     | 21,90                | 1,91              | 538,00                         | 82,80                          | 81,50                          | 17,80                          |
| 140          | 140 x 70 x 6 x 6                | 12,90     | 16,46                | 1,93              | 496,20                         | 70,90                          | 75,20                          | 14,90                          |
|              | 140 x 70 x 7 x 7                | 14,90     | 18,80                | 1,96              | 558,00                         | 79,70                          | 84,20                          | 16,70                          |
|              | 140 x 70 x 9 x 9                | 18,80     | 23,40                | 2,04              | 683,00                         | 97,50                          | 103,00                         | 20,80                          |
| 150          | 150 x 75 x 6 x 6                | 13,80     | 17,50                | 2,05              | 609,00                         | 81,20                          | 92,30                          | 17,00                          |
|              | 150 x 75 x 9 x 9                | 20,00     | 25,50                | 2,16              | 850,00                         | 113,00                         | 120,00                         | 24,00                          |
| 160          | 160 x 80 x 6 x 6                | 14,80     | 18,80                | 2,18              | 750,00                         | 93,80                          | 114,20                         | 19,60                          |
|              | 160 x 80 x 8 x 8                | 19,40     | 24,50                | 2,24              | 946,00                         | 118,00                         | 143,00                         | 24,90                          |
| 180          | 180 x 90 x 6 x 6                | 16,80     | 21,40                | 2,42              | 1092,00                        | 121,00                         | 165,00                         | 25,10                          |
|              | 180 x 90 x 9 x 9                | 24,60     | 31,00                | 2,52              | 1517,00                        | 169,00                         | 229,00                         | 35,30                          |
| 200          | 200 x 100 x 6 x 6               | 18,70     | 23,60                | 2,67              | 1490,00                        | 149,00                         | 227,00                         | 30,90                          |
|              | 200 x 100 x 8 x 8               | 24,60     | 30,90                | 2,72              | 1907,00                        | 191,00                         | 287,00                         | 39,50                          |
|              | 200 x 100 x 10 x 10             | 30,00     | 38,20                | 2,81              | 2310,00                        | 231,00                         | 350,00                         | 48,80                          |
| 220          | 220 x 80 x 10 x 13              | 31,80     | 40,80                | 2,28              | 2880,00                        | 262,00                         | 231,00                         | 40,50                          |
| 240          | 240 x 85 x 18 x 22              | 56,30     | 72,20                | 2,52              | 5467,00                        | 455,00                         | 398,00                         | 66,50                          |



Perfiles en "U" producidos en caliente, con tratamiento térmico y decapados.

**Tolerancias:** Según DIN 1026.

**Calidad del material:** AISI 304 y 316.

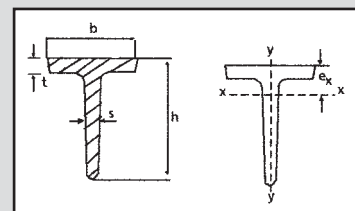
Suministro en largos de 4 a 7 metros.

Perfiles en "T" producidos en caliente, con tratamiento térmico y decapados.

**Tolerancias:** Según DIN 1024

Suministro en largos de 4 a 6 metros.

**Calidad del material:** AISI 304 y 316 .



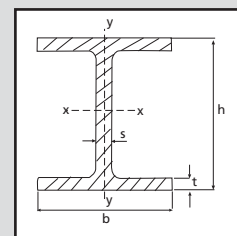
| Denominación | dimensiones mm<br>h x b x s x t | Peso Kg/m | Area cm <sup>2</sup> | e <sub>x</sub> cm | I <sub>x</sub> cm <sup>4</sup> | W <sub>x</sub> cm <sup>3</sup> | I <sub>y</sub> cm <sup>4</sup> | W <sub>y</sub> cm <sup>3</sup> |
|--------------|---------------------------------|-----------|----------------------|-------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| T 20         | 20 x 20 x 4                     | 1,20      | 1,50                 | 0,64              | 0,48                           | 0,35                           | 0,26                           | 0,26                           |
| T 25         | 25 x 25 x 3                     | 1,10      | 1,40                 | 0,72              | 0,79                           | 0,46                           | 0,37                           | 0,30                           |
|              | 25 x 25 x 4                     | 1,50      | 1,90                 | 0,75              | 1,01                           | 0,89                           | 0,52                           | 0,41                           |
| T 30         | 30 x 30 x 3                     | 1,40      | 1,72                 | 0,85              | 1,41                           | 0,65                           | 0,64                           | 0,42                           |
|              | 30 x 30 x 4                     | 1,80      | 2,30                 | 0,88              | 1,89                           | 0,90                           | 0,93                           | 0,62                           |
| T 40         | 40 x 40 x 4                     | 2,50      | 3,10                 | 1,12              | 4,55                           | 1,27                           | 2,08                           | 2,04                           |
| T 40         | 40 x 40 x 5                     | 3,00      | 3,80                 | 1,12              | 5,28                           | 1,84                           | 2,58                           | 2,29                           |
| T 50         | 50 x 50 x 5                     | 3,80      | 4,90                 | 1,42              | 11,60                          | 3,23                           | 5,37                           | 2,15                           |
| T 60         | 60 x 60 x 6                     | 5,50      | 7,00                 | 1,70              | 24,00                          | 5,57                           | 11,10                          | 3,71                           |
| T 70         | 70 x 70 x 7                     | 7,50      | 9,50                 | 1,98              | 43,20                          | 8,60                           | 20,00                          | 5,72                           |
| T 80         | 80 x 80 x 8                     | 9,70      | 12,40                | 2,27              | 73,70                          | 12,90                          | 34,20                          | 8,55                           |
| T 90         | 90 x 90 x 9                     | 12,20     | 15,60                | 2,56              | 118,00                         | 18,30                          | 54,90                          | 12,20                          |
| T100         | 100 x 100 x 8                   | 12,40     | 15,80                | 2,74              | 149,00                         | 20,40                          | 66,40                          | 13,30                          |
|              | 100 x 100 x 10                  | 15,10     | 19,20                | 2,85              | 180,00                         | 25,20                          | 83,70                          | 16,70                          |
| T 120        | 120 x 120 x 13                  | 25,10     | 29,70                | 3,44              | 401,00                         | 46,80                          | 189,00                         | 31,50                          |



## Perfiles "IPB" y "IPE" laminados, en caliente de acero inoxidable

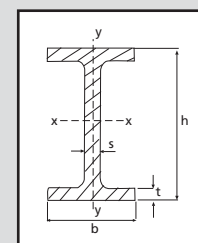
| IPB | dimensiones<br>mm<br>h x b x s x t | Peso<br>Kg/m | Area<br>cm <sup>2</sup> | I <sub>x</sub><br>cm <sup>4</sup> | W <sub>x</sub><br>cm <sup>3</sup> | I <sub>y</sub><br>cm <sup>4</sup> | W <sub>y</sub><br>cm <sup>3</sup> |
|-----|------------------------------------|--------------|-------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 100 | 100 x 100 x 6 x 8                  | 17,10        | 21,80                   | 381,00                            | 76,20                             | 132,00                            | 26,40                             |
|     | 100 x 100 x 6 x 10                 | 20,40        | 26,20                   | 452,00                            | 90,50                             | 166,00                            | 33,30                             |
| 120 | 120 x 120 x 6,5 x 11               | 28,40        | 36,90                   | 911,00                            | 152,00                            | 337,00                            | 56,10                             |
|     | 120 x 120 x 10 x 12,5              | 32,40        | 41,30                   | 977,00                            | 163,00                            | 360,00                            | 60,10                             |
| 140 | 140 x 140 x 7 x 12                 | 33,40        | 42,20                   | 1490,00                           | 212,00                            | 530,00                            | 76,30                             |
|     | 140 x 140 x 9 x 12                 | 35,80        | 45,60                   | 1520,00                           | 217,00                            | 528,00                            | 76,00                             |
| 150 | 150 x 150 x 7 x 10                 | 31,80        | 40,10                   | 1640,00                           | 219,00                            | 563,00                            | 75,10                             |
| 160 | 160 x 160 x 10 x 13                | 42,90        | 55,00                   | 2470,00                           | 308,00                            | 814,00                            | 102,00                            |
|     | 160 x 160 x 12 x 20                | 45,30        | 57,80                   | 2290,00                           | 286,00                            | 392,00                            | 174,00                            |
| 180 | 180 x 180 x 15 x 15                | 62,20        | 76,50                   | 4044,00                           | 449,00                            | 1349,00                           | 152,00                            |
| 200 | 200 x 200 x 8 x 12                 | 50,40        | 64,80                   | 4800,00                           | 480,00                            | 1596,00                           | 159,60                            |
| 250 | 250 x 250 x 9 x 14                 | 72,40        | 92,20                   | 10800,00                          | 867,00                            | 3650,00                           | 292,00                            |
| 300 | 300 x 300 x 10 x 16                | 100,90       | 128,60                  | 21922,00                          | 1461,00                           | 7116,00                           | 474,00                            |

Perfiles IPB producidos en caliente.  
Recocidos y decapados.  
**Tolerancias:** Según DIN 1025.  
**Suministro:** en largos de 4 a 6 metros.  
**Calidad del material:** AISI 304 y 316.  
Suministro en largos de 4 a 7 metros.



| Denominación<br>IPE | dimensiones<br>mm<br>h x b x s x t | Peso<br>Kg/m | Area<br>cm <sup>2</sup> | I <sub>x</sub><br>cm <sup>4</sup> | W <sub>x</sub><br>cm <sup>3</sup> | I <sub>y</sub><br>cm <sup>4</sup> | W <sub>y</sub><br>cm <sup>3</sup> |
|---------------------|------------------------------------|--------------|-------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| 80                  | 80 x 46 x 3,8 x 5,2                | 6,20         | 7,90                    | 82,40                             | 20,60                             | 8,34                              | 3,62                              |
| 100                 | 100 x 55 x 5,7 x 5,7               | 9,00         | 11,50                   | 177                               | 35,40                             | 15,70                             | 5,70                              |
| 120                 | 120 x 64 x 7,5 x 7                 | 12,90        | 16,60                   | 344                               | 57,40                             | 26,50                             | 8,29                              |
| 140                 | 140 x 73 x 4,7 x 6,9               | 12,90        | 16,60                   | 546                               | 77,90                             | 43,60                             | 11,90                             |
| 160                 | 160 x 82 x 10 x 12                 | 26,30        | 33,70                   | 1320                              | 164                               | 109                               | 26,40                             |
|                     | 160 x 82 x 10 x 13                 | 27,70        | 35,50                   | 1388                              | 173                               | 120                               | 29,20                             |
| 180                 | 180 x 91 x 9 x 11                  | 29,60        | 37,70                   | 1858                              | 206                               | 143                               | 31,50                             |
|                     | 180 x 91 x 12 x 13                 | 34,20        | 43,80                   | 2060                              | 229                               | 158                               | 34,70                             |
| 200                 | 200 x 100 x 10 x 12                | 32,90        | 42,20                   | 2619                              | 262                               | 186                               | 37,30                             |
|                     | 200 x 100 x 12 x 12                | 35,70        | 45,80                   | 2710                              | 271                               | 188                               | 37,50                             |
| 220                 | 220 x 110 x 15 x 20                | 56,20        | 72,10                   | 5206                              | 473                               | 437                               | 79,50                             |
| 240                 | 240 x 120 x 16 x 20                | 61,00        | 78,20                   | 6550                              | 546                               | 468                               | 78,00                             |

Perfiles IPE producidos en caliente.  
Recocidos y decapados.  
**Tolerancias:** Según DIN 1025.  
**Suministro:** en largos de 4 a 6 metros.  
**Calidad del material:** AISI 304 y 316.







## Accesorios para decoración de acero inoxidable



Accesorios fabricados en acero inoxidable Aisi 304, para ser montados evitando soldaduras. La unión de los accesorios aquí relacionados, se realiza con un sistema de enchufe (mediante pegamento especial "Loctite 638") o bien roscado. Para ver gama dimensional rogamos consulten. Acabado estandar satinado exterior gr 320.



## Chapas y bobinas de acero inoxidable

### CHAPAS

Laminado en caliente

### Dimensiones bobinas y chapas

### BOBINAS

Laminado en frío

| Espesor / mm | Longitud min. | Longitud max. | Espesor / mm   | Longitud min.                 | Longitud max.                  |
|--------------|---------------|---------------|--|-------------------------------|--------------------------------|
| 2-13         | 1000 mm       | 10.000 mm     | 0,4; 0,5; 0,6<br>0,8; 1; 1,2<br>1,5 a 8  | 1250 mm<br>1500 mm<br>2000 mm | 3000 mm<br>6000 mm<br>10000 mm |
| Espesor / mm | Ancho max.    |               | - Longitud de bobinas: 45 m. mínimo<br>- Anchos estándar: 100-1250-1500-2000 mm.<br>- Otros anchos a petición<br><br>CALIDADES: 304 / 304L / 321 / 316 / 316L / 316 Ti |                               |                                |
| 2            | TIPO 1        | TIPO (2)      |  |                               |                                |
|              | -             | 1000 mm       |  |                               |                                |
| 2,5          | 1000 mm       | 1250 mm       |  |                               |                                |
| 3            | 1000 mm       | 1500 mm       |  |                               |                                |
| 4            | 1500 mm       | 1500 mm       |  |                               |                                |
| 5            | 1500 mm       | 2000 mm       |  |                               |                                |
| 6            | 1500 mm       | 2000 mm       |  |                               |                                |
| 7            | 1500 mm       | 2000 mm       |  |                               |                                |
| 8 a 13       | 2000 mm       | 2000 mm       |  |                               |                                |

\* Bajo consulta podemos ofrecer formatos a medida en longitud, ancho y espesor.

\* Para calidades no indicadas, rogamos consulten. (310, 314, 904 L, 1.4462)

Laminado en caliente

### Rugosidad

Laminado en frío

| Espesor | R <sub>a</sub> | Espesor | R <sub>a</sub> | Espesor | R <sub>a</sub> | Espesor | R <sub>a</sub> |
|---------|----------------|---------|----------------|---------|----------------|---------|----------------|
| 2 mm    | max. 5µm       | 8 mm    | max. 5µm       | < 1 mm  | max. 0,25 µm   | 6 mm    | max. 0,90 µm   |
| 3 mm    |                | 9 mm    |                | 1 mm    | max. 0,30 µm   | 7 mm    | max. 1,00 µm   |
| 4 mm    |                | 10 mm   |                | 2 mm    | max. 0,30 µm   | 8 mm    | max. 1,20 µm   |
| 5 mm    |                | 11 mm   |                | 3 mm    | max. 0,35 µm   |         |                |
| 6 mm    |                | 12 mm   |                | 4 mm    | max. 0,40 µm   |         |                |
| 7 mm    |                | 13 mm   |                | 5 mm    | max. 0,70 µm   |         |                |

### Tolerancias de espesor

| Espesor  |          | Tolerancias     |                 |                 | Espesor  |         | Tolerancias  |
|----------|----------|-----------------|-----------------|-----------------|----------|---------|--------------|
| MIN.     | MAX.     | ANCHO ≤ 1200 mm | ANCHO ≤ 1500 mm | ANCHO ≤ 2000 mm | Min.     | Max.    |              |
| 2,00 mm  | 2,49 mm  | +/- 0,18 mm     | +/- 0,21mm      | +/- 0,25 mm     | 0,40 mm  | 0,49 mm | +/- 0,030 mm |
| 2,50 mm  | 2,99 mm  | +/- 0,20 mm     | +/- 0,22 mm     | +/- 0,26 mm     | 0,50 mm  | 0,69 mm | +/- 0,040 mm |
| 3,00 mm  | 3,99 mm  | +/- 0,22 mm     | +/- 0,24 mm     | +/- 0,27 mm     | 0,70 mm  | 0,99 mm | +/- 0,050 mm |
| 4,00 mm  | 4,99 mm  | +/- 0,24 mm     | +/- 0,26 mm     | +/- 0,29 mm     | 1,00 mm  | 1,09 mm | +/- 0,050 mm |
| 5,00 mm  | 5,99 mm  | +/- 0,26 mm     | +/- 0,28 mm     | +/- 0,31 mm     | 1,10 mm  | 1,49 mm | +/- 0,060 mm |
| 6,00 mm  | 7,99 mm  | +/- 0,29 mm     | +/- 0,30 mm     | +/- 0,35 mm     | 1,50 mm  | 1,99 mm | +/- 0,075 mm |
| 8,00 mm  | 9,99 mm  | +/- 0,32mm      | +/- 0,33 mm     | +/- 0,40 mm     | 2,00 mm  | 2,49 mm | +/- 0,100 mm |
| 10,00 mm | 12,49 mm | +/- 0,35 mm     | +/- 0,36 mm     | +/- 0,43 mm     | 2,50 mm  | 2,99 mm | +/- 0,120 mm |
| 12,50 mm | 13,00 mm | +/- 0,37mm      | +/- 0,38 mm     | +/- 0,46 mm     | 3,00 mm  | 3,49 mm | +/- 0,120 mm |
|          |          |                 |                 |                 | 3,50 mm  | 3,99 mm | +/- 0,130 mm |
|          |          |                 |                 |                 | 4,00 mm  | 4,49 mm | +/- 0,140 mm |
|          |          |                 |                 |                 | 4,50 mm  | 4,99 mm | +/- 0,140 mm |
|          |          |                 |                 |                 | 5,00 mm  | 5,99 mm | +/- 0,160 mm |
|          |          |                 |                 |                 | 6,00 mm  | 6,99 mm | +/- 0,160 mm |
|          |          |                 |                 |                 | 7, 00 mm | 8,00 mm | +/- 0,200 mm |



## Chapa lagrimada de acero inoxidable

| Dimensiones |                   |              |                          |
|-------------|-------------------|--------------|--------------------------|
| Espesor     | Ancho mm          | Longitud     | * Peso Kg/m <sup>2</sup> |
| 3 + L       | 1000 mm           | Máximo 6 mts | 27-33                    |
| 3,5 + L     | 1000 mm           | Máximo 6 mts | 30-36                    |
| 4 + L       | 1000 mm / 1250 mm | Máximo 6 mts | 34-40                    |
| 4,5 + L     | 1000 mm / 1250 mm | Máximo 6 mts | 38-45                    |
| 5 + L       | 1000 mm / 1250 mm | Máximo 6 mts | 42-49                    |
| 6 + L       | 1000 mm / 1250 mm | Máximo 6 mts | 50-57                    |
| 7 + L       | 1000 mm / 1250 mm | Máximo 6 mts | 58-65                    |
| 8 + L       | 1000 mm / 1250 mm | Máximo 6 mts | 66-70                    |

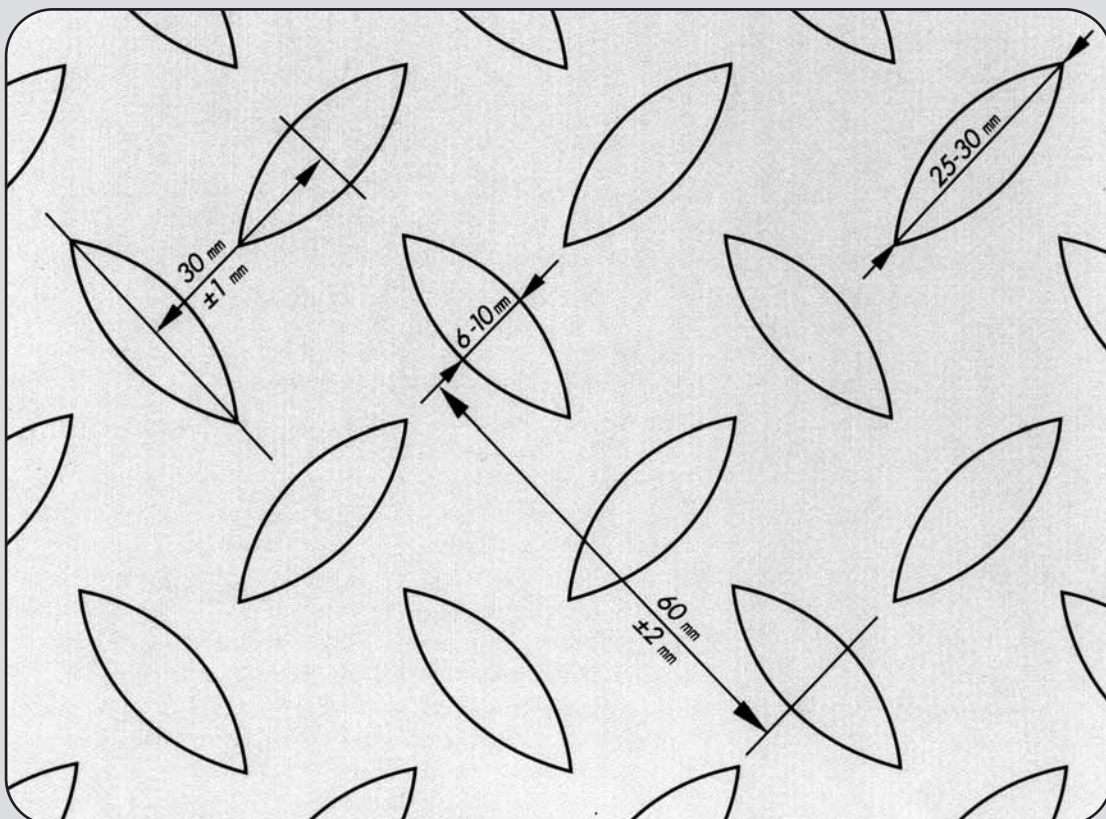
L= Espesor de la lágrima

\* Los pesos indicados son aproximados.

Acabados: Laminada en caliente, recocida y decapada.

Calidad del material: AISI 304/304L/316/321

| Lágrima    |           |          |
|------------|-----------|----------|
| Longitud   | Ancho     | Espesor  |
| 25 a 32 mm | 6 a 10 mm | 1 a 2 mm |



Se pueden suministrar en otros modelos. Rogamos consulten a nuestro Departamento Comercial.





# Gama ASTM

de acero inoxidable





# Gama ASTM

## Tubos soldados y sin soldadura

Dimensiones según ASME / ANSI B 36.19 y B 36.10  
Pesos lineales en lbs/pie y Kg/metro.

| Pulgadas nominales | Diámetro D | Schedule 5 S |       |           | Schedule 10 S |           | Schedule 40 S/STD |           | Schedule 80 S/XS |           | Schedule 160 |           | Schedule XXS |  |
|--------------------|------------|--------------|-------|-----------|---------------|-----------|-------------------|-----------|------------------|-----------|--------------|-----------|--------------|--|
|                    | Exterior   | Espesor T    | Peso  | Espesor T | Peso          | Espesor T | Peso              | Espesor T | Peso             | Espesor T | Peso         | Espesor T | Peso         |  |
|                    | Pulgadas   | Pulgadas     | lbs/p | Pulgadas  | lbs/p         | Pulgadas  | lbs/p             | Pulgadas  | lbs/p            | Pulgadas  | lbs/p        | Pulgadas  | lbs/p        |  |
|                    | mm         | mm           | Kg/m  | mm        | Kg/m          | mm        | Kg/m              | mm        | Kg/m             | mm        | Kg/m         | mm        | Kg/m         |  |
| 1/4"               | 0.540      |              |       | 0.065     | 0.33          | 0.088     | 0.43              | 0.119     | 0.54             |           |              |           |              |  |
|                    | 13,72      |              |       | 1,65      | 0,49          | 2,24      | 0,64              | 3,02      | 0,80             |           |              |           |              |  |
| 3/8"               | 0.675      |              |       | 0.065     | 0.42          | 0.091     | 0.57              | 0.126     | 0.74             |           |              |           |              |  |
|                    | 17,15      |              |       | 1,65      | 0,63          | 2,31      | 0,85              | 3,20      | 1,11             |           |              |           |              |  |
| 1/2"               | 0.840      | 0.065        | 0.54  | 0.083     | 0.68          | 0.109     | 0.86              | 0.147     | 1.10             | 0.188     | 1.32         |           |              |  |
|                    | 21,34      | 1,65         | 0,81  | 2,11      | 1,01          | 2,77      | 1,28              | 0,73      | 1,64             | 4,78      | 1,97         |           |              |  |
| 3/4"               | 1.050      | 0.065        | 0.69  | 0.083     | 0.87          | 0.113     | 1.14              | 0.154     | 1.49             | 0.219     | 1.97         | 0.308     | 2.48         |  |
|                    | 26,67      | 1,65         | 1,03  | 2,11      | 1,30          | 2,87      | 1,71              | 3,91      | 2,23             | 5,56      | 2,94         | 7,82      | 3,70         |  |
| 1"                 | 1.315      | 0.065        | 0.88  | 0.109     | 1.42          | 0.133     | 1.70              | 0.179     | 2.20             | 0.250     | 2.88         | 0.358     | 3.71         |  |
|                    | 33,40      | 1,65         | 1,31  | 2,77      | 2,12          | 3,38      | 2,54              | 4,55      | 3,28             | 6,35      | 4,29         | 9,09      | 5,53         |  |
| 1 1/4"             | 1.660      | 0.065        | 1.12  | 0.109     | 1.83          | 0.140     | 2.31              | 0.191     | 3.04             | 0.250     | 3.82         | 0.382     | 5.29         |  |
|                    | 42,16      | 1,65         | 1,67  | 2,77      | 2,73          | 3,56      | 3,44              | 4,85      | 4,53             | 6,35      | 5,70         | 9,70      | 7,89         |  |
| 1 1/2"             | 1.900      | 0.065        | 1.29  | 0.109     | 2.11          | 0.145     | 2.76              | 0.200     | 3.67             | 0.281     | 4.93         | 0.400     | 6.51         |  |
|                    | 48,26      | 1,65         | 1,92  | 2,77      | 3,16          | 3,68      | 4,11              | 5,08      | 5,49             | 7,14      | 7,36         | 10,16     | 9,70         |  |
| 2"                 | 2.375      | 0.065        | 1.62  | 0.109     | 2.68          | 0.154     | 3.70              | 0.218     | 5.09             | 0.343     | 7.57         | 0.436     | 9.16         |  |
|                    | 60,33      | 1,65         | 2,42  | 2,77      | 3,99          | 3,91      | 5,52              | 5,54      | 7,59             | 8,71      | 11,26        | 11,07     | 13,64        |  |
| 2 1/2"             | 2.875      | 0.083        | 2.51  | 0.120     | 3.58          | 0.203     | 5.88              | 0.276     | 7.77             | 0.375     | 10.16        | 0.552     | 13.90        |  |
|                    | 73,03      | 2,11         | 3,74  | 3,05      | 5,34          | 5,16      | 8,76              | 7,01      | 11,58            | 9,52      | 15,14        | 14,02     | 20,70        |  |
| 3"                 | 3.500      | 0.083        | 3.07  | 0.120     | 4.40          | 0.216     | 7.69              | 0.300     | 10.41            | 0.438     | 14.55        | 0.600     | 18.86        |  |
|                    | 88,90      | 2,11         | 4,58  | 3,05      | 6,55          | 5,49      | 11,46             | 7,62      | 15,50            | 11,13     | 21,66        | 15,24     | 28,10        |  |
| 3 1/2"             | 4.000      | 0.083        | 3.52  | 0.120     | 5.05          | 0.226     | 9.25              | 0.318     | 12.70            |           |              |           |              |  |
|                    | 101,60     | 2,11         | 5,25  | 3,05      | 7,52          | 5,74      | 13,7              | 8,08      | 18,81            |           |              |           |              |  |

### Tolerancias

| Espesor nominal                                    | Diámetro nominal | Diámetro exterior |        | Longitud  |
|--|------------------|-------------------|--------|---|
|  |                  | +                 | -      |   |
| Todas dimensiones<br>- según ASTM A-530<br>- 12,5% | 1/8" a 1 1/2"    | 0,4 mm            | 0,8 mm | Ø de 1/8" a 8"<br>Largos 4,6 a 7,3 m<br>Tolerancia: por acuerdo<br>Largos fijos<br>Tolerancia: + 6 mm<br>- 0 mm |
|  | 2" a 4"          | 0,8 mm            | 0,8 mm |   |
|  | 5" a 8"          | 1,6 mm            | 0,8 mm |   |
|  | 10" a 18"        | 2,4 mm            | 0,8 mm |   |
|  | 20" a 26"        | 3,2 mm            | 0,8 mm |   |
|  | 28" a 34"        | 4 mm              | 0,8 mm |   |
|  | 36" a 48"        | 4,8 mm            | 0,8 mm |   |



# Tubos soldados y sin soldadura

Dimensiones según ASME / ANSI B 36.19 y B 36.10  
Pesos lineales en lbs/pie y Kg/metro.

| Pulgadas nominales | Diámetro D | Schedule 5 S |       |           | Schedule 10 S |           | Schedule 40 S/STD |           | Schedule 80 S/XS |           | Schedule 160 |           | Schedule XXS |  |
|--------------------|------------|--------------|-------|-----------|---------------|-----------|-------------------|-----------|------------------|-----------|--------------|-----------|--------------|--|
|                    | Exterior   | Espesor T    | Peso  | Espesor T | Peso          | Espesor T | Peso              | Espesor T | Peso             | Espesor T | Peso         | Espesor T | Peso         |  |
|                    | Pulgadas   | Pulgadas     | lbs/p | Pulgadas  | lbs/p         | Pulgadas  | lbs/p             | Pulgadas  | lbs/p            | Pulgadas  | lbs/p        | Pulgadas  | lbs/p        |  |
|                    | mm         | mm           | Kg/m  | mm        | Kg/m          | mm        | Kg/m              | mm        | Kg/m             | mm        | Kg/m         | mm        | Kg/m         |  |
| 4"                 | 4.500      | 0.083        | 3.98  | 0.120     | 5.70          | 0.237     | 10.95             | 0.337     | 15.21            | 0.531     | 22.85        | 0.674     | 27.54        |  |
|                    | 114,30     | 2,11         | 5,93  | 3,05      | 8,49          | 6,02      | 16,32             | 8,56      | 22,66            | 13,49     | 34,04        | 17,12     | 41,64        |  |
| 5"                 | 5.563      | 0.109        | 6.45  | 0.134     | 7.88          | 0.258     | 14.83             | 0.375     | 21.08            | 0.625     | 33.47        | 0.750     | 32.53        |  |
|                    | 141,30     | 2,77         | 9,61  | 3,40      | 11,74         | 6,55      | 22,09             | 9,52      | 31,40            | 15,87     | 49,82        | 19,05     | 58,29        |  |
| 6"                 | 6.625      | 0.109        | 7.72  | 0.134     | 9.42          | 0.280     | 19.26             | 0.432     | 29.00            | 0.718     | 46.04        | 0.864     | 53.16        |  |
|                    | 168,28     | 2,77         | 11,50 | 3,40      | 14,03         | 7,11      | 28,69             | 10,97     | 43,20            | 18,24     | 60,58        | 21,95     | 80,31        |  |
| 8"                 | 8.625      | 0.109        | 10.1  | 0.148     | 13.40         | 0.322     | 29.00             | 0.500     | 44.05            | 0.906     | 75.82        | 0.875     | 72.42        |  |
|                    | 219,08     | 2,77         | 15,0  | 3,76      | 19,94         | 8,18      | 43,18             | 12,70     | 65,61            | 23,01     | 112,9        | 22,23     | 109,50       |  |
| 10"                | 10.750     | 0.134        | 15.4  | 0.165     | 18.70         | 0.365     | 41.13             | 0.500     | 55.57            | 1.125     | 117.4        | 1.000     | 104.13       |  |
|                    | 273,05     | 3,40         | 22,9  | 4,19      | 27,83         | 9,27      | 61,22             | 12,70     | 82,78            | 28,57     | 174,9        | 25,40     | 154,97       |  |
| 12"                | 12.750     | 0.156        | 21.3  | 0.180     | 24.20         | 0.375     | 49.56             | 0.500     | 66.41            | 1.312     | 162.8        | 1.000     | 125.49       |  |
|                    | 323,85     | 3,96         | 31,7  | 4,57      | 36,00         | 9,52      | 73,82             | 12,70     | 98,89            | 33,34     | 242,5        | 25,40     | 186,77       |  |
| 14"                | 14.000     | 0.156        | 23.4  | 0.188     | 27.73         | 0.375     | 54.57             | 0.500     | 72.09            | 1.406     | 192.0        |           |              |  |
|                    | 355,60     | 3,96         | 34,9  | 4,78      | 41,30         | 9,52      | 81,28             | 12,70     | 109,00           | 37,71     | 285,9        |           |              |  |
| 16"                | 16.000     | 0.165        | 28.2  | 0.188     | 31.75         | 0.375     | 62.58             | 0.500     | 82.77            | 1.549     | 244.9        |           |              |  |
|                    | 406,40     | 4,19         | 42,0  | 4,78      | 47,29         | 9,52      | 93,21             | 12,70     | 123,29           | 40,49     | 364,85       |           |              |  |
| 18"                | 18.000     | 0.165        | 31.9  | 0.188     | 35.77         | 0.375     | 70.59             | 0.500     | 93.45            | 1.781     | 308.55       |           |              |  |
|                    | 457,20     | 4,19         | 47,5  | 4,78      | 53,26         | 9,52      | 105,14            | 12,70     | 139,19           | 45,24     | 459,15       |           |              |  |
| 20"                | 20.000     | 0.188        | 40.4  | 0.218     | 46.06         | 0.375     | 78.60             | 0.500     | 104.13           | 1.969     | 379.14       |           |              |  |
|                    | 508,00     | 4,78         | 60,2  | 5,54      | 68,50         | 9,52      | 117,07            | 12,70     | 155,10           | 50,01     | 564,14       |           |              |  |
| 24"                | 24.000     | 0.218        | 55,37 | 0.250     | 63,41         | 0.375     | 94,62             | 0.500     | 125,49           | 2.344     | 542,13       |           |              |  |
|                    | 609,60     | 5,54         | 84,16 | 6,35      | 96,33         | 9,52      | 141,12            | 12,70     | 187,07           | 59,54     | 823,66       |           |              |  |

Aplicación: Para trabajos a alta temperatura y ambiente corrosivo.

Fabricación: La tubería será soldada, sin aportación de material o sin soldadura.

Análisis químico: Ver tabla página 6.

Los valores indicados para pesos lineales corresponden a aceros austeníticos y han sido calculados según la fórmula:

$$P = \frac{T(D-T)}{K} \text{ (Para una densidad de 7,97, } K = 40 \text{)}$$

Para calcular los pesos lineales de aceros ferríticos, multiplicar los valores de la tabla por el factor 0,97 (correspondiente a una densidad de 7.73)

$$\text{Peso lineal en lbs./p} = \frac{\text{Peso lineal en Kg./m.}}{1.4895}$$





## Tubos para intercambiador de calor. Soldados y sin soldadura de acero inoxidable

| Diámetro |        | Galga, B.W.G |       |       |       |       |       |       |
|----------|--------|--------------|-------|-------|-------|-------|-------|-------|
|          |        | 22           | 20    | 18    | 16    | 14    | 12    | 11    |
| Pulgadas | mm     | Espesor / mm |       |       |       |       |       |       |
|          |        | 0,71         | 0,89  | 1,24  | 1,65  | 2,11  | 2,77  | 3,05  |
|          |        | Peso: Kg/m   |       |       |       |       |       |       |
| 5/8"     | 15,88  | 0,288        | 0,334 | 0,455 | 0,588 | 0,728 | -     | -     |
| 3/4"     | 19,05  | 0,348        | 0,405 | 0,553 | 0,719 | 0,895 | -     | -     |
| 1"       | 25,40  | 0,469        | 0,546 | 0,750 | 0,981 | 1,231 | 1,570 | 1,707 |
| 1 1/4"   | 31,80  | -            | -     | 0,949 | 1,246 | 1,569 | 2,014 | 2,196 |
| 1 1/2"   | 38,10  | -            | -     | 1,144 | 1,506 | 1,902 | 2,451 | 2,677 |
| 1 3/4"   | 44,45  | -            | -     | 1,342 | 1,768 | 2,237 | 2,891 | 3,162 |
| 2"       | 50,80  | -            | -     | 1,539 | 2,031 | 2,573 | 3,331 | 3,647 |
| 2 1/4"   | 57,15  | -            | -     | 1,736 | 2,293 | 2,908 | 3,772 | 4,132 |
| 2 3/8"   | 60,30  | -            | -     | 1,834 | 2,423 | 3,074 | 3,990 | 4,372 |
| 2 1/2"   | 63,50  | -            | -     | 1,933 | 2,555 | 3,244 | 4,212 | 4,617 |
| 2 3/4"   | 69,90  | -            | -     | 2,132 | 2,820 | 3,582 | 4,656 | 5,105 |
| 3"       | 76,20  | -            | -     | 2,327 | 3,080 | 3,915 | 5,093 | 5,587 |
| 3 1/2"   | 88,90  | -            | -     | -     | 3,605 | 4,585 | 5,974 | 6,557 |
| 4"       | 101,60 | -            | -     | -     | 4,130 | 5,256 | 6,855 | 7,526 |
| 4 1/2"   | 114,30 | -            | -     | -     | 4,654 | 5,927 | 7,736 | 8,496 |

Normas: ASTM A-213, A-249, A-269

Tolerancias: según ASTM A-450

Calidad del material: AISI 304 / 304 L, 316 / 316 L.

Otras calidades especiales bajo consulta.

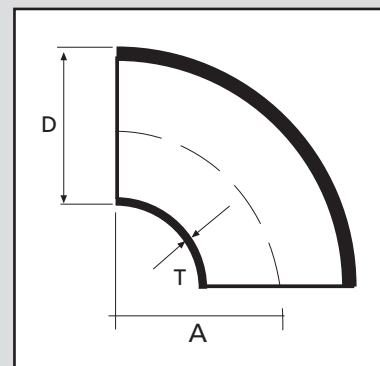
### Equivalencia Galgas B.W.G

| BWG (Birmingham Wire Gauge) |          |            |
|-----------------------------|----------|------------|
| BWG                         | Pulgadas | milímetros |
| 22                          | 0,028    | 0,711      |
| 20                          | 0,035    | 0,889      |
| 19                          | 0,042    | 1,066      |
| 18                          | 0,049    | 1,244      |
| 17                          | 0,058    | 1,473      |
| 16                          | 0,065    | 1,651      |
| 15                          | 0,072    | 1,828      |
| 14                          | 0,083    | 2,108      |
| 13                          | 0,095    | 2,413      |
| 12                          | 0,109    | 2,768      |
| 11                          | 0,120    | 3,048      |
| 10                          | 0,134    | 3,403      |
| 9                           | 0,148    | 3,759      |
| 8                           | 0,165    | 4,191      |
| 7                           | 0,180    | 4,572      |
| 6                           | 0,203    | 5,156      |
| 5                           | 0,220    | 5,588      |
| 4                           | 0,238    | 6,045      |
| 3                           | 0,259    | 6,578      |
| 2                           | 0,284    | 7,213      |
| 1                           | 0,300    | 7,620      |
| 0                           | 0,340    | 8,636      |



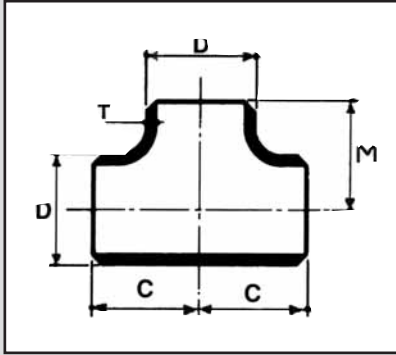


## Codos de acero inoxidable soldados y sin soldadura ASME / ANSI B 16.9



| Codos 90° radio largo |               |           |         |         |         |                     |                     | Codos 90° radio corto |         |         |         |                    |         |         |         |
|-----------------------|---------------|-----------|---------|---------|---------|---------------------|---------------------|-----------------------|---------|---------|---------|--------------------|---------|---------|---------|
| DN                    | Diámetro<br>D | Espesor=T |         |         |         | A<br>Radio<br>largo | A<br>Radio<br>corto | Radio largo / Peso    |         |         |         | Radio corto / Peso |         |         |         |
|                       |               | Sch 5S    | Sch 10S | Sch 40S | Sch 80S |                     |                     | Sch 5S                | Sch 10S | Sch 40S | Sch 80S | Sch 5S             | Sch 10S | Sch 40S | Sch 80S |
| Pulg.                 | mm            | mm        | mm      | mm      | mm      | mm                  | mm                  | Kg                    | Kg      | Kg      | Kg      | Kg                 | Kg      | Kg      | Kg      |
| 1/2"                  | 21,34         | 1,65      | 2,11    | 2,77    | 3,73    | 38,10               | -                   | 0,05                  | 0,06    | 0,08    | 0,10    | -                  | -       | -       | -       |
| 3/4"                  | 26,67         | 1,65      | 2,11    | 2,87    | 3,91    | 28,50               | -                   | 0,06                  | 0,08    | 0,10    | 0,10    | -                  | -       | -       | -       |
| 1"                    | 33,40         | 1,65      | 2,77    | 3,38    | 4,55    | 38,10               | 25,40               | 0,08                  | 0,12    | 0,15    | 0,20    | 0,08               | 0,09    | 0,12    | 0,13    |
| 1 1/4"                | 42,16         | 1,65      | 2,77    | 3,56    | 4,85    | 47,60               | 31,80               | 0,12                  | 0,20    | 0,26    | 0,35    | 0,10               | 0,15    | 0,20    | 0,22    |
| 1 1/2"                | 48,26         | 1,65      | 2,77    | 3,68    | 5,08    | 57,20               | 38,10               | 0,17                  | 0,28    | 0,37    | 0,50    | 0,11               | 0,19    | 0,24    | 0,32    |
| 2"                    | 60,33         | 1,65      | 2,77    | 3,91    | 5,54    | 76,20               | 50,80               | 0,29                  | 0,48    | 0,65    | 0,93    | 0,19               | 0,32    | 0,43    | 0,60    |
| 2 1/2"                | 73,03         | 2,11      | 3,05    | 5,16    | 7,01    | 95,30               | 63,50               | 0,58                  | 0,80    | 1,37    | 1,79    | 0,38               | 0,54    | 0,90    | 1,13    |
| 3"                    | 88,90         | 2,11      | 3,05    | 5,49    | 7,62    | 114,3               | 76,20               | 0,81                  | 1,14    | 2,04    | 2,87    | 0,54               | 0,76    | 1,36    | 1,82    |
| 4"                    | 114,30        | 2,11      | 3,05    | 6,02    | 8,56    | 152,4               | 101,6               | 1,39                  | 1,97    | 3,84    | 5,62    | 0,93               | 1,31    | 2,56    | 3,56    |
| 5"                    | 141,30        | 2,77      | 3,40    | 6,55    | 9,52    | 190,5               | 127,0               | 2,83                  | 3,42    | 6,48    | 9,69    | 1,89               | 2,28    | 4,32    | 6,20    |
| 6"                    | 168,28        | 2,77      | 3,40    | 7,11    | 10,97   | 228,6               | 152,4               | 4,03                  | 4,87    | 9,94    | 16,00   | 2,68               | 3,24    | 6,63    | 10,26   |
| 8"                    | 219,08        | 2,77      | 3,76    | 8,18    | 12,70   | 304,8               | 203,2               | 7,06                  | 10,00   | 20,10   | 32,20   | 4,71               | 6,68    | 13,40   | 20,84   |
| 10"                   | 273,05        | 3,40      | 4,19    | 9,27    | 12,70   | 381,0               | 254,0               | 13,20                 | 15,50   | 35,40   | 49,90   | 8,83               | 10,40   | 23,60   | 32,94   |
| 12"                   | 323,85        | 3,96      | 4,57    | 9,52    | 12,70   | 457,2               | 304,8               | 22,30                 | 25,90   | 56,20   | 72,50   | 14,80              | 16,70   | 37,50   | 47,30   |
| 14"                   | 355,60        | 3,96      | 4,77    | 9,52    | 12,70   | 533,4               | 355,6               | 29,20                 | 36,20   | 70,20   | 94,00   | 15,20              | 24,55   | 48,30   | 59,20   |
| 16"                   | 406,40        | 4,19      | 4,77    | 9,52    | 12,70   | 609,6               | 406,4               | 40,60                 | 47,60   | 91,50   | 124,0   | 25,60              | 32,00   | 63,40   | 81,80   |
| 18"                   | 457,20        | 4,19      | 4,77    | 9,52    | 12,70   | 685,8               | 457,2               | 49,80                 | 57,30   | 116,0   | 159,0   | 40,40              | 40,40   | 73,60   | 104,0   |
| 20"                   | 508,00        | 4,77      | 5,53    | 9,52    | 12,70   | 762,0               | 508,0               | 72,00                 | 83,50   | 143,8   | 195,0   | 50,40              | 60,20   | 99,70   | 129,0   |
| 24"                   | 609,60        | 5,54      | 6,35    | 9,52    | 12,70   | 914,0               | 609,6               | 120,0                 | 138,0   | 208,0   | 281,0   | 86,90              | 102,0   | 144,0   | 186,0   |

Análisis químico, ver tabla página 6.  
Tolerancias dimensionales ver página 101.



## Tes iguales de acero inoxidable soldadas y sin soldadura ASME / ANSI B 16.9

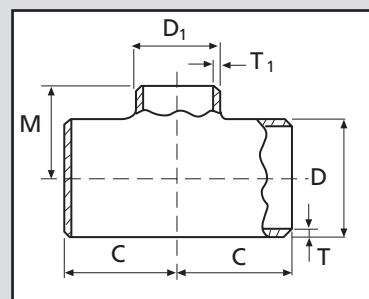
| Tes iguales |               |           |         |         |         |             |           |         |         |         |
|-------------|---------------|-----------|---------|---------|---------|-------------|-----------|---------|---------|---------|
| DN          | Diámetro<br>D | Espesor=T |         |         |         | C<br>y<br>M | Peso (Kg) |         |         |         |
|             |               | Sch 5S    | Sch 10S | Sch 40S | Sch 80S |             | Sch 5S    | Sch 10S | Sch 40S | Sch 80S |
| Pulg.       | mm            | mm        | mm      | mm      | mm      | mm          | Kg        | Kg      | Kg      | Kg      |
| 1/2"        | 21,34         | 1,65      | 2,11    | 2,77    | 3,73    | 25,40       | 0,09      | 0,09    | 0,16    | 0,20    |
| 3/4"        | 26,67         | 1,65      | 2,11    | 2,87    | 3,91    | 28,60       | 0,13      | 0,13    | 0,20    | 0,29    |
| 1"          | 33,40         | 1,65      | 2,77    | 3,38    | 4,55    | 38,10       | 0,22      | 0,27    | 0,34    | 0,40    |
| 1 1/4"      | 42,16         | 1,65      | 2,77    | 3,56    | 4,85    | 47,60       | 0,30      | 0,50    | 0,59    | 0,72    |
| 1 1/2"      | 48,26         | 1,65      | 2,77    | 3,68    | 5,08    | 57,20       | 0,50      | 0,68    | 0,91    | 1,02    |
| 2"          | 60,33         | 1,65      | 2,77    | 3,91    | 5,54    | 63,50       | 0,68      | 0,82    | 1,59    | 1,81    |
| 2 1/2"      | 73,03         | 2,11      | 3,05    | 5,16    | 7,01    | 76,20       | 1,20      | 1,36    | 2,72    | 3,17    |
| 3"          | 88,90         | 2,11      | 3,05    | 5,49    | 7,62    | 85,70       | 1,57      | 1,77    | 3,18    | 3,85    |
| 4"          | 114,30        | 2,11      | 3,05    | 6,02    | 8,56    | 104,8       | 2,46      | 2,57    | 5,44    | 8,11    |
| 5"          | 141,30        | 2,77      | 3,40    | 6,55    | 9,52    | 123,8       | 4,04      | 5,44    | 14,06   | 11,78   |
| 6"          | 168,28        | 2,77      | 3,40    | 7,11    | 10,97   | 142,9       | 5,50      | 7,71    | 15,42   | 18,12   |
| 8"          | 219,08        | 2,77      | 3,76    | 8,18    | 12,70   | 177,8       | 11,07     | 11,34   | 24,95   | 33,98   |
| 10"         | 273,05        | 3,40      | 4,19    | 9,27    | 12,70   | 215,9       | 19,87     | 16,78   | 38,56   | 47,57   |
| 12"         | 323,85        | 3,96      | 4,57    | 9,52    | 12,70   | 254,0       | 27,86     | 24,49   | 54,43   | 72,48   |
| 14"         | 355,60        | 3,96      | 4,77    | 9,52    | 12,70   | 279,4       | 28,74     | 48,50   | 79,30   | 81,78   |
| 16"         | 406,40        | 4,19      | 4,77    | 9,52    | 12,70   | 304,8       | 35,69     | 58,90   | 99,70   | 114,23  |
| 18"         | 457,20        | 4,19      | 4,77    | 9,52    | 12,70   | 342,9       | 45,71     | 76,60   | 129,60  | 144,98  |
| 20"         | 508,00        | 4,77      | 5,53    | 9,52    | 12,70   | 381,0       | 69,97     | 103,30  | 162,00  | 179,66  |
| 24"         | 609,60        | 5,54      | 6,35    | 9,52    | 12,70   | 431,8       | 113,23    | 155,40  | 226,00  | 243,13  |

Análisis químico, ver tabla página 6.  
Tolerancias dimensionales ver página 101.



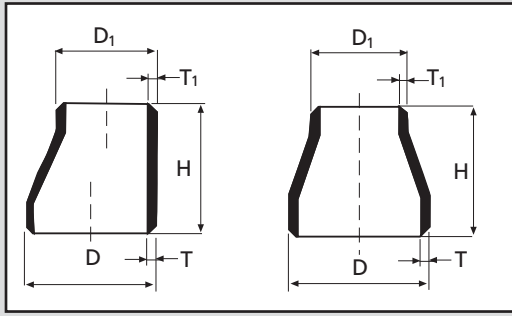
# Tes reducidas de acero inoxidable soldadas y sin soldadura

ASME / ANSI B 16.9



## Tes reducidas

| Diámetro nominal |        | D      | D1     | Espesor (mm) |                |          |                |          |                |          |                | C<br>mm | M<br>mm | Peso (Kg) |          |          |          |
|------------------|--------|--------|--------|--------------|----------------|----------|----------------|----------|----------------|----------|----------------|---------|---------|-----------|----------|----------|----------|
| Paso             | Red    |        |        | Sch. 5S      |                | Sch. 10S |                | Sch. 40S |                | Sch. 80S |                |         |         | Sch. 5S   | Sch. 10S | Sch. 40S | Sch. 80S |
|                  |        |        |        | T            | T <sub>1</sub> | T        | T <sub>1</sub> | T        | T <sub>1</sub> | T        | T <sub>1</sub> |         |         |           |          |          |          |
| 3/4"             | 1/2"   | 26,67  | 21,34  | 1,65         | 1,65           | 2,11     | 2,11           | 2,87     | 2,77           | 3,91     | 3,73           | 28,60   | 28,60   | 0,12      | 0,12     | 0,12     | 0,18     |
| 1"               | 1/2"   | 33,53  | 21,34  | 1,65         | 1,65           | 2,77     | 2,11           | 3,38     | 2,77           | 4,55     | 3,73           | 38,10   | 38,10   | 0,20      | 0,20     | 0,23     | 0,34     |
|                  | 3/4"   | 33,53  | 26,67  | 1,65         | 1,65           | 2,77     | 2,11           | 3,38     | 2,87           | 4,55     | 3,91           | 38,10   | 38,10   | 0,21      | 0,21     | 0,24     | 0,35     |
| 1 1/4"           | 3/4"   | 42,16  | 26,67  | 1,65         | 1,65           | 2,77     | 2,11           | 3,56     | 2,87           | 4,85     | 4,55           | 47,60   | 47,60   | 0,32      | 0,32     | 0,42     | 0,61     |
|                  | 1"     | 42,16  | 33,40  | 1,65         | 1,65           | 2,77     | 2,77           | 3,56     | 3,38           | 4,85     | 4,55           | 47,60   | 47,60   | 0,33      | 0,33     | 0,41     | 0,64     |
| 1 1/2"           | 1/2"   | 48,26  | 21,34  | 1,65         | 1,65           | 2,77     | 2,11           | 3,68     | 2,77           | 5,08     | 3,73           | 57,20   | 57,20   | 0,43      | 0,43     | 0,56     | 0,89     |
|                  | 3/4"   | 48,26  | 26,67  | 1,65         | 1,65           | 2,77     | 2,11           | 3,68     | 2,87           | 5,08     | 3,90           | 57,20   | 57,20   | 0,44      | 0,44     | 0,57     | 0,90     |
|                  | 12     | 48,26  | 33,40  | 1,65         | 1,65           | 2,77     | 2,77           | 3,68     | 3,68           | 5,08     | 4,55           | 57,20   | 57,20   | 0,46      | 0,46     | 0,60     | 0,92     |
|                  | 1 1/4" | 48,26  | 42,16  | 1,65         | 1,65           | 2,77     | 2,77           | 3,68     | 3,56           | 5,08     | 4,85           | 57,20   | 57,20   | 0,48      | 0,48     | 0,62     | 0,97     |
| 2"               | 3/4"   | 60,33  | 26,67  | 1,65         | 1,65           | 2,77     | 2,11           | 3,91     | 2,87           | 5,54     | 3,91           | 63,50   | 44,50   | 0,62      | 0,70     | 1,11     | 1,44     |
|                  | 1"     | 60,33  | 33,40  | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,38           | 5,54     | 4,55           | 63,50   | 50,80   | 0,64      | 0,72     | 1,14     | 1,46     |
|                  | 1 1/4" | 60,33  | 42,16  | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,56           | 5,54     | 4,85           | 63,50   | 57,20   | 0,68      | 0,74     | 1,18     | 1,51     |
|                  | 1 1/2" | 60,33  | 48,26  | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,68           | 5,54     | 5,08           | 63,50   | 60,40   | 0,73      | 0,76     | 1,23     | 1,57     |
| 2 1/2"           | 1 1/2" | 73,03  | 48,26  | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,68           | 7,01     | 5,08           | 76,20   | 69,80   | 0,82      | 1,18     | 2,98     | 2,61     |
|                  | 2"     | 73,03  | 60,33  | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,91           | 7,01     | 5,54           | 76,20   | 73,20   | 0,83      | 1,21     | 2,12     | 2,66     |
| 3"               | 1 1/2" | 88,90  | 48,26  | 2,11         | 1,65           | 3,05     | 2,77           | 5,99     | 3,60           | 7,62     | 5,08           | 85,70   | 73,20   | 1,33      | 1,60     | 2,98     | 3,84     |
|                  | 2"     | 88,90  | 60,33  | 2,11         | 1,65           | 3,05     | 2,77           | 5,49     | 3,91           | 7,62     | 5,54           | 85,70   | 76,20   | 1,42      | 1,63     | 3,01     | 3,86     |
|                  | 2 1/2" | 88,90  | 73,03  | 2,11         | 2,11           | 3,05     | 3,05           | 5,49     | 5,16           | 7,62     | 7,01           | 85,70   | 82,60   | 1,58      | 1,69     | 3,15     | 3,97     |
| 4"               | 1 1/2" | 114,30 | 48,26  | 2,11         | 1,65           | 3,05     | 2,77           | 6,02     | 3,68           | 8,56     | 5,08           | 104,8   | 85,90   | 2,45      | 2,51     | 5,04     | 6,63     |
|                  | 2"     | 114,30 | 60,33  | 2,11         | 1,65           | 3,05     | 2,77           | 6,02     | 3,91           | 8,56     | 5,54           | 104,8   | 88,90   | 2,47      | 2,53     | 5,08     | 6,70     |
|                  | 2 1/2" | 114,30 | 73,03  | 2,11         | 2,11           | 3,05     | 3,05           | 6,02     | 5,16           | 8,56     | 7,01           | 104,8   | 95,30   | 2,52      | 2,59     | 5,22     | 6,79     |
|                  | 3"     | 114,30 | 88,90  | 2,11         | 2,11           | 3,05     | 3,05           | 6,02     | 5,49           | 8,56     | 7,62           | 104,8   | 98,60   | 2,55      | 2,61     | 5,27     | 6,93     |
| 5"               | 3"     | 141,30 | 88,90  | 2,77         | 2,11           | 3,40     | 3,05           | 6,55     | 5,49           | 9,52     | 7,62           | 123,8   | 111,2   | 3,38      | 4,17     | 8,13     | 10,95    |
|                  | 4"     | 141,30 | 114,3  | 2,77         | 2,11           | 3,40     | 3,05           | 6,55     | 6,02           | 9,52     | 8,56           | 123,8   | 117,6   | 3,43      | 4,24     | 8,36     | 11,18    |
| 6"               | 2 1/2" | 168,28 | 73,03  | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 5,16           | 10,97    | 7,01           | 142,9   | 120,6   | 4,62      | 5,69     | 11,87    | 17,05    |
|                  | 3"     | 168,28 | 88,90  | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 5,49           | 10,97    | 7,62           | 142,9   | 124,0   | 4,67      | 5,75     | 11,92    | 17,07    |
|                  | 4"     | 168,28 | 114,3  | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 6,02           | 10,97    | 8,56           | 142,9   | 130,0   | 4,75      | 5,85     | 12,10    | 17,19    |
|                  | 5"     | 168,28 | 141,30 | 2,77         | 2,77           | 3,40     | 3,4            | 7,11     | 6,55           | 10,97    | 9,52           | 142,9   | 137,0   | 4,80      | 5,92     | 12,34    | 17,47    |
| 8"               | 4"     | 219,08 | 114,3  | 2,77         | 2,11           | 3,76     | 3,05           | 8,18     | 6,02           | 12,70    | 8,56           | 177,8   | 156,0   | 7,35      | 9,80     | 21,26    | 30,76    |
|                  | 5"     | 219,08 | 141,30 | 2,77         | 2,77           | 3,76     | 3,40           | 8,18     | 6,55           | 12,70    | 9,52           | 177,8   | 162,0   | 7,41      | 9,83     | 21,35    | 30,85    |
|                  | 6"     | 219,08 | 168,28 | 2,77         | 2,77           | 3,76     | 3,40           | 8,18     | 7,11           | 12,70    | 10,97          | 177,8   | 168,0   | 7,44      | 9,90     | 21,62    | 31,25    |
| 10"              | 5"     | 273,05 | 141,3  | 3,40         | 2,77           | 4,19     | 3,40           | 9,27     | 6,55           | 12,70    | 9,52           | 215,9   | 191,0   | 13,43     | 16,47    | 36,14    | 47,47    |
|                  | 6"     | 273,05 | 168,28 | 3,40         | 2,77           | 4,19     | 3,40           | 9,27     | 7,11           | 12,70    | 10,97          | 215,9   | 194,0   | 13,49     | 16,58    | 36,27    | 47,95    |
|                  | 8"     | 273,05 | 219,08 | 3,40         | 2,77           | 4,19     | 3,76           | 9,27     | 8,18           | 12,70    | 12,70          | 215,9   | 203,0   | 13,54     | 16,69    | 36,85    | 48,39    |
| 12"              | 6"     | 323,85 | 168,28 | 3,96         | 2,77           | 4,57     | 3,40           | 9,52     | 7,11           | 12,70    | 10,97          | 254,0   | 219,0   | 22,93     | 25,10    | 51,96    | 67,48    |
|                  | 8"     | 323,85 | 219,08 | 3,96         | 2,77           | 4,57     | 3,76           | 9,52     | 8,18           | 12,70    | 12,70          | 254,0   | 229,0   | 23,01     | 25,32    | 52,38    | 67,92    |
|                  | 10"    | 323,85 | 273,05 | 3,96         | 3,4            | 4,57     | 4,19           | 9,52     | 9,27           | 12,70    | 12,70          | 254,0   | 241,0   | 23,13     | 25,48    | 53,72    | 68,81    |

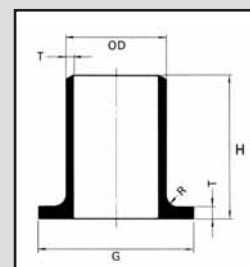


## Reducciones concéntricas y excéntricas de acero inoxidable soldadas y sin soldadura

ASME / ANSI B 16.9

### Reducciones concéntricas y excéntricas

| Diámetro nominal |        | Diámetro exterior<br>D | Diámetro reducido<br>D <sub>1</sub> | Espesor (mm) |                |          |                |          |                |          |                | Longitud<br>mm<br>H | Peso (Kg) |          |          |          |
|------------------|--------|------------------------|-------------------------------------|--------------|----------------|----------|----------------|----------|----------------|----------|----------------|---------------------|-----------|----------|----------|----------|
|                  |        |                        |                                     | Sch. 5S      |                | Sch. 10S |                | Sch. 40S |                | Sch. 80S |                |                     | Sch. 5S   | Sch. 10S | Sch. 40S | Sch. 80S |
| Paso             | Red    |                        |                                     | T            | T <sub>1</sub> | T        | T <sub>1</sub> | T        | T <sub>1</sub> | T        | T <sub>1</sub> |                     |           |          |          |          |
| 3/4"             | 1/2"   | 26,67                  | 21,34                               | 1,65         | 1,65           | 2,11     | 2,11           | 2,87     | 2,77           | 3,91     | 3,73           | 38                  | 0,05      | 0,09     | 0,10     | 0,15     |
| 1"               | 1/2"   | 33,40                  | 21,34                               | 1,65         | 1,65           | 2,77     | 2,11           | 3,38     | 2,77           | 4,55     | 3,73           | 51                  | 0,06      | 0,08     | 0,10     | 0,16     |
|                  | 3/4"   | 33,40                  | 26,67                               | 1,65         | 1,65           | 2,77     | 2,11           | 3,38     | 2,87           | 4,55     | 3,91           | 51                  | 0,06      | 0,09     | 0,11     | 0,18     |
| 1 1/4"           | 1"     | 42,16                  | 33,40                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,56     | 3,38           | 4,85     | 4,55           | 51                  | 0,06      | 0,12     | 0,15     | 0,24     |
| 1 1/2"           | 1/2"   | 48,26                  | 21,34                               | 1,65         | 1,65           | 2,77     | 2,11           | 3,68     | 2,77           | 5,08     | 3,73           | 64                  | 0,09      | 0,15     | 0,20     | 0,27     |
|                  | 3/4"   | 48,26                  | 26,67                               | 1,65         | 1,65           | 2,77     | 2,11           | 3,68     | 2,87           | 5,08     | 3,91           | 64                  | 0,09      | 0,15     | 0,20     | 0,29     |
|                  | 1"     | 48,26                  | 33,40                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,68     | 3,38           | 5,08     | 4,55           | 64                  | 0,10      | 0,17     | 0,79     | 0,79     |
| 2"               | 1 1/4" | 48,26                  | 42,16                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,68     | 3,56           | 5,08     | 4,85           | 64                  | 0,11      | 0,19     | 0,26     | 0,33     |
|                  | 3/4"   | 60,33                  | 26,67                               | 1,65         | 1,65           | 2,77     | 2,11           | 3,91     | 2,87           | 5,54     | 3,91           | 76                  | 0,12      | 0,21     | 0,29     | 0,45     |
|                  | 1"     | 60,33                  | 33,40                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,38           | 5,54     | 4,55           | 76                  | 0,14      | 0,23     | 0,32     | 0,45     |
|                  | 1 1/4" | 60,33                  | 42,16                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,56           | 5,54     | 4,85           | 76                  | 0,15      | 0,25     | 0,35     | 0,52     |
| 2 1/2"           | 1 1/2" | 60,33                  | 48,26                               | 1,65         | 1,65           | 2,77     | 2,77           | 3,91     | 3,68           | 5,54     | 5,08           | 76                  | 0,16      | 0,27     | 0,37     | 0,54     |
|                  | 1"     | 73,03                  | 33,40                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,38           | 7,01     | 4,55           | 89                  | 0,45      | 0,34     | 0,79     | 0,79     |
|                  | 1 1/4" | 73,03                  | 42,16                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,56           | 7,01     | 4,85           | 89                  | 0,27      | 0,39     | 0,67     | 0,82     |
|                  | 1 1/2" | 73,03                  | 48,26                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,68           | 7,01     | 5,08           | 89                  | 0,28      | 0,39     | 0,66     | 0,85     |
| 3"               | 2"     | 73,03                  | 60,33                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,16     | 3,91           | 7,01     | 5,54           | 89                  | 0,30      | 0,43     | 0,72     | 0,93     |
|                  | 1"     | 88,90                  | 33,40                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,49     | 3,38           | 7,62     | 4,55           | 89                  | 0,28      | 0,40     | 0,71     | 0,88     |
|                  | 1 1/4" | 88,90                  | 42,16                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,49     | 3,56           | 7,62     | 4,85           | 89                  | 0,29      | 0,43     | 0,77     | 1,03     |
|                  | 1 1/2" | 88,90                  | 48,36                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,49     | 3,68           | 7,62     | 5,08           | 89                  | 0,31      | 0,44     | 0,78     | 1,10     |
|                  | 2"     | 88,90                  | 60,33                               | 2,11         | 1,65           | 3,05     | 2,77           | 5,49     | 3,91           | 7,62     | 5,54           | 89                  | 0,33      | 0,47     | 0,84     | 1,17     |
| 4"               | 2 1/2" | 88,90                  | 73,03                               | 2,11         | 2,11           | 3,05     | 3,05           | 5,49     | 5,16           | 7,62     | 7,01           | 89                  | 0,37      | 0,54     | 0,98     | 1,29     |
|                  | 1 1/2" | 114,30                 | 48,26                               | 2,11         | 1,65           | 3,05     | 2,77           | 6,02     | 3,68           | 8,56     | 5,08           | 102                 | 0,43      | 0,63     | 1,24     | 1,73     |
|                  | 2"     | 114,30                 | 60,33                               | 2,11         | 1,65           | 3,05     | 2,77           | 6,02     | 3,91           | 8,56     | 5,54           | 102                 | 0,46      | 0,65     | 1,27     | 1,78     |
|                  | 2 1/2" | 114,30                 | 73,03                               | 2,11         | 2,11           | 3,05     | 3,05           | 6,02     | 5,16           | 8,56     | 7,01           | 102                 | 0,49      | 0,70     | 1,37     | 2,00     |
| 5"               | 3"     | 114,30                 | 88,90                               | 2,11         | 2,11           | 3,05     | 3,05           | 6,02     | 5,49           | 8,56     | 7,62           | 102                 | 0,52      | 0,74     | 1,45     | 2,12     |
|                  | 4"     | 141,30                 | 88,90                               | 2,77         | 2,11           | 3,40     | 3,05           | 6,55     | 5,49           | 9,52     | 7,62           | 127                 | 0,99      | 1,20     | 2,27     | 3,54     |
|                  | 4"     | 141,30                 | 114,30                              | 2,77         | 2,11           | 3,40     | 3,05           | 6,55     | 6,02           | 9,52     | 8,56           | 127                 | 1,10      | 1,32     | 2,50     | 3,76     |
| 6"               | 2 1/2" | 168,28                 | 73,03                               | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 5,16           | 10,97    | 7,01           | 140                 | 1,12      | 1,35     | 2,74     | 4,51     |
|                  | 3"     | 168,28                 | 88,90                               | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 5,49           | 10,97    | 7,62           | 140                 | 1,24      | 1,50     | 3,04     | 5,03     |
|                  | 4"     | 168,28                 | 114,30                              | 2,77         | 2,11           | 3,40     | 3,05           | 7,11     | 6,02           | 10,97    | 8,56           | 140                 | 1,34      | 1,62     | 3,30     | 5,44     |
|                  | 5"     | 168,28                 | 141,30                              | 2,77         | 2,77           | 3,40     | 3,40           | 7,11     | 6,55           | 10,97    | 9,52           | 140                 | 1,45      | 1,75     | 3,57     | 5,71     |
| 8"               | 4"     | 219,08                 | 114,30                              | 2,77         | 2,11           | 3,76     | 3,05           | 8,18     | 6,02           | 12,70    | 8,56           | 152                 | 1,80      | 2,56     | 5,10     | 8,43     |
|                  | 5"     | 219,08                 | 141,30                              | 2,77         | 2,77           | 3,76     | 3,40           | 8,18     | 6,55           | 12,70    | 9,52           | 152                 | 1,90      | 2,70     | 5,40     | 8,83     |
|                  | 6"     | 219,08                 | 168,28                              | 2,77         | 2,77           | 3,76     | 3,40           | 8,18     | 7,11           | 12,70    | 10,97          | 152                 | 2,01      | 2,85     | 5,71     | 9,24     |
| 10"              | 5"     | 273,05                 | 141,30                              | 3,40         | 2,77           | 4,19     | 3,40           | 9,27     | 6,55           | 12,70    | 9,52           | 178                 | 2,82      | 3,30     | 8,21     | 13,00    |
|                  | 6"     | 273,05                 | 168,28                              | 3,40         | 2,77           | 4,19     | 3,40           | 9,27     | 7,11           | 12,70    | 10,97          | 178                 | 3,30      | 3,87     | 8,78     | 13,50    |
|                  | 8"     | 273,05                 | 219,08                              | 3,40         | 2,77           | 4,19     | 3,76           | 9,27     | 8,18           | 12,70    | 12,70          | 178                 | 3,59      | 4,21     | 9,58     | 14,22    |
| 12"              | 6"     | 323,85                 | 168,28                              | 3,96         | 2,77           | 4,57     | 3,40           | 9,52     | 7,11           | 12,70    | 10,97          | 203                 | 4,97      | 5,73     | 12,40    | 18,390   |
|                  | 8"     | 323,85                 | 219,08                              | 3,96         | 2,77           | 4,57     | 3,76           | 9,52     | 8,18           | 12,70    | 12,70          | 203                 | 5,45      | 6,11     | 13,70    | 19,70    |
|                  | 10"    | 323,85                 | 273,05                              | 3,96         | 3,40           | 4,57     | 4,19           | 9,52     | 9,27           | 12,70    | 12,70          | 203                 | 5,83      | 6,55     | 14,70    | 19,48    |



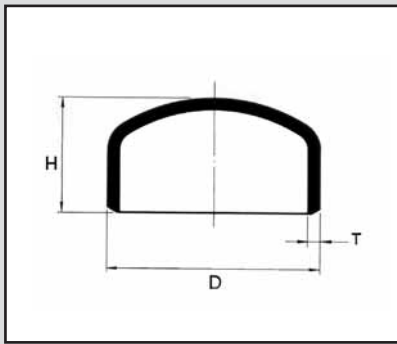
## Stub-ends de acero inoxidable

ASME / ANSI B 16.9 - MSS SP-43

| Stub Ends DIMENSIONES |                     |                |         |         |         |         |        |                 |        |  |
|-----------------------|---------------------|----------------|---------|---------|---------|---------|--------|-----------------|--------|--|
| DN                    | Diámetro<br>D<br>mm | Espesor=T (mm) |         |         |         | G<br>mm | H (mm) |                 | R (mm) |  |
|                       |                     | Sch 5S         | Sch 10S | Sch 40S | Sch 80S |         | MSS    | Tipo A<br>(max) | Tipo B |  |
| 1/2"                  | 21,34               | 1,65           | 2,11    | 2,77    | 3,73    | 34,93   | 50,80  | 3,30            | 0,76   |  |
| 3/4"                  | 26,67               | 1,65           | 2,11    | 2,87    | 3,91    | 42,80   | 50,80  | 3,30            | 0,76   |  |
| 1"                    | 33,40               | 1,65           | 2,77    | 3,38    | 4,55    | 50,80   | 50,80  | 3,30            | 0,76   |  |
| 1 1/4"                | 42,16               | 1,65           | 2,77    | 3,56    | 4,85    | 63,50   | 50,80  | 4,83            | 0,76   |  |
| 1 1/2"                | 48,26               | 1,65           | 2,77    | 3,38    | 5,08    | 73,03   | 50,80  | 6,35            | 0,76   |  |
| 2"                    | 60,33               | 1,65           | 2,77    | 3,91    | 5,54    | 92,08   | 63,50  | 7,87            | 0,76   |  |
| 2 1/2"                | 73,03               | 2,11           | 3,05    | 5,16    | 7,01    | 104,78  | 63,50  | 7,87            | 0,76   |  |
| 3"                    | 88,90               | 2,11           | 3,05    | 5,49    | 7,62    | 127,00  | 63,50  | 9,65            | 0,76   |  |
| 4"                    | 114,30              | 2,11           | 3,05    | 6,02    | 8,56    | 157,18  | 76,20  | 11,18           | 0,76   |  |
| 5"                    | 141,30              | 2,77           | 3,40    | 6,55    | 9,52    | 185,75  | 76,20  | 11,18           | 1,52   |  |
| 6"                    | 168,28              | 2,77           | 3,40    | 7,11    | 10,97   | 215,90  | 88,90  | 12,70           | 1,52   |  |
| 8"                    | 219,08              | 2,77           | 3,76    | 8,18    | 12,70   | 269,88  | 101,60 | 12,70           | 1,52   |  |
| 10"                   | 273,05              | 3,40           | 4,19    | 9,27    | 12,70   | 323,85  | 127,00 | 12,70           | 1,52   |  |
| 12"                   | 323,85              | 3,96           | 4,57    | 9,52    | 12,70   | 381,00  | 152,40 | 12,70           | 1,52   |  |
| 14"                   | 355,60              | 3,96           | 4,78    | 9,52    | 12,70   | 412,75  | 152,40 | 12,70           | 1,52   |  |
| 16"                   | 406,40              | 4,19           | 4,78    | 9,52    | 12,70   | 469,90  | 152,40 | 12,70           | 1,52   |  |
| 18"                   | 457,20              | 4,19           | 4,78    | 9,52    | 12,70   | 533,40  | 152,40 | 12,70           | 1,52   |  |
| 20"                   | 508,00              | 4,78           | 5,54    | 9,52    | 12,70   | 584,20  | 152,40 | 12,70           | 1,52   |  |
| 22"                   | 558,80              | 4,78           | 5,54    | 9,52    | 12,70   | 641,35  | 152,40 | 12,70           | 1,52   |  |
| 24"                   | 609,60              | 4,78           | 6,35    | 9,52    | 12,70   | 692,15  | 152,40 | 12,70           | 1,52   |  |

| Peso (Kgs) |     |         |          |          |          |
|------------|-----|---------|----------|----------|----------|
| DN         | H   | SCH. 5S | SCH. 10S | SCH. 40S | SCH. 80S |
| 1/2"       | MSS | 0.059   | 0.077    | 0.118    | 0.127    |
| 3/4"       | MSS | 0.068   | 0.086    | 0.154    | 0.168    |
| 1"         | MSS | 0.091   | 0.140    | 0.186    | 0.240    |
| 1 1/4"     | MSS | 0.131   | 0.208    | 0.263    | 0.349    |
| 1 1/2"     | MSS | 0.159   | 0.249    | 0.376    | 0.458    |
| 2"         | MSS | 0.245   | 0.376    | 0.539    | 0.743    |
| 2 1/2"     | MSS | 0.349   | 0.471    | 0.797    | 1.060    |
| 3"         | MSS | 0.467   | 0.638    | 1.133    | 1.508    |
| 4"         | MSS | 0.711   | 0.978    | 1.812    | 2.523    |
| 5"         | MSS | 1.046   | 1.237    | 2.537    | 3.601    |
| 6"         | MSS | 1.62    | 1.95     | 3.72     | 5.57     |
| 8"         | MSS | 2.45    | 3.10     | 5.89     | 10.12    |
| 10"        | MSS | 4.04    | 4.86     | 10.42    | 13.95    |
| 12"        | MSS | 6.60    | 7.11     | 14.95    | 19.93    |
| 14"        | MSS | 6.43    | 7.75     | 15.46    | 20.62    |
| 16"        | MSS | 7.91    | 9.02     | 17.98    | 23.98    |
| 18"        | MSS | 9.24    | 10.53    | 21.00    | 28.00    |
| 20"        | MSS | 11.68   | 13.54    | 23.30    | 31.07    |
| 22"        | MSS | -       | -        | -        | -        |
| 24"        | MSS | 16.52   | 18.94    | 50.45    | 61.07    |

Análisis químico, ver tabla página 6.  
Tolerancias dimensionales ver página 101.



## Caps de acero inoxidable

ASME / ANSI B 16.9

| Caps   |                     |              |               |               |               |         |           |         |         |         |
|--------|---------------------|--------------|---------------|---------------|---------------|---------|-----------|---------|---------|---------|
| DN     | Diámetro<br>D<br>mm | Espesor=T    |               |               |               | H<br>mm | Peso (Kg) |         |         |         |
|        |                     | Sch 5S<br>mm | Sch 10S<br>mm | Sch 40S<br>mm | Sch 80S<br>mm |         | Sch 5S    | Sch 10S | Sch 40S | Sch 80S |
| 1/2"   | 21,34               | 1,65         | 2,11          | 2,77          | 3,73          | 25,40   | 0,04      | 0,04    | 0,05    | 0,05    |
| 3/4"   | 26,67               | 1,65         | 2,11          | 2,87          | 3,91          | 25,40   | 0,05      | 0,05    | 0,06    | 0,09    |
| 1"     | 33,40               | 1,65         | 2,77          | 3,38          | 4,55          | 38,10   | 0,05      | 0,09    | 0,11    | 0,11    |
| 1 1/4" | 42,16               | 1,65         | 2,77          | 3,56          | 4,85          | 38,10   | 0,07      | 0,11    | 0,15    | 0,16    |
| 1 1/2" | 48,26               | 1,65         | 2,77          | 3,68          | 5,08          | 38,10   | 0,08      | 0,13    | 0,17    | 0,22    |
| 2"     | 60,33               | 1,65         | 2,77          | 3,91          | 5,54          | 38,10   | 0,10      | 0,17    | 0,23    | 0,34    |
| 2 1/2" | 73,03               | 2,11         | 3,05          | 5,16          | 7,01          | 50,80   | 0,17      | 0,24    | 0,42    | 0,51    |
| 3"     | 88,90               | 2,11         | 3,05          | 5,49          | 7,62          | 63,50   | 0,25      | 0,36    | 0,66    | 0,89    |
| 4"     | 114,30              | 2,11         | 3,05          | 6,02          | 8,56          | 76,20   | 0,41      | 0,59    | 1,17    | 1,51    |
| 5"     | 141,30              | 2,77         | 3,40          | 6,55          | 9,52          | 88,90   | 0,81      | 0,98    | 1,90    | 2,90    |
| 6"     | 168,28              | 2,77         | 3,40          | 7,11          | 10,97         | 101,60  | 1,11      | 1,35    | 2,83    | 4,24    |
| 8"     | 219,08              | 2,77         | 3,76          | 8,18          | 12,70         | 127     | 1,74      | 2,49    | 5,11    | 7,76    |
| 10"    | 273,05              | 3,40         | 4,19          | 9,27          | 12,70         | 152,40  | 3,26      | 3,84    | 8,92    | 13,11   |
| 12"    | 323,85              | 3,96         | 4,57          | 9,52          | 12,70         | 177,80  | 5,47      | 6,15    | 14,10   | 17,94   |
| 14"    | 355,60              | 3,96         | 4,77          | 9,52          | 12,70         | 190,50  | 7,19      | 7,85    | 16,35   | 21,11   |
| 16"    | 406,40              | 4,19         | 4,77          | 9,52          | 12,70         | 203,20  | 11,00     | 9,56    | 18,60   | 25,73   |
| 18"    | 457,20              | 4,19         | 4,77          | 9,52          | 12,70         | 228,60  | 13,92     | 12,10   | 23,54   | 32,57   |
| 20"    | 508,00              | 4,77         | 5,53          | 9,52          | 12,70         | 254     | 17,19     | 17,90   | 29,06   | 40,21   |
| 24"    | 609,60              | 5,54         | 6,35          | 9,52          | 12,72         | 304,80  | 27,43     | 30,15   | 41,85   | 57,86   |

Análisis químico, ver tabla página 6.  
Tolerancias dimensionales ver página 101.





## Tolerancias dimensionales para accesorios de acero inoxidable

### ASME / ANSI B 16.9

| Todos los accesorios |                              |                              |                                  | Codos 45°-90° y tes                | Reducciones y Stub-ends | Caps       | Stub-ends           |               |               |
|----------------------|------------------------------|------------------------------|----------------------------------|------------------------------------|-------------------------|------------|---------------------|---------------|---------------|
| Diámetro nominal     | Diámetro exterior al chaflán | Diámetro interior al extremo | Espesor de pared T               | Centro a extremo Dimension A, C, M | Longitud H              | Longitud H | Diámetro exterior G | Espesor T     | Radio R       |
| Pulgada              | mm                           | mm                           |                                  | mm                                 | mm                      | mm         | mm                  | mm            | mm            |
| 1/2" a 2 1/2"        | + 1,58<br>-0,79              | ± 0,79                       | No inferior al 87,5% del espesor | ± 1,58                             | ± 1,58                  | ± 3,17     | + 0<br>- 0,79       | + 1,58<br>- 0 | + 0<br>- 0,79 |
| 3" a 3 1/2"          | ± 1,58                       | ± 1,58                       |                                  | ± 1,58                             | ± 1,58                  | ± 3,17     | + 0<br>- 0,79       | + 1,58<br>- 0 | + 0<br>- 0,79 |
| 4"                   | ± 1,58                       | ± 1,58                       |                                  | ± 1,58                             | ± 1,58                  | ± 3,17     | + 0<br>- 0,79       | + 1,58<br>- 0 | + 0<br>- 1,58 |
| 5" a 8"              | + 2,38<br>- 1,58             | ± 1,58                       |                                  | ± 1,58                             | ± 1,58                  | ± 6,35     | + 0<br>0,79         | ± 1,58<br>- 0 | + 0<br>- 1,58 |
| 10" a 18"            | + 3,96<br>- 3,17             | ± 3,17                       |                                  | ± 2,38                             | ± 2,38                  | ± 6,35     | + 0<br>- 1,58       | + 1,58<br>- 0 | + 0<br>- 1,58 |
| 20" a 24"            | + 6,35<br>- 4,76             | ± 4,76                       |                                  | ± 2,38                             | ± 2,38                  | ± 6,35     | + 0<br>- 1,58       | + 1,58<br>- 0 | + 0<br>- 1,58 |
| 26" a 30"            | + 6,35<br>- 4,76             | ± 4,76                       |                                  | ± 3,17                             | ± 4,76                  | ± 9,52     | -                   | -             | -             |
| 32" a 48"            | + 6,35<br>- 4,76             | ± 4,76                       |                                  | ± 4,76                             | ± 4,76                  | ± 9,52     | -                   | -             | -             |





## Bridas y accesorios forjados de acero inoxidable

### ASME / ANSI B16.5

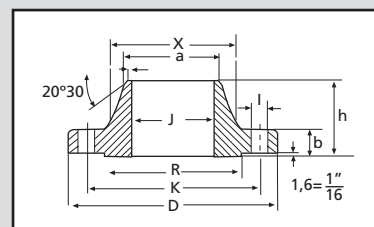
| Especificación de materiales |                       |                    |                        |                 |                       |              |              |               |               |         |       |         |                |
|------------------------------|-----------------------|--------------------|------------------------|-----------------|-----------------------|--------------|--------------|---------------|---------------|---------|-------|---------|----------------|
| Material                     | Propiedades mecánicas |                    |                        |                 | Composición química % |              |              |               |               |         |       |         |                |
|                              | Resistencia<br>MPa    | L. elástico<br>MPa | Alarga-<br>miento<br>% | Estricción<br>% | C                     | Mn           | Si           | S             | P             | Cr      | Ni    | Mo      | Ti             |
| A-182 F-304                  | 515<br>485 min.*      | 205<br>min.        | 30<br>min.             | 50<br>min.      | 0,08<br>máx.          | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 18-20   | 8-11  | -       | -              |
| A-182 F-304 L                | 485<br>450 min.*      | 170<br>min.        | 30<br>min.             | 50<br>min.      | 0,035<br>máx.         | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 18-20   | 8-13  | -       | -              |
| A-182 F-316                  | 515<br>485 min.*      | 205<br>min.        | 30<br>min.             | 50<br>min.      | 0,08<br>máx.          | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 16-18   | 10-14 | 2,0-3,0 | -              |
| A-182 F-316 L                | 485<br>450 min.*      | 170<br>min.        | 30<br>min.             | 50<br>min.      | 0,035<br>máx.         | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 16-18   | 10-15 | 2,0-3,0 | -              |
| A-182 F-321                  | 515<br>485 min.*      | 205<br>min.        | 30<br>min.             | 50<br>min.      | 0,08<br>máx.          | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 17 min. | 9-12  | -       | >5xC<br><0,70% |
| A-182 F-310                  | 515<br>485 min.*      | 205<br>min.        | 30<br>min.             | 50<br>min.      | 0,15<br>máx.          | 2,00<br>máx. | 1,00<br>máx. | 0,030<br>máx. | 0,040<br>máx. | 24-26   | 19-22 | -       | -              |

(\*) Para secciones >130 mm.





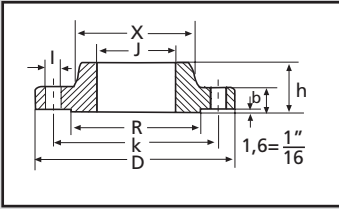
## Bridas welding-neck de acero inoxidable ASME / ANSI B 16.5



| Welding Neck - ANSI 150 Lbs |       |  |      |       |        |        |              |          |       |        |               |
|-----------------------------|-------|--|------|-------|--------|--------|--------------|----------|-------|--------|---------------|
| Diámetro nominal            | Brida |  |      |       | Cuello |        | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                             | D mm  | J mm                                   | b mm | h mm  | a mm   | x mm   |              | Número   | I mm  | K mm   |               |
| 1/2"                        | 88,9  | Debe ser especificado por el comprador | 11,1 | 47,6  | 21,34  | 30,20  | 34,90        | 4        | 15,75 | 60,30  | 0,90          |
| 3/4"                        | 98,4  |  | 12,7 | 52,4  | 26,67  | 38,10  | 42,90        | 4        | 15,75 | 69,80  | 0,90          |
| 1"                          | 107,9 |  | 14,3 | 55,6  | 33,40  | 49,20  | 50,80        | 4        | 15,75 | 79,40  | 1,40          |
| 1 1/4"                      | 117,5 |  | 15,9 | 57,1  | 42,16  | 58,70  | 63,50        | 4        | 15,75 | 88,90  | 1,40          |
| 1 1/2"                      | 127,0 |  | 17,5 | 61,9  | 48,26  | 65,10  | 73,00        | 4        | 15,75 | 98,40  | 1,80          |
| 2"                          | 152,4 |  | 19,1 | 63,5  | 60,33  | 77,80  | 92,10        | 4        | 19,05 | 120,60 | 2,70          |
| 2 1/2"                      | 177,8 |  | 22,2 | 69,8  | 73,03  | 90,50  | 104,80       | 4        | 19,05 | 139,70 | 3,60          |
| 3"                          | 190,5 |  | 23,8 | 69,8  | 88,90  | 107,90 | 127,00       | 4        | 19,05 | 152,40 | 4,50          |
| 3 1/2"                      | 215,9 |  | 23,8 | 71,4  | 101,60 | 122,20 | 139,70       | 8        | 19,05 | 177,80 | 5,40          |
| 4"                          | 228,6 |  | 23,8 | 76,2  | 114,30 | 134,90 | 157,20       | 8        | 19,05 | 190,50 | 6,80          |
| 5"                          | 254,0 |  | 23,8 | 88,9  | 141,30 | 163,50 | 185,70       | 8        | 22,35 | 215,90 | 8,60          |
| 6"                          | 279,4 |  | 25,4 | 88,9  | 168,28 | 192,10 | 215,90       | 8        | 22,35 | 241,30 | 10,90         |
| 8"                          | 342,9 |  | 28,6 | 101,6 | 219,08 | 246,10 | 269,90       | 8        | 22,35 | 298,40 | 17,70         |
| 10"                         | 406,4 |  | 30,2 | 101,6 | 273,05 | 304,80 | 323,80       | 12       | 25,4  | 361,90 | 23,60         |
| 12"                         | 482,6 |  | 31,8 | 114,3 | 323,85 | 365,10 | 381,00       | 12       | 25,4  | 431,80 | 36,30         |
| 14"                         | 533,4 |  | 34,9 | 127,0 | 355,60 | 400,00 | 412,70       | 12       | 28,45 | 476,20 | 50,00         |
| 16"                         | 596,9 |  | 36,5 | 127,0 | 406,40 | 457,20 | 469,90       | 16       | 28,45 | 539,70 | 64,00         |
| 18"                         | 635,0 |  | 39,7 | 139,7 | 457,20 | 504,80 | 533,40       | 16       | 31,75 | 577,80 | 68,00         |
| 20"                         | 698,5 |  | 42,9 | 144,5 | 508,00 | 558,80 | 584,20       | 20       | 31,75 | 635,00 | 81,60         |
| 24"                         | 812,8 |  | 47,6 | 152,4 | 609,60 | 663,60 | 692,10       | 20       | 35,05 | 749,30 | 118,00        |

| Welding Neck - ANSI 300 Lbs |        |  |       |        |        |        |              |          |       |        |               |
|-----------------------------|--------|--|-------|--------|--------|--------|--------------|----------|-------|--------|---------------|
| Diámetro nominal            | Brida  |  |       |        | Cuello |        | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                             | D mm   | J mm                                   | b mm  | h mm   | a mm   | x mm   |              | Número   | I mm  | K mm   |               |
| 1/2"                        | 95,20  | Debe ser especificado por el comprador | 14,30 | 52,40  | 21,34  | 38,10  | 34,90        | 4        | 15,75 | 66,70  | 0,90          |
| 3/4"                        | 117,50 |  | 15,90 | 57,10  | 26,67  | 47,60  | 42,90        | 4        | 19,05 | 82,50  | 1,40          |
| 1"                          | 123,80 |  | 17,50 | 61,90  | 33,40  | 54,00  | 50,80        | 4        | 19,05 | 88,90  | 1,80          |
| 1 1/4"                      | 133,30 |  | 19,00 | 65,10  | 46,16  | 63,50  | 63,50        | 4        | 19,05 | 98,40  | 2,30          |
| 1 1/2"                      | 155,60 |  | 20,60 | 68,30  | 48,26  | 69,80  | 73,00        | 4        | 22,35 | 114,30 | 3,20          |
| 2"                          | 165,10 |  | 22,20 | 69,80  | 60,33  | 84,10  | 92,10        | 8        | 19,05 | 127,00 | 4,10          |
| 2 1/2"                      | 190,50 |  | 25,40 | 76,20  | 73,03  | 100,00 | 104,80       | 8        | 22,35 | 149,20 | 5,40          |
| 3"                          | 209,50 |  | 28,60 | 79,40  | 88,90  | 117,50 | 127,00       | 8        | 22,35 | 168,30 | 6,80          |
| 3 1/2"                      | 228,60 |  | 30,20 | 81,00  | 101,60 | 133,30 | 139,70       | 8        | 22,35 | 184,10 | 8,20          |
| 4"                          | 254,00 |  | 31,80 | 85,70  | 114,30 | 146,00 | 157,20       | 8        | 22,35 | 200,00 | 11,30         |
| 5"                          | 279,40 |  | 34,90 | 98,40  | 141,30 | 177,80 | 185,70       | 8        | 22,35 | 234,90 | 14,50         |
| 6"                          | 317,50 |  | 36,50 | 98,40  | 168,28 | 206,40 | 215,90       | 12       | 22,35 | 269,90 | 19,00         |
| 8"                          | 381,00 |  | 41,30 | 111,10 | 219,08 | 260,30 | 269,90       | 12       | 25,40 | 330,20 | 30,40         |
| 10"                         | 444,50 |  | 47,60 | 117,50 | 273,05 | 320,70 | 323,80       | 16       | 28,45 | 387,30 | 41,30         |
| 12"                         | 520,70 |  | 50,80 | 130,20 | 323,85 | 374,60 | 381,00       | 16       | 31,75 | 450,80 | 83,50         |
| 14"                         | 584,20 |  | 54,00 | 142,90 | 355,60 | 425,40 | 412,70       | 20       | 31,75 | 514,30 | 81,60         |
| 16"                         | 647,70 |  | 57,20 | 146,00 | 406,40 | 482,60 | 469,90       | 20       | 35,05 | 571,50 | 113,00        |
| 18"                         | 711,20 |  | 60,30 | 158,00 | 457,20 | 533,40 | 533,40       | 24       | 35,05 | 628,60 | 145,00        |
| 20"                         | 774,70 |  | 63,50 | 161,90 | 508,00 | 587,40 | 584,20       | 24       | 35,05 | 685,80 | 181,00        |
| 24"                         | 914,40 |  | 69,80 | 168,30 | 609,30 | 701,70 | 692,10       | 24       | 41,15 | 812,80 | 263,00        |

Análisis químico y propiedades mecánicas, ver tabla página 102.



## Bridas slip-on de acero inoxidable ASME / ANSI B 16.5

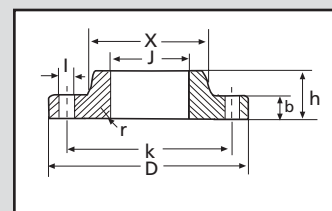
| Slip-on - ANSI 150 Lbs |        |        |       |       |             |              |          |       |        |               |
|------------------------|--------|--------|-------|-------|-------------|--------------|----------|-------|--------|---------------|
| Diámetro nominal       | Brida  |        |       |       | Cuello x mm | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                        | D mm   | J mm   | b mm  | h mm  |             |              | Número   | l mm  | K mm   |               |
| 1/2"                   | 88,90  | 22,30  | 11,10 | 15,90 | 30,20       | 34,90        | 4        | 15,75 | 60,30  | 0,50          |
| 3/4"                   | 98,40  | 27,70  | 12,70 | 15,90 | 38,10       | 42,90        | 4        | 15,75 | 69,80  | 0,90          |
| 1"                     | 107,90 | 34,50  | 14,30 | 17,50 | 49,20       | 50,80        | 4        | 15,75 | 79,40  | 0,90          |
| 1 1/4"                 | 117,50 | 43,20  | 15,90 | 20,60 | 58,70       | 63,50        | 4        | 15,75 | 88,90  | 1,40          |
| 1 1/2"                 | 127,00 | 49,50  | 17,50 | 22,20 | 65,10       | 73,00        | 4        | 15,75 | 98,40  | 1,40          |
| 2"                     | 152,40 | 62,00  | 19,10 | 25,40 | 77,80       | 92,10        | 4        | 19,05 | 120,60 | 2,30          |
| 2 1/2"                 | 177,80 | 74,70  | 22,20 | 28,60 | 90,50       | 104,80       | 4        | 19,05 | 139,70 | 3,20          |
| 3"                     | 190,50 | 90,70  | 23,80 | 30,20 | 107,90      | 127,00       | 4        | 19,05 | 152,40 | 3,60          |
| 3 1/2"                 | 215,90 | 103,40 | 23,80 | 31,70 | 122,20      | 139,70       | 8        | 19,05 | 177,80 | 5,00          |
| 4"                     | 228,60 | 116,10 | 23,80 | 33,30 | 134,90      | 157,20       | 8        | 19,05 | 190,50 | 5,90          |
| 5"                     | 254,00 | 143,80 | 23,80 | 36,50 | 163,50      | 185,70       | 8        | 22,35 | 215,90 | 6,80          |
| 6"                     | 279,40 | 170,70 | 25,40 | 39,70 | 192,10      | 215,90       | 8        | 22,35 | 241,30 | 8,60          |
| 8"                     | 342,90 | 221,50 | 28,60 | 44,40 | 246,0       | 269,90       | 8        | 22,35 | 298,40 | 13,60         |
| 10"                    | 406,40 | 276,30 | 30,20 | 49,20 | 304,80      | 323,80       | 12       | 25,4  | 361,90 | 19,50         |
| 12"                    | 482,60 | 327,10 | 31,80 | 55,60 | 365,10      | 381,00       | 12       | 25,4  | 431,80 | 29,00         |
| 14"                    | 533,40 | 359,10 | 34,90 | 57,10 | 400,00      | 412,70       | 12       | 28,45 | 476,20 | 41,00         |
| 16"                    | 596,90 | 410,50 | 36,50 | 63,50 | 457,20      | 469,90       | 16       | 28,45 | 539,70 | 44,50         |
| 18"                    | 635,00 | 461,80 | 39,70 | 68,30 | 504,80      | 533,40       | 16       | 31,75 | 577,80 | 59,00         |
| 20"                    | 698,50 | 513,10 | 42,90 | 73,00 | 558,80      | 584,20       | 20       | 31,75 | 635,00 | 75,00         |
| 24"                    | 812,80 | 615,95 | 47,60 | 82,50 | 663,60      | 692,10       | 20       | 35,05 | 749,30 | 99,80         |

| Slip-on - ANSI 300 Lbs |        |        |       |        |             |              |          |       |        |               |
|------------------------|--------|--------|-------|--------|-------------|--------------|----------|-------|--------|---------------|
| Diámetro nominal       | Brida  |        |       |        | Cuello x mm | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                        | D mm   | J mm   | b mm  | h mm   |             |              | Número   | l mm  | K mm   |               |
| 1/2"                   | 95,20  | 22,30  | 14,30 | 22,20  | 38,10       | 34,90        | 4        | 15,75 | 66,70  | 0,90          |
| 3/4"                   | 117,50 | 27,70  | 15,90 | 25,40  | 47,60       | 42,90        | 4        | 19,05 | 82,50  | 1,40          |
| 1"                     | 123,80 | 34,50  | 17,50 | 27,00  | 54,00       | 50,80        | 4        | 19,05 | 88,90  | 1,40          |
| 1 1/4"                 | 133,30 | 43,20  | 19,00 | 27,00  | 63,50       | 63,50        | 4        | 19,05 | 98,40  | 1,80          |
| 1 1/2"                 | 155,60 | 49,50  | 20,60 | 30,20  | 69,80       | 73,00        | 4        | 22,35 | 114,30 | 2,70          |
| 2"                     | 165,10 | 62,00  | 22,20 | 33,30  | 84,10       | 92,10        | 8        | 19,05 | 127,00 | 3,20          |
| 2 1/2"                 | 190,50 | 74,70  | 25,40 | 38,10  | 100,00      | 104,80       | 8        | 22,35 | 149,20 | 4,50          |
| 3"                     | 209,50 | 90,70  | 28,60 | 42,90  | 117,50      | 127,00       | 8        | 22,35 | 168,30 | 5,90          |
| 3 1/2"                 | 228,50 | 103,40 | 30,20 | 44,40  | 133,40      | 139,70       | 8        | 22,35 | 184,10 | 7,70          |
| 4"                     | 254,00 | 116,10 | 31,80 | 47,60  | 146,00      | 157,20       | 8        | 22,35 | 200,00 | 10,00         |
| 5"                     | 279,40 | 143,80 | 34,90 | 50,80  | 177,80      | 185,70       | 8        | 22,35 | 234,90 | 12,70         |
| 6"                     | 317,50 | 170,70 | 36,50 | 52,40  | 206,40      | 215,90       | 12       | 22,35 | 269,90 | 17,70         |
| 8"                     | 381,00 | 221,50 | 41,30 | 61,90  | 260,30      | 269,90       | 12       | 25,4  | 330,20 | 26,30         |
| 10"                    | 444,50 | 276,30 | 47,60 | 66,70  | 320,70      | 323,80       | 16       | 28,45 | 387,30 | 36,70         |
| 12"                    | 520,70 | 327,10 | 50,80 | 73,00  | 374,60      | 381,00       | 16       | 31,75 | 450,80 | 52,20         |
| 14"                    | 584,20 | 359,10 | 54,00 | 76,20  | 425,40      | 412,70       | 20       | 31,75 | 514,30 | 74,80         |
| 16"                    | 647,70 | 410,50 | 57,20 | 82,50  | 482,60      | 469,90       | 20       | 35,05 | 571,50 | 86,20         |
| 18"                    | 711,20 | 461,80 | 60,30 | 88,90  | 533,40      | 533,40       | 24       | 35,05 | 628,50 | 113,00        |
| 20"                    | 774,70 | 513,10 | 63,50 | 95,20  | 587,40      | 584,20       | 24       | 35,05 | 685,80 | 143,00        |
| 24"                    | 914,40 | 615,90 | 69,80 | 106,40 | 701,70      | 692,10       | 24       | 41,15 | 812,80 | 215,00        |





## Bridas lap-joint de acero inoxidable ASME / ANSI B 16.5

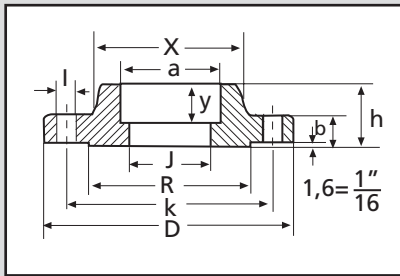


Lap-joint - ANSI 150 Lbs

| Diámetro nominal | Brida   |         |         |         |         | Cuello<br>x<br>mm | Taladros |         |         | Peso aprox<br>Kg |
|------------------|---------|---------|---------|---------|---------|-------------------|----------|---------|---------|------------------|
|                  | D<br>mm | J<br>mm | b<br>mm | h<br>mm | r<br>mm |                   | Número   | l<br>mm | K<br>mm |                  |
| 1/2"             | 88,90   | 22,90   | 11,10   | 15,90   | 3,20    | 30,20             | 4        | 15,75   | 60,30   | 0,50             |
| 3/4"             | 98,40   | 28,20   | 12,70   | 15,90   | 3,20    | 38,10             | 4        | 15,75   | 69,80   | 0,90             |
| 1"               | 107,90  | 35,00   | 14,30   | 17,50   | 3,20    | 49,20             | 4        | 15,75   | 79,40   | 0,90             |
| 1 1/4"           | 117,50  | 43,70   | 15,90   | 20,60   | 4,80    | 58,70             | 4        | 15,75   | 88,90   | 1,40             |
| 1 1/2"           | 127,00  | 50,00   | 17,50   | 22,20   | 6,30    | 65,10             | 4        | 15,75   | 98,40   | 1,40             |
| 2"               | 152,40  | 62,50   | 19,10   | 25,40   | 7,90    | 77,80             | 4        | 19,05   | 120,60  | 2,30             |
| 2 1/2"           | 177,80  | 75,40   | 22,20   | 28,60   | 7,90    | 90,50             | 4        | 19,05   | 139,70  | 3,20             |
| 3"               | 190,50  | 91,40   | 23,80   | 30,20   | 9,50    | 107,90            | 4        | 19,05   | 152,40  | 3,60             |
| 3 1/2"           | 215,90  | 104,10  | 23,80   | 31,70   | 9,50    | 122,20            | 8        | 19,05   | 177,80  | 5,00             |
| 4"               | 228,60  | 116,80  | 23,80   | 33,30   | 11,10   | 134,90            | 8        | 19,05   | 190,50  | 5,90             |
| 5"               | 254,00  | 144,50  | 23,80   | 36,50   | 11,10   | 163,50            | 8        | 22,35   | 215,90  | 6,80             |
| 6"               | 279,40  | 171,4   | 25,40   | 39,70   | 12,70   | 192,10            | 8        | 22,35   | 241,30  | 8,60             |
| 8"               | 342,90  | 222,20  | 28,60   | 44,40   | 12,70   | 246,10            | 8        | 22,35   | 298,40  | 13,60            |
| 10"              | 406,40  | 277,40  | 30,20   | 49,20   | 12,70   | 304,80            | 12       | 25,40   | 361,90  | 19,50            |
| 12"              | 482,60  | 328,20  | 31,80   | 55,60   | 12,70   | 365,10            | 12       | 25,40   | 431,80  | 29,00            |
| 14"              | 533,40  | 360,20  | 34,90   | 79,40   | 12,70   | 400,00            | 12       | 28,45   | 476,20  | 47,60            |
| 16"              | 596,90  | 411,20  | 36,50   | 87,30   | 12,70   | 457,20            | 16       | 28,45   | 539,70  | 63,50            |
| 18"              | 635,00  | 462,30  | 39,70   | 96,80   | 12,70   | 504,80            | 16       | 31,75   | 577,80  | 72,60            |
| 20"              | 698,50  | 514,30  | 42,90   | 103,20  | 12,70   | 558,80            | 20       | 31,75   | 635,00  | 88,50            |
| 24"              | 812,80  | 615,90  | 47,60   | 111,10  | 12,70   | 663,60            | 20       | 35,05   | 749,30  | 125,00           |

Lap-joint - ANSI 300 Lbs

| Diámetro nominal | Brida   |         |         |         |         | Cuello<br>x<br>mm | Taladros |         |         | Peso aprox<br>Kg |
|------------------|---------|---------|---------|---------|---------|-------------------|----------|---------|---------|------------------|
|                  | D<br>mm | J<br>mm | b<br>mm | h<br>mm | r<br>mm |                   | Número   | l<br>mm | K<br>mm |                  |
| 1/2"             | 95,20   | 22,90   | 14,30   | 22,20   | 3,20    | 38,10             | 4        | 15,75   | 66,70   | 0,90             |
| 3/4"             | 117,50  | 28,20   | 15,90   | 25,40   | 3,20    | 47,60             | 4        | 19,05   | 82,50   | 1,40             |
| 1"               | 123,80  | 350     | 17,50   | 27,00   | 3,20    | 54,00             | 4        | 19,05   | 88,90   | 2,40             |
| 1 1/4"           | 133,30  | 43,70   | 19,10   | 27,00   | 4,80    | 63,50             | 4        | 19,05   | 98,4    | 1,80             |
| 1 1/2"           | 155,60  | 50,00   | 20,60   | 30,20   | 6,30    | 69,80             | 4        | 22,35   | 114,3   | 2,70             |
| 2"               | 165,10  | 62,50   | 22,20   | 33,30   | 7,90    | 84,10             | 8        | 19,05   | 127,0   | 3,20             |
| 2 1/2"           | 190,50  | 75,40   | 25,40   | 38,10   | 7,90    | 100,00            | 8        | 22,35   | 149,2   | 4,50             |
| 3"               | 209,50  | 91,40   | 28,60   | 42,90   | 9,50    | 117,50            | 8        | 22,35   | 168.3   | 5,90             |
| 3 1/2"           | 228,50  | 104,10  | 30,20   | 44,40   | 9,50    | 133,40            | 8        | 22,35   | 184,1   | 7,70             |
| 4"               | 254,00  | 116,80  | 31,80   | 47,60   | 11,10   | 146,00            | 8        | 22,35   | 200,0   | 10,00            |
| 5"               | 279,40  | 144,50  | 34,90   | 50,80   | 11,10   | 177,80            | 8        | 22,35   | 234,9   | 12,70            |
| 6"               | 317,50  | 171,40  | 36,50   | 52,40   | 12,70   | 206,40            | 12       | 22,35   | 269,9   | 17,70            |
| 8"               | 381,00  | 222,20  | 41,30   | 61,90   | 12,70   | 260,30            | 12       | 25,40   | 330,2   | 26,30            |
| 10"              | 444,50  | 277,40  | 47,60   | 95,20   | 12,70   | 320,70            | 16       | 28,45   | 387,3   | 41,30            |
| 12"              | 520,70  | 328,20  | 50,80   | 101,60  | 12,70   | 374,60            | 16       | 31,75   | 450,8   | 63,50            |
| 14"              | 584,20  | 360,20  | 54,00   | 111,10  | 12,70   | 425,40            | 20       | 31,75   | 514,3   | 86,20            |
| 16"              | 647,70  | 411,20  | 57,20   | 120,60  | 12,70   | 482,60            | 20       | 35,05   | 571,5   | 113,00           |
| 18"              | 711,20  | 462,30  | 60,30   | 130,20  | 12,70   | 533,40            | 24       | 35,05   | 628,5   | 134,00           |
| 20"              | 774,70  | 514,30  | 63,50   | 139,70  | 12,70   | 587,40            | 24       | 35,05   | 685,8   | 168,00           |
| 24"              | 914,40  | 615,90  | 69,80   | 152,40  | 12,70   | 701,70            | 24       | 41,15   | 812,8   | 249,00           |



## Bridas socket-welding de acero inoxidable ASME / ANSI B 16.5

| Socket welding - ANSI 150 Lbs |        |  |        |       |       |       |             |              |          |       |        |               |
|-------------------------------|--------|--|--------|-------|-------|-------|-------------|--------------|----------|-------|--------|---------------|
| Diámetro nominal              | Brida  |  |        |       |       |       | Cuello x mm | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                               | D mm   | J mm                                   | a mm   | y mm  | b mm  | h mm  |             |              | Número   | I mm  | K mm   |               |
| 1/4"                          | 88,90  | Debe ser especificado por el comprador | 14,70  | 9,50  | 11,10 | 15,90 | 30,20       | 34,90        | 4        | 15,75 | 60,30  | 0,30          |
| 3/8"                          | 88,90  |  | 18,30  | 9,50  | 11,10 | 15,90 | 30,20       | 34,90        | 4        | 15,75 | 60,30  | 0,40          |
| 1/2"                          | 88,90  |  | 22,35  | 9,50  | 11,10 | 15,90 | 30,20       | 34,90        | 4        | 15,75 | 60,30  | 0,40          |
| 3/4"                          | 98,40  |  | 27,70  | 11,10 | 12,70 | 15,90 | 38,10       | 42,90        | 4        | 15,75 | 69,80  | 0,70          |
| 1"                            | 107,90 |  | 34,50  | 12,70 | 14,30 | 17,50 | 49,20       | 50,80        | 4        | 15,75 | 79,40  | 0,90          |
| 1 1/4"                        | 127,00 |  | 43,20  | 14,30 | 17,50 | 22,20 | 65,10       | 73,00        | 4        | 15,75 | 88,90  | 1,20          |
| 1 1/2"                        | 127,00 |  | 49,50  | 15,90 | 17,50 | 22,20 | 65,10       | 73,00        | 4        | 15,75 | 98,40  | 1,50          |
| 2"                            | 152,40 |  | 62,00  | 17,50 | 19,10 | 25,40 | 77,80       | 92,10        | 4        | 19,05 | 120,60 | 2,30          |
| 2 1/2"                        | 177,80 |  | 74,70  | 19,01 | 22,30 | 28,60 | 90,50       | 104,80       | 4        | 19,05 | 139,70 | 3,70          |
| 3"                            | 190,50 |  | 90,70  | 20,60 | 23,80 | 30,20 | 107,90      | 127,00       | 4        | 19,05 | 152,40 | 4,20          |
| 3 1/2"                        | 215,90 |  | 103,40 | 22,20 | 23,80 | 31,70 | 122,20      | 139,70       | 8        | 19,05 | 177,80 | 5,30          |
| 4"                            | 228,60 |  | 116,10 | 23,80 | 23,80 | 33,30 | 134,90      | 157,20       | 8        | 19,05 | 190,50 | 5,90          |

| Socket welding - ANSI 300 Lbs |        |  |        |       |       |       |             |              |          |       |        |               |
|-------------------------------|--------|--|--------|-------|-------|-------|-------------|--------------|----------|-------|--------|---------------|
| Diámetro nominal              | Brida  |  |        |       |       |       | Cuello x mm | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|                               | D mm   | J mm                                   | a mm   | y mm  | b mm  | h mm  |             |              | Número   | I mm  | K mm   |               |
| 1/4"                          | 95,20  | Debe ser especificado por el comprador | 14,70  | 9,50  | 14,30 | 22,20 | 38,10       | 34,90        | 4        | 15,75 | 66,70  | 0,50          |
| 3/8"                          | 95,20  |  | 18,30  | 9,50  | 14,30 | 22,20 | 38,10       | 34,90        | 4        | 15,75 | 66,70  | 0,60          |
| 1/2"                          | 95,20  |  | 22,40  | 9,50  | 14,30 | 22,20 | 38,10       | 34,90        | 4        | 15,75 | 66,70  | 0,70          |
| 3/4"                          | 117,50 |  | 27,70  | 11,10 | 15,90 | 25,40 | 47,60       | 42,90        | 4        | 19,05 | 82,50  | 1,20          |
| 1"                            | 123,80 |  | 34,50  | 12,70 | 17,50 | 27,00 | 54,00       | 50,80        | 4        | 19,05 | 88,90  | 1,40          |
| 1 1/4"                        | 133,30 |  | 43,20  | 15,90 | 19,10 | 27,00 | 63,50       | 73,00        | 4        | 19,05 | 98,40  | 1,90          |
| 1 1/2"                        | 155,60 |  | 49,50  | 15,90 | 20,60 | 30,20 | 69,80       | 73,00        | 4        | 22,35 | 114,30 | 2,80          |
| 2"                            | 165,10 |  | 62,00  | 17,50 | 22,20 | 33,30 | 84,10       | 92,10        | 8        | 19,05 | 127,00 | 3,30          |
| 2 1/2"                        | 190,50 |  | 74,70  | 19,01 | 25,40 | 38,10 | 100,00      | 104,80       | 8        | 22,35 | 149,20 | 4,60          |
| 3"                            | 209,55 |  | 90,70  | 20,60 | 28,60 | 42,90 | 117,50      | 127,00       | 8        | 22,35 | 168,30 | 6,30          |
| 3 1/2"                        | 228,60 |  | 103,40 | 22,20 | 30,20 | 44,40 | 133,35      | 139,70       | 8        | 22,35 | 184,15 | 7,80          |
| 4"                            | 254,00 |  | 116,10 | 23,80 | 31,80 | 47,60 | 146,05      | 157,20       | 8        | 22,35 | 200,00 | 10,20         |

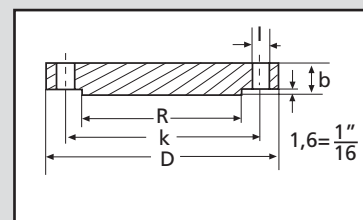
Análisis químico y propiedades mecánicas, ver tabla página 102.





## Bridas ciegas de acero inoxidable

### ASME / ANSI B 16.5



Blind - ANSI 150 Lbs

| Diámetro nominal | Brida  |       | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|------------------|--------|-------|--------------|----------|-------|--------|---------------|
|                  | D mm   | b mm  |              | Número   | I mm  | K mm   |               |
| 1/2"             | 88,90  | 11,10 | 34,90        | 4        | 15,75 | 60,30  | 0,50          |
| 3/4"             | 98,40  | 12,70 | 42,90        | 4        | 15,75 | 69,80  | 0,90          |
| 1"               | 107,90 | 14,30 | 50,80        | 4        | 15,75 | 79,40  | 0,90          |
| 1 1/4"           | 117,50 | 15,90 | 63,50        | 4        | 15,75 | 88,90  | 1,40          |
| 1 1/2"           | 127,00 | 17,50 | 73,00        | 4        | 15,75 | 98,40  | 1,80          |
| 2"               | 152,40 | 19,10 | 92,10        | 4        | 19,05 | 120,60 | 2,30          |
| 2 1/2"           | 177,80 | 22,20 | 104,80       | 4        | 19,05 | 139,70 | 3,20          |
| 3"               | 190,50 | 23,80 | 127,00       | 4        | 19,05 | 152,40 | 4,10          |
| 3 1/2"           | 215,90 | 23,80 | 139,70       | 8        | 19,05 | 177,80 | 5,90          |
| 4"               | 228,60 | 23,80 | 157,20       | 8        | 19,05 | 190,50 | 7,70          |
| 5"               | 254,00 | 23,80 | 185,70       | 8        | 22,35 | 215,90 | 9,10          |
| 6"               | 279,40 | 25,40 | 215,90       | 8        | 22,35 | 241,30 | 11,80         |
| 8"               | 342,90 | 28,60 | 269,90       | 8        | 22,35 | 298,40 | 210           |
| 10"              | 406,40 | 30,20 | 323,80       | 12       | 25,40 | 361,90 | 31,80         |
| 12"              | 482,60 | 31,80 | 381,00       | 12       | 25,40 | 431,80 | 49,90         |
| 14"              | 533,40 | 34,90 | 412,70       | 12       | 28,45 | 476,20 | 63,50         |
| 16"              | 569,90 | 36,50 | 469,90       | 16       | 28,45 | 539,70 | 81,60         |
| 18"              | 635,00 | 39,70 | 533,40       | 16       | 31,75 | 577,80 | 99,80         |
| 20"              | 698,50 | 42,90 | 584,20       | 20       | 31,75 | 635,00 | 129,00        |
| 24"              | 812,80 | 47,60 | 692,10       | 20       | 35,05 | 749,30 | 195,00        |

Blind - ANSI 300 Lbs

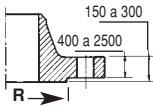
| Diámetro nominal | Brida  |       | Resalte R mm | Taladros |       |        | Peso aprox Kg |
|------------------|--------|-------|--------------|----------|-------|--------|---------------|
|                  | D mm   | b mm  |              | Número   | I mm  | K mm   |               |
| 1/2"             | 95,20  | 14,30 | 34,90        | 4        | 15,75 | 66,70  | 0,90          |
| 3/4"             | 117,50 | 15,90 | 42,90        | 4        | 19,05 | 82,50  | 1,40          |
| 1"               | 123,80 | 17,50 | 50,80        | 4        | 19,05 | 88,90  | 1,40          |
| 1 1/4"           | 133,30 | 19,00 | 63,50        | 4        | 19,05 | 98,40  | 1,80          |
| 1 1/2"           | 155,60 | 20,60 | 73,00        | 4        | 22,35 | 114,30 | 2,70          |
| 2"               | 165,10 | 22,20 | 92,10        | 8        | 19,05 | 127,00 | 3,60          |
| 2 1/2"           | 190,50 | 25,40 | 104,80       | 8        | 22,35 | 149,20 | 5,40          |
| 3"               | 209,50 | 28,60 | 127,00       | 8        | 22,35 | 168,30 | 7,30          |
| 3 1/2"           | 228,60 | 30,20 | 139,70       | 8        | 22,35 | 184,10 | 9,50          |
| 4"               | 254,00 | 31,80 | 157,20       | 8        | 22,35 | 200,00 | 12,20         |
| 5"               | 279,40 | 34,90 | 185,70       | 8        | 22,35 | 234,90 | 15,90         |
| 6"               | 317,50 | 36,50 | 215,90       | 12       | 22,35 | 269,90 | 22,70         |
| 8"               | 381,00 | 41,30 | 269,90       | 12       | 25,40 | 330,20 | 36,70         |
| 10"              | 444,50 | 47,60 | 323,80       | 16       | 28,45 | 387,30 | 57,00         |
| 12"              | 520,70 | 50,80 | 381,00       | 16       | 31,75 | 450,80 | 84,00         |
| 14"              | 584,20 | 54,00 | 412,70       | 20       | 31,75 | 514,30 | 113,00        |
| 16"              | 647,70 | 57,20 | 469,90       | 20       | 35,05 | 571,50 | 134,00        |
| 18"              | 711,20 | 60,30 | 533,40       | 24       | 35,05 | 628,60 | 178,00        |
| 20"              | 774,70 | 63,50 | 584,20       | 24       | 35,05 | 685,80 | 229,00        |
| 24"              | 914,40 | 69,80 | 692,10       | 24       | 41,15 | 812,80 | 358,00        |



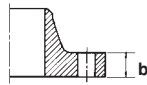


## Caras de junta / ANSI 150 - 2500 lbs

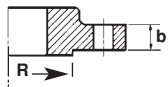
cara con resalte



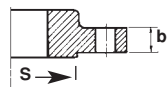
cara plana



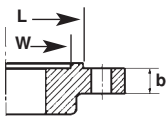
Macho- Hembra Grande



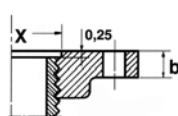
Macho- Hembra Pequeña



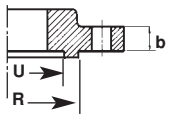
Macho



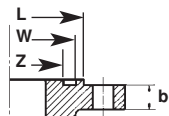
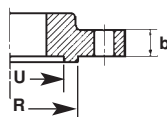
Hembra



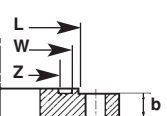
Proyección-Ranurado Grande



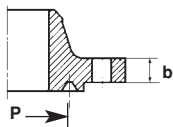
Proyección



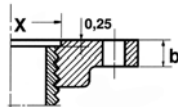
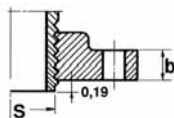
Ranurado



Junta con Aro



Macho- Hembra Pequeño



## Acabado de junta MSS-SP-6

Denominación

Perfil

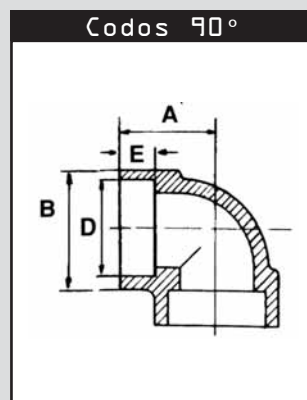
| Denominación                               | Perfil          |
|--|-----------------|
| Acabado estandar $\leq 12''$               | Espiral<br>     |
| Acabado estandar $\geq 12''$               | Espiral<br>     |
| Serrado en espiral para todas las medidas  | Espiral<br>     |
| Serrado concéntrico para todas las medidas | Concéntrico<br> |
| Mecanizado fino                            |                 |
| Rectificado                                |                 |



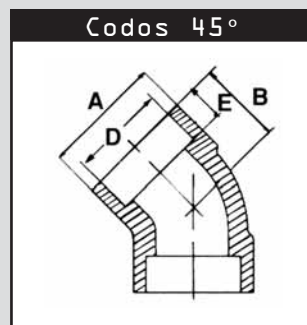
# Accesorios forjados de acero inoxidable

ASME / ANSI B 16.11 - Enchufe y soldadura (S.W.)

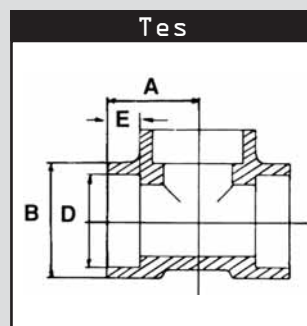
|        | 3.000 lbs |         |         |         |                | 6.000 lbs |         |         |         |                |
|--------|-----------|---------|---------|---------|----------------|-----------|---------|---------|---------|----------------|
|        | A<br>mm   | B<br>mm | D<br>mm | E<br>mm | Peso<br>Kg/100 | A<br>mm   | B<br>mm | D<br>mm | E<br>mm | Peso<br>Kg/100 |
| 1/4"   | 24,5      | 25,5    | 14,0    | 13,5    | 12,0           | -         | -       | -       | -       | -              |
| 3/8"   | 24,5      | 25,5    | 17,5    | 11,0    | 10,4           | -         | -       | -       | -       | -              |
| 1/2"   | 28,5      | 33,5    | 21,7    | 12,5    | 21,8           | 33,5      | 38,0    | 21,7    | 14,5    | 40,0           |
| 3/4"   | 33,5      | 38,0    | 27,1    | 14,5    | 30,8           | 38,0      | 46,0    | 27,1    | 16,0    | 62,1           |
| 1"     | 38,0      | 46,0    | 33,8    | 16,0    | 46,7           | 44,5      | 55,5    | 33,8    | 17,5    | 102,1          |
| 1 1/4" | 44,5      | 55,5    | 42,6    | 17,5    | 67,1           | 51,0      | 62,0    | 42,6    | 19,0    | 132,1          |
| 1 1/2" | 51,0      | 62,0    | 48,7    | 19,0    | 90,2           | 60,5      | 75,5    | 48,7    | 22,0    | 237,0          |
| 2"     | 60,5      | 75,7    | 61,1    | 22,0    | 136,1          | 63,5      | 84,0    | 61,1    | 22,0    | 272,4          |
| 2 1/2" | 76,0      | 92,0    | 73,8    | 34,5    | 280,0          | 86,0      | 110,0   | 73,8    | 30,0    | 580,0          |
| 3"     | 86,0      | 110,0   | 89,8    | 29,0    | 440,0          | 95,5      | 120,5   | 89,8    | 32,0    | 840,0          |
| 4"     | 114,5     | 152,5   | 115,4   | 48,0    | 1.330,0        | 114,5     | 152,5   | 115,4   | 35,0    | 1.580,0        |



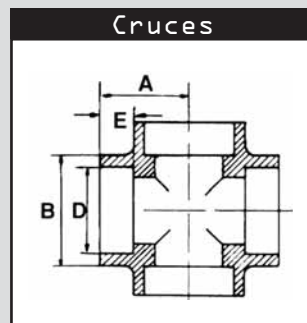
|        |       |      |       |      |       |       |      |       |      |         |
|--------|-------|------|-------|------|-------|-------|------|-------|------|---------|
| 1/4"   | 25,5  | 19,0 | 14,0  | 9,5  | 9,5   | -     | -    | -     | -    | -       |
| 3/8"   | 25,5  | 19,0 | 17,5  | 11,0 | 9,0   | -     | -    | -     | -    | -       |
| 1/2"   | 38,0  | 25,5 | 21,7  | 11,0 | 26,0  | 38,0  | 25,5 | 21,7  | 12,5 | 31,0    |
| 3/4"   | 38,0  | 25,5 | 27,1  | 12,5 | 25,0  | 46,0  | 28,5 | 27,1  | 14,5 | 52,0    |
| 1"     | 46,0  | 28,5 | 33,8  | 14,5 | 38,1  | 55,5  | 33,5 | 33,8  | 16,0 | 92,0    |
| 1 1/4" | 55,5  | 33,5 | 42,6  | 16,0 | 60,8  | 62,0  | 35,0 | 42,6  | 14,5 | 102,0   |
| 1 1/2" | 62,0  | 35,0 | 48,7  | 16,0 | 70,8  | 75,5  | 43,0 | 48,7  | 17,5 | 191,5   |
| 2"     | 75,5  | 43,0 | 61,1  | 17,5 | 113,5 | 84,0  | 43,5 | 61,1  | 15,0 | 228,5   |
| 2 1/2" | 101,5 | 52,5 | 73,8  | 24,0 | 336,0 | 101,5 | 52,5 | 73,8  | 20,5 | 404,0   |
| 3"     | 118,0 | 63,5 | 89,8  | 32,0 | 470,0 | 118,0 | 63,5 | 89,8  | 28,5 | 580,0   |
| 4"     | 146,0 | 79,5 | 115,4 | 38,0 | 900,0 | 146,0 | 79,5 | 115,4 | 38   | 1.065,0 |



|        |       |       |       |      |         |       |       |       |      |         |
|--------|-------|-------|-------|------|---------|-------|-------|-------|------|---------|
| 1/4"   | 24,5  | 25,5  | 14,0  | 13,5 | 15,5    | -     | -     | -     | -    | -       |
| 3/8"   | 24,5  | 25,5  | 17,5  | 11,0 | 14,1    | -     | -     | -     | -    | -       |
| 1/2"   | 28,5  | 33,5  | 21,7  | 12,5 | 30,8    | 33,5  | 38,0  | 21,7  | 14,5 | 52,6    |
| 3/4"   | 33,5  | 38,0  | 27,1  | 14,5 | 38,6    | 38,0  | 46,0  | 27,1  | 16,0 | 88,1    |
| 1"     | 38,0  | 46,0  | 33,8  | 16,0 | 60,8    | 44,5  | 55,5  | 33,8  | 17,5 | 144,0   |
| 1 1/4" | 44,5  | 55,5  | 42,6  | 17,5 | 93,1    | 51,0  | 62,0  | 42,6  | 19,0 | 179,3   |
| 1 1/2" | 51,0  | 62,0  | 48,7  | 19,0 | 123,8   | 60,5  | 75,5  | 48,7  | 22,0 | 324,0   |
| 2"     | 60,5  | 75,7  | 61,1  | 22,0 | 191,1   | 63,5  | 84,0  | 61,1  | 22,0 | 350,5   |
| 2 1/2" | 76,0  | 92,0  | 73,8  | 34,5 | 370,0   | 86,0  | 110,0 | 73,8  | 30,0 | 880,0   |
| 3"     | 86,0  | 110,0 | 89,8  | 29,0 | 550,0   | 95,5  | 120,5 | 89,8  | 32,0 | 1.050,0 |
| 4"     | 114,5 | 152,5 | 115,4 | 48,0 | 1.900,0 | 114,5 | 152,5 | 115,4 | 35,0 | 2.220,0 |



|        |       |       |       |      |       |       |       |       |      |       |
|--------|-------|-------|-------|------|-------|-------|-------|-------|------|-------|
| 1/4"   | 24,5  | 25,5  | 14,0  | 13,5 | 18,1  | -     | -     | -     | -    | -     |
| 3/8"   | 24,5  | 25,5  | 17,5  | 11,0 | 14,5  | -     | -     | -     | -    | -     |
| 1/2"   | 28,5  | 33,5  | 21,7  | 12,5 | 36,3  | 33,5  | 38,0  | 21,7  | 14,5 | 62,5  |
| 3/4"   | 33,5  | 38,0  | 27,1  | 14,5 | 44,9  | 38,0  | 46,0  | 27,1  | 16,0 | 104,0 |
| 1"     | 38,0  | 46,0  | 33,8  | 16,0 | 75,8  | 44,5  | 55,5  | 33,8  | 17,5 | 170,5 |
| 1 1/4" | 44,5  | 55,5  | 42,6  | 17,5 | 109,0 | 51,0  | 62,0  | 42,6  | 19,0 | 211,1 |
| 1 1/2" | 51,0  | 62,0  | 48,7  | 19,0 | 145,3 | 60,5  | 75,5  | 48,7  | 22,0 | 395,0 |
| 2"     | 60,5  | 75,7  | 61,1  | 22,0 | 235,2 | 63,5  | 84,0  | 61,1  | 22,0 | 422,2 |
| 2 1/2" | 76,0  | 92,0  | 73,8  | 34,5 | 450,0 | 86,0  | 110,0 | 73,8  | 30,0 | 1.180 |
| 3"     | 86,0  | 110,0 | 89,8  | 29,0 | 780,0 | 95,5  | 120,5 | 89,8  | 32,0 | 1.320 |
| 4"     | 114,5 | 152,5 | 115,4 | 48,0 | 2.150 | 114,5 | 152,5 | 115,4 | 35,0 | 2.600 |

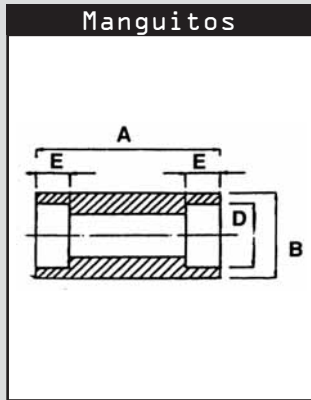


Análisis químico, ver tabla página 102.

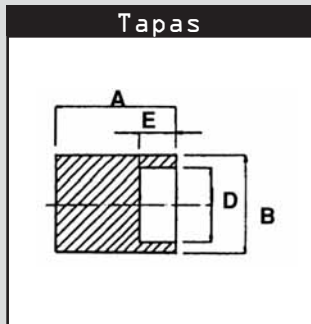


# Accesorios forjados de acero inoxidable

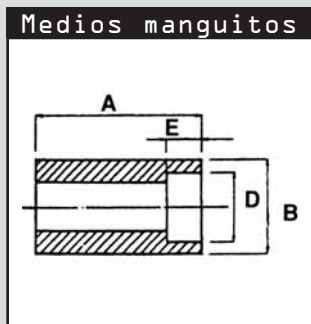
ASME / ANSI B 16.11 - Enchufe y soldadura (S.W)



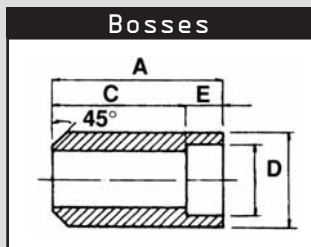
|        | 3.000 lbs |         |         |         |                | 6.000 lbs |         |         |         |                |
|--------|-----------|---------|---------|---------|----------------|-----------|---------|---------|---------|----------------|
|        | A<br>mm   | B<br>mm | D<br>mm | E<br>mm | Peso<br>Kg/100 | A<br>mm   | B<br>mm | D<br>mm | E<br>mm | Peso<br>Kg/100 |
| 1/4"   | 24,5      | 22,0    | 14,0    | 9,5     | 5,0            | -         | -       | -       | -       | -              |
| 3/8"   | 28,5      | 25,5    | 17,5    | 11,0    | 6,4            | -         | -       | -       | -       | -              |
| 1/2"   | 35,0      | 31,5    | 21,7    | 12,5    | 12,7           | 35,0      | 38,0    | 21,7    | 12,5    | 23,2           |
| 3/4"   | 38,0      | 38,0    | 27,1    | 14,5    | 18,6           | 38,0      | 44,5    | 27,1    | 14,5    | 32,0           |
| 1"     | 44,5      | 44,5    | 33,8    | 16,0    | 26,3           | 44,5      | 57,0    | 33,8    | 16,0    | 63,6           |
| 1 1/4" | 47,5      | 57,0    | 42,6    | 17,5    | 47,7           | 47,5      | 63,5    | 42,6    | 17,5    | 72,2           |
| 1 1/2" | 51,0      | 63,5    | 48,7    | 19,0    | 56,8           | 51,0      | 76,0    | 48,7    | 19,0    | 117,2          |
| 2"     | 63,5      | 76,0    | 61,1    | 22,0    | 92,2           | 63,5      | 92,0    | 61,1    | 22,0    | 207,9          |
| 2 1/2" | 66,5      | 92,0    | 73,8    | 23,5    | 140,0          | 66,5      | 108,0   | 73,8    | 23,5    | 280,0          |
| 3"     | 70,0      | 108,0   | 89,8    | 25,5    | 180,0          | 70,0      | 127,0   | 89,8    | 25,5    | 323,0          |
| 4"     | 76,0      | 140,0   | 115,4   | 28,5    | 323,0          | 76,0      | 159,0   | 115,4   | 28,5    | 622,0          |



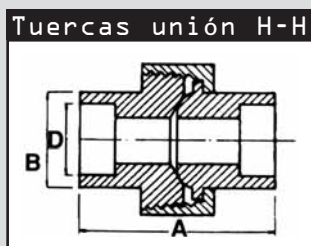
|        |      |       |       |      |       |      |       |       |      |       |
|--------|------|-------|-------|------|-------|------|-------|-------|------|-------|
| 1/4"   | 17,5 | 22,0  | 14,0  | 9,5  | 4,1   | -    | -     | -     | -    | -     |
| 3/8"   | 19,0 | 25,5  | 17,5  | 11,0 | 5,4   | -    | -     | -     | -    | -     |
| 1/2"   | 22,0 | 31,5  | 21,7  | 12,5 | 10,0  | 25,5 | 38,0  | 21,7  | 12,5 | 19,1  |
| 3/4"   | 25,5 | 38,0  | 27,1  | 14,5 | 16,3  | 27,0 | 44,5  | 27,1  | 14,5 | 26,5  |
| 1"     | 27,0 | 44,5  | 33,8  | 16,0 | 21,8  | 32,0 | 57,0  | 33,8  | 16,0 | 52,7  |
| 1 1/4" | 30,0 | 57,0  | 42,6  | 17,5 | 41,3  | 33,5 | 63,5  | 42,6  | 17,5 | 63,6  |
| 1 1/2" | 32,0 | 63,5  | 48,7  | 19,0 | 50,8  | 35,0 | 76,0  | 48,7  | 19,0 | 97,2  |
| 2"     | 38,0 | 76,0  | 61,1  | 22,0 | 85,4  | 41,5 | 92,0  | 61,1  | 22,0 | 164,3 |
| 2 1/2" | 38,0 | 92,0  | 73,8  | 23,5 | 125,0 | 41,5 | 108,0 | 73,8  | 23,5 | 223,0 |
| 3"     | 44,5 | 108,0 | 89,8  | 25,5 | 195,0 | 47,5 | 127,0 | 89,8  | 25,5 | 345,0 |
| 4"     | 47,5 | 140,0 | 115,4 | 28,5 | 336,0 | 54,0 | 159,0 | 115,4 | 28,5 | 604,0 |



|        |      |       |       |      |       |      |       |       |      |       |
|--------|------|-------|-------|------|-------|------|-------|-------|------|-------|
| 1/4"   | 25,5 | 22,0  | 14,0  | 9,5  | 5,0   | -    | -     | -     | -    | -     |
| 3/8"   | 28,5 | 25,5  | 17,5  | 11,0 | 6,4   | -    | -     | -     | -    | -     |
| 1/2"   | 35,0 | 31,5  | 21,7  | 12,5 | 12,7  | 35,0 | 38,0  | 21,7  | 12,5 | 23,2  |
| 3/4"   | 38,0 | 38,0  | 27,1  | 14,5 | 18,6  | 38,0 | 44,5  | 27,1  | 14,5 | 31,8  |
| 1"     | 44,5 | 44,5  | 33,8  | 16,0 | 26,3  | 44,5 | 57,0  | 33,8  | 16,0 | 63,6  |
| 1 1/4" | 47,5 | 57,0  | 42,6  | 17,5 | 47,2  | 47,5 | 63,5  | 42,6  | 17,5 | 72,2  |
| 1 1/2" | 51,0 | 63,5  | 48,7  | 19,0 | 56,8  | 51,0 | 76,0  | 48,7  | 19,0 | 117,2 |
| 2"     | 63,5 | 76,0  | 61,1  | 22,0 | 92,2  | 63,5 | 92,0  | 61,1  | 22,0 | 207,9 |
| 2 1/2" | 66,5 | 92,0  | 73,8  | 23,5 | 140,0 | 66,5 | 108,0 | 73,8  | 23,5 | 280,0 |
| 3"     | 70,0 | 108,0 | 89,8  | 25,5 | 180,0 | 70,0 | 127,0 | 89,8  | 25,5 | 323,0 |
| 4"     | 76,0 | 140,0 | 115,4 | 28,5 | 323,0 | 76,0 | 159,0 | 115,4 | 28,0 | 622,0 |



|                      | Pulg.      | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    |
|----------------------|------------|------|------|------|------|------|--------|--------|-------|
| 3.000 LB<br>6.000 LB | A (mm)     | 41,5 | 44,5 | 51,0 | 51,0 | 51,0 | 51,0   | 51,0   | 51,0  |
|                      | B (mm)     | 32,0 | 35,0 | 38,0 | 44,5 | 57,0 | 63,5   | 76,0   | 92,0  |
|                      | C (mm)     | 32,0 | 33,5 | 38,0 | 36,5 | 35,0 | 33,5   | 32,0   | 28,5  |
|                      | D (mm)     | 14,0 | 17,5 | 21,7 | 27,1 | 33,8 | 42,6   | 48,7   | 61,1  |
|                      | E (mm)     | 9,5  | 11,0 | 12,5 | 14,5 | 16,0 | 17,5   | 19,0   | 22,0  |
| Peso<br>Kg/100       | 3.000 lbs. | 22,5 | 29,0 | 35,5 | 48,0 | 76,5 | 84,0   | 120,5  | 171,0 |
|                      | 6.000 lbs. | -    | -    | 38,0 | 52,5 | 82,5 | 92,0   | 130,5  | 186,0 |



|          | Pulg.       | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    |
|----------|-------------|------|------|------|------|------|--------|--------|-------|
| 3.000 LB | A (mm)      | 44,5 | 47,5 | 54,0 | 58,5 | 63,5 | 71,5   | 79,5   | 92,0  |
|          | B (mm)      | 22,0 | 25,5 | 32,0 | 38,0 | 44,5 | 57,0   | 63,5   | 76,0  |
|          | D (mm)      | 14,0 | 17,5 | 21,7 | 27,1 | 33,8 | 42,6   | 48,7   | 61,1  |
|          | E (mm)      | 9,5  | 11,0 | 12,5 | 14,5 | 16,0 | 17,5   | 19,0   | 22,0  |
|          | Peso=Kg/100 | 22,5 | 34,0 | 39,0 | 48,0 | 66,0 | 115,0  | 142,0  | 245,0 |

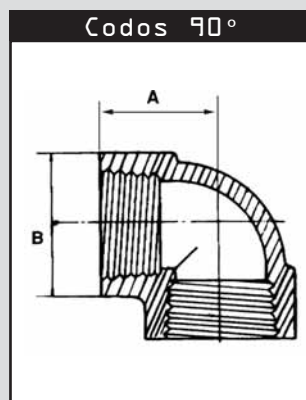
Análisis químico, ver tabla página 102.



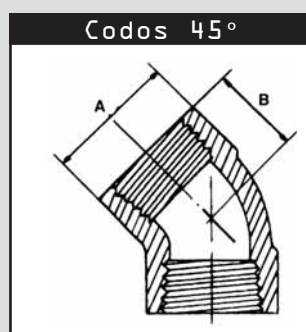
# Accesorios forjados de acero inoxidable roscados

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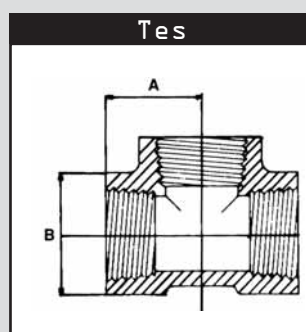
| Diámetro | 3.000 lbs |       |             | 6.000 lbs |       |             |
|----------|-----------|-------|-------------|-----------|-------|-------------|
|          | A mm      | B mm  | Peso Kg/100 | A mm      | B mm  | Peso Kg/100 |
| 1/4"     | 24,5      | 25,5  | 14,0        | 28,5      | 33,5  | 30,0        |
| 3/8"     | 28,5      | 33,5  | 27,0        | 33,5      | 38,0  | 45,5        |
| 1/2"     | 33,5      | 38,0  | 41,5        | 38,0      | 46,0  | 72,0        |
| 3/4"     | 38,0      | 46,0  | 65,0        | 44,5      | 55,5  | 115,5       |
| 1"       | 44,5      | 55,5  | 103,5       | 51,0      | 62,0  | 161,5       |
| 1 1/4"   | 51,0      | 62,0  | 130,5       | 60,5      | 75,5  | 267,0       |
| 1 1/2"   | 60,5      | 75,5  | 221,5       | 63,5      | 84,0  | 320,5       |
| 2"       | 63,5      | 84,0  | 247,0       | 86,0      | 110,0 | 794,0       |
| 2 1/2"   | 86,0      | 110,0 | 734,0       | 95,5      | 120,5 | 985,0       |
| 3"       | 95,5      | 120,5 | 778,0       | 114,5     | 152,5 | 1.800,0     |
| 4"       | 114,5     | 152,5 | 1.328,0     | -         | -     | -           |



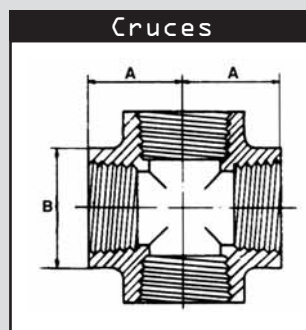
|        |       |      |       |       |      |         |
|--------|-------|------|-------|-------|------|---------|
| 1/4"   | 25,5  | 19,0 | 11,5  | 38,0  | 25,5 | 40,5    |
| 3/8"   | 38,0  | 25,5 | 36,5* | 38,0  | 25,5 | 38,5    |
| 1/2"   | 38,0  | 25,5 | 34,0  | 46,0  | 28,5 | 61,0    |
| 3/4"   | 46,0  | 28,5 | 55,5  | 55,5  | 33,5 | 102,0   |
| 1"     | 55,5  | 33,5 | 92,0  | 62,0  | 35,0 | 117,5   |
| 1 1/4" | 62,0  | 35,0 | 96,5  | 75,5  | 43,0 | 207,0   |
| 1 1/2" | 75,5  | 43,0 | 183,5 | 84,0  | 43,5 | 261,0   |
| 2"     | 84,0  | 43,5 | 193,0 | 101,5 | 52,5 | 437,0   |
| 2 1/2" | 101,5 | 52,5 | 346,0 | 120,5 | 63,5 | 700,0   |
| 3"     | 120,5 | 63,5 | 545,0 | 152,5 | 79,5 | 1.416,0 |
| 4"     | 152,5 | 79,5 | 950,0 | -     | -    | -       |



|        |       |       |         |       |       |         |
|--------|-------|-------|---------|-------|-------|---------|
| 1/4"   | 24,5  | 25,5  | 19,5,0  | 28,5  | 33,5  | 41,5    |
| 3/8"   | 28,5  | 33,5  | 38,0    | 33,5  | 38,0  | 62,5    |
| 1/2"   | 33,5  | 38,0  | 56,0    | 38,0  | 46,0  | 98,0    |
| 3/4"   | 38,0  | 46,0  | 84,0    | 44,5  | 55,5  | 164,5   |
| 1"     | 44,5  | 55,5  | 136,0   | 51,0  | 62,0  | 219,0   |
| 1 1/4" | 51,0  | 62,0  | 164,5   | 60,5  | 75,5  | 331,5   |
| 1 1/2" | 60,5  | 75,5  | 310,0   | 63,5  | 84,0  | 442,5   |
| 2"     | 63,5  | 84,0  | 317,5   | 86,0  | 110,0 | 850,0   |
| 2 1/2" | 86,0  | 110,0 | 880,0   | 95,5  | 120,5 | 1.310,0 |
| 3"     | 95,5  | 120,5 | 950,0   | 114,5 | 152,5 | 2.400,0 |
| 4"     | 114,5 | 152,5 | 1.720,0 | -     | -     | -       |



|        |       |       |         |       |       |         |
|--------|-------|-------|---------|-------|-------|---------|
| 1/4"   | 24,5  | 25,5  | 20,5    | 28,5  | 33,5  | 50,8    |
| 3/8"   | 28,5  | 33,5  | 43,5    | 33,5  | 38,0  | 70,3    |
| 1/2"   | 33,5  | 38,0  | 65,9    | 38,0  | 46,0  | 117,5   |
| 3/4"   | 38,0  | 46,0  | 104,5   | 44,5  | 55,5  | 191,0   |
| 1"     | 44,5  | 55,5  | 169,0   | 51,0  | 62,0  | 255,8   |
| 1 1/4" | 51,0  | 62,0  | 199,5   | 60,5  | 75,5  | 434,5   |
| 1 1/2" | 60,5  | 75,5  | 369,0   | 63,5  | 84,0  | 516,6   |
| 2"     | 63,5  | 84,0  | 377,0   | 86,0  | 110,0 | 1.200,0 |
| 2 1/2" | 86,0  | 110,0 | 950,0   | 95,5  | 120,5 | 1.650,0 |
| 3"     | 95,5  | 120,5 | 1.300,0 | 114,5 | 152,5 | 2.800,0 |
| 4"     | 114,5 | 152,5 | 1.900,0 | -     | -     | -       |

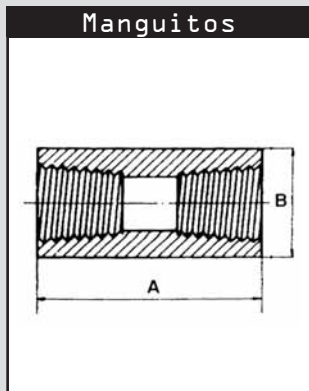


Análisis químico, ver tabla página 102.

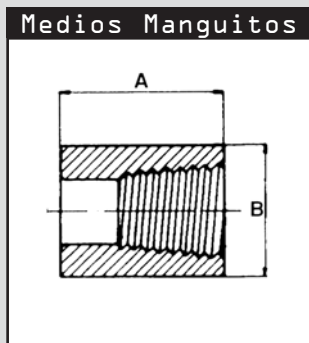


# Accesorios forjados de acero inoxidable roscados

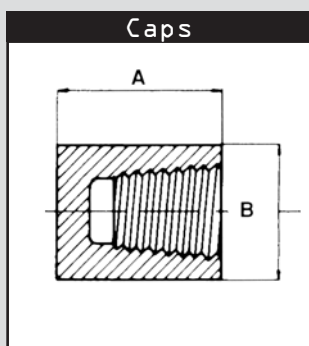
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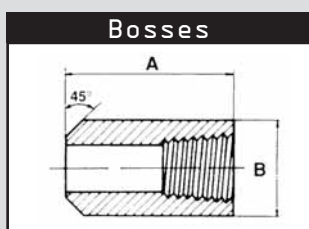
|          | Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    | 2 1/2" | 3"    | 4"    |
|----------|-------------|------|------|------|------|------|--------|--------|-------|--------|-------|-------|
| 3.000 LB | A (mm)      | 35,0 | 38,0 | 47,5 | 51,0 | 60,5 | 66,5   | 79,5   | 85,5  | 92,0   | 108,0 | 120,5 |
|          | B (mm)      | 19,0 | 22,0 | 29,0 | 35,0 | 44,5 | 57,0   | 63,5   | 76,0  | 92,0   | 108,0 | 140,0 |
|          | Peso=Kg/100 | 4,5  | 5,9  | 12,7 | 19,1 | 38,6 | 68,0   | 99,3   | 137,0 | 207,0  | 308,0 | 544,0 |
| 6.000 LB | A (mm)      | 35,0 | 38,0 | 47,5 | 51,0 | 60,5 | 66,5   | 79,5   | 85,5  | 92,0   | 108,0 | 120,5 |
|          | B (mm)      | 25,5 | 32,0 | 38,0 | 44,5 | 57,0 | 63,5   | 76,0   | 92,0  | 108,0  | 127,0 | 159,0 |
|          | Peso=Kg/100 | 6,3  | 18,1 | 31,2 | 40,8 | 85,2 | 105,0  | 181,0  | 340,0 | 419,0  | 610,0 | 1030  |



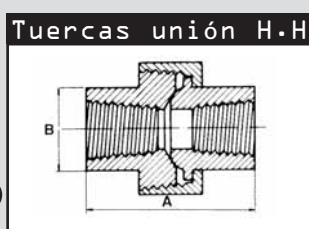
|          |             |      |      |      |      |      |      |      |       |       |       |       |
|----------|-------------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| 3.000 LB | A (mm)      | 17,5 | 19,0 | 24,0 | 25,5 | 30,0 | 33,5 | 39,5 | 43,0  | 46,0  | 54,0  | 60,0  |
|          | B (mm)      | 19,0 | 22,0 | 29,0 | 35,0 | 44,5 | 57,0 | 63,5 | 76,0  | 92,0  | 108,0 | 140,0 |
|          | Peso=Kg/100 | 2,3  | 3,2  | 6,4  | 9,5  | 20,0 | 34,0 | 49,9 | 68,5  | 103,5 | 154,0 | 273,0 |
| 6.000 LB | A (mm)      | 17,5 | 19,0 | 24,0 | 25,5 | 30,0 | 33,5 | 39,5 | 43,0  | 46,0  | 54,0  | 60,0  |
|          | B (mm)      | 25,5 | 32,0 | 38,0 | 44,5 | 57,0 | 63,5 | 76,0 | 92,0  | 108,0 | 127,0 | 159,0 |
|          | Peso=Kg/100 | 3,1  | 9,1  | 15,8 | 20,4 | 42,6 | 52,6 | 90,7 | 170,0 | 210,0 | 305,0 | 503,0 |



|          |             |      |      |      |      |      |      |      |       |       |       |       |
|----------|-------------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| 3.000 LB | A (mm)      | 25,5 | 25,5 | 32,0 | 36,5 | 41,5 | 44,5 | 44,5 | 47,5  | 60,5  | 65,0  | 68,0  |
|          | B (mm)      | 19,0 | 22,0 | 29,0 | 35,0 | 44,5 | 57,0 | 63,5 | 76,0  | 92,0  | 108,0 | 140,0 |
|          | Peso=Kg/100 | 4,1  | 5,0  | 10,9 | 17,7 | 32,7 | 59,9 | 69,8 | 106,0 | 184,0 | 165,0 | 457,0 |
| 6.000 LB | A (mm)      | 25,5 | 30,0 | 35,0 | 38,0 | 46,0 | 47,5 | 47,5 | 51,0  | 63,5  | 68,0  | 74,5  |
|          | B (mm)      | 25,5 | 32,0 | 38,0 | 44,5 | 57,0 | 63,5 | 76,0 | 92,0  | 108,0 | 127,0 | 159,0 |
|          | Peso=Kg/100 | 5,9  | 8,6  | 14,0 | 20,0 | 34,0 | 59,4 | 76,6 | 147,0 | 210,0 | 200,0 | 630,0 |



|                      | Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    |
|----------------------|-------------|------|------|------|------|------|--------|--------|-------|
| 3.000 LB<br>6.000 LB | A (mm)      | 41,5 | 44,5 | 51,0 | 51,0 | 51,0 | 51,0   | 51,0   | 51,0  |
|                      | B (mm)      | 32,0 | 35,0 | 38,0 | 44,5 | 57,0 | 63,5   | 76,0   | 92,0  |
|                      | Peso=Kg/100 | 23,5 | 29,5 | 37,5 | 50,0 | 80,0 | 90,0   | 129,0  | 178,0 |



|          |             |      |      |      |      |      |      |       |       |
|----------|-------------|------|------|------|------|------|------|-------|-------|
| 3.000 LB | A (mm)      | 44,5 | 47,5 | 54,0 | 56,5 | 63,5 | 71,5 | 79,5  | 92,0  |
|          | B (mm)      | 22,0 | 22,5 | 32,0 | 38,0 | 44,5 | 57,0 | 63,5  | 76,0  |
|          | Peso=Kg/100 | 14,0 | 20,0 | 35,0 | 42,5 | 65,0 | 97,5 | 125,5 | 201,0 |

Análisis químico, ver tabla página 102.

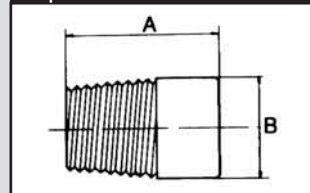


# Accesorios forjados de acero inoxidable roscados

ASME / ANSI B 16.11 - Rosca ASME / ANSI B1.20.1 (NPT)

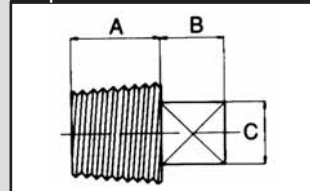
| Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    | 2 1/2" | 3"    | 4"    |
|-------------|------|------|------|------|------|--------|--------|-------|--------|-------|-------|
| A (mm)      | 41,5 | 44,5 | 44,5 | 44,5 | 51,0 | 51,0   | 51,0   | 63,5  | 70,0   | 70,0  | 76,0  |
| B (mm)      | 13,5 | 17,5 | 21,5 | 27,0 | 33,5 | 43,0   | 48,5   | 60,5  | 73,0   | 89,0  | 114,0 |
| Peso=Kg/100 | 4,5  | 7,3  | 11,8 | 19,5 | 33,6 | 54,9   | 71,7   | 141,1 | 220,0  | 326,0 | 602,0 |

Tapón cabeza redonda



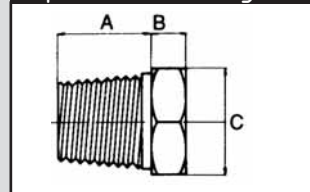
| Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"    | 4"    |
|-------------|------|------|------|------|------|--------|--------|------|--------|-------|-------|
| A (mm)      | 11,0 | 12,5 | 14,5 | 16,0 | 19,0 | 20,5   | 20,5   | 22,0 | 27,0   | 29,0  | 38,0  |
| B (mm)      | 6,5  | 8,0  | 9,5  | 11,0 | 12,5 | 14,5   | 16,0   | 17,5 | 19,0   | 20,5  | 31,5  |
| C (mm)      | 9,5  | 11,0 | 14,5 | 16,0 | 20,5 | 24,0   | 28,5   | 33,5 | 38,0   | 42,0  | 63,5  |
| Peso=Kg/100 | 1,4  | 2,7  | 4,9  | 8,6  | 16,3 | 27,2   | 38,1   | 62,6 | 95,1   | 154,0 | 385,0 |

Tapón cabeza cuadrada



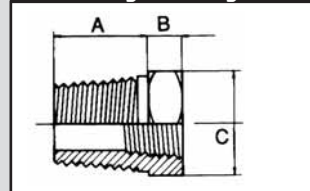
| Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"    | 2 1/2" | 3"    | 4"    |
|-------------|------|------|------|------|------|--------|--------|-------|--------|-------|-------|
| A (mm)      | 16,0 | 17,5 | 19,0 | 24,0 | 25,5 | 25,5   | 25,5   | 27,0  | 40,0   | 42,0  | 45,0  |
| B (mm)      | 6,5  | 8,0  | 8,0  | 9,5  | 9,5  | 14,5   | 16,0   | 17,5  | 19,0   | 20,5  | 25,5  |
| C (mm)      | 16,0 | 17,5 | 22   | 27,0 | 36,5 | 46,0   | 51,0   | 63,5  | 76,0   | 94,0  | 118,0 |
| Peso=Kg/100 | 2,6  | 4,8  | 7,3  | 17,9 | 24,7 | 44,5   | 59,5   | 115,8 | 175,0  | 250,0 | 600,0 |

Tapón cabeza hexagonal



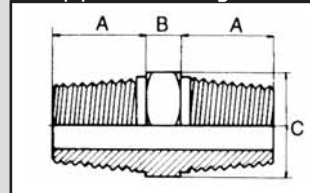
| Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"    | 4"    |
|-------------|------|------|------|------|------|--------|--------|------|--------|-------|-------|
| A (mm)      | 12,5 | 14,5 | 17,5 | 19,0 | 20,5 | 22,0   | 24,0   | 25,5 | 30,0   | 38,0  | 45,0  |
| B (mm)      | 5,0  | 5,0  | 5,0  | 6,5  | 6,5  | 9,5    | 9,5    | 11,0 | 12,5   | 17,5  | 25,5  |
| C (mm)      | 16,0 | 17,5 | 22,0 | 27,0 | 36,5 | 46,0   | 51,0   | 63,5 | 76,0   | 94,0  | 118,0 |
| Peso=Kg/100 | 0,9  | 1,3  | 2,7  | 5,0  | 8,6  | 17,7   | 16,3   | 38,1 | 54,0   | 117,0 | 315,0 |

Bussing hexagonal



| Diámetro    | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"    | 4"    |
|-------------|------|------|------|------|------|--------|--------|------|--------|-------|-------|
| A (mm)      | 12,5 | 14,5 | 17,5 | 19   | 20,5 | 22,0   | 24,0   | 25,5 | 30,0   | 38,0  | 45,0  |
| B (mm)      | 6,5  | 8,0  | 8,0  | 9,5  | 9,5  | 12,5   | 14,5   | 16,0 | 19,0   | 20,5  | 25,5  |
| C (mm)      | 16,0 | 17,5 | 22,0 | 27,0 | 36,5 | 46,0   | 51,0   | 63,5 | 76,0   | 94,0  | 118,0 |
| Peso=Kg/100 | 1,8  | 2,7  | 5,5  | 9,5  | 16,3 | 34,0   | 32,7   | 72,1 | 110,0  | 130,0 | 240,0 |

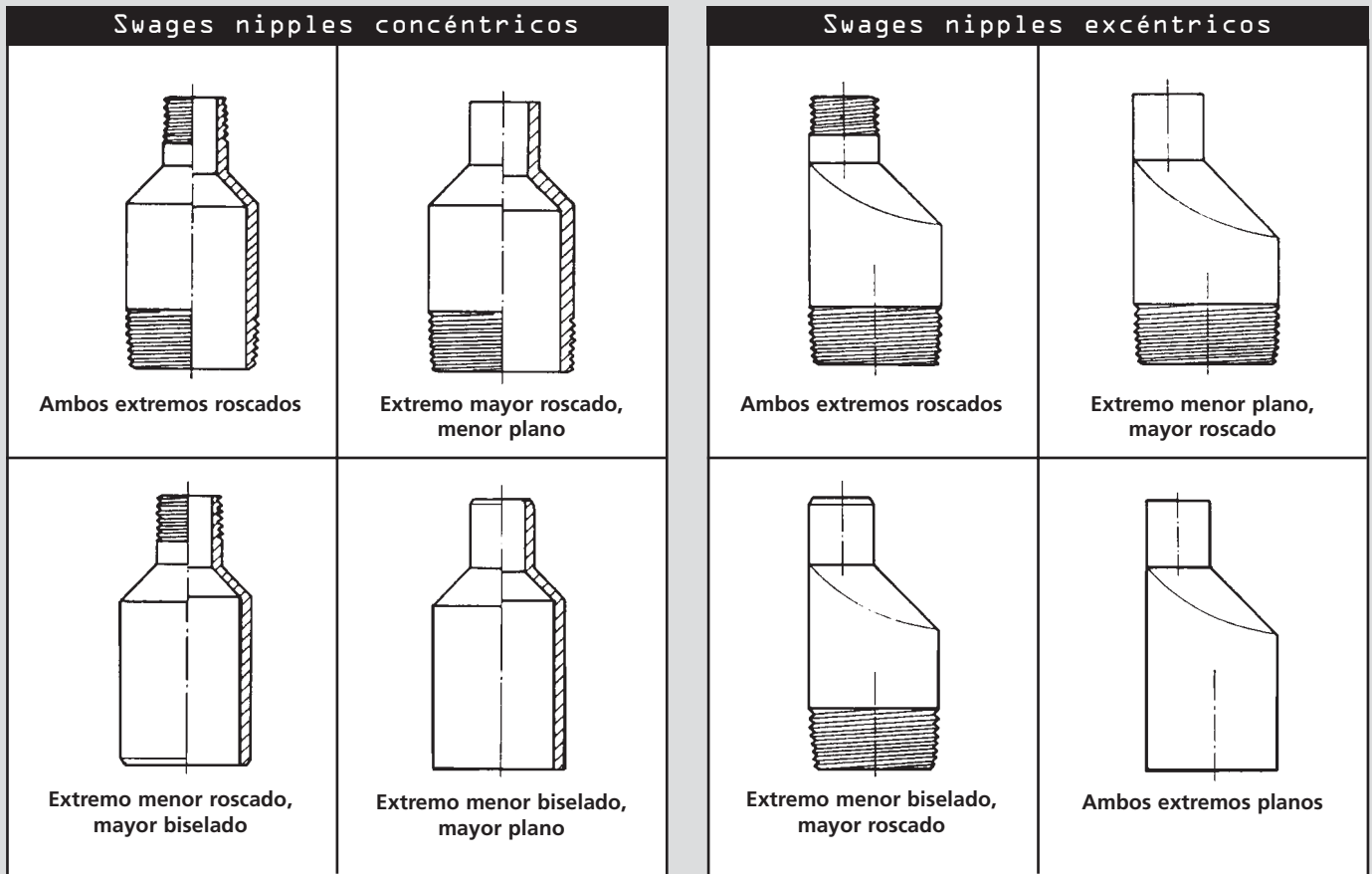
Nipple hexagonal



Análisis químico, ver tabla página 102.



## Accesorios forjados en acero inoxidable



### Código para nomenclatura de los extremos

|               |                        |               |                       |
|---------------|------------------------|---------------|-----------------------|
| <b>P.B.E.</b> | EXTREMOS PLANOS        | <b>T.B.E.</b> | EXTREMOS ROSCADOS     |
| <b>P.L.E.</b> | EXTREMO MAYOR PLANO    | <b>T.L.E.</b> | EXTREMO MAYOR ROSCADO |
| <b>P.S.E.</b> | EXTREMO MENOR PLANO    | <b>T.S.E.</b> | EXTREMO MENOR ROSCADO |
| <b>B.B.E.</b> | EXTREMOS BISELADOS     | <b>T.O.E.</b> | UN EXTREMO ROSCADO    |
| <b>B.L.E.</b> | EXTREMO MAYOR BISELADO | <b>P.O.E.</b> | UN EXTREMO PLANO      |
| <b>B.S.E.</b> | EXTREMO MENOR BISELADO | <b>B.O.E.</b> | UN EXTREMO BISELADO   |

## Accesorios de derivación







## Aleaciones de níquel, titanio y cobre





# Aleaciones de níquel, titanio y cobre

## Aleaciones de níquel

| Aleaciones | Propiedades físicas         |                              |                               |                                   | Características mecánicas  |                     |                    |
|------------|-----------------------------|------------------------------|-------------------------------|-----------------------------------|----------------------------|---------------------|--------------------|
|            | Densidad gr/cm <sup>3</sup> | Coef. lineal expans cm/cm/°C | Calor específico Joules/Kg-°K | Resistividad eléctrica Microhm-cm | Carga de rotura (20°C) MPa | Límite elástico MPa | Alargamiento %(2") |
| 200        | 8,90                        | 13,3 x 10 <sup>-6</sup>      | 456                           | 8,50                              | 462                        | 148                 | 47                 |
| 201        | 8,90                        | 13,3 x 10 <sup>-6</sup>      | 456                           | 8,50                              | 403                        | 103                 | 50                 |
| C-276      | 8,90                        | 11,2 x 10 <sup>-6</sup>      | 425                           | 130                               | 790                        | 415                 | 50                 |
| C-286      | 7,92                        | 16,5 x 10 <sup>-6</sup>      | 420                           | 91                                | 620                        | 275                 | 40                 |
| 400        | 8,80                        | 13,9 x 10 <sup>-6</sup>      | 427                           | 55                                | 550                        | 240                 | 40                 |
| K-500      | 8,44                        | 13,7 x 10 <sup>-6</sup>      | 419                           | 62                                | 1.100                      | 790                 | 20                 |
| 600        | 8,42                        | 12,4 x 10 <sup>-6</sup>      | 460                           | 103                               | 640                        | 255                 | 45                 |
| 601        | 8,05                        | 11 x 10 <sup>-6</sup>        | 460                           | 119                               | 790                        | 440                 | 45                 |
| 625        | 8,44                        | 12,8 x 10 <sup>-6</sup>      | 410                           | 129                               | 940                        | 430                 | 51                 |
| 718        | 8,20                        | 13 x 10 <sup>-6</sup>        | 435                           | 125                               | 1.240                      | 1.035               | 12                 |
| 800        | 8,03                        | 14,2 x 10 <sup>-6</sup>      | 455                           | 99                                | 600                        | 295                 | 44                 |
| 800 H      | 8,03                        | 14,2 x 10 <sup>-6</sup>      | 455                           | 99                                | 530                        | 200                 | 52                 |
| 825        | 8,13                        | 13,9 x 10 <sup>-6</sup>      | 440                           | 112                               | 690                        | 300                 | 45                 |
| DS         | 8,00                        | 14,5 x 10 <sup>-6</sup>      | 452                           | 108                               | 550                        | 230                 | 30                 |
| B2         | 9,20                        | 10,1 x 10 <sup>-6</sup>      | 377                           | 137                               | 760                        | 350                 | 40                 |
| 20         | 8,05                        | 14,9 x 10 <sup>-6</sup>      | 500                           | 103                               | 550                        | 240                 | 30                 |

Suministro en chapa, barra, tubos y accesorios.

## Barra maciza redonda en aleaciones de níquel / titanio / cobre

| Aleación     | Normas   |           |             | Diámetro estandar |
|--------------|----------|-----------|-------------|-------------------|
|              | UNS      | N° DIN    | ASTM        |                   |
| B2           | N 100665 | 2.4617    | B-335       | hasta 200mm       |
| C-276        | N 10276  | 2.4819    | B-574       | hasta 300mm       |
| DS           | N 08330  | 1.4864    | -           | hasta 300mm       |
| K-500        | N 05500  | 2.4374/75 | -           | hasta 400mm       |
| 201          | N 02201  | 2.4068    | B-160       | hasta 350mm       |
| 400          | N 04400  | 2.4360    | B-164       | hasta 350mm       |
| 600          | N 06600  | 2.4816    | B-166       | hasta 300mm       |
| 800          | N 08800  | 1.4876    | B-408       | hasta 350mm       |
| 800 H        | N 08810  | 1.4958    | B-408       | hasta 350mm       |
| 825          | N 08825  | 2.4858    | B-425       | hasta 300mm       |
| TITANIO Gr 2 | R 50400  | -         | B-348, Gr 2 | 10 a 250mm        |
| Cu Ni 90/10  | C 70600  | 2.0872    | B-151       | 8 a 220mm         |
| Cu Ni 70/30  | C 71500  | 2.0882    | B-151       | 10 a 285mm        |

Otras aleaciones rogamos consulten a nuestro Departamento Comercial.



## Chapas

De aleaciones de níquel • De aleaciones de titanio • De cuproníquel 90/10

| Aleaciones                     | Normas                                       |           |            | Dimensiones (mm)   |                  |
|--------------------------------|--|-----------|------------|--------------------|------------------|
|                                | IJNS   | Nº W.-DIN | ASTM       | Rango de espesores | Formatos máximos |
| B2                             | N 10665                                      | 2.4617    | B-333      | 1,2 hasta 20       | 2000 x 6000      |
| K-500                          | N 05500                                      | 2.4374/75 | -          | 1,5 hasta 20       | 2000 x 6000      |
| 201                            | N 02201                                      | 2.4068    | B-162      | 0,2 hasta 50       | 2500 x 8000      |
| 400                            | N 04400                                      | 2.4360    | B-127      | 0,2 hasta 50       | 2500 x 8000      |
| 600                            | N 06600                                      | 2.4816    | B-168      | 1,1 hasta 20       | 2500 x 8000      |
| 800                            | N 08800                                      | 1.4876    | B-409      | 1,1 hasta 20       | 2500 x 8000      |
| 800 H                          | N 08810                                      | 1.4958    | B-409      | 1,1 hasta 20       | 2500 x 8000      |
| 825                            | N 08825                                      | 2.4858    | B-424      | 1,1 hasta 20       | 2500 x 8000      |
| C-263                          | N 07263                                      | 2.4650    | -          | 1,3 hasta 20       | 2000 x 6000      |
| C-276                          | N 10276                                      | 2.4819    | B-575      | 1,1 hasta 20       | 2000 x 6000      |
| 718                            | N 07718                                      | 2.4668    | B-670      | 1,1 hasta 20       | 2000 x 6000      |
| DS                             | N 08330                                      | 1.4864    | -          | 1,3 hasta 20       | 2000 x 6000      |
| 22                             | N 06022                                      | 2.4602    | B-575      | 1,0 hasta 20       | 2000 x 6000      |
| 20                             | N 08020                                      | 2.4660    | B-463      | 2,0 hasta 20       | 2500 x 8000      |
| CuNi 90/10                     | C 70600                                      | 2.0872    | B-171/402  | 2,0 hasta 50       | 2500 x 6000      |
| Titanio Gr. 2<br>y Gr 1, 3, 4. | R 50400                                      | -         | B-265 Gr 2 | 0,7 hasta 50       | 2438 x 6000      |
| Titanio aleado                 | Aleaciones bajo consulta<br>(Ver página 119) |           |            | 0,4 hasta 101      | 914 x 2438       |

Bajo consulta podemos ofrecer distintos formatos y aleaciones que no aparecen en la relación anterior. Contacte con nuestro Departamento Comercial.



# Aplicaciones de las aleaciones de níquel

| Material DIN | UNS     | ASTM                             | Aleación | Aplicaciones  | Composición química nominal |            |       |      |       |              |                              | Dureza | Resistencia a la corrosión |                                |     |  |      |      |             |         |   |    |
|--------------|---------|----------------------------------|----------|---|-----------------------------|------------|-------|------|-------|--------------|------------------------------|--------|----------------------------|--------------------------------|-----|--|------|------|-------------|---------|---|----|
|              |         |                                  |          |   | Cr                          | Ni         | Fe    | Mo   | Cu    | C            | Otros                        |        | Densidad (gr/cm)           | H <sub>2</sub> SO <sub>4</sub> | HCl | H <sub>3</sub> PO <sub>4</sub> /HNO <sub>3</sub> | A.O. | Alc. | Sales A.Mar | Fab.CI. |   |    |
| 1.4529       | N08925  | B-677<br>B-673<br>B-674<br>B-625 | 904-hMo  | Equipos para proceso en industria papelera, producción de ácido sulfúrico y fosfórico. Plataformas petrolíferas y plantas de desalinización de agua de mar.   | 20,5                        | 25         | Resto | 6,2  | 0,1   | 0,02         | Mn-1,0<br>Si-0,5             | 8,1    | E                          | E                              | E   | B  | B    | B    | E           | E       |   |    |
| 1.4563       | N08028  | B-668                            | 28       | Tubos de intercambiadores de calor en la producción de ácido sulfúrico. Tubería para agua de mar y condensadores. Evaporadores de hidróxido sódico. Tubos para ambientes corrosivos.  | 27,0                        | 31,0       | Resto | 3,5  | 1,0   | 0,01         | Mn-1,0                       | 8,03   | B                          | A                              | E   | A  | B    | B    | A           | A       | B |    |
| 1.4864       | N08330  | B-536                            | DS       | Equipos para proceso de alta temperatura. Hornos. Antorchas. Vainas para termopares. Ventiladores.  | 16                          | 35         | Resto | -    | -     | 0,15         | Mn-2,0                       | 8,0    | 160 HB                     |                                |     |  |      |      |             |         |   |    |
| 1.4876       | N08800  | B-407<br>B-408<br>B-564          | 800      | Tubos para hornos de pirólisis de etileno y torres de rectificación de vapor de metano. Tubos de hornos para anhídrido acético y para monómetro de cloruro de vinilo. Tubos para calentadores y unidades de tratamiento térmico. La aleación no forma la fase sigma que se produce en exposiciones largas hasta 640°C.      | 21                          | 32,5       | Resto | -    | 0,50  | 0,08         | Mn-1,0                       | 7,94   | 80 RB                      | A                              | NA  | A  | B    | B    | A           | A       | A | B  |
| 2.4066/8     | N0220/1 | B-160<br>B-161                   | 200/1    | Equipos para fabricación y almacenamiento de cáusticos. Producción de fibras sintéticas. Componentes electrónicos. Aparatos de alta conductividad. Equipos químicos y equipos de fabricación de productos alimenticios.   | -                           | 0          | 0,4   | -    | 0,15  | 0,10<br>0,01 | -                            | 8,89   | 100RB<br>80RB              | A                              | A   | A  | NA   | E    | B           | B       | B | B  |
| 2.4360       | N04400  | B-164<br>B-165<br>B-564CI.A.     | 400      | Aplicaciones en ambientes salinos. Ejes, válvulas, bombas, remaches, evaporadores de sal, tuberías. Evaporadores de HF, disolventes, material para decapado ácido.  | -                           | 92,2<br>99 | 1,0   | -    | Resto | 0,15         | Ti-0,70<br>Al-2,7<br>Mn-0,75 | 8,47   | 32 RC                      | B                              | A   | E  | NA   | B    | B           | B       | B | B  |
| 2.4375       | N05500  | QQ-N-286<br>CI.A.                | K-500    | Ejes impulsores de bombas. Componentes de válvulas. muelles, remaches. Equipos para extracción de petróleo. Válvulas de seguridad.  | -                           | 66,5       | 1,0   | -    | Resto | 0,15         | Ti-0,70                      | 8,47   | 32 RC                      | B                              | A   | E  | NA   | B    | B           | B       | B | B  |
| 2.4617       | N10665  | B-335                            | B-2      | Equipos de proceso de fabricación de HCl, H <sub>2</sub> O, H <sub>2</sub> PO <sub>4</sub> y acético. resistente a la oxidación hasta 760°C.  | 0,50                        | 66,5       | 1,0   | 27,5 | -     | 0,012        | Si-0,05                      | 9,22   | 94 RB                      | E                              | E   | B  | E    | B    | A           | NA      | B | NA |
| 2.4618/9     | N06985  | B-581/2                          | G/G-3    | Equipos para desulfuración de gas. Evaporadores. Cambiadores de calor. Equipos de blanqueo en papeleros. Tubos para ambientes corrosivos (el G-3 posee mayor soldabilidad). Alta resistencia a la corrosión por picaduras   | 22,2                        | Resto      | 19,5  | 7,0  | 1,9   | 0,03         | Co-2,0<br>W-0,5              | 8,30   | 80 RB                      | B                              | B   | B  | B    | B    | B           | B       | B | B  |
| 2.4650       | N072623 | -                                | C-263    | Turbinas industriales de gas. Aeronáutica. Cámaras de combustión. Conos de escape. Anillos. Excelente resistencia hasta 815°C.  | 20,0                        | Resto      | 0,5   | 5,8  | 0,2   | 0,06         | Co-20,0<br>Ti-2,1<br>Al-0,5  | 8,40   | 230 RB                     |                                |     |  |      |      |             |         |   |    |
| 2.4660       | N08020  | B-472<br>B-473                   | 20       | Bombas para procesos químicos. Vástagos de válvulas y tuberías. Remaches, arandelas y filtros. Equipos para decapado. fabricación de gasolina y goma sintética.   | 20,0                        | Resto      | Resto | 2,5  | 3,5   | 0,02         | Mn-1,0                       | 8,06   | 80 RB                      | B                              | B   | E  | B    | B    | B           | A       | B | B  |
| 2.4665       | N06002  | B-572<br>B-622                   | X        | Rodillos para hornos. Componentes de tratamientos térmicos. Resistencia a la oxidación hasta 1.175°C.   | 22,0                        | 34,0       | 18,50 | 9,0  | 0,10  | -            | Co-1,5<br>W-0,60             | 8,22   | 92 RB                      | A                              | B   | B  | B    | B    | B           | B       | B | NA |
| 2.4669       | N07750  | B-637                            | X-750    | Muelles. Utillaje para extrusión. Herramientas de conformado. Remaches.   | 15,5                        | Resto      | 7,0   | -    | -     | 0,06         | Ti-2,5                       | 8,25   | 36 RC                      | A                              | NA  | A  | A    | A    | B           | B       | B | A  |
| 2.4668       | N07718  | B-637                            | 718      | Válvulas de seguridad, soportes y accesorios para la producción de petróleo, en pozos sometidos a alta presión y ambiente corrosivo. Utillaje para extrusión en caliente. Excelente resistencia a la oxidación hasta 980°C.   | 19,0                        | Resto      | 18,5  | 3,0  | -     | 0,04         | Co-Ta5,<br>Al-0,5            | 8,19   | 44 RC                      | A                              | A   | A  | NA   | B    | B           | B       | B | B  |
| 2.4816       | N06600  | B-166<br>B-167<br>B-564          | 600      | Fabricación de materiales fotográficos que contienen sales de plata. Separadores de cloruro de etileno. Transportadores de bandejas en hornos, separadores de licor en fábricas de pulpa y papel. Resistencia a la oxidación hasta 1.175°C.   | 15,5                        | Resto      | 8,0   | -    | 0,20  | 0,07         | -                            | 8,41   | 70 RB                      | A                              | NA  | A  | A    | A    | B           | B       | B | A  |
| 2.4819       | N10276  | B-574<br>B-622                   | C-276    | Equipo de proceso plantas ácido sulfúrico, fundiciones de cobre, plantas de desulfuración y ambientes altamente corrosivos. Resistencia a la oxidación hasta 1.040°C.   | 15,5                        | Resto      | 6,5   | 15,5 | -     | 0,01         | W-3,5<br>Si-0,05             | 8,89   | 92 RB                      | B                              | B   | B  | A    | B    | B           | B       | B | NA |
| 2.4856       | N06625  | B-444<br>B-446                   | 625      | Equipo de control químico y contaminación. Tuberías, válvulas, equipo naval. Ejes para bombas de alta potencia y revestimiento para válvulas de alta presión de H <sub>2</sub> O. Excelente resistencia a la oxidación hasta 980°C.   | 21,5                        | Resto      | 2,5   | 9,0  | -     | 0,05         | Co-Ta5,<br>Al-1,0            | 8,44   | 78 RB                      | B                              | B   | B  | E    | B    | B           | B       | B | B  |
| 2.4858       | N08825  | B-423<br>B-425                   | 825      | Tubos para ambientes corrosivos. Equipos para sistemas de desechos y control de contaminación. Calentadores para tanques de decapado; soportes. Equipo de manipulación de reactivos. Válvulas, tubería y bombas. Resistente a ácidos oxidantes y reductores; especialmente a las soluciones de ácido fosfórico y sulfúrico. | 21,5                        | Resto      | 30,0  | 3,0  | 2,2   | 0,03         | Ti-1,0<br>Al-1,0             | 8,14   | 80 RB                      | B                              | N   | B  | B    | B    | B           | NA      | B | B  |

Otras aleaciones, por favor, consulten a nuestro Departamento Comercial. Suministro en chapa, barra, tubos y accesorios.



## Aleaciones de titanio

| Denominación                                | Grado 2  | Grado 4  | 6 Al-4 V (grado 5)  | 3 Al-2,5 V (grado 9)  | 6 Al-6 V-2 Sn   | 6 Al-2 Sn-4Zr-6 Mo  | 3 Al-8 V-6Cr-4Zr-4 Mo (Grado 19)  | 10 V-2 Fe-3 Al  |
|---|--|--|---|---|---|---|---|---|
| Tipo  | Comer. puro  | Comer. puro  | $\alpha$ - $\beta$  | $\alpha$ - $\beta$  | $\alpha$ - $\beta$  | $\alpha$ - $\beta$  | $\beta$   | $\beta$   |
| N° UNS                                      | R 50400  | R 50700  | R 56400   | R 56320   | R 56620   | R 56260   | R 58640   | -   |
| Análisis químico                            | C: 0,08<br>Fe: 0,30<br>N: 0,03<br>O: 0,25<br>H: 0,015<br>Ti: Resto | C: 0,08<br>Fe: 0,50<br>N: 0,05<br>O: 0,40<br>H: 0,015<br>Ti: Resto | C: 0,08<br>Fe: 0,25<br>N: 0,05<br>O: 0,20<br>Al: 5,5-6,75<br>V: 3,5-4,5<br>H: 0,01<br>Ti: Resto | C: 0,08<br>Fe: 0,25<br>N: 0,03<br>O: 0,15<br>Al: 2,5-3,5<br>V: 2-3<br>H: 0,015<br>Ti: Resto | C: 0,08<br>Fe: 0,35-1,0<br>N: 0,04<br>O: 0,20<br>Al: 5-6<br>V: 5-6<br>Sn: 1,5-2,5<br>Cu: 0,35-1<br>H: 0,0125<br>Ti: Resto | C: 0,04<br>Fe: 0,15<br>N: 0,04<br>O: 0,50<br>Al: 5,5-6,5<br>Sn: 1,75-2,25<br>Zr: 3,5-4,5<br>Mo: 5,5-6,5<br>H: 0,0125<br>Ti: Resto | C: 0,05<br>Fe: 0,3<br>N: 0,03<br>O: 0,12<br>Al: 3-4<br>V: 7,5-8,5<br>Zr: 3,5-4,5<br>Mo: 3,5-4,5<br>Cr: 5,5-6,5<br>Ti: Resto | C: 0,05<br>Fe: 1,6-2,2<br>N: 0,05<br>O: 0,13<br>Al: 2,6-3,4<br>V: 9-11<br>H: 0,015<br>Ti: Resto |
| Soldabilidad                                | Excelente  | Buena  | Muy buena   | Muy buena   | Limitada  | Limitada  | Regular   | Regular   |
| Resistencia a la tracción N/mm <sup>2</sup> | 345  | 552  | 896   | 620   | 1.034   | 1.172   | 793   | 1.193   |
| Límite elástico - N/mm <sup>2</sup>         | 276  | 483  | 827   | 483   | 965   | 1.103   | 759   | 1.103   |
| Alargamiento - %                            | 20   | 15   | 10  | 15  | 10  | 10  | 15  | 4   |
| Reducción de área (Barra) %                 | 30   | 25   | 25  | 25  | 20  | 20  |   | 6   |
| Dureza                                      | 82 HRB   | 100 HRB  | 33 HRC  | 25 HRC  | 38 HRC  | 39 HRC  | 30-45 HRC   | 32-41 HRC   |
| Densidad - grs/cm <sup>3</sup>              | 4,51   | 4,51   | 4,43  | 4,48  | 4,54  | 4,65  | 4,82  | 4,65  |
| Punto de fusión °C                          | 1.660  | 1.660  | 1.650   | 1.700   | 1.704   | 1.593   | 1.650   | 1.645   |
| Resistividad eléctrica M-ohms-cm            | 56   | 60   | 171   | 126   | 157   | 200   | 160   | -   |
| Productos disponibles                       | Chapa - Tubo   | Barra-Palanquilla Chapa  | Barra-Palanquilla Chapa   | Barra-Tubo  | Barra-Palanquilla Forja-Chapa   | Barra-Palanquilla Forja   | Palanquilla Tubo-Chapa  | Palanquilla   |
| Especificación AMS                          | 4902   | 4921   | 4911 4928   | 4943 4944   | 4918 4936 4978  | 4981  | 4957 4958   | 4983 4986   |
| Especificación ASTM                         | B 265 B-337/338  | B-265 B-348  | B-265 B-348   | B-337/338/348   | B-265 B-348   | B-348   | B-265 B 337 B-348   | B-348   |
| Especificación MIL                          | T-9046   | T-9047   | T-9046 T-9047   | -   | T-9046 / 9047   | T-9047  | T-9046 / 9047   | -   |

Otras aleaciones, por favor, consulten a nuestro Departamento Comercial.





# Información técnica







## Consejos para el mantenimiento y limpieza del acero inoxidable

Es indudable que los principales motivos de la rápida difusión y empleo del acero inoxidable son su belleza superficial, su resistencia a la corrosión y su mínimo mantenimiento, sin embargo, hay que seguir unas recomendaciones, en su almacenamiento, manipulación, transformación, y distribución para evitar problemas ocasionados por un mal trato del material.

Durante el proceso de transformación y manipulación debe evitarse que se produzcan deterioros en su superficie y es necesario implantar una serie de normas de orden y limpieza en los talleres donde se trabaja el acero inoxidable y esencialmente debe cuidarse al ser colocado en obras, en contacto con materiales de la construcción y aditivos, propios de la construcción.

Las recomendaciones básicas, durante la manipulación y montaje del acero inoxidable en obra, son las siguientes:

- 1) Conservar el acero inoxidable en sus embalajes originales hasta el momento de su utilización.
- 2) El almacenamiento debe de hacerse en interior y en lugar seco.
- 3) Evitar todo contacto con acero al carbono, colocando entre la superficie en contacto, madera, papel o trapos.
- 4) Evitar que el inoxidable sea expuesto al polvo del taller o a vapores químicos.
- 5) Evitar el contacto con los materiales de construcción como cemento, yeso, escombros, etc., prestando especial atención a los aditivos de limpieza de fachadas.
- 6) No pisar el material, ni darle golpes y evitar su contacto con aceros al carbono o metales blandos como cobre o bronce.
- 7) No almacenar el inoxidable cerca de máquinas que puedan salpicarle aceite, líquidos o grasas.

Si por inobservancia, de alguna de estas recomendaciones y esencialmente en las contaminaciones, producidas en obras y construcciones, se recomienda efectuar, urgentemente un proceso de limpieza, consistente en:

- 1) Desengrasar con alcohol industrial.
- 2) Decapar para eliminar la contaminación producida por yesos, cementos, etc., o líquidos empleados en las obras, con decapante «HK 101 INOX» durante 10 minutos.
- 3) Lavar con jabón neutro, y aclarar con agua, secando con una gamuza el material.

Para cualquier duda, contacten con nuestros servicios técnicos.



**Hastinik, S.A.**



**Tubasol, S.A.**



**Inox Ibérica, S.A.**



**Aerotécnica, S.A.**



**Tabla indicativa de las presiones máximas de operación a una temperatura de 20°C para tubos soldados, según las normas siguientes:**

**DIN 17457 - 11850; NFA 49147 - 49247 - 49249; ASTM A 249 - A 269 - A 270**

| Diámetro mm | Espesor mm | Aisi 304-321<br>316 Ti Kg/cm <sup>2</sup> | Aisi 304L-316L<br>Kg/cm <sup>2</sup> |
|-------------|------------|---|--------------------------------------|
| 15          | 1          | 116                                       | 96                                   |
| 16          | 1          | 109                                       | 90                                   |
| 16          | 1,5        | 163                                       | 135                                  |
| 17,2        | 1,65       | 167                                       | 139                                  |
| 17,2        | 2          | 203                                       | 168                                  |
| 18          | 1          | 97  | 80                                   |
| 18          | 1,5        | 145                                       | 120                                  |
| 19,05       | 1          | 91  | 76                                   |
| 19,05       | 1,25       | 114                                       | 95                                   |
| 19,05       | 1,65       | 151                                       | 125                                  |
| 20          | 1          | 87  | 72                                   |
| 20          | 1,5        | 131                                       | 108                                  |
| 21,3        | 1,65       | 135                                       | 112                                  |
| 21,3        | 2          | 164                                       | 136                                  |
| 21,3        | 2,6        | 213                                       | 176                                  |
| 22          | 1          | 79  | 66                                   |
| 22          | 1,5        | 119                                       | 99                                   |
| 25,4        | 1          | 69  | 57                                   |
| 25,4        | 1,25       | 86  | 71                                   |
| 25,4        | 1,65       | 113                                       | 94                                   |
| 26,9        | 1,65       | 107                                       | 89                                   |
| 26,9        | 2          | 130                                       | 107                                  |
| 26,9        | 2,6        | 168                                       | 140                                  |
| 28          | 1          | 62  | 52                                   |
| 28          | 1,5        | 93  | 77                                   |
| 30          | 1          | 58  | 48                                   |
| 30          | 1,5        | 87  | 72                                   |
| 32          | 1          | 54  | 45                                   |

| Diámetro mm | Espesor mm | Aisi 304-321<br>316 Ti Kg/cm <sup>2</sup> | Aisi 304L-316L<br>Kg/cm <sup>2</sup> |
|-------------|------------|---|--------------------------------------|
| 32          | 1,5        | 82  | 68                                   |
| 33,7        | 1,65       | 85  | 71                                   |
| 33,7        | 2          | 103                                       | 86                                   |
| 33,7        | 2,9        | 150                                       | 124                                  |
| 33,7        | 3,2        | 165                                       | 137                                  |
| 34          | 1          | 51  | 43                                   |
| 34          | 1,5        | 77  | 64                                   |
| 38          | 1          | 46  | 38                                   |
| 38          | 1,5        | 69  | 57                                   |
| 40          | 1          | 44  | 36                                   |
| 40          | 1,5        | 66  | 54                                   |
| 42,4        | 1,65       | 68  | 56                                   |
| 42,4        | 2          | 82  | 68                                   |
| 42,4        | 2,6        | 107                                       | 89                                   |
| 42,4        | 2,9        | 119                                       | 99                                   |
| 42,4        | 3,2        | 132                                       | 109                                  |
| 44,5        | 1,5        | 59  | 49                                   |
| 44,5        | 2          | 78  | 65                                   |
| 48,3        | 1,65       | 60  | 49                                   |
| 48,3        | 2          | 72  | 60                                   |
| 48,3        | 2,6        | 94  | 78                                   |
| 48,3        | 2,9        | 105                                       | 87                                   |
| 48,3        | 3,2        | 115                                       | 96                                   |
| 50          | 1,5        | 52  | 43                                   |
| 50          | 2          | 70  | 58                                   |
| 53          | 1,5        | 49  | 41                                   |
| 54          | 2          | 65  | 54                                   |
| 60,3        | 1,65       | 48  | 40                                   |

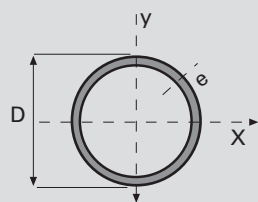


## Tabla indicativa de las presiones máximas de operación a una temperatura de 20°C para tubos soldados, según las normas siguientes:

DIN 17457 - 11850; NFA 49147 - 49247 - 49249; ASTM A 249 - A 269 - A 270

| Diámetro mm | Espesor mm | Aisi 304-321<br>316 Ti Kg/cm <sup>2</sup> | Aisi 304L-316L<br>Kg/cm <sup>2</sup> |
|-------------|------------|---|--------------------------------------|
| 60,3        | 2          | 58  | 48                                   |
| 60,3        | 2,6        | 75  | 62                                   |
| 60,3        | 2,9        | 84  | 69                                   |
| 60,3        | 3,2        | 92  | 77                                   |
| 60,3        | 3,6        | 104                                       | 86                                   |
| 70          | 1,5        | 37  | 31                                   |
| 70          | 2          | 50  | 41                                   |
| 76,1        | 1,65       | 38  | 31                                   |
| 76,1        | 2          | 46  | 38                                   |
| 76,1        | 2,6        | 60  | 49                                   |
| 76,1        | 2,9        | 66  | 55                                   |
| 76,1        | 3,2        | 73  | 61                                   |
| 76,1        | 3,6        | 82  | 68                                   |
| 83          | 1,5        | 31  | 26                                   |
| 84          | 2          | 41  | 34                                   |
| 88,9        | 1,65       | 32  | 27                                   |
| 88,9        | 2          | 39  | 33                                   |
| 88,9        | 2,6        | 51  | 42                                   |
| 88,9        | 2,9        | 57  | 47                                   |
| 88,9        | 3,2        | 63  | 52                                   |
| 88,9        | 3,6        | 71  | 59                                   |
| 88,9        | 4          | 78  | 65                                   |
| 101,6       | 1,65       | 28  | 23                                   |
| 101,6       | 2          | 34  | 28                                   |
| 101,6       | 3          | 51  | 43                                   |
| 103         | 1,5        | 25  | 21                                   |
| 104         | 2          | 34  | 28                                   |
| 114,3       | 1,65       | 25  | 21                                   |
| 114,3       | 2          | 30  | 25                                   |
| 114,3       | 2,6        | 40  | 33                                   |
| 114,3       | 2,9        | 44  | 37                                   |

| Diámetro mm | Espesor mm | Aisi 304-321<br>316 Ti Kg/cm <sup>2</sup> | Aisi 304L-316L<br>Kg/cm <sup>2</sup> |
|-------------|------------|---|--------------------------------------|
| 114,3       | 3,2        | 49  | 40                                   |
| 114,3       | 3,6        | 55  | 46                                   |
| 114,3       | 4          | 61  | 51                                   |
| 129         | 2          | 27  | 22                                   |
| 139,7       | 2          | 25  | 21                                   |
| 139,7       | 2,6        | 32  | 27                                   |
| 139,7       | 3          | 37  | 31                                   |
| 139,7       | 4          | 50  | 41                                   |
| 154         | 2          | 23  | 19                                   |
| 156         | 3          | 34  | 28                                   |
| 168,3       | 2          | 21  | 17                                   |
| 168,3       | 2,6        | 27  | 22                                   |
| 168,3       | 3          | 31  | 26                                   |
| 168,3       | 3,6        | 37  | 31                                   |
| 168,3       | 4          | 41  | 34                                   |
| 204         | 2          | 17  | 14                                   |
| 205         | 2,5        | 21  | 18                                   |
| 206         | 3          | 25  | 21                                   |
| 219,1       | 2          | 16  | 13                                   |
| 219,1       | 2,6        | 21  | 17                                   |
| 219,1       | 3          | 24  | 20                                   |
| 219,1       | 3,6        | 29  | 24                                   |
| 219,1       | 4          | 32  | 26                                   |
| 254         | 2          | 14  | 11                                   |
| 256         | 3          | 20  | 17                                   |
| 273         | 2          | 13  | 11                                   |
| 273         | 2,6        | 17  | 14                                   |
| 273         | 3          | 19  | 16                                   |
| 273         | 3,6        | 23  | 19                                   |
| 273         | 4          | 26  | 21                                   |



## Tabla indicativa para el cálculo de estructuras en acero inoxidable • Tubos redondos

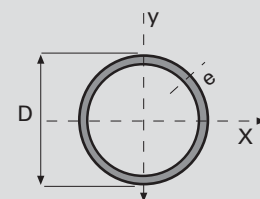
| Dimensiones<br>D x e<br>mm | Area (A)<br>cm <sup>2</sup> | Momento de inercia | Módulo resistente            | Radio de giro |
|----------------------------|-----------------------------|--------------------|------------------------------|---------------|
|                            |                             | I cm <sup>4</sup>  | xx = yy<br>W cm <sup>3</sup> | i cm          |
| 20 x 1,5                   | 0,87                        | 0,38               | 0,38                         | 0,656         |
| 25 x 1,5                   | 1,11                        | 0,77               | 0,61                         | 0,833         |
| 28 x 1,5                   | 1,25                        | 1,10               | 0,79                         | 0,938         |
| 33 x 1,5                   | 1,48                        | 1,85               | 1,12                         | 1,115         |
| 38 x 1,5                   | 1,72                        | 2,87               | 1,51                         | 1,292         |
| 43 x 1,5                   | 1,96                        | 4,22               | 1,96                         | 1,468         |
| 50,8 x 1,5                 | 2,32                        | 7,06               | 2,78                         | 1,744         |
| 63,5 x 1,5                 | 2,92                        | 14,05              | 4,42                         | 2,193         |
| 76,1 x 1,5                 | 3,52                        | 24,46              | 6,43                         | 2,638         |
| 84 x 2                     | 5,15                        | 43,33              | 10,32                        | 2,900         |
| 104 x 2                    | 6,41                        | 83,38              | 16,03                        | 3,607         |
| 129 x 2                    | 7,98                        | 160,92             | 24,95                        | 4,491         |
| 154 x 2                    | 9,55                        | 275,86             | 35,83                        | 5,374         |
| 204 x 2                    | 12,69                       | 647,42             | 63,47                        | 7,142         |
| 254 x 2                    | 15,83                       | 1.256,95           | 98,97                        | 8,910         |
| 17,2 x 1,65                | 0,81                        | 0,25               | 0,291                        | 0,533         |
| 17,2 x 2                   | 0,96                        | 0,28               | 0,326                        | 0,542         |
| 21,3 x 1,65                | 1,02                        | 0,50               | 0,469                        | 0,697         |
| 21,3 x 2                   | 1,21                        | 0,57               | 0,536                        | 0,686         |
| 21,3 x 2,6                 | 1,53                        | 0,68               | 0,639                        | 0,668         |
| 26,9 x 1,65                | 1,31                        | 1,05               | 0,781                        | 0,895         |
| 26,9 x 2                   | 1,56                        | 1,22               | 0,907                        | 0,883         |
| 26,9 x 2,6                 | 1,98                        | 1,48               | 1,10                         | 0,864         |
| 33,7 x 1,65                | 1,66                        | 2,14               | 1,27                         | 1,135         |
| 33,7 x 2                   | 1,99                        | 2,51               | 1,49                         | 1,123         |
| 33,7 x 2,6                 | 2,54                        | 3,09               | 1,84                         | 1,103         |
| 33,7 x 3,2                 | 3,07                        | 3,60               | 2,14                         | 1,084         |
| 42,4 x 1,65                | 2,11                        | 4,39               | 2,07                         | 1,442         |
| 42,4 x 2                   | 2,54                        | 5,19               | 2,45                         | 1,430         |
| 42,4 x 2,6                 | 3,25                        | 6,46               | 3,05                         | 1,410         |
| 42,4 x 3,2                 | 3,94                        | 7,62               | 3,59                         | 1,391         |
| 48,3 x 1,65                | 2,42                        | 6,59               | 2,73                         | 1,650         |
| 48,3 x 2                   | 2,91                        | 7,81               | 3,23                         | 1,638         |
| 48,3 x 2,6                 | 3,73                        | 9,78               | 4,05                         | 1,618         |
| 48,3 x 3,2                 | 4,53                        | 11,59              | 4,80                         | 1,599         |
| 60,3 x 1,65                | 3,04                        | 13,08              | 4,34                         | 2,074         |
| 60,3 x 2                   | 3,66                        | 15,58              | 5,17                         | 2,062         |
| 60,3 x 2,6                 | 4,71                        | 19,65              | 6,52                         | 2,042         |
| 60,3 x 3,2                 | 5,74                        | 23,47              | 7,78                         | 2,022         |
| 60,3 x 3,6                 | 6,41                        | 25,87              | 8,58                         | 2,009         |
| 76,1 x 1,65                | 3,86                        | 26,75              | 7,03                         | 2,633         |
| 76,1 x 2                   | 4,66                        | 31,98              | 8,40                         | 2,621         |
| 76,1 x 2,6                 | 6,00                        | 40,59              | 10,7                         | 2,600         |

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## Tabla indicativa para el cálculo de estructuras en acero inoxidable • Tubos redondos



| Dimensiones<br>D x e<br>mm | Area (A)<br>cm <sup>2</sup> | Momento de inercia | Módulo resistente | Radio de giro |
|----------------------------|-----------------------------|--------------------|-------------------|---------------|
|                            |                             | xx = yy            |                   | i cm          |
|                            |                             | I cm <sup>4</sup>  | W cm <sup>3</sup> |               |
| 76,1 x 2,9                 | 6,67                        | 44,74              | 11,8              | 2,590         |
| 76,1 x 3,6                 | 8,20                        | 54,01              | 14,2              | 2,566         |
| 88,9 x 1,65                | 4,52                        | 43,05              | 9,7               | 3,085         |
| 88,9 x 2                   | 5,46                        | 51,57              | 11,6              | 3,073         |
| 88,9 x 2,6                 | 7,05                        | 65,68              | 14,8              | 3,053         |
| 88,9 x 3,2                 | 8,62                        | 79,21              | 17,8              | 3,032         |
| 88,9 x 4                   | 10,67                       | 96,34              | 21,7              | 3,005         |
| 114,3 x 1,65               | 5,84                        | 92,65              | 16,2              | 3,983         |
| 114,3 x 2                  | 7,06                        | 111,27             | 19,5              | 3,971         |
| 114,3 x 2,6                | 9,12                        | 142,37             | 24,9              | 3,950         |
| 114,3 x 3,2                | 11,17                       | 172,47             | 30,2              | 3,930         |
| 114,3 x 4                  | 13,86                       | 211,07             | 36,9              | 3,902         |
| 139,7 x 2                  | 8,65                        | 205,11             | 29,4              | 4,869         |
| 139,7 x 2,6                | 11,20                       | 263,21             | 37,7              | 4,848         |
| 139,7 x 3,2                | 13,72                       | 319,78             | 45,8              | 4,827         |
| 139,7 x 4                  | 17,05                       | 392,86             | 56,2              | 4,800         |
| 168,3 x 2                  | 10,45                       | 361,27             | 42,9              | 5,880         |
| 168,3 x 2,6                | 13,53                       | 464,63             | 55,2              | 5,859         |
| 168,3 x 3,2                | 16,60                       | 565,74             | 67,2              | 5,838         |
| 168,3 x 4                  | 20,65                       | 697,09             | 82,8              | 5,811         |
| 219,1 x 2                  | 13,64                       | 803,72             | 73,4              | 7,676         |
| 219,1 x 2,6                | 17,68                       | 1036,26            | 94,6              | 7,655         |
| 219,1 x 3,2                | 21,70                       | 1264,92            | 115               | 7,634         |
| 219,1 x 4                  | 27,03                       | 1563,84            | 143               | 7,606         |
| 273 x 2                    | 17,03                       | 1564,09            | 115               | 9,583         |
| 273 x 2,6                  | 22,09                       | 2019,92            | 148               | 9,562         |
| 273 x 3,2                  | 27,13                       | 2469,67            | 181               | 9,541         |
| 273 x 4                    | 33,81                       | 3059,95            | 224               | 9,513         |

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Fórmulas utilizadas:

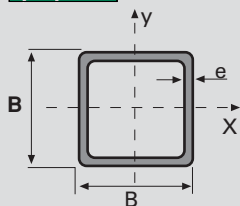
$$A = \frac{\pi}{4} (D^2 - (D-2e)^2)$$

$$I = \frac{\pi(D^4 - (D-2e)^4)}{64}$$

$$W = \frac{2I}{D}$$

$$i = \sqrt{\frac{I}{A}}$$





## Tabla indicativa para el cálculo de estructuras en acero inoxidable. Tubos cuadrados

| Dimensiones<br>B x B x e<br>mm | Area (A)<br>cm <sup>2</sup> | Momento de inercia | Módulo resistente | Radio de giro |
|--------------------------------|-----------------------------|--------------------|-------------------|---------------|
|                                |                             | I cm <sup>4</sup>  | W cm <sup>3</sup> | i cm          |
| 20 x 20 x 1,20                 | 0,88                        | 0,51               | 0,51              | 0,761         |
| 20 x 20 x 1,50                 | 1,07                        | 0,60               | 0,60              | 0,749         |
| 25 x 25 x 1,20                 | 1,12                        | 1,04               | 0,83              | 0,964         |
| 25 x 25 x 1,50                 | 1,37                        | 1,25               | 0,99              | 0,955         |
| 25 x 25 x 2,00                 | 1,77                        | 1,53               | 1,23              | 0,930         |
| 30 x 30 x 1,20                 | 1,36                        | 1,86               | 1,24              | 1,169         |
| 30 x 30 x 1,50                 | 1,67                        | 2,24               | 1,49              | 1,158         |
| 30 x 30 x 2,00                 | 2,17                        | 2,80               | 1,86              | 1,136         |
| 35 x 35 x 1,20                 | 1,60                        | 3,02               | 1,72              | 1,374         |
| 35 x 35 x 1,50                 | 1,97                        | 3,65               | 2,09              | 1,361         |
| 35 x 35 x 2,00                 | 2,57                        | 4,61               | 2,63              | 1,339         |
| 40 x 40 x 1,20                 | 1,84                        | 4,85               | 2,29              | 1,577         |
| 40 x 40 x 1,50                 | 2,27                        | 5,57               | 2,78              | 1,566         |
| 40 x 40 x 2,00                 | 2,97                        | 7,07               | 3,54              | 1,543         |
| 40 x 40 x 3,00                 | 4,21                        | 9,32               | 4,66              | 1,488         |
| 50 x 50 x 1,50                 | 2,87                        | 11,18              | 4,47              | 1,974         |
| 50 x 50 x 2,00                 | 3,77                        | 14,36              | 5,74              | 1,952         |
| 50 x 50 x 3,00                 | 5,41                        | 19,47              | 7,79              | 1,897         |
| 50 x 50 x 4,00                 | 6,95                        | 23,73              | 9,49              | 1,848         |
| 60 x 60 x 2,00                 | 4,57                        | 25,45              | 8,48              | 2,360         |
| 60 x 60 x 3,00                 | 6,61                        | 35,13              | 11,71             | 2,306         |
| 60 x 60 x 4,00                 | 8,55                        | 43,55              | 14,52             | 2,257         |
| 70 x 70 x 2,00                 | 5,37                        | 41,14              | 11,75             | 2,768         |
| 70 x 70 x 3,00                 | 7,81                        | 57,53              | 16,44             | 2,714         |
| 70 x 70 x 4,00                 | 10,15                       | 72,12              | 20,61             | 2,666         |
| 80 x 80 x 2,00                 | 6,17                        | 62,24              | 15,56             | 3,176         |
| 80 x 80 x 3,00                 | 9,01                        | 87,84              | 21,96             | 3,122         |
| 80 x 80 x 4,00                 | 11,75                       | 111,04             | 27,76             | 3,074         |
| 80 x 80 x 5,00                 | 14,36                       | 131,44             | 32,86             | 3,025         |
| 80 x 80 x 6,00                 | 16,83                       | 149,18             | 37,29             | 2,977         |
| 100 x 100 x 2,00               | 7,77                        | 123,86             | 24,77             | 3,993         |
| 100 x 100 x 3,00               | 11,41                       | 177,05             | 35,41             | 3,939         |
| 100 x 100 x 4,00               | 14,95                       | 226,35             | 45,27             | 3,891         |
| 100 x 100 x 5,00               | 18,36                       | 271,10             | 54,22             | 3,843         |
| 100 x 100 x 6,00               | 21,63                       | 311,47             | 62,29             | 3,795         |
| 120 x 120 x 3,00               | 13,81                       | 312,35             | 52,06             | 4,756         |
| 120 x 120 x 4,00               | 18,15                       | 402,28             | 67,05             | 4,708         |
| 120 x 120 x 5,00               | 22,36                       | 485,47             | 80,91             | 4,659         |
| 120 x 120 x 6,00               | 26,43                       | 562,16             | 93,69             | 4,612         |

Fórmulas utilizadas:

$$I = \frac{1}{12} [B^4 - (B-2e)^4]$$

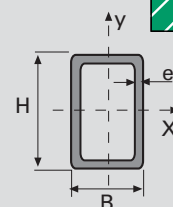
$$W = \frac{2I}{B}$$

$$i = \sqrt{\frac{I}{A}}$$





## Tabla indicativa para el cálculo de estructuras en acero inoxidable • Tubos rectangulares



| Dimensiones<br>H x B x e | Area (A)<br>cm <sup>2</sup> | Momento de inercia | Módulo resistente | Radio de giro | Momento de inercia | Módulo resistente | Radio de giro |
|--------------------------|-----------------------------|--------------------|-------------------|---------------|--------------------|-------------------|---------------|
|                          |                             | x-x                |                   |               | y-y                |                   |               |
|                          |                             | I cm <sup>4</sup>  | W cm <sup>3</sup> | i cm          | I cm <sup>4</sup>  | W cm <sup>3</sup> | i cm          |
| 30 x 20 x 1,20           | 1,12                        | 1,36               | 0,91              | 1,102         | 0,72               | 0,72              | 0,802         |
| 30 x 20 x 1,50           | 1,37                        | 1,63               | 1,09              | 1,091         | 0,86               | 0,86              | 0,792         |
| 40 x 20 x 1,20           | 1,36                        | 2,77               | 1,39              | 1,427         | 0,94               | 0,94              | 0,831         |
| 40 x 20 x 1,50           | 1,67                        | 3,34               | 1,67              | 1,414         | 1,12               | 1,12              | 0,819         |
| 40 x 20 x 2,00           | 2,17                        | 4,18               | 2,09              | 1,388         | 1,38               | 1,38              | 0,797         |
| 50 x 25 x 1,50           | 2,12                        | 6,77               | 2,71              | 1,787         | 2,28               | 1,83              | 1,037         |
| 50 x 25 x 2,00           | 2,77                        | 8,59               | 3,44              | 1,761         | 2,86               | 2,29              | 1,016         |
| 50 x 30 x 1,50           | 2,27                        | 7,66               | 3,06              | 1,837         | 3,46               | 2,31              | 1,235         |
| 50 x 30 x 2,00           | 2,97                        | 9,75               | 3,90              | 1,812         | 4,37               | 2,91              | 1,213         |
| 60 x 30 x 1,50           | 2,57                        | 11,99              | 3,99              | 2,160         | 4,07               | 2,71              | 1,258         |
| 60 x 30 x 2,00           | 3,37                        | 15,35              | 5,12              | 2,134         | 5,15               | 3,44              | 1,236         |
| 60 x 30 x 3,00           | 4,81                        | 20,50              | 6,83              | 2,064         | 6,80               | 4,53              | 1,189         |
| 60 x 40 x 1,50           | 2,87                        | 14,56              | 4,85              | 2,252         | 7,79               | 3,89              | 1,647         |
| 60 x 40 x 2,00           | 3,77                        | 18,72              | 6,24              | 2,228         | 9,97               | 4,98              | 1,626         |
| 60 x 40 x 3,00           | 5,41                        | 25,38              | 8,46              | 2,166         | 13,44              | 6,72              | 1,576         |
| 60 x 40 x 4,00           | 6,95                        | 30,99              | 10,33             | 2,112         | 16,28              | 8,14              | 1,531         |
| 80 x 40 x 2,00           | 4,57                        | 37,90              | 9,48              | 2,880         | 12,86              | 6,43              | 1,677         |
| 80 x 40 x 3,00           | 6,61                        | 52,25              | 13,06             | 2,812         | 17,56              | 8,78              | 1,630         |
| 80 x 40 x 4,00           | 8,55                        | 64,79              | 16,20             | 2,753         | 21,48              | 10,74             | 1,585         |
| 80 x 60 x 2,00           | 5,37                        | 50,07              | 12,52             | 3,054         | 32,18              | 10,73             | 2,448         |
| 80 x 60 x 3,00           | 7,81                        | 70,05              | 17,51             | 2,995         | 44,89              | 14,96             | 2,397         |
| 80 x 60 x 4,00           | 10,15                       | 87,92              | 21,98             | 2,943         | 56,12              | 18,71             | 2,351         |
| 100 x 40 x 2,00          | 5,37                        | 66,93              | 13,25             | 3,512         | 15,75              | 7,87              | 1,713         |
| 100 x 40 x 3,00          | 7,81                        | 92,34              | 18,47             | 3,439         | 21,67              | 10,84             | 1,666         |
| 100 x 40 x 4,00          | 10,15                       | 115,70             | 23,14             | 3,376         | 26,69              | 13,35             | 1,622         |
| 100 x 50 x 2,00          | 5,77                        | 75,83              | 15,17             | 3,625         | 25,88              | 10,35             | 2,118         |
| 100 x 50 x 3,00          | 8,41                        | 106,46             | 21,29             | 3,558         | 36,06              | 14,42             | 2,071         |
| 100 x 50 x 4,00          | 10,95                       | 134,14             | 26,83             | 3,500         | 44,95              | 17,98             | 2,026         |
| 100 x 60 x 2,00          | 6,17                        | 85,44              | 17,09             | 3,721         | 38,91              | 12,97             | 2,511         |
| 100 x 60 x 3,00          | 9,01                        | 120,57             | 24,11             | 3,658         | 54,65              | 18,22             | 2,463         |
| 100 x 60 x 4,00          | 11,75                       | 152,58             | 30,52             | 3,604         | 68,68              | 22,89             | 2,418         |
| 100 x 60 x 5,00          | 14,36                       | 180,77             | 36,15             | 3,548         | 80,83              | 26,94             | 2,373         |
| 120 x 60 x 3,00          | 10,21                       | 189,12             | 31,52             | 4,304         | 64,40              | 21,47             | 2,511         |
| 120 x 60 x 4,00          | 13,35                       | 240,74             | 40,12             | 4,247         | 81,25              | 27,08             | 2,467         |
| 120 x 60 x 5,00          | 16,36                       | 286,87             | 47,83             | 4,188         | 95,99              | 32,00             | 2,422         |
| 120 x 60 x 6,00          | 19,23                       | 328,01             | 54,67             | 4,130         | 108,77             | 36,26             | 2,378         |
| 120 x 80 x 2,00          | 7,77                        | 161,00             | 26,83             | 4,552         | 86,58              | 21,65             | 3,338         |
| 120 x 80 x 3,00          | 11,41                       | 230,20             | 38,37             | 4,492         | 123,43             | 30,86             | 3,289         |
| 120 x 80 x 4,00          | 14,95                       | 294,59             | 49,10             | 4,439         | 157,29             | 39,32             | 3,244         |
| 120 x 80 x 5,00          | 18,36                       | 353,14             | 58,86             | 4,386         | 187,78             | 46,94             | 3,198         |
| 120 x 80 x 6,00          | 21,63                       | 406,06             | 67,68             | 4,333         | 215,03             | 53,76             | 3,153         |

Fórmulas utilizadas:

$$I_x = \frac{1}{12} [BH^3 - (B-2e)(H-2e)^3]$$

$$W = \frac{2Ix}{H}$$

$$i = \sqrt{\frac{Ix}{A}}$$

$$I_y = \frac{1}{12} [HB^3 - (H-2e)(B-2e)^3]$$

$$W = \frac{2Iy}{B}$$

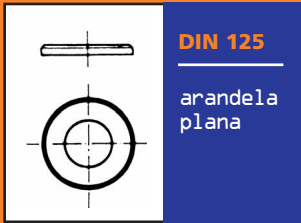
$$i = \sqrt{\frac{Iy}{A}}$$

# Indice de productos



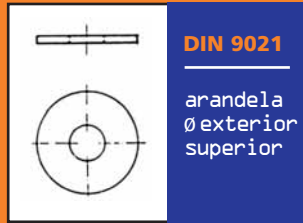
Inox Ibérica S.A.

|   |  |   |   |   |  |   |  |
|---|--|---|---|---|--|---|--|
|    | <b>DIN 933</b><br>cabeza hexagonal                 |    | <b>DIN 931</b><br>cabeza hexagonal media rosca      |    | <b>DIN 84</b><br>tornillo cabeza cilíndrica          |    | <b>DIN 85</b><br>tornillo cabeza alomada                         |
|    | <b>DIN 963</b><br>tornillo cabeza avellanada       |    | <b>DIN 964</b><br>tornillo cabeza gota de sebo      |    | <b>DIN 965</b><br>tornillo cabeza avellanada philips |    | <b>DIN 966</b><br>tornillo cabeza gota sebo philips              |
|  | <b>DIN 7985</b><br>tornillo cabeza alomada philips |  | <b>DIN 7991</b><br>tornillo allen cabeza avellanada |  | <b>DIN 912</b><br>tornillo allen                     |  | <b>ISO 7380</b><br>tornillo cabeza redonda hexágono interior ULS |
|  | <b>DIN 603</b><br>tornillo con cuello cuadrado     |  | <b>DIN 913</b><br>espárrago allen c/extremo cónico  |  | <b>DIN 914</b><br>espárrago allen c/punta            |  | <b>DIN 916</b><br>espárrago allen c/filo anular                  |
|  | <b>DIN 975</b><br>varilla roscada                  |  | <b>DIN 934</b><br>tuerca hexagonal                  |  | <b>DIN 439</b><br>tuerca especial altura inferior    |  | <b>DIN 1587</b><br>tuerca ciega                                  |
|  | <b>DIN 315</b><br>tuerca mariposa                  |  | <b>DIN 985</b><br>tuerca autoseguro                 |  | <b>DIN 929</b><br>tuerca soldable                    |  | <b>DIN 935</b><br>tuerca almenada                                |



**DIN 125**

arandela plana



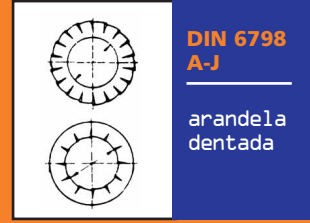
**DIN 9021**

arandela  
Ø exterior superior



**DIN 127**

arandela  
groover



**DIN 6798  
A-J**

arandela  
dentada



**DIN 433**

arandela



**DIN 137 A**

arandela  
elástica



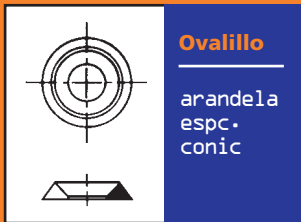
**NFE 25511**

arandela  
contact



**DIN 6799**

arandela  
seguridad



**Ovalillo**

arandela  
espc.  
conic



**DIN 7971**

tornillo  
para chapa  
cabeza  
cilindrica



**DIN 7972**

tornillo  
para chapa  
cabeza  
avellanada



**DIN 7973**

tornillo  
para chapa  
cabeza  
gota sebo



**DIN 7981**

tornillo  
para chapa  
cabeza  
cilindrica  
philips



**DIN 7982**

tornillo  
para chapa  
cabeza  
avellanada  
philips



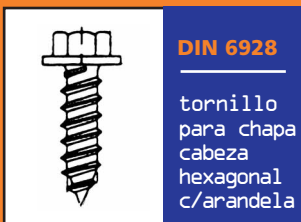
**DIN 7983**

tornillo  
para chapa  
cabeza  
gota sebo  
philips



**DIN 7976**

tornillo  
para chapa  
cabeza  
hexagonal



**DIN 6928**

tornillo  
para chapa  
cabeza  
hexagonal  
c/arandela



**DIN 95**

tirafondo  
de cabeza  
gota de  
sebo



**DIN 96**

tirafondo  
de cabeza  
redonda



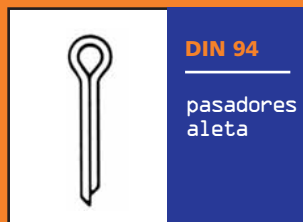
**DIN 97**

tirafondo  
de cabeza  
avellanada



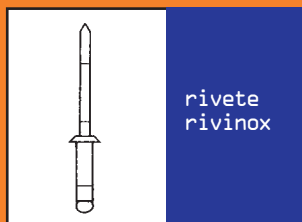
**DIN 571**

tirafondo  
cabeza  
hexagonal

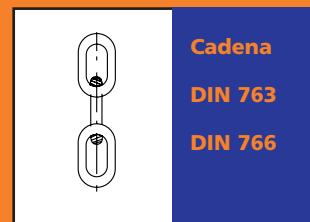


**DIN 94**

pasadores  
aleta



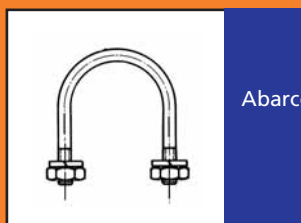
rivete  
rivinox



**Cadena**

**DIN 763**

**DIN 766**



Abarcones



pieza  
especial



tornillo  
para  
aglomerado  
pozidrive



CONCAVIDAD AHUECADA EN ESPÁRRAGOS



CUADRADOS DOBLES PARA LAS TUERCAS FLOTANTES



UNA MUESCA PARA LAS TUERCAS PEM 300°



DOS MUESCAS EN LOS DISTANCIADORES



SELLO "PEM" EN LA PARTE SUPERIOR DE LAS TUERCAS



DOS MUESCAS EN TUERCA

# productos de aerotécnica



Aerotécnica, S.A.

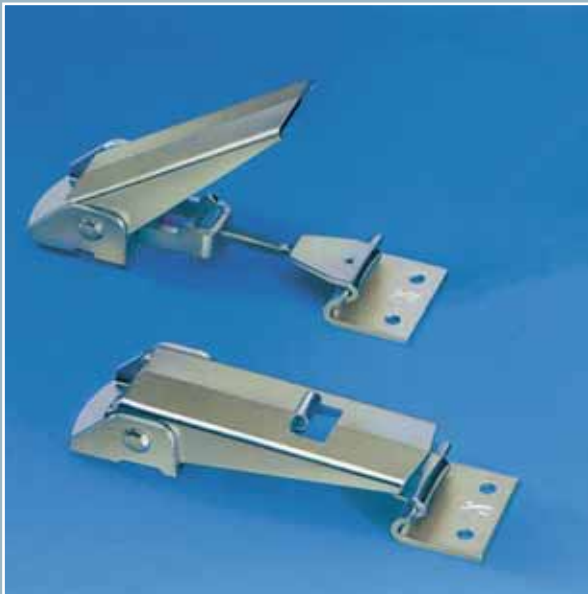
## fijaciones y prensas

- Fijaciones flotantes autoinsertables
- Fijaciones ciegas autoinsertables
- Espárragos y distanciadores de cabeza oculta
- Tuercas autoinsertables
- Productos de fijación CONNECT'R WARE®
- Sistema de tierra WAVEGUARD®
- Fijaciones embutidas autoinsertables PEMSERT®
- Fijaciones autoinsertables miniatura
- Espárragos y centradores autoinsertables
- Fijaciones para uso en placas de circuito impreso (PCI) o junto con ellas
- Fijaciones autoblocantes PEMFLEX®
- Conjuntos de fijaciones de panel autoinsertables
- Fijaciones autoinsertables y autoblocantes PEMHEX®
- Fijaciones autoinsertables de ángulo recto PEM®R'ANGL
- Distanciadores autoinsertables
- Distanciadores SNAP-TOP® Y KEYHOLE®
- Tuercas de soldar por resistencia autolocalizables
- Prensas PEMSERTER®
- Insertos para plástico SI®



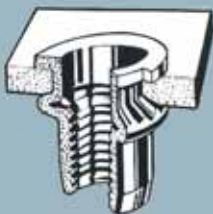
PARA AYUDARLE A IDENTIFICAR LAS FIJACIONES VERDADERAS DE MARCA PEM®, LA MAYORÍA LLEVA UNA DE NUESTRAS MARCAS REGISTRADAS "PEM", UNA MARCA DE "UNA O DOS MUESCAS" EN FIJACIONES DE ROSCA INTERIOR Y UNA "CONCAVIDAD AHUECADA" EN LAS PUNTAS DE LOS ESPÁRRAGOS. PARA ASEGURARSE DE QUE RECIBE LAS FIJACIONES DE MARCA PEM® VERDADERAS, BUSQUE LAS MARCAS PEM® EN LOS PRODUCTOS.

## CIERRES DE UN CUARTO DE VUELTA



## CIERRES DE PALANCA

**AERBLOC**



Ranura de anclaje para una mayor seguridad

Cuerpo cónico montaje rápido

**tuerca anti-rotación**

**tuercas remachables**



## Acero al carbono

- 1 Tubos soldados, ISO-65 y DIN 2440, negros o galvanizados (DIN 2444), extremos lisos o roscados (DIN 2999) o ranurados.
- 2 Accesorios maleables y juntas rápidas.
- 3 Válvulas industriales y de fontanería.
- 4 Tubos sin soldadura, DIN 2440 serie media y DIN 2441 serie pesada.
- 5 Tubos soldados DIN-2458 y tubos sin soldadura DIN-2448.
- 6 Curvas N-3, DIN-2605 y N-5, DIN-2606; reducciones DIN-2616; Tes DIN-2615.
- 7 Bridas ciegas DIN 2527 (PN6, PN10, PN16, PN25 y PN 40).
- 8 Bridas planas, DIN-2573, DIN-2576, DIN-2502 y DIN 2503 (PN6 / 10 / 16 / 25).
- 9 Bridas roscadas DIN-2566, DIN-2573, y DIN 2576. Tornillos para bridas.
- 10 Bridas con cuello DIN-2632, DIN-2633, DIN-2634 y DIN-2635 (PN10 / 16 / 25 / 40).
- 11 Acoplamientos para tubos ranurados Gruvlok.
- 12 Abrazaderas.
- 13 Tubos soldados DIN-2394, alto espesor.
- 14 Tubos soldados cuadrados y rectangulares, DIN-2395.
- 15 Tubos soldados, estirados en frío, DIN-2393.
- 16 Tubos soldados DIN-1626 y tubos sin soldadura DIN-1629.



- 17 Tubos sin soldadura DIN-17175, resistentes al calor.
- 18 Tubos y accesorios para prensado rápido Hitpress.
- 19 Tubos soldados y sin soldadura, ASME/ANSI B36.10, API 5L.
- 20 Codos radio largo ASME/ANSI B16.9 y radio corto ASME/ANSI B16.28.
- 21 Reducciones concéntricas / excéntricas, tes iguales / reducidas, caps, ASME/ANSI B16.9.
- 22 Accesorios forjados, 3000 y 6000 LBS S/ASME/ANSI B16.11, socket welding, codos, tes, cruces, manguitos, caps, medio-manguito, bosses y tuercas unión H-H.
- 23 Accesorios roscados, 3000 y 6000 LBS ASME/ANSI B16.11, rosca ANSI B1.20.1, codos, tes, cruces, manguitos, caps, tuercas unión H-H, bosses, tapones cabeza cuadrada, redonda, hexagonal, bushing hexagonal, nipple hexagonal.
- 24 Swages nipples concéntricos, excéntricos, accesorios de derivación, weldolet, sockolet y threadolet.



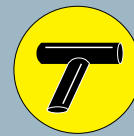
# GRUPO HASTINIK

## Certificaciones registro según UNE-EN-ISO-9002-94





Hastinik, S.A.



Tubasol, S.A.

# Nuestros almacenes



BARCELONA



MADRID



ZONA LEVANTE



SEVILLA



ZONA NORTE



ZONA GALICIA



GIRONA



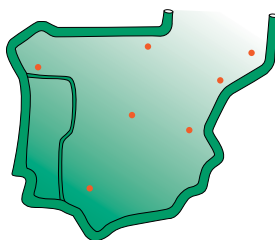
Inox Iberica, S.A.



Aerotecnica, S.A. 135



# Delegaciones y almacenes del Grupo Hastinik



**Hastinik, S.A.**



**Tubasol, S.A.**



**Inox Ibérica, S.A.**



**Aerotécnica, S.A.**

- Tubos inoxidables DIN, ANSI, métricos.
- Tubos inoxidables cuadrados y rectangulares.
- Accesorios inoxidables.
- Chapa, barras, pletinas, ángulos.
- Aleaciones de aluminio.
- Aleaciones níquel, titanio.

**BARCELONA**  
C/. Solsona, 3  
Políg. Industr. La Florida  
08130 Santa Perpètua de la Mogoda (Barcelona)  
Tel. 93 565 30 00 - Fax 93 565 30 10

**MADRID**  
C/. Cedro, 9.3 - 9.4  
Políg. Industr. Los Huertecillos  
28350 Ciempozuelos (Madrid)  
Tel. 91 808 61 30 - Fax 91 808 60 02

**ZONA NORTE**  
Polígono Industrial Ayala  
01479 Murga (Alava)  
Tel. 945 39 97 00 - Fax 945 39 97 10

**ZONA LEVANTE**  
Calle La Alhóndiga, 3  
Pol. La Pahilla - Ap. de Correos n.º 83  
46370 Chiva (Valencia)  
Tel. 96 252 42 30 - Fax 96 252 41 02

**GALICIA**  
Polígono Industrial A Granxa  
Paralela 3, Parcela 195 - 196  
Apartado de Correos 114  
36400 Porriño (Pontevedra)  
Tel. 986 34 29 40 - Fax 986 34 29 35

**SEVILLA**  
Polígono Industrial La Red Sur  
Calle 17, Parcela 21  
41500 Alcalá de Guadaíra (Sevilla)  
Tel. 95 563 58 70 - Fax 95 563 58 75

**GIRONA**  
Polígono Industrial "Casa Nova"  
c/ Rosselló, s/n  
17181 Aiguaviva (Girona)  
Tel. 972 40 69 12 - Fax 972 40 69 17

- Tubos acero al carbono DIN, ANSI, soldados y sin soldadura.
- Accesorios, curvas, bridas.
- Válvulas.

**BARCELONA**  
C/. Solsona, 3  
Políg. Industr. La Florida  
08130 Santa Perpètua de la Mogoda (Barcelona)  
Tel. 93 565 30 02 - Fax 93 565 30 10

**MADRID**  
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46370 Chiva (Valencia)  
Tel. 96 252 42 32 - Fax 96 252 41 02

**GALICIA**  
Polígono Industrial A Granxa  
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**SEVILLA**  
Polígono Industrial La Red Sur  
Calle 17, Parcela 21  
41500 Alcalá de Guadaíra (Sevilla)  
Tel. 95 563 58 70 - Fax 95 563 58 75

**GIRONA**  
Polígono Industrial "Casa Nova"  
c/ Rosselló, s/n  
17181 Aiguaviva (Girona)  
Tel. 972 40 69 12 - Fax 972 40 69 17

- Tornillos de acero inoxidable.
- Tornillería bajo plano.

**BARCELONA**  
C/. Solsona, 3  
Políg. Industr. La Florida  
08130 Santa Perpètua de la Mogoda (Barcelona)  
Tel. 93 565 30 01 - Fax 93 565 30 10

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01479 Murga (Alava)  
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Calle 17, Parcela 21  
41500 Alcalá de Guadaíra (Sevilla)  
Tel. 95 563 58 70 - Fax 95 563 58 75

**GIRONA**  
Polígono Industrial "Casa Nova"  
c/ Rosselló, s/n  
17181 Aiguaviva (Girona)  
Tel. 972 40 69 12 - Fax 972 40 69 17

- Sistemas de fijación.
- Cierres 1/4 vuelta y de palanca.
- Insertos, separadores.

**BARCELONA**  
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08130 Santa Perpètua de la Mogoda (Barcelona)  
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web: [www.inoxiberica.com](http://www.inoxiberica.com)

e-mail: [comercial@aerotecnica.es](mailto:comercial@aerotecnica.es)  
web: [www.aerotecnica.es](http://www.aerotecnica.es)

**GRUPO HASTINIK**