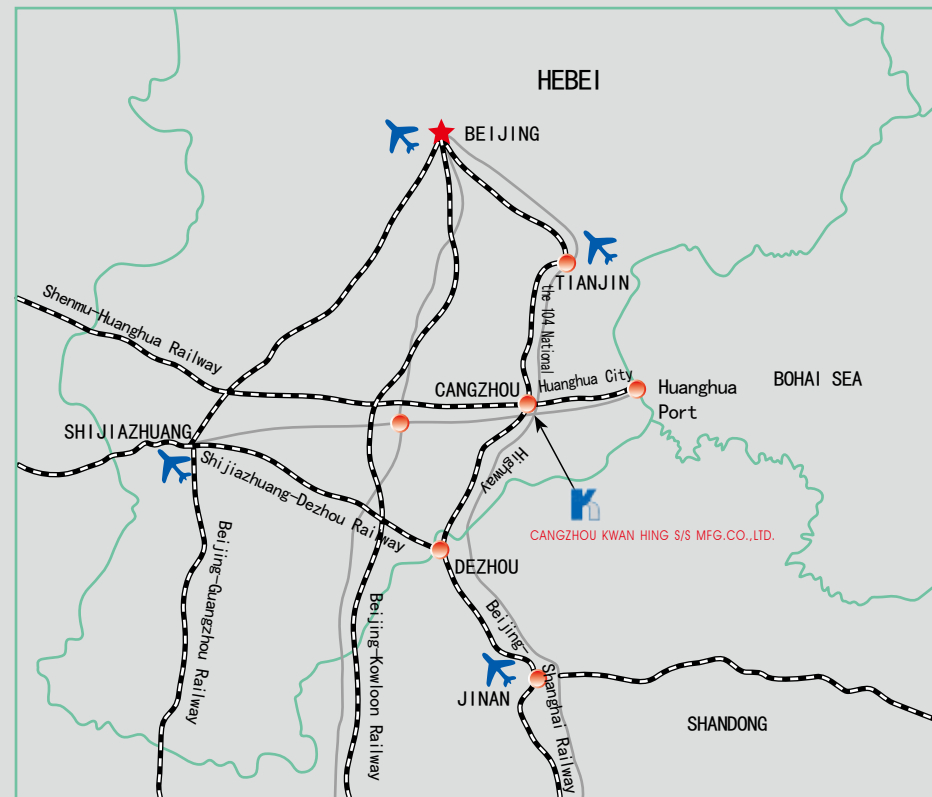




120 Kilometers from TianJin airport  
240 Kilometers from BeiJing airport



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*Choosing Kwan Hing is Bound To Succeed*

## ➔ **Brief Introduction**

As a joint venture in Cangzhou, Hebei, China, we are invested by Kwan Hing Manufacturing Ltd (Hong Kong) and NIC Corp. (in Osaka, Japan). And we are specialized in supplying Stainless Steel Products for overseas customers, such as S/S screwed fittings, butt-welding fittings, Ball Disc, 1PC 2PC & 3PC S/S Ball Valve, Y-strainer, Check Valve, Welding Nipples, Barrel Nipples, Pipe Clamps, Hose Clamps, Unions (SMS, DIN, IDF, Tri-Clamps) Flange, sanitary valves and fittings as well as Bathroom & Kitchen Faucet, etc. With the guarantee of ISO9001:2000 Certificate, PED 97/23/EC Certificate and CE Certificate, together with Japanese management idea, We supply you top-quality products as always. We have built our company policy on a foundation of quality service and reliable deliveries, in which the high standards of the product and its documentation are each an inherent part. For years of expansion, we now have over 450 workers in our plant and the annual production capacity is around 1200 Tons in 304/316 304L/316L stainless steel and carbon steel.

KH guarantees excellent customer service for its quality products. We see ourselves as your trusted business partner and have ample capacity to respond to unusual requests fast and efficiently.

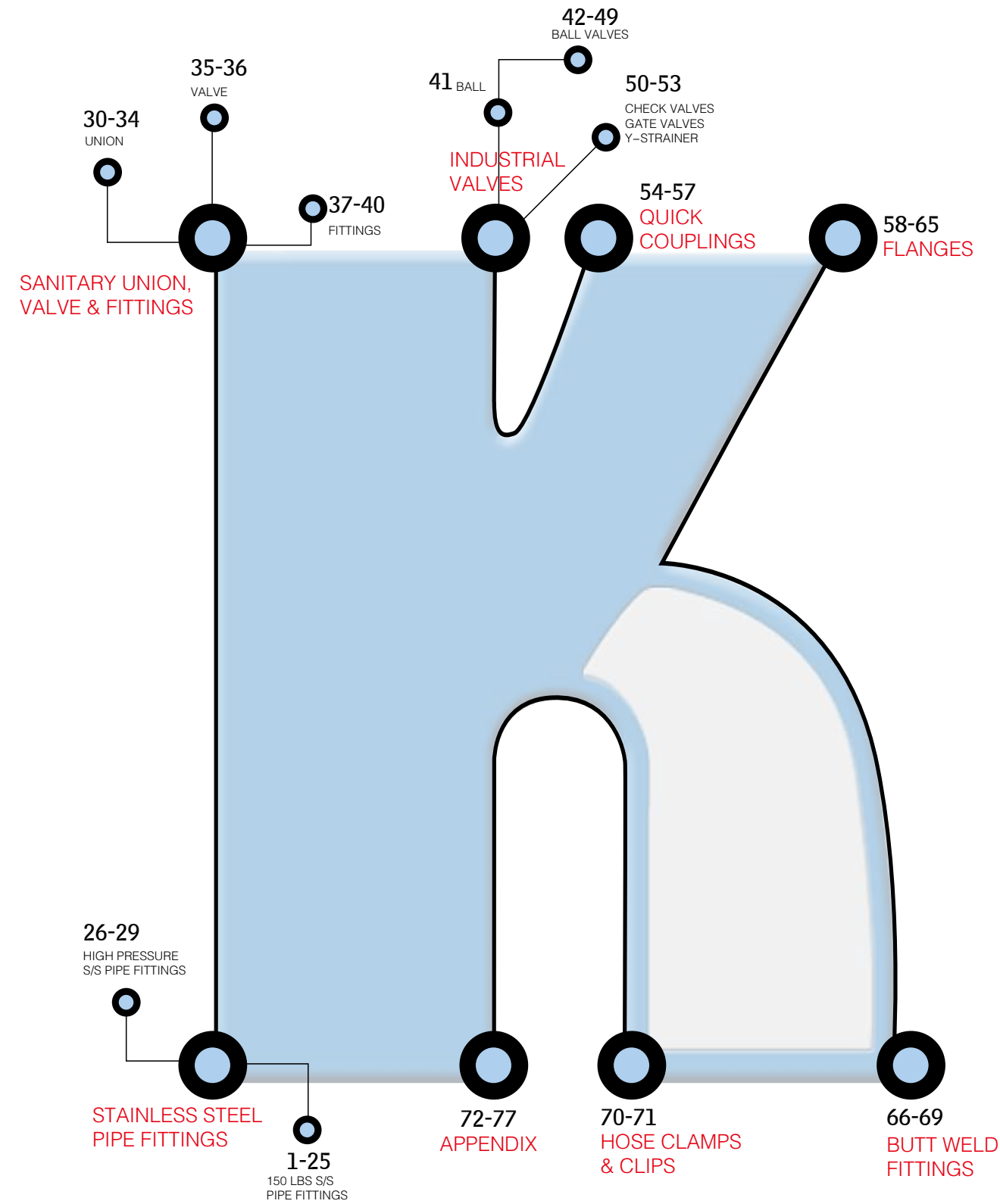
We hope we can provide a complete product list to satisfy all your needs. We are also in position to supply top quality screwed fittings including standard item as well as OEM project.

For years of mfg, our products shipped to many countries including the U.S., Germany, Italy, Spain, British, Ireland, Austria, Denmark, Japan, and Dubai. In addition, our domestic sales is also growing and our customers including contractors and oil & petroleum distributor etc. Although our products gain a good honor from our customers, we never underestimate any potential risk that can affect our quality. Casting the Excellent is our business ideology. Please feel free to tell us about your thinking towards our company, products and services.

Pls believe us: *Choosing Kwan Hing is Bound To Succeed.*



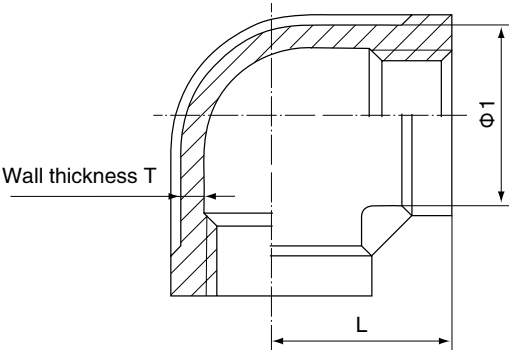




➔ Elbow 90° (LB 90° )



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

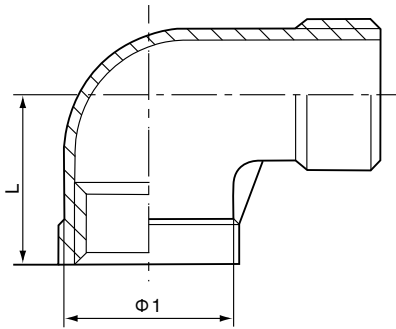


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.8  | 1.65 | 1.75 | 2    | 2.25  | 2.5   | 2.85 | 3.25  | 3.75 | 4.25  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.5  | 2.5  | 3    | 3    | 3.5   | 3.5   | 4    | 4.5   | 5    | 5.5   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6 | 96.8  |
|          | T    | 2.7  | 2.7  | 2.7  | 2.7  | 3.2  | 3.2  | 3.8   | 3.8   | 4    | 4.7   | 5.2  | 6     |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 15.2 | 19.7 | 23.3 | 28   | 34.8 | 43.6 | 53    | 58    | 71   | 87    | 100  | 126   |
|          | L    | 17   | 18.5 | 22.9 | 26.8 | 32   | 37.5 | 45.9  | 47.6  | 58   | 70    | 77   | 97    |
|          | T    | 3.6  | 4.35 | 4.85 | 3.4  | 4.15 | 5.05 | 5.5   | 5     | 5.6  | 5.75  | 6    | 6.5   |

➔ Street Elbow 90° (SLB 90° )



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78   | 97    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6 | 96.8  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 17   | 21   | 25   | 29   | 35   | 43   | 52    | 58.8  | 71.7 | 86.2  | 98.6 | 121   |
|          | L    | 19   | 21   | 25   | 28   | 33   | 38   | 45    | 50    | 58   | 69    | 78   | 97    |

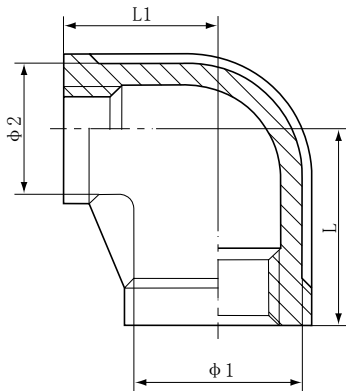


➔ Red Elbow 90° (RLB 90° )



FEATURES

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| ISO4144  | Φ1   | 16    | 20    | 24.5  | 24.5  | 30    | 30   | 37.5 | 37.5  | 46.5  | 46.5  |
|          | Φ2   | 13    | 16    | 16    | 20    | 20    | 24.5 | 24.5 | 30    | 30    | 37.5  |
|          | L    | 18    | 22    | 24    | 25    | 28    | 30   | 33   | 35    | 40    | 42    |
|          | L1   | 18    | 20    | 24    | 26    | 28    | 29   | 32   | 34    | 38    | 40    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| ISO4144  | Φ1   | 53    | 53    | 65.5  | 65.5  | 82    | 82   | 95.5 | 95.5  | 121.5 | 121.5 |
|          | Φ2   | 37.5  | 46.5  | 46.5  | 53    | 53    | 65.5 | 65.5 | 82    | 82    | 95.5  |
|          | L    | 45    | 48    | 54    | 55    | 62    | 65   | 72   | 75    | 90    | 91    |
|          | L1   | 41    | 45    | 48    | 52    | 55    | 60   | 62   | 72    | 78    | 83    |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1   |       | 1 1/4 |     |
|----------|------|-------|-------|-------|-------|-------|------|-----|-------|-------|-----|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2 | 3/4   | 3/4   | 1   |
| JIS      | Φ1   | 19    | 22    | 26    | 26    | 32    | 32   | 39  | 39    | 48    | 48  |
|          | Φ2   | 16    | 19    | 19    | 22    | 22    | 26   | 26  | 32    | 32    | 39  |
|          | L    | 19    | 23    | 27    | 27    | 32    | 32   | 38  | 38    | 46    | 46  |
|          | L1   | 17    | 19    | 19    | 23    | 23    | 27   | 27  | 32    | 32    | 38  |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3   |       | 4     |     |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2   | 2 1/2 | 2 1/2 | 3   |
| JIS      | Φ1   | 55    | 55    | 67    | 67    | 83.5  | 83.5 | 97  | 97    | 123   | 123 |
|          | Φ2   | 39    | 48    | 48    | 55    | 55    | 67   | 67  | 83.5  | 83.5  | 97  |
|          | L    | 48    | 48    | 57    | 57    | 69    | 69   | 78  | 78    | 96    | 96  |
|          | L1   | 38    | 46    | 46    | 48    | 48    | 57   | 57  | 69    | 69    | 78  |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| SP-114   | Φ1   | 15.4  | 19.7  | 26.2  | 26.2  | 31.9  | 31.9 | 39.8 | 39.8  | 47.8  | 47.8 |
|          | Φ2   | 13.5  | 15.4  | 15.4  | 19.7  | 19.7  | 26.2 | 26.2 | 31.9  | 31.9  | 39.8 |
|          | L    | 22    | 24    | 21    | 26    | 26.5  | 26.5 | 32.5 | 34    | 38    | 40   |
|          | L1   | 20    | 24    | 22    | 25    | 28    | 28   | 34   | 35    | 40    | 40   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| SP-114   | Φ1   | 55.9  | 55.9  | 66.5  | 66.5  | 83.3  | 83.3 | 98.2 | 98.2  | 123   | 123  |
|          | Φ2   | 39.8  | 47.8  | 47.8  | 55.9  | 55.9  | 66.5 | 66.5 | 83.3  | 83.3  | 98.2 |
|          | L    | 42    | 43    | 45    | 52    | 54    | 61   | 63   | 70    | 72    | 79   |
|          | L1   | 45    | 47    | 52    | 55    | 60    | 63   | 68   | 71    | 76    | 80   |

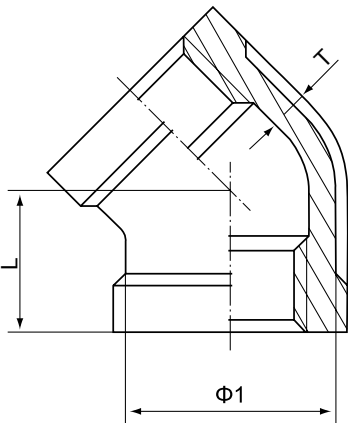
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| EN-10241 | Φ1   | 21.3  | 23.5  | 29    | 29    | 35    | 35   | 43   | 43    | 52    | 52   |
|          | Φ2   | 17    | 21.3  | 21.3  | 23.5  | 23.5  | 29   | 29   | 35    | 35    | 43   |
|          | L    | 21    | 21.3  | 27    | 27    | 33    | 33   | 38   | 38    | 45    | 45   |
|          | L1   | 19    | 21    | 21    | 21.3  | 21.3  | 27   | 27   | 33    | 33    | 38   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| EN-10241 | Φ1   | 58    | 58    | 71    | 71    | 86.5  | 86.5 | 99.5 | 99.5  | 125   | 125  |
|          | Φ2   | 43    | 52    | 52    | 58    | 58    | 71   | 71   | 86.5  | 86.5  | 99.5 |
|          | L    | 50    | 50    | 58    | 58    | 69.7  | 69.7 | 77.5 | 77.5  | 98.2  | 98.2 |
|          | L1   | 38    | 45    | 45    | 50    | 50    | 58   | 58   | 69.7  | 69.7  | 77.5 |

➔ Elbow 45° (LB 45° )



FEATURES

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



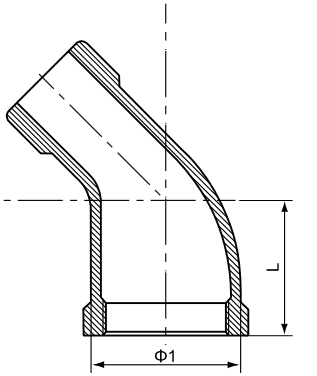
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-------|-------|
| ISO4144  | Φ1   | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5  | 121.5 |
|          | L    | 16   | 17   | 19   | 21   | 25   | 29   | 33    | 37    | 42   | 49    | 54    | 64    |
|          | T    | 2.5  | 2.5  | 2.8  | 1.65 | 1.75 | 2.0  | 2.25  | 2.5   | 2.85 | 3.25  | 3.75  | 4.25  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97    | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78    | 96    |
|          | T    | 2.5  | 2.5  | 2.5  | 2.5  | 3.0  | 3.0  | 3.5   | 3.5   | 4.0  | 4.5   | 5.0   | 5.5   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| SP-114   | Φ1   | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2  | 123   |
|          | L    | 19   | 21   | 23   | 25   | 30   | 32   | 33    | 36    | 44   | 50    | 54    | 58.5  |
|          | T    | 2.7  | 2.7  | 2.7  | 2.7  | 3.2  | 3.2  | 3.8   | 3.8   | 4    | 4.7   | 5.2   | 6.0   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| EN-10241 | Φ1   | 18   | 21   | 25   | 29.5 | 35.6 | 43   | 52.4  | 58    | 72   | 87    | 100.3 | 125.5 |
|          | L    | 18   | 18   | 20   | 22   | 25   | 28   | 33    | 36    | 43   | 50    | 55    | 64    |
|          | T    | 5.0  | 5.0  | 5.3  | 4.15 | 4.55 | 4.75 | 5.2   | 5.0   | 6.1  | 5.75  | 6.15  | 6.25  |

➔ Street Elbow 45° (SLB 45° )



FEATURES

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



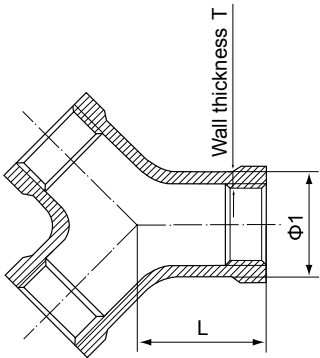
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78   | 97    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6 | 96.8  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 17   | 21   | 25   | 29   | 35   | 43   | 52    | 58.8  | 71.7 | 86.2  | 98.6 | 121   |
|          | L    | 19   | 21   | 25   | 28   | 33   | 38   | 45    | 50    | 58   | 69    | 78   | 97    |



➔ Y Type Tee(Y-TB)



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

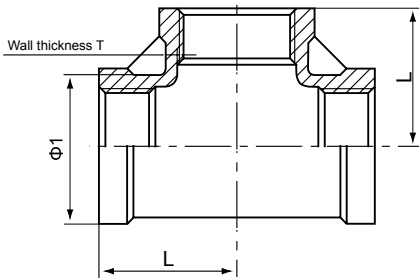


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ 1  | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.8  | 1.65 | 1.75 | 2    | 2.25  | 2.5   | 2.85 | 3.25  | 3.75 | 4.25  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ 1  | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.5  | 2.5  | 3    | 3    | 3.5   | 3.5   | 4    | 4.5   | 5    | 5.5   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ 1  | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6 | 96.8  |
|          | T    | 2.7  | 2.7  | 2.7  | 2.7  | 3.2  | 3.2  | 3.8   | 3.8   | 4    | 4.7   | 5.2  | 6     |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ 1  | 15.2 | 19.7 | 23.3 | 28   | 34.8 | 43.6 | 53    | 58    | 71   | 87    | 100  | 126   |
|          | L    | 17   | 18.5 | 22.9 | 26.8 | 32   | 37.5 | 45.9  | 47.6  | 58   | 70    | 77   | 97    |
|          | T    | 3.6  | 4.35 | 4.85 | 3.4  | 4.15 | 5.05 | 5.5   | 5     | 5.6  | 5.75  | 6    | 6.5   |

➔ Tee(TB)



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

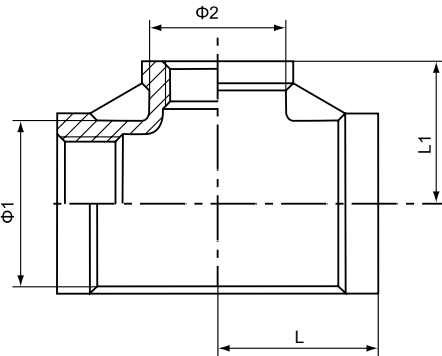


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-------|-------|
| ISO4144  | Φ 1  | 13   | 16.5 | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5  | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78    | 96    |
|          | T    | 2.5  | 2.5  | 2.8  | 1.65 | 1.75 | 2    | 2.25  | 2.5   | 2.85 | 3.25  | 3.75  | 4.25  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| JIS      | Φ 1  | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97    | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78    | 96    |
|          | T    | 2.5  | 2.5  | 2.5  | 2.5  | 3    | 3    | 3.5   | 3.5   | 4    | 4.5   | 5     | 5.5   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| SP-114   | Φ 1  | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2  | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6  | 96.8  |
|          | T    | 2.7  | 2.7  | 2.7  | 2.7  | 3.2  | 3.2  | 3.8   | 3.8   | 4    | 4.7   | 5.2   | 6     |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
| EN-10241 | Φ 1  | 17   | 21.3 | 23.5 | 30   | 35   | 43   | 52    | 58    | 71   | 86.6  | 100.2 | 125   |
|          | L    | 19   | 21   | 23.6 | 28   | 33   | 38   | 45    | 50    | 58   | 70    | 78.5  | 97    |
|          | T    | 3.6  | 4.35 | 4.85 | 3.4  | 4.15 | 5.05 | 5.5   | 5     | 5.6  | 5.75  | 6     | 6.5   |

➔ Red. Tee(RTB)



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| ISO4144  | Φ 1  | 16    | 20    | 24.5  | 24.5  | 30    | 30   | 37.5 | 37.5  | 46.5  | 46.5  |
|          | Φ 2  | 13    | 16    | 16    | 20    | 20    | 24.5 | 24.5 | 30    | 30    | 37.5  |
|          | L    | 18    | 22    | 24    | 25    | 28    | 30   | 33   | 35    | 40    | 42    |
|          | L1   | 18    | 20    | 24    | 26    | 28    | 29   | 32   | 34    | 38    | 40    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| ISO4144  | Φ 1  | 53    | 53    | 65.5  | 65.5  | 82    | 82   | 95.5 | 95.5  | 121.5 | 121.5 |
|          | Φ 2  | 37.5  | 46.5  | 46.5  | 53    | 53    | 65.5 | 65.5 | 82    | 82    | 95.5  |
|          | L    | 45    | 48    | 54    | 55    | 62    | 65   | 72   | 75    | 90    | 91    |
|          | L1   | 41    | 45    | 48    | 52    | 55    | 60   | 62   | 72    | 78    | 83    |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| JIS      | Φ 1  | 19    | 22    | 26    | 26    | 32    | 32   | 39   | 39    | 48    | 48   |
|          | Φ 2  | 16    | 19    | 19    | 22    | 22    | 26   | 26   | 32    | 32    | 39   |
|          | L    | 19    | 23    | 27    | 27    | 32    | 32   | 38   | 38    | 46    | 46   |
|          | L1   | 17    | 19    | 19    | 23    | 23    | 27   | 27   | 32    | 32    | 38   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| JIS      | Φ 1  | 55    | 55    | 67    | 67    | 83.5  | 83.5 | 98.2 | 98.2  | 123   | 123  |
|          | Φ 2  | 39    | 48    | 48    | 55    | 55    | 67   | 67   | 83.5  | 83.5  | 98.2 |
|          | L    | 48    | 48    | 57    | 57    | 69    | 69   | 78   | 78    | 96    | 96   |
|          | L1   | 38    | 46    | 46    | 48    | 48    | 57   | 57   | 69    | 69    | 78   |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| SP-114   | Φ 1  | 15.4  | 19.7  | 26.2  | 26.2  | 31.9  | 31.9 | 39.8 | 39.8  | 47.8  | 47.8 |
|          | Φ 2  | 13.5  | 15.4  | 15.4  | 19.7  | 19.7  | 26.2 | 26.2 | 31.9  | 31.9  | 39.8 |
|          | L    | 20.6  | 23.6  | 28.5  | 28.5  | 33.3  | 33.3 | 38.1 | 38.1  | 44.5  | 44.5 |
|          | L1   | 20.6  | 20.6  | 20.6  | 23.6  | 23.6  | 28.5 | 28.5 | 33.3  | 33.3  | 38.1 |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| SP-114   | Φ 1  | 55.9  | 55.9  | 66.5  | 66.5  | 83.3  | 83.3 | 98.2 | 98.2  | 123   | 123  |
|          | Φ 2  | 39.8  | 47.8  | 47.8  | 55.9  | 55.9  | 66.5 | 66.5 | 83.3  | 83.3  | 98.2 |
|          | L    | 49    | 49    | 57.1  | 57.1  | 68    | 68   | 77.6 | 77.6  | 96.8  | 96.8 |
|          | L1   | 38.1  | 44.5  | 44.5  | 49    | 49    | 57.1 | 57.1 | 68    | 68    | 77.6 |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1     |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2   | 3/4   | 3/4   | 1     |
| EN-10241 | Φ 1  | 21.3  | 23.5  | 30    | 30    | 35    | 35   | 43    | 43    | 52    | 52    |
|          | Φ 2  | 17    | 21.3  | 21.3  | 23.5  | 23.5  | 30   | 30    | 35    | 35    | 43    |
|          | L    | 21    | 23.6  | 28    | 28    | 33    | 33   | 38    | 38    | 45    | 45    |
|          | L1   | 19    | 21    | 21    | 23.6  | 23.6  | 28   | 28    | 33    | 33    | 38    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3     |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2     | 2 1/2 | 2 1/2 | 3     |
| EN-10241 | Φ 1  | 58    | 58    | 71    | 71    | 86.6  | 86.6 | 100.2 | 100.2 | 125   | 125   |
|          | Φ 2  | 43    | 52    | 52    | 58    | 58    | 71   | 71    | 86.6  | 86.6  | 100.2 |
|          | L    | 50    | 50    | 58    | 58    | 70    | 70   | 78.5  | 78.5  | 97    | 97    |
|          | L1   | 38    | 45    | 45    | 50    | 50    | 58   | 58    | 70    | 70    | 78.5  |

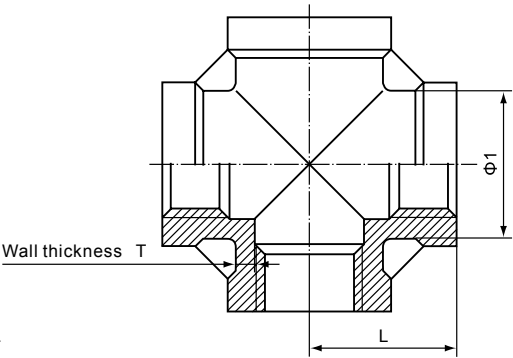


Cross(+B)



FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- Dimension conform to ISO 4144, SP114 EN-10241, JIS
- 150 LBS
- Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT



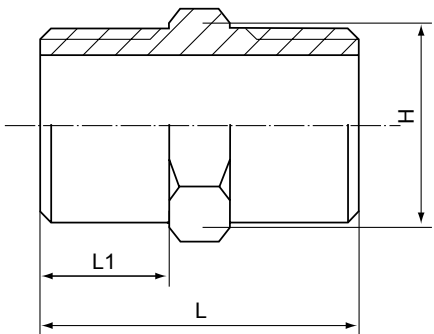
| standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13   | 16   | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 45    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.8  | 1.65 | 1.75 | 2    | 2.25  | 2.5   | 2.85 | 3.25  | 3.75 | 4.25  |
| standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17   | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
|          | T    | 2.5  | 2.5  | 2.5  | 2.5  | 3    | 3    | 3.5   | 3.5   | 4    | 4.5   | 5    | 5.5   |
| standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123   |
|          | L    | 20.6 | 20.6 | 23.6 | 28.5 | 33.3 | 38.1 | 44.5  | 49    | 57.1 | 68    | 77.6 | 96.8  |
|          | T    | 2.7  | 2.7  | 2.7  | 2.7  | 3.2  | 3.2  | 3.8   | 3.8   | 4    | 4.7   | 5.2  | 6     |
| standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 15.2 | 19.7 | 23.3 | 28   | 34.8 | 43.6 | 53    | 58    | 71   | 87    | 100  | 126   |
|          | L    | 17   | 18.5 | 22.9 | 26.8 | 32   | 37.5 | 45.9  | 47.6  | 58   | 70    | 77   | 97    |
|          | T    | 3.6  | 4.35 | 4.85 | 3.4  | 4.15 | 5.05 | 5.5   | 5     | 5.6  | 5.75  | 6    | 6.5   |

Hex. Nipple(HN)



FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- Dimension conform to ISO 4144, SP114 EN-10241, JIS
- 150 LBS
- Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT



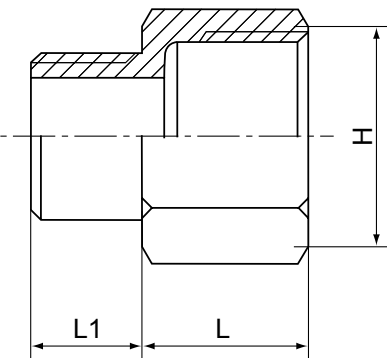
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | L    | 20   | 25   | 27   | 34   | 36.5 | 42   | 47.5  | 17.5  | 57   | 61    | 67.5 | 80    |
|          | L1   | 8    | 10.5 | 11   | 14.5 | 15.5 | 18   | 20.5  | 20.5  | 25   | 27    | 30   | 36    |
|          | H    | 11   | 15   | 18   | 22   | 28   | 35   | 43.5  | 49.5  | 62   | 77.5  | 90.5 | 117   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | L    | 32   | 34   | 36   | 42   | 47   | 52   | 56    | 60    | 66   | 73    | 82   | 93    |
|          | L1   | 11   | 12   | 13   | 16   | 18   | 20   | 22    | 23    | 26   | 28    | 33   | 36    |
|          | H    | 14   | 17   | 21   | 26   | 31   | 38   | 46    | 53    | 63   | 81    | 94   | 118   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | L    | 33   | 30   | 31.8 | 38   | 43.8 | 49.7 | 54    | 59.9  | 65.5 | 72.9  | 80   | 91    |
|          | L1   | 12.9 | 12   | 12.8 | 15   | 17   | 19.6 | 20.7  | 22.8  | 25.6 | 27.8  | 31   | 35.7  |
|          | H    | 12.5 | 17   | 20.9 | 26   | 31   | 38   | 45    | 52    | 62.7 | 80    | 92   | 117.5 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | L    | 23.6 | 27.8 | 28   | 34   | 40   | 46   | 52.5  | 54    | 62   | 70    | 78.4 | 94    |
|          | L1   | 8.9  | 11   | 12.2 | 14.9 | 16.5 | 19.5 | 21.5  | 22.2  | 24.4 | 28.5  | 31.7 | 38.2  |
|          | H    | 12   | 16   | 19   | 21.6 | 30   | 36   | 46    | 50    | 64.5 | 79.5  | 90   | 120   |

Red. Socket M/F (RS M/F)



FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- Dimension conform to ISO 4144, SP114 EN-10241, JIS
- 150 LBS
- Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| ISO4144  | L    | 17    | 17.5  | 21    | 21    | 22.5  | 22.5 | 26   | 26    | 29    | 29    |
|          | L1   | 8     | 10.5  | 10.5  | 11    | 11    | 14.5 | 14.5 | 15.5  | 15.5  | 18    |
|          | H    | 17    | 20.5  | 25    | 25    | 31    | 31   | 38   | 38    | 47    | 47    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| ISO4144  | L    | 29    | 29    | 33.5  | 33.5  | 38.5  | 38.5 | 42   | 42    | 48.8  | 48.5  |
|          | L1   | 18    | 20.5  | 20.5  | 20.5  | 20.5  | 25   | 25   | 27    | 27    | 30    |
|          | H    | 53    | 53    | 66    | 66    | 82    | 82   | 95.5 | 95.5  | 121.5 | 121.5 |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |     |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-----|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1   |
| JIS      | L    | 15    | 17    | 24    | 24    | 24    | 24   | 28   | 30    | 29    | 30  |
|          | L1   | 8     | 10.5  | 10.5  | 11    | 11    | 14.5 | 14.5 | 15.5  | 15.5  | 18  |
|          | H    | 17    | 20    | 20    | 20    | 30    | 30   | 36   | 36    | 45    | 45  |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |     |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3   |
| JIS      | L    | 32    | 32    | 36    | 36    | 40    | 40   | 45   | 45    | 54    | 54  |
|          | L1   | 18    | 20.5  | 20.5  | 20.5  | 20.5  | 25   | 25   | 27    | 27    | 30  |
|          | H    | 52    | 52    | 63    | 63    | 76    | 76   | 89   | 89    | 121   | 121 |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| SP-114   | L    | 15.5  | 18    | 23.5  | 23.5  | 24.6  | 24.6 | 29.9 | 29.9  | 30.6  | 30.6 |
|          | L1   | 12.9  | 12    | 12    | 12.8  | 12.8  | 15   | 15   | 17    | 17    | 19.6 |
|          | H    | 15.4  | 19.7  | 26.2  | 26.2  | 31.9  | 31.9 | 39.8 | 39.8  | 47.8  | 47.8 |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| SP-114   | L    | 32.5  | 32.5  | 35.6  | 35.6  | 42.7  | 42.7 | 44.7 | 44.7  | 48    | 48   |
|          | L1   | 19.6  | 20.7  | 20.7  | 22.8  | 22.8  | 25.6 | 25.6 | 27.8  | 27.8  | 31   |
|          | H    | 55.9  | 55.9  | 66.5  | 66.5  | 83.3  | 83.3 | 98.2 | 98.2  | 123   | 123  |

| Standard | SIZE | 1/4  | 3/8  | 1/2  |      | 3/4  |      | 1    |      | 1 1/4 |      |
|----------|------|------|------|------|------|------|------|------|------|-------|------|
|          |      | 1/8  | 1/4  | 1/4  | 3/8  | 3/8  | 1/2  | 1/2  | 3/4  | 3/4   | 1    |
| EN-10241 | L    | 17   | 19   | 20   | 20   | 24   | 24   | 25   | 25   | 28    | 28   |
|          | L1   | 8.9  | 11   | 11   | 12.2 | 12.2 | 14.9 | 14.9 | 16.5 | 16.5  | 19.5 |
|          | H    | 18   | 21   | 27   | 27   | 30   | 30   | 38   | 38   | 50    | 50   |
| Standard | SIZE | 1/4  | 3/8  | 1/2  |      | 3/4  |      | 1    |      | 1 1/4 |      |
|          |      | 1/8  | 1/4  | 1/4  | 3/8  | 3/8  | 1/2  | 1/2  | 3/4  | 3/4   | 1    |
| EN-10241 | L    | 28   | 28   | 34   | 34   | 40   | 40   | 45   | 45   | 50    | 50   |
|          | L1   | 19.5 | 21.5 | 21.5 | 22.2 | 22.2 | 24.4 | 24.4 | 28.5 | 28.5  | 31.7 |
|          | H    | 55   | 55   | 70   | 70   | 92   | 92   | 109  | 109  | 132   | 132  |



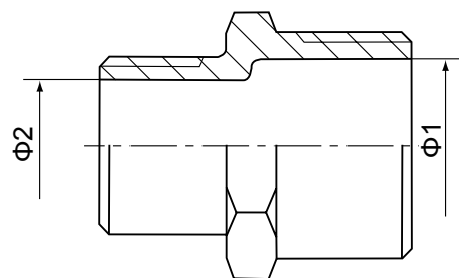


## ➔ Red. Hex. Nipple(RHN)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



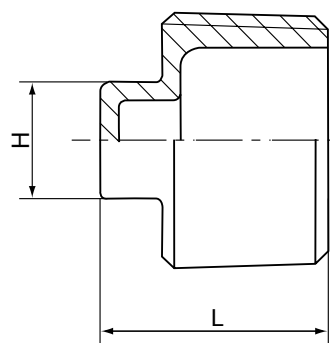
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| ISO4144  | Φ1   | 8     | 11.5  | 15    | 15    | 20.5  | 20.5 | 26   | 26    | 34.5  | 34.5  |
|          | Φ2   | 5.5   | 8     | 8     | 11.5  | 11.5  | 15   | 15   | 20.5  | 20.5  | 26    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| ISO4144  | Φ1   | 40    | 40    | 51    | 51    | 65.5  | 65.5 | 77.5 | 77.5  | 101.5 | 101.5 |
|          | Φ2   | 26    | 34.5  | 34.5  | 40    | 40    | 51   | 51   | 65.5  | 65.5  | 77.5  |
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| JIS      | Φ1   | 8.5   | 11    | 16    | 16    | 19    | 19   | 26   | 26    | 33.5  | 33.5  |
|          | Φ2   | 5     | 8.5   | 8.5   | 11    | 11    | 16   | 16   | 19    | 19    | 26    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| JIS      | Φ1   | 39    | 39    | 50    | 50    | 64.5  | 64.5 | 75.5 | 75.5  | 100.5 | 100.5 |
|          | Φ2   | 26    | 33.5  | 33.5  | 39    | 39    | 50   | 50   | 64.5  | 64.5  | 75.5  |
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| EN-10241 | Φ1   | 7     | 9.4   | 13.7  | 13.7  | 19    | 19   | 25.5 | 25.5  | 32    | 32    |
|          | Φ2   | 4.3   | 7     | 7     | 9.4   | 9.4   | 13.7 | 13.7 | 19    | 19    | 25.5  |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| EN-10241 | Φ1   | 38.5  | 38.5  | 50.2  | 50.2  | 63.8  | 63.8 | 77   | 77    | 102   | 102   |
|          | Φ2   | 25.5  | 32    | 32    | 38.5  | 38.5  | 50.2 | 50.2 | 63.8  | 63.8  | 77    |

## ➔ Square Plug(SQ)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



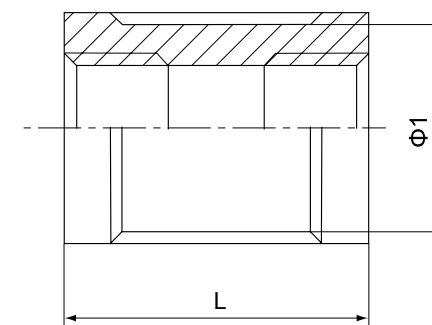
| Standard | SIZE | 1/8 | 1/4 | 3/8  | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|----------|------|-----|-----|------|-----|------|------|-------|-------|------|-------|------|------|
|          |      | L   | 13  | 15.5 | 16  | 20.5 | 21.5 | 25    | 27.5  | 28.5 | 33    | 37   | 42   |
| ISO4144  | H    | 6   | 7   | 8    | 10  | 12   | 14   | 16    | 20    | 22   | 28    | 32   | 40   |
| Standard | SIZE | 1/8 | 1/4 | 3/8  | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | L   | 16  | 19   | 21  | 25   | 28   | 31    | 35    | 36   | 41    | 48   | 58   |
| JIS      | H    | 7   | 9   | 12   | 14  | 17   | 19   | 23    | 26    | 32   | 41    | 45.5 | 57.5 |
| Standard | SIZE | 1/8 | 1/4 | 3/8  | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | L   | 16  | 18   | 20  | 22   | 27   | 32    | 36    | 37   | 43    | 46   | 50   |
| SP-114   | H    | 7   | 9   | 10   | 11  | 16   | 19   | 22    | 22    | 27   | 32    | 36   | 58   |
| Standard | SIZE | 1/8 | 1/4 | 3/8  | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | L   | 19  | 20   | 22  | 25   | 27.5 | 32    | 35    | 37   | 39    | 48   | 52   |
| EN-10241 | H    | 7   | 9   | 11   | 13  | 16   | 20   | 24    | 25    | 32   | 42    | 46   | 58   |

## ➔ Socket Banded(SB)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



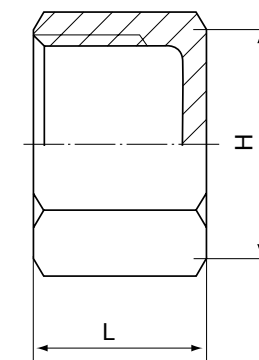
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|----------|------|-----|------|------|------|------|------|-------|-------|------|-------|------|------|
|          |      | Φ1  | 13   | 16   | 20   | 24.5 | 30   | 37.5  | 46.5  | 53   | 65.5  | 82   | 95.5 |
| ISO4144  | L    | 17  | 24   | 25   | 32   | 35   | 41   | 45    | 45    | 54   | 63    | 69   | 81   |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | Φ1  | 16   | 19   | 22   | 26   | 32   | 39    | 48    | 55   | 67    | 83.5 | 97   |
| JIS      | L    | 17  | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96   |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | Φ1  | 15   | 21.3 | 25.7 | 27   | 31.9 | 39.8  | 47.8  | 55.9 | 66.5  | 83.3 | 98.2 |
| SP-114   | L    | 20  | 25.6 | 27   | 34   | 36   | 44   | 52    | 51    | 56   | 68    | 76.5 | 80   |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | Φ1  | 15   | 18.5 | 21.3 | 26.4 | 31.8 | 39.5  | 49.3  | 55.5 | 69    | 87   | 103  |
| EN-10241 | L    | 15  | 25   | 26   | 34   | 36   | 43   | 48    | 48    | 56   | 65    | 71   | 83   |

## ➔ Hex. Cap(HCB)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|------|
|          |      | H    | 13.5 | 17   | 20.5 | 25   | 31   | 38    | 47    | 53   | 66    | 82   | 95.5 |
| ISO4144  | L    | 13.5 | 17   | 17.5 | 21   | 22.5 | 26   | 29    | 29    | 33.5 | 38.5  | 42   | 48.5 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | H    | 14   | 17   | 20   | 20   | 30   | 36    | 45    | 52   | 63    | 76   | 89   |
| JIS      | L    | 14   | 15   | 17   | 24   | 24   | 28   | 30    | 32    | 36   | 40    | 45   | 54   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | H    | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8  | 47.8  | 55.9 | 66.5  | 83.3 | 98.2 |
| SP-114   | L    | 15.4 | 15.5 | 18   | 23.5 | 24.6 | 29.9 | 30.6  | 32.5  | 35.6 | 42.7  | 44.7 | 48   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|          |      | H    | 15   | 18   | 21   | 27   | 30   | 38    | 50    | 55   | 70    | 92   | 109  |
| EN-10241 | L    | 13   | 17   | 19   | 20   | 24   | 25   | 28    | 28    | 34   | 40    | 45   | 50   |





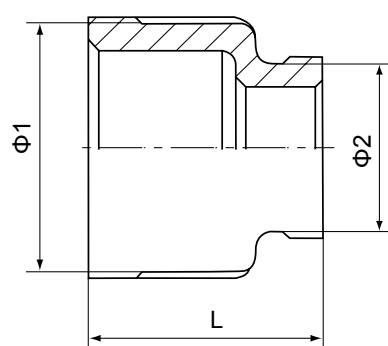
## ➔ Red. Socket Banded (RSB)



KH-1016

## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1     |
| ISO4144  | Φ1   | 16.5  | 20    | 25.5  | 25.5  | 31    | 31   | 38   | 38    | 47    | 47    |
|          | Φ2   | 13    | 16.5  | 16.5  | 20    | 20    | 24.7 | 24.7 | 31    | 31    | 38    |
|          | L    | 25    | 26    | 34    | 34    | 36    | 36   | 42   | 42    | 48    | 48    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3     |
| ISO4144  | Φ1   | 54    | 54    | 66    | 66    | 82    | 82   | 96.5 | 96.5  | 123.5 | 123.5 |
|          | Φ2   | 38    | 47    | 47    | 54    | 54    | 66   | 66   | 82    | 82    | 96.5  |
|          | L    | 52    | 52    | 58    | 58    | 65    | 65   | 72   | 72    | 94    | 94    |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| JIS      | Φ1   | 19    | 22    | 26    | 26    | 32    | 32   | 39   | 39    | 48    | 48   |
|          | Φ2   | 16    | 19    | 19    | 22    | 22    | 26   | 26   | 32    | 32    | 39   |
|          | L    | 25    | 28    | 34    | 34    | 38    | 38   | 42   | 42    | 48    | 48   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| JIS      | Φ1   | 55    | 55    | 67    | 67    | 83.5  | 83.5 | 98.2 | 98.2  | 123   | 123  |
|          | Φ2   | 39    | 48    | 48    | 55    | 55    | 67   | 67   | 83.5  | 83.5  | 98.2 |
|          | L    | 52    | 52    | 58    | 58    | 65    | 65   | 72   | 72    | 94    | 94   |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1     |       | 1 1/4 |       |
|----------|------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2   | 3/4   | 3/4   | 1     |
| SP-114   | Φ1   | 21.4  | 25.4  | 30.5  | 30.5  | 37.1  | 37.1 | 44.9  | 44.9  | 54.6  | 54.6  |
|          | Φ2   | 19.1  | 21.4  | 21.4  | 25.4  | 25.4  | 30.5 | 30.5  | 37.1  | 37.1  | 44.9  |
|          | L    | 25.4  | 28.5  | 35    | 32    | 38    | 38   | 41    | 41    | 51    | 51    |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3     |       | 4     |       |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2     | 2 1/2 | 2 1/2 | 3     |
| SP-114   | Φ1   | 61.7  | 61.7  | 75.2  | 75.2  | 84.1  | 84.1 | 101.6 | 101.6 | 128.5 | 128.5 |
|          | Φ2   | 44.9  | 54.6  | 54.6  | 61.7  | 61.7  | 75.2 | 75.2  | 84.1  | 84.1  | 101.6 |
|          | L    | 53.8  | 53.8  | 63.5  | 63.5  | 72.9  | 72.9 | 80.8  | 80.8  | 93.5  | 93.5  |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1   |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|------|-----|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2 | 3/4   | 3/4   | 1    |
| EN-10241 | Φ1   | 21.5  | 26    | 29    | 29    | 36.7  | 36.7 | 43  | 43    | 52.5  | 52.5 |
|          | Φ2   | 15.2  | 21.5  | 21.5  | 26    | 26    | 29   | 29  | 36.7  | 36.7  | 43   |
|          | L    | 26    | 29    | 34    | 34    | 37    | 37   | 42  | 42    | 52    | 52   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3   |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2   | 2 1/2 | 2 1/2 | 3    |
| EN-10241 | Φ1   | 59    | 59    | 72    | 72    | 87    | 87   | 100 | 100   | 126   | 126  |
|          | Φ2   | 43    | 52.5  | 52.5  | 59    | 59    | 72   | 72  | 87    | 87    | 100  |
|          | L    | 53    | 53    | 57    | 57    | 68    | 68   | 76  | 76    | 89    | 89   |

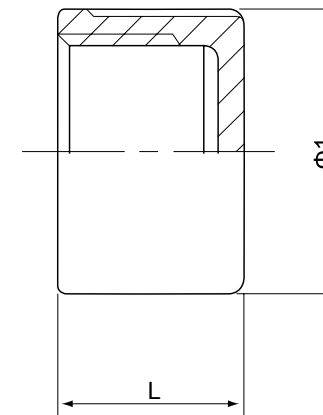
## ➔ Round Cap(CB)



KH-1017

## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4    |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|----|------|
| ISO4144  | Φ1   | 13.7 | 16.7 | 20.7 | 25.2 | 30.7 | 38.2 | 47.5  | 54    | 66.5 | 83.5  | 97 | 123  |
|          | L    | 13.5 | 17   | 17.5 | 21   | 22.5 | 26   | 29    | 29    | 33.5 | 38.5  | 42 | 48.5 |

| standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3  | 4   |
|----------|------|-----|-----|-----|-----|-----|----|-------|-------|----|-------|----|-----|
| JIS      | Φ1   | 14  | 17  | 20  | 20  | 30  | 36 | 45    | 52    | 63 | 76    | 89 | 121 |
|          | L    | 14  | 15  | 17  | 24  | 24  | 28 | 30    | 32    | 36 | 40    | 45 | 54  |

| standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-------|-------|
| SP-114   | Φ1   | 19.1 | 21.6 | 26   | 30.6 | 36.5 | 45.1 | 54.9  | 61.9  | 75.6 | 84.3  | 100.7 | 128.6 |
|          | L    | 16.9 | 18   | 18.9 | 22   | 25   | 27   | 30    | 31.8  | 35.7 | 38.9  | 43.9  | 50.6  |

| standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3   | 4   |
|----------|------|-----|-----|-----|-----|-----|----|-------|-------|----|-------|-----|-----|
| EN-10241 | Φ1   | 15  | 18  | 21  | 27  | 30  | 38 | 50    | 55    | 70 | 92    | 109 | 132 |
|          | L    | 13  | 17  | 19  | 20  | 24  | 25 | 28    | 28    | 34 | 40    | 45  | 50  |

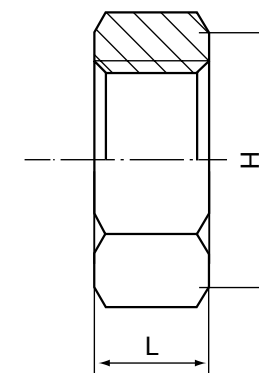
## ➔ Hex. Back Nut(LN)



KH-1018

## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3   | 4   |
|----------|------|-----|-----|-----|-----|-----|----|-------|-------|----|-------|-----|-----|
| ISO4144  | L    | 5   | 6   | 6   | 7   | 7   | 9  | 11    | 11    | 13 | 15    | 17  | 20  |
|          | H    | 15  | 18  | 22  | 27  | 32  | 40 | 48    | 55    | 68 | 85    | 100 | 125 |

| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4  | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3    | 4   |
|----------|------|-----|-----|-----|-----|------|----|-------|-------|----|-------|------|-----|
| JIS      | L    | 7   | 7   | 7.8 | 8   | 11   | 12 | 12.9  | 14.6  | 15 | 17    | 20.7 | 24  |
|          | H    | 19  | 19  | 24  | 30  | 37.7 | 42 | 52    | 60    | 72 | 88    | 98.3 | 125 |

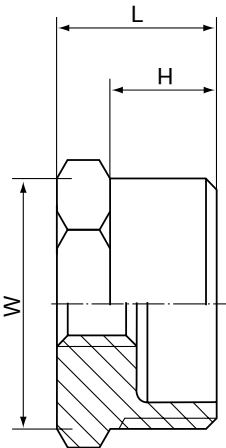
| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3   | 4   |
|----------|------|-----|-----|-----|-----|-----|----|-------|-------|----|-------|-----|-----|
| EN-10241 | L    | 6   | 7   | 8   | 10  | 11  | 10 | 11    | 12    | 13 | 15    | 17  | 20  |
|          | H    | 14  | 23  | 26  | 31  | 37  | 46 | 55    | 63    | 76 | 92    | 109 | 132 |



➔ Hex. Bushing (HB)



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |     |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|-----|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1   |
| ISO4144  | H    | 11.5  | 12    | 14.5  | 14.5  | 15.5  | 15.5 | 17.5 | 17.5  | 20    | 20  |
|          | L    | 16    | 16.5  | 20    | 20    | 21    | 21   | 24   | 24    | 27    | 27  |
|          | W    | 14    | 18    | 22    | 22    | 27.5  | 27.5 | 34.5 | 34.5  | 43    | 43  |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |     |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3   |
| ISO4144  | H    | 20.5  | 20.5  | 24    | 24    | 27    | 27   | 30   | 30    | 35    | 35  |
|          | L    | 28.5  | 28.5  | 32    | 32    | 37    | 37   | 40   | 40    | 45    | 45  |
|          | W    | 49    | 49    | 61    | 61    | 76    | 76   | 90   | 90    | 115   | 115 |

| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |     | 1   |       | 1 1/4 |     |
|----------|------|-------|-------|-------|-------|-------|-----|-----|-------|-------|-----|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2 | 1/2 | 3/4   | 3/4   | 1   |
| JIS      | H    | 12    | 13    | 16    | 16    | 18    | 18  | 20  | 20    | 22    | 22  |
|          | L    | 17    | 18    | 21    | 21    | 24    | 24  | 27  | 27    | 30    | 30  |
|          | W    | 17    | 21    | 26    | 26    | 31    | 31  | 38  | 38    | 46    | 46  |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |     | 3   |       | 4     |     |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2   | 2   | 2 1/2 | 2 1/2 | 3   |
| JIS      | H    | 23    | 23    | 25    | 25    | 28    | 28  | 31  | 31    | 37    | 37  |
|          | L    | 32    | 32    | 36    | 36    | 39    | 39  | 44  | 44    | 51    | 51  |
|          | W    | 53    | 53    | 63    | 63    | 80    | 80  | 90  | 90    | 119   | 119 |

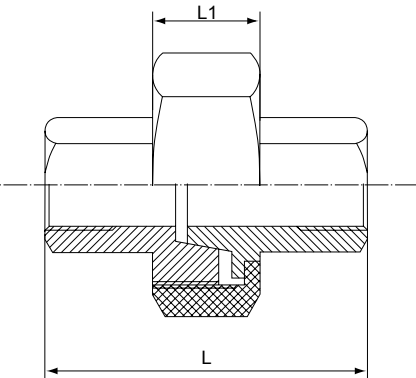
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |     | 1    |       | 1 1/4 |      |
|----------|------|-------|-------|-------|-------|-------|-----|------|-------|-------|------|
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2 | 1/2  | 3/4   | 3/4   | 1    |
| SP-114   | H    | 11.7  | 13    | 15    | 15    | 18    | 18  | 19.6 | 19.6  | 22.5  | 22.5 |
|          | L    | 18    | 19    | 21    | 21    | 26    | 26  | 27.6 | 27.6  | 32    | 32   |
|          | W    | 16.7  | 21    | 25    | 25    | 29    | 29  | 37   | 37    | 48    | 48   |
| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |     | 3    |       | 4     |      |
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2   | 2    | 2 1/2 | 2 1/2 | 3    |
| SP-114   | H    | 22    | 22    | 25.5  | 25.5  | 32    | 32  | 34.5 | 34.5  | 38    | 38   |
|          | L    | 32    | 32    | 37.6  | 37.6  | 44    | 44  | 46   | 46    | 52    | 52   |
|          | W    | 53    | 53    | 63    | 63    | 80    | 80  | 92   | 92    | 116   | 116  |

| Standard | SIZE | 1 1/2 |       | 2     |       | 2 1/2 |      | 3    |       | 4     |      |
|----------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|
|          |      | 1     | 1 1/4 | 1 1/4 | 1 1/2 | 1 1/2 | 2    | 2    | 2 1/2 | 2 1/2 | 3    |
| EN-10241 | H    | 10.8  | 11.9  | 15.6  | 15.4  | 17.4  | 17.5 | 19.7 | 19.7  | 21.9  | 21.9 |
|          | L    | 15.2  | 16.5  | 21    | 21    | 24    | 24   | 27   | 27    | 30    | 30   |
|          | W    | 16    | 18    | 26    | 26    | 30    | 30   | 35   | 35    | 45    | 45   |
| Standard | SIZE | 1/4   | 3/8   | 1/2   |       | 3/4   |      | 1    |       | 1 1/4 |      |
|          |      | 1/8   | 1/4   | 1/4   | 3/8   | 3/8   | 1/2  | 1/2  | 3/4   | 3/4   | 1    |
| EN-10241 | H    | 25.8  | 25.8  | 24.8  | 24.8  | 30.9  | 30.9 | 33   | 33    | 35    | 35   |
|          | L    | 38    | 38    | 36    | 36    | 45    | 45   | 47   | 47    | 52    | 52   |
|          | W    | 52    | 52    | 63    | 63    | 81    | 81   | 95   | 95    | 110   | 110  |

➔ Union Conical F/F (CU-Z-F/F)



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

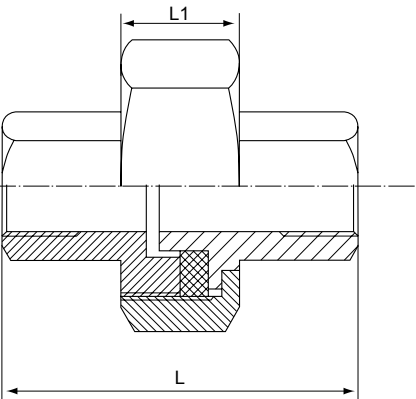


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|----|-----|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31 | 34  |
|          | L    | 30   | 33.5 | 36.5 | 39.5 | 42.5 | 50   | 54    | 58    | 65   | 75    | 83 | 110 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29 | 32  |
|          | L    | 33   | 33   | 34   | 40   | 42   | 49   | 55    | 58    | 63   | 71    | 79 | 92  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30 | 34  |
|          | L    | 29   | 37.5 | 38   | 42   | 50.4 | 48   | 59    | 65    | 69   | 80    | 88 | 108 |

➔ Union Teflon Flat F/F ( CU-T-F/F )



- FEATURES**
- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



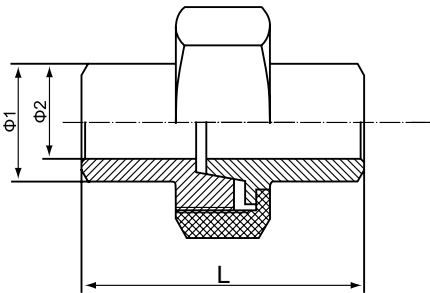
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|----|-----|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31 | 34  |
|          | L    | 30   | 33.5 | 36.5 | 39.5 | 42.5 | 50   | 54    | 58    | 65   | 75    | 83 | 110 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29 | 32  |
|          | L    | 33   | 33   | 34   | 40   | 42   | 49   | 55    | 58    | 63   | 71    | 79 | 92  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30 | 34  |
|          | L    | 29   | 37.5 | 38   | 42   | 50.4 | 48   | 59    | 65    | 69   | 80    | 88 | 108 |



➔ Union Conical BW/BW (CU-BW-Z)



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

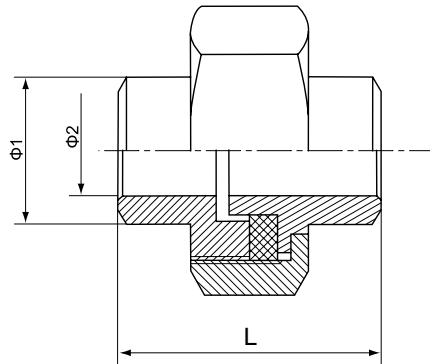


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 10.2 | 13.5 | 17.2 | 21.3 | 26.9 | 33.7 | 42.4  | 48.3  | 60.3 | 76.1  | 88.9 | 114.3 |
|          | Φ2   | 6.2  | 8.8  | 12.5 | 16   | 21.6 | 27.2 | 35.9  | 41.8  | 53   | 68.8  | 80.8 | 105.3 |
|          | L    | 26   | 35.5 | 38   | 44   | 45   | 50   | 55    | 57    | 65   | 71    | 80   | 95    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 10.7 | 13.5 | 17   | 21   | 26.9 | 33.7 | 42    | 48    | 60   | 76    | 88.9 | 114.3 |
|          | Φ2   | 6.5  | 8.8  | 12.3 | 16.7 | 21.6 | 27.2 | 36.3  | 41.5  | 53.3 | 68.9  | 80.8 | 105.3 |
|          | L    | 33   | 33   | 34   | 40   | 42   | 49   | 55    | 58    | 63   | 71    | 77   | 92    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 10.2 | 13.5 | 17.2 | 21.3 | 26.9 | 33.7 | 42.4  | 48.3  | 60.3 | 76.1  | 88.9 | 114.3 |
|          | Φ2   | 6.2  | 8.8  | 12.5 | 16   | 21.6 | 27.2 | 35.9  | 41.8  | 53   | 68.8  | 80.8 | 105.3 |
|          | L    | 26   | 35.5 | 38   | 42   | 50.4 | 48   | 59    | 64    | 69   | 75    | 84   | 99    |

➔ Union Teflon Flat BW/BW (CU-BW-T)



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

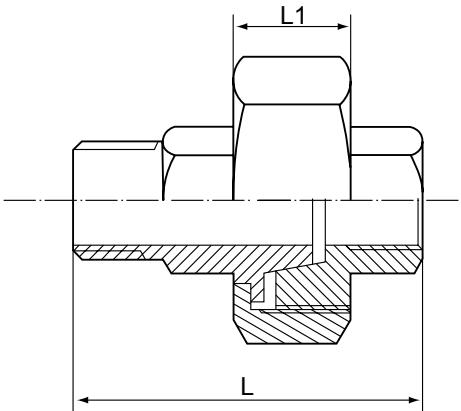


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 10.2 | 13.5 | 17.2 | 21.3 | 26.9 | 33.7 | 42.4  | 48.3  | 60.3 | 76.1  | 88.9 | 114.3 |
|          | Φ2   | 6.2  | 8.8  | 12.5 | 16   | 21.6 | 27.2 | 35.9  | 41.8  | 53   | 68.8  | 80.8 | 105.3 |
|          | L    | 26   | 35.5 | 38   | 44   | 45   | 50   | 55    | 57    | 65   | 71    | 80   | 95    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 10.7 | 13.5 | 17   | 21   | 26.9 | 33.7 | 42    | 48    | 60   | 76    | 88.9 | 114.3 |
|          | Φ2   | 6.5  | 8.8  | 12.3 | 16.7 | 21.6 | 27.2 | 36.3  | 41.5  | 53.3 | 68.9  | 80.8 | 105.3 |
|          | L    | 33   | 33   | 34   | 40   | 42   | 49   | 55    | 58    | 63   | 71    | 77   | 92    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 10.2 | 13.5 | 17.2 | 21.3 | 26.9 | 33.7 | 42.4  | 48.3  | 60.3 | 76.1  | 88.9 | 114.3 |
|          | Φ2   | 6.2  | 8.8  | 12.5 | 16   | 21.6 | 27.2 | 35.9  | 41.8  | 53   | 68.8  | 80.8 | 105.3 |
|          | L    | 26   | 35.5 | 38   | 42   | 50.4 | 48   | 59    | 64    | 69   | 75    | 84   | 99    |

➔ Union Conical M/F ( CU-Z-MF )



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

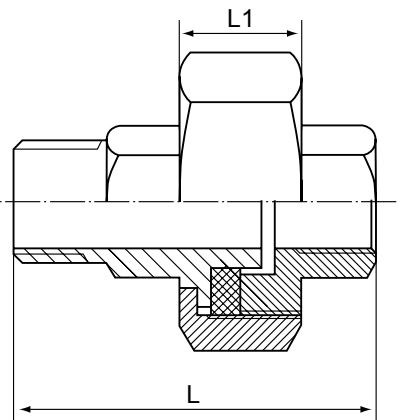


| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-----|-----|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31  | 34  |
|          | L    | 38   | 44   | 47.5 | 54   | 58   | 68   | 74.5  | 78.5  | 90   | 102   | 113 | 146 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29  | 32  |
|          | L    | 42.5 | 42.5 | 15.5 | 53.5 | 56.5 | 66.5 | 74    | 78    | 83   | 92    | 102 | 114 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30  | 34  |
|          | L    | 40   | 50   | 50   | 57   | 67   | 68.3 | 83    | 86.3  | 94   | 113.3 | 127 | 154 |

➔ Union Teflon Flat M/F ( CU-T-M/F )



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114  
EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-----|-----|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31  | 34  |
|          | L    | 38   | 44   | 47.5 | 54   | 58   | 68   | 74.5  | 78.5  | 90   | 102   | 113 | 146 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29  | 32  |
|          | L    | 42.5 | 42.5 | 45.5 | 53.5 | 56.5 | 66.5 | 74    | 78    | 83   | 92    | 102 | 114 |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4   |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30  | 34  |
|          | L    | 40   | 50   | 50   | 57   | 67   | 68.3 | 83    | 86.3  | 94   | 113.3 | 127 | 154 |





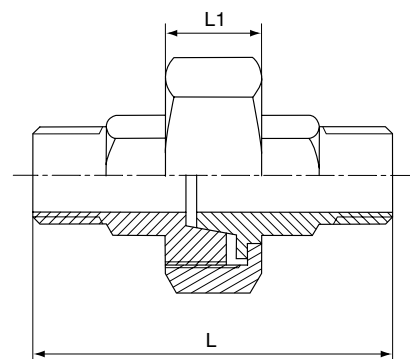
## ➔ Union Conical M/M(CU-Z-MM)



KH-1026

**FEATURES**

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-----|-------|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31  | 34    |
|          | L    | 46   | 54.5 | 58.5 | 68.5 | 73.5 | 86   | 95    | 99    | 115  | 129   | 143 | 182   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29  | 32    |
|          | L    | 52   | 52   | 57   | 67   | 71   | 84   | 93    | 98    | 103  | 113   | 125 | 136   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30  | 34    |
|          | L    | 51   | 62.5 | 62   | 72   | 83.6 | 88.6 | 107   | 107.6 | 119  | 146.6 | 166 | 200.6 |

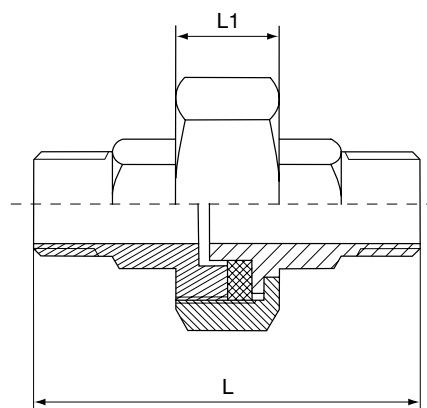
## ➔ Union Teflon Flat M/M(CU-T-MM)



KH-1027

**FEATURES**

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|-----|-------|
| ISO4144  | L1   | 13   | 13.5 | 15   | 16   | 17   | 20   | 22    | 24    | 27   | 29.5  | 31  | 34    |
|          | L    | 46   | 54.5 | 58.5 | 68.5 | 73.5 | 86   | 95    | 99    | 115  | 129   | 143 | 182   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
| SP-114   | L1   | 13.5 | 13.5 | 14.5 | 15.5 | 16.5 | 18.5 | 21    | 23    | 25   | 27    | 29  | 32    |
|          | L    | 52   | 52   | 57   | 67   | 71   | 84   | 93    | 98    | 103  | 113   | 125 | 136   |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3   | 4     |
| EN-10241 | L1   | 13.5 | 13.5 | 15.5 | 17   | 19   | 20.5 | 23    | 26    | 28.5 | 28.5  | 30  | 34    |
|          | L    | 51   | 62.5 | 62   | 72   | 83.6 | 88.6 | 107   | 107.6 | 119  | 146.6 | 166 | 200.6 |

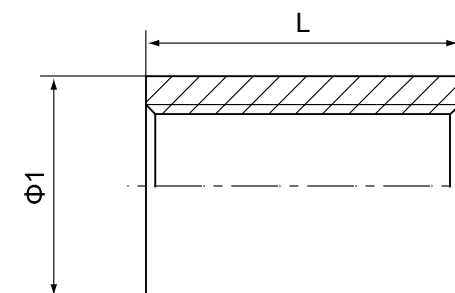
## ➔ Couplings ( SPE &amp; SPU FOR NPT THREAD )



KH-1028

**FEATURES**

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT
- ❑ MADE FROM CASTING, WELD PIPE OR SEAMLESS PIPE



| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|-----|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13  | 16.5 | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 17  | 24   | 25   | 32   | 35   | 41   | 45    | 45    | 54   | 63    | 69   | 81    |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16  | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 17  | 19   | 23   | 27   | 32   | 38   | 46    | 48    | 57   | 69    | 78   | 96    |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 14  | 18.5 | 21.5 | 26   | 32   | 39   | 48    | 54    | 66.5 | 82    | 95   | 122   |
|          | L    | 20  | 25   | 25   | 33   | 35   | 42   | 47    | 47    | 56   | 65    | 70   | 80    |
| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 15  | 18.5 | 21.3 | 26.4 | 31.8 | 39.5 | 49.3  | 55.5  | 69   | 87    | 103  | 126   |
|          | L    | 15  | 25   | 26   | 34   | 36   | 43   | 48    | 48    | 56   | 65    | 71   | 83    |

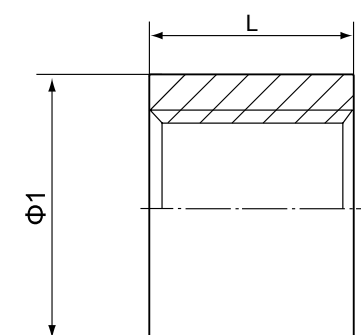
## ➔ Half Couplings ( 1/2 SPE )



KH-1029

**FEATURES**

- ❑ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- ❑ Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- ❑ 150 LBS
- ❑ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT
- ❑ MADE FROM CASTING, WELD PIPE OR SEAMLESS PIPE



| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 13   | 16.5 | 20   | 24.5 | 30   | 37.5 | 46.5  | 53    | 65.5 | 82    | 95.5 | 121.5 |
|          | L    | 7.5  | 11   | 11.5 | 15   | 16.5 | 19.5 | 21.5  | 21.5  | 26   | 30.5  | 33.5 | 39.5  |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| JIS      | Φ1   | 16   | 19   | 22   | 26   | 32   | 39   | 48    | 55    | 67   | 83.5  | 97   | 123   |
|          | L    | 8.5  | 11.5 | 12.5 | 15.5 | 17.5 | 20.5 | 22.5  | 22.5  | 27.5 | 31.5  | 34.5 | 42    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| SP-114   | Φ1   | 14   | 18.5 | 21.5 | 26   | 32   | 39   | 48    | 54    | 66.5 | 82    | 95   | 122   |
|          | L    | 11.5 | 13.5 | 16.5 | 18.5 | 20.5 | 23.5 | 26.5  | 29.5  | 31   | 34    | 38   | 43    |
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
| EN-10241 | Φ1   | 15   | 18.5 | 21.3 | 26.4 | 31.8 | 39.5 | 49.3  | 55.5  | 69   | 87    | 103  | 126   |
|          | L    | 6.5  | 15   | 16.5 | 18   | 20.5 | 23.5 | 26.5  | 26.5  | 29.5 | 31    | 34.5 | 38    |

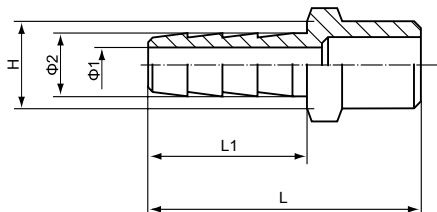


Hex. Hose Nipple(HON)



FEATURES

- ☐ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- ☐ Dimension conform to ISO 4144, SP114 EN-10241, JIS
- ☐ 150 LBS
- ☐ Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT
- ☐ MADE FROM CASTING OR BAR



| Standard | SIZE | 1/8 | 1/4  | 3/8  | 1/2  | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3     | 4   |
|----------|------|-----|------|------|------|-----|----|-------|-------|----|-------|-------|-----|
| ISO4144  | L    | 38  | 42.5 | 49   | 57.5 | 66  | 76 | 79    | 83    | 92 | 99    | 107.5 | 117 |
|          | L1   | 26  | 28   | 33   | 38   | 45  | 52 | 52    | 56    | 60 | 65    | 70    | 73  |
|          | Φ1   | 4   | 5    | 7    | 10.5 | 15  | 22 | 27.5  | 34    | 45 | 59    | 71    | 95  |
|          | Φ2   | 8   | 9    | 11.5 | 15   | 20  | 27 | 33    | 39.5  | 52 | 67    | 80    | 105 |
|          | H    | 11  | 15   | 18   | 22   | 28  | 35 | 43.5  | 49.5  | 62 | 77.5  | 90.5  | 117 |

| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|-----|-----|-----|------|------|------|-------|-------|------|-------|------|-------|
| JIS      | L    | 33  | 41  | 44  | 49   | 59   | 69   | 74    | 79    | 89   | 109   | 134  | 149   |
|          | L1   | 19  | 23  | 24  | 25   | 34   | 44   | 44    | 45    | 54   | 61    | 91   | 96    |
|          | Φ1   | 5   | 6   | 8   | 11.5 | 16.5 | 23   | 28    | 35    | 47   | 61    | 73   | 96    |
|          | Φ2   | 9   | 11  | 12  | 16   | 22   | 29.5 | 36    | 42    | 54   | 65.5  | 78.5 | 103   |
|          | H    | 11  | 13  | 16  | 19.5 | 24.5 | 33.5 | 43.5  | 51.5  | 62.5 | 78.5  | 92.5 | 117.5 |

| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3    | 4   |
|----------|------|-----|-----|-----|-----|------|------|-------|-------|----|-------|------|-----|
| SP-114   | L    | 34  | 42  | 45  | 50  | 60   | 70   | 75    | 80    | 90 | 110   | 135  | 150 |
|          | L1   | 20  | 24  | 25  | 26  | 35   | 45   | 45    | 46    | 55 | 67    | 92   | 96  |
|          | Φ1   | 4   | 5   | 6   | 9   | 15   | 21.5 | 27    | 33    | 45 | 55    | 68   | 91  |
|          | Φ2   | 7   | 9   | 10  | 14  | 20   | 27.5 | 34    | 40    | 52 | 63.5  | 76.5 | 103 |
|          | H    | 14  | 16  | 19  | 22  | 27.5 | 36.6 | 46    | 52    | 63 | 79    | 93   | 118 |

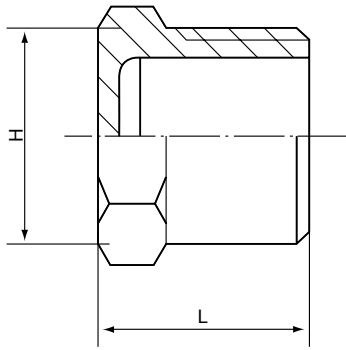
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| EN-10241 | L    | 45   | 47   | 55   | 64   | 68   | 71   | 80    | 95    | 105  | 125   | 150  | 165   |
|          | L1   | 31.6 | 31.8 | 38.5 | 43   | 44   | 44   | 50    | 57    | 67   | 80    | 103  | 113   |
|          | Φ1   | 2.5  | 4.4  | 7.5  | 10.7 | 17.1 | 23.4 | 28.8  | 35.1  | 47.5 | 58.5  | 68.2 | 87.6  |
|          | Φ2   | 4.5  | 6.4  | 9.5  | 12.7 | 19.1 | 25.4 | 31.8  | 38.1  | 50.8 | 63.5  | 76.2 | 101.6 |
|          | H    | 12.5 | 16.5 | 20   | 23.5 | 31   | 38.5 | 46    | 52    | 62   | 78    | 92   | 117   |

Hex. Plug (HP)



FEATURES

- ☐ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- ☐ Dimension conform to ISO 4144, SP114 EN-10241, JIS
- ☐ 150 LBS
- ☐ Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8 | 1/4  | 3/8 | 1/2  | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3    | 4   |
|----------|------|-----|------|-----|------|-----|----|-------|-------|----|-------|------|-----|
| ISO4144  | H    | 11  | 15   | 18  | 22   | 28  | 35 | 43.5  | 49.5  | 62 | 77.5  | 90.5 | 117 |
|          | L    | 12  | 14.5 | 16  | 19.5 | 21  | 24 | 27    | 27    | 32 | 34    | 37.5 | 44  |

| Standard | SIZE | 1/8  | 1/4  | 3/8 | 1/2 | 3/4 | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3  | 4   |
|----------|------|------|------|-----|-----|-----|------|-------|-------|------|-------|----|-----|
| JIS      | H    | 13.8 | 16.7 | 21  | 25  | 29  | 37   | 48    | 53    | 63   | 80    | 92 | 116 |
|          | L    | 16.8 | 18   | 19  | 21  | 26  | 27.6 | 32    | 32    | 37.6 | 44    | 46 | 52  |

| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| SP-114   | H    | 13.6 | 16.6 | 20.6 | 25.8 | 30.5 | 37.5 | 45.4  | 52.1  | 62.5 | 79.2  | 92.2 | 117.2 |
|          | L    | 16.9 | 18   | 18.9 | 22   | 25   | 27   | 30    | 31.8  | 35.7 | 38.9  | 43.9 | 50.6  |

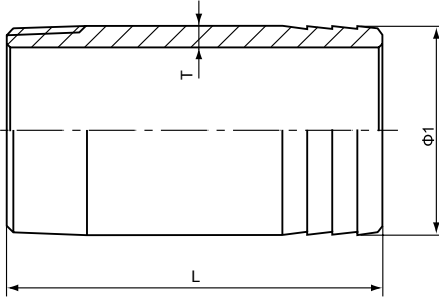
| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3  | 4   |
|----------|------|------|------|------|-----|-----|----|-------|-------|----|-------|----|-----|
| EN-10241 | H    | 14   | 16   | 18   | 26  | 30  | 35 | 45    | 52    | 63 | 81    | 95 | 118 |
|          | L    | 13.4 | 15.2 | 16.5 | 21  | 24  | 27 | 30    | 38    | 36 | 45    | 47 | 52  |

Male Hose Nipple (MHON)



FEATURES

- ☐ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
- ☐ Dimension conform to ISO 4144, SP114 EN-10241, JIS
- ☐ 150 LBS
- ☐ Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT
- ☐ MADE FROM CASTING, WELD PIPE OR SEAMLESS PIPE



| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | Φ1    | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | L(mm) | 47     | 49     | 55     | 63     | 72     | 82     | 83     | 87     | 96     | 103    | 111    | 123    |
|          | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 5.58   |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |

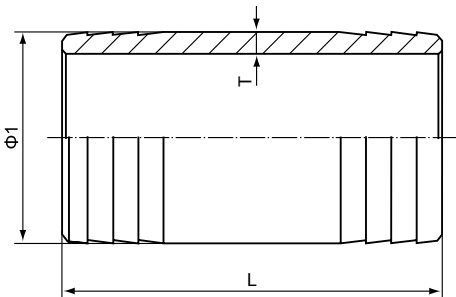
| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | Φ1    | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | L(mm) | 47     | 49     | 55     | 63     | 72     | 82     | 83     | 87     | 96     | 103    | 111    | 123    |
|          | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |



➔ Double Hose Nipple(DHON)



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114 EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT
  - ❑ MADE FROM CASTING, WELD PIPE OR SEAMLESS PIPE



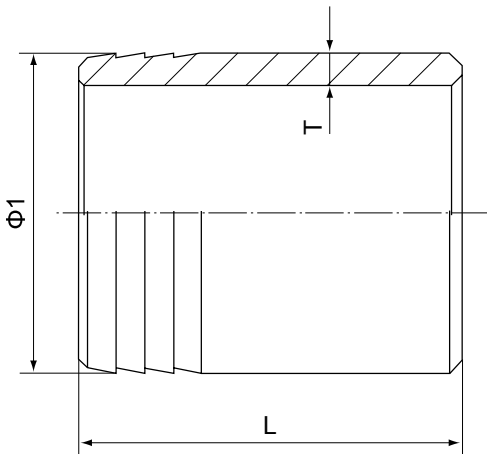
| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | Φ 1   | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 6.02   |
|          | L(mm) | 62     | 66     | 76     | 86     | 100    | 114    | 114    | 122    | 130    | 140    | 150    | 156    |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | Φ 1   | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(mm) | 62     | 66     | 76     | 86     | 100    | 114    | 114    | 122    | 130    | 140    | 150    | 156    |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

➔ Bw Hose Nipple(BWHON)



- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS21 ISO 228/1 & ISO 7/1
  - ❑ Dimension conform to ISO 4144, SP114 EN-10241, JIS
  - ❑ 150 LBS
  - ❑ Material conform to ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB AISI 304, 304L, 316, 316L, 301, 430 ECT
  - ❑ MADE FROM CASTING, WELD PIPE OR SEAMLESS PIPE



| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | Φ 1   | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 6.02   |
|          | L(mm) | 36     | 38     | 43     | 48     | 55     | 62     | 62     | 66     | 70     | 75     | 80     | 83     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | Φ 1   | 9      | 13     | 16     | 20     | 25.5   | 32.4   | 41     | 47     | 59     | 71.5   | 87.4   | 112.8  |
|          | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(mm) | 36     | 38     | 43     | 48     | 55     | 62     | 62     | 66     | 70     | 75     | 80     | 83     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |



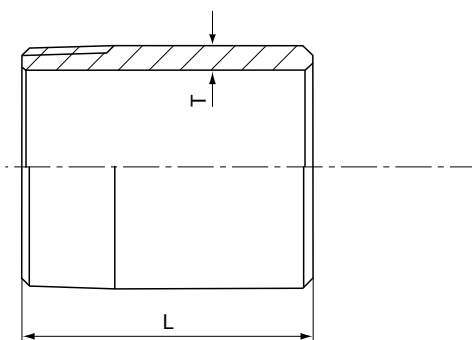


## ➔ Welding Nipple(WN)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT
- MADE FROM CASTING, WELD PIPE OR  
SEAMLESS PIPE



| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 6.02   |
|          | L(mm) | 30     | 30     | 30     | 35     | 40     | 40     | 50     | 50     | 50     | 60     | 70     | 80     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

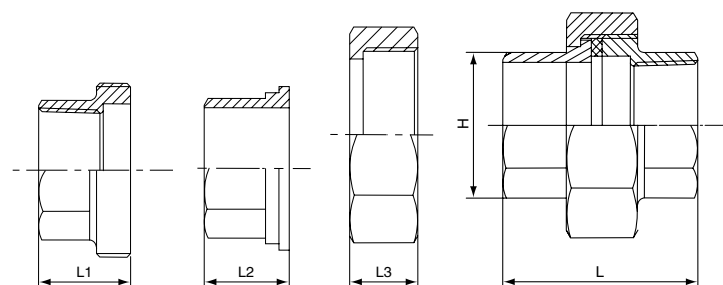
| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(mm) | 30     | 30     | 30     | 35     | 40     | 40     | 50     | 50     | 50     | 60     | 70     | 80     |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

## ➔ Flex Union(FLEX-U)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



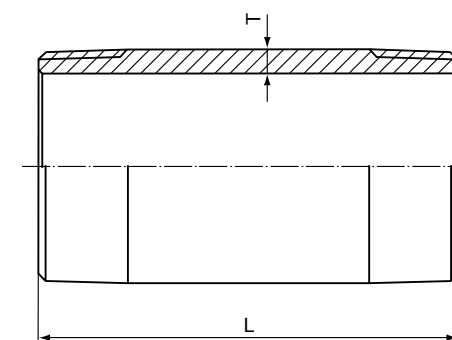
| SIZE | 1/4 | 3/8 | 1/2  | 3/4  | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 |
|------|-----|-----|------|------|----|-------|-------|----|-------|
| L1   | 17  | 19  | 21   | 24.5 | 27 | 30    | 33    | 37 | 42    |
| L2   | 15  | 17  | 18   | 22   | 25 | 27    | 31    | 34 | 42    |
| L3   | 14  | 16  | 17.5 | 18.5 | 20 | 22    | 24.5  | 27 | 30    |
| L    | 35  | 39  | 42   | 49.5 | 55 | 60    | 67    | 74 | 87    |
| H    | 19  | 23  | 27   | 33   | 41 | 50    | 56    | 69 | 87    |

## ➔ Barrel Nipple(BN)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT
- MADE FROM CASTING, WELD PIPE OR  
SEAMLESS PIPE



| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 6.02   |
|          | L(mm) | 40     | 40     | 40     | 60     | 60     | 60     | 80     | 80     | 100    | 100    | 120    | 150    |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

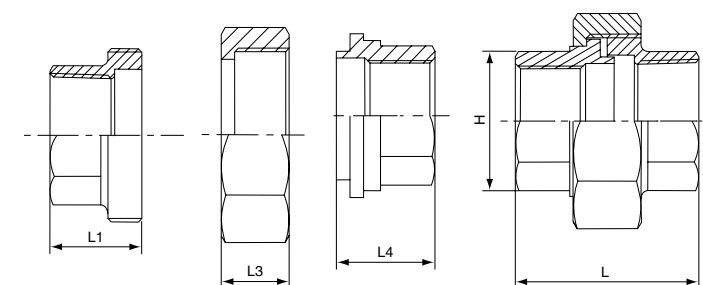
| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(mm) | 40     | 40     | 40     | 60     | 60     | 60     | 80     | 80     | 100    | 100    | 120    | 150    |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

## ➔ JIS Union(JIS-U)



## FEATURES

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144  
SP114  
EN-10241  
JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT



| SIZE | 1/4 | 3/8 | 1/2  | 3/4  | 1  | 1 1/4 | 1 1/2 | 2    | 2 1/2 |
|------|-----|-----|------|------|----|-------|-------|------|-------|
| L1   | 17  | 19  | 21   | 24.5 | 27 | 30    | 23    | 37   | 42    |
| L3   | 14  | 16  | 17.5 | 18.5 | 20 | 22    | 24.5  | 27   | 30    |
| L4   | 18  | 20  | 20.5 | 26   | 29 | 32    | 35.5  | 39.5 | 45.5  |
| L    | 33  | 37  | 39.5 | 48.5 | 54 | 60    | 66.5  | 74.5 | 85.5  |
| H    | 19  | 23  | 27   | 33   | 41 | 50    | 56    | 69   | 87    |



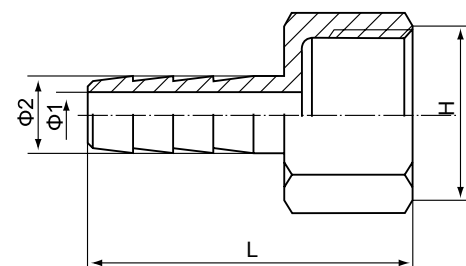
## ➔ Female Hex. Hose Nipple (FHON)



KH-1039

**FEATURES**

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| Standard | SIZE | 1/8  | 1/4 | 3/8  | 1/2  | 3/4  | 1  | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|-----|------|------|------|----|-------|-------|------|-------|------|-------|
| ISO4144  | Φ1   | 4    | 5   | 7    | 10.5 | 15   | 22 | 27.5  | 34    | 45   | 59    | 71   | 95    |
|          | Φ2   | 8    | 9   | 11.5 | 15   | 20   | 27 | 33    | 39.5  | 52   | 67    | 80   | 105   |
|          | L    | 39.5 | 45  | 50.5 | 59   | 67.5 | 78 | 81    | 85    | 93.5 | 103.5 | 112  | 121.5 |
|          | H    | 13.5 | 17  | 20.5 | 25   | 31   | 38 | 47    | 53    | 66   | 82    | 95.5 | 121.5 |

| Standard | SIZE | 1/8 | 1/4 | 3/8 | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3    | 4   |
|----------|------|-----|-----|-----|------|------|------|-------|-------|----|-------|------|-----|
| JIS      | Φ1   | 5   | 6   | 8   | 11.5 | 16.5 | 23   | 28    | 35    | 47 | 61    | 73   | 96  |
|          | Φ2   | 9   | 11  | 12  | 16   | 22   | 29.5 | 36    | 42    | 54 | 65.5  | 78.5 | 103 |
|          | L    | 33  | 38  | 41  | 49   | 58   | 72   | 74    | 77    | 90 | 104   | 136  | 149 |
|          | H    | 14  | 17  | 20  | 20   | 30   | 36   | 45    | 52    | 63 | 76    | 89   | 121 |

| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4   |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-----|
| SP-114   | Φ1   | 4    | 5    | 6    | 9    | 15   | 21.5 | 27    | 33    | 45   | 55    | 68   | 91  |
|          | Φ2   | 7    | 9    | 10   | 14   | 20   | 27.5 | 34    | 40    | 52   | 63.5  | 76.5 | 103 |
|          | L    | 32   | 34   | 39   | 45   | 48   | 53   | 59    | 65    | 72   | 80    | 89   | 104 |
|          | H    | 13.5 | 15.4 | 19.7 | 26.2 | 31.9 | 39.8 | 47.8  | 55.9  | 66.5 | 83.3  | 98.2 | 123 |

| Standard | SIZE | 1/8  | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|----------|------|------|------|------|------|------|------|-------|-------|------|-------|------|-------|
| EN-10241 | Φ1   | 2.5  | 4.4  | 7.5  | 10.7 | 17.1 | 23.4 | 28.8  | 35.1  | 47.5 | 58.5  | 68.2 | 87.6  |
|          | Φ2   | 4.5  | 6.4  | 9.5  | 12.7 | 19.1 | 25.4 | 31.8  | 38.1  | 50.8 | 63.5  | 76.2 | 101.6 |
|          | L    | 35.7 | 36.2 | 43.1 | 48.6 | 50.6 | 51.3 | 58.1  | 69.2  | 80.2 | 94.1  | 117  | 128   |
|          | H    | 14   | 16   | 18   | 26   | 30   | 35   | 45    | 52    | 63   | 81    | 95   | 118   |

## ➔ Special Union Fof S.korea(CU-SK)

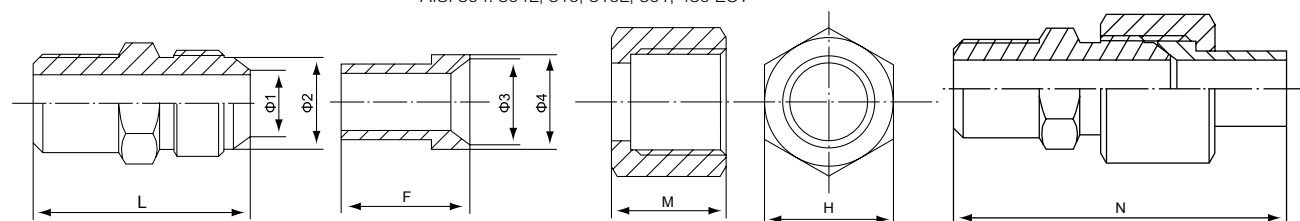


KH-1040

**FEATURES**

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

| SIZE | Φ1 | Φ2   | Φ3   | Φ4   | L    | F  | M  | H  | N    |
|------|----|------|------|------|------|----|----|----|------|
| 1/2  | 14 | 19.3 | 18   | 19.8 | 45.5 | 27 | 24 | 27 | 69.8 |
| 3/4  | 18 | 23.4 | 22   | 24   | 51   | 29 | 25 | 32 | 77.5 |
| 1    | 23 | 30   | 27.5 | 30   | 56   | 38 | 29 | 38 | 91.5 |



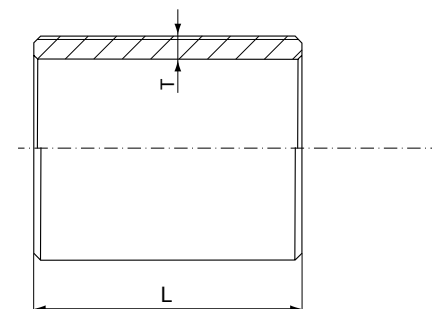
## ➔ Parrel Nipple(PN)



KH-1041

**FEATURES**

- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT
- MADE FROM CASTING, WELD PIPE OR  
SEAMLESS PIPE



| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-40   | L(mm) | 22     | 22     | 24     | 30     | 34     | 40     | 42     | 42     | 52     | 56     | 62     | 80     |
|          | T     | 2      | 2.5    | 2.31   | 2.77   | 2.87   | 3.38   | 3.56   | 3.68   | 3.91   | 5.16   | 5.49   | 6.02   |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

| Standard | SIZE  | 1/8    | 1/4    | 3/8    | 1/2    | 3/4    | 1      | 1 1/4  | 1 1/2  | 2      | 2 1/2  | 3      | 4      |
|----------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SCH-80   | L(mm) | 22     | 22     | 24     | 30     | 34     | 40     | 42     | 42     | 52     | 56     | 62     | 80     |
|          | T     | 2.41   | 3.02   | 3.2    | 3.73   | 3.91   | 4.55   | 4.85   | 5.08   | 5.54   | 7.01   | 7.62   | 8.56   |
|          | L(in) | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     | 1"     |
|          |       | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
|          |       | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" | 1 1/2" |
|          |       | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     | 2"     |
|          |       | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" | 2 1/2" |
|          |       | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     | 3"     |
|          |       | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     | 4"     |
|          |       | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     | 5"     |
|          |       | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     | 6"     |
|          |       | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     | 8"     |

## ➔ Special Union For Japan(SN-M)

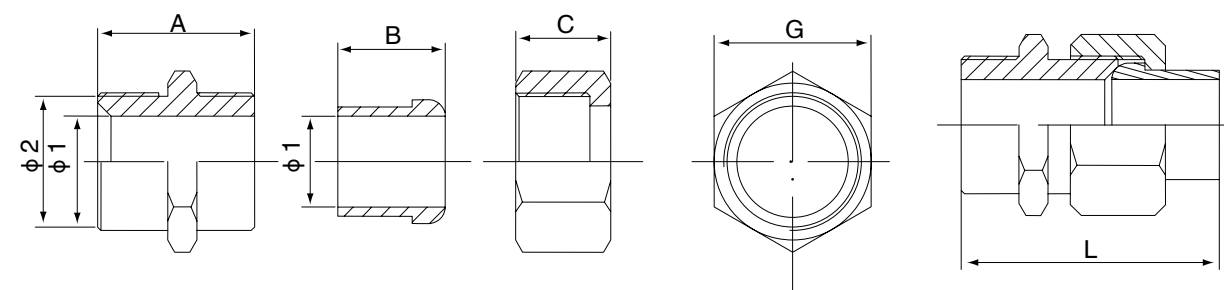


KH-1042

**FEATURES**

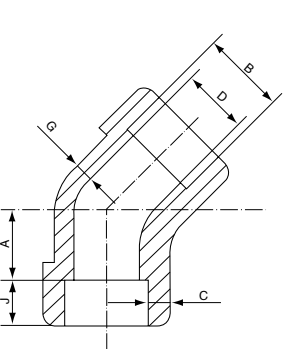
- The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS21  
ISO 228/1 & ISO 7/1
- Dimension conform to  
ISO 4144, SP114  
EN-10241, JIS
- 150 LBS
- Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT

| SIZE | 1/4  | 3/8  | 1/2 | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 |
|------|------|------|-----|------|------|-------|-------|------|-------|
| Φ1   | 7    | 9    | 13  | 18   | 23   | 29    | 35    | 44   | 57    |
| Φ2   | 10.5 | 14   | 18  | 23   | 29.5 | 38    | 44    | 55.5 | 71    |
| G    | 17   | 21   | 24  | 32   | 38   | 50    | 54    | 70   | 85    |
| A    | 29   | 31   | 37  | 41   | 44   | 55    | 55    | 63   | 83    |
| B    | 19   | 21   | 23  | 24   | 26   | 28    | 28    | 39   | 44    |
| C    | 15   | 17   | 19  | 21   | 23   | 25    | 25    | 29   | 40    |
| L    | 47   | 50.5 | 58  | 62.5 | 67.5 | 80    | 80    | 97.5 | 121.5 |

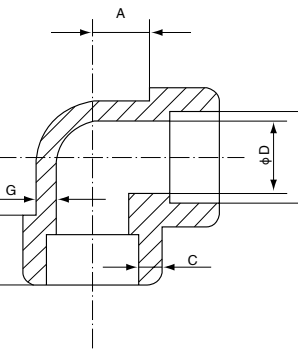




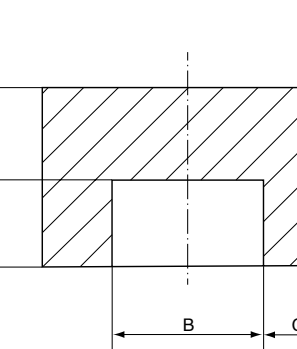
ELBOW 45°



ELBOW 90°

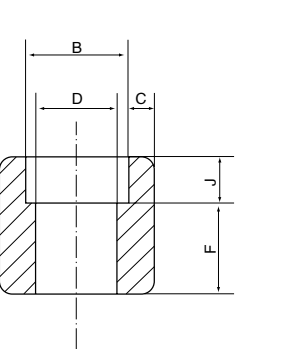


CAP

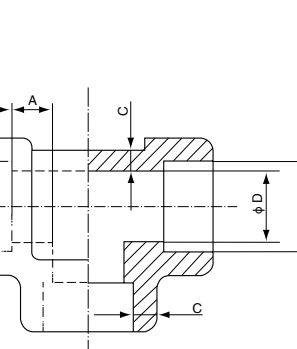


| DN  | Nom. Pipe Size | Socket bore Dia. (2)B | Bore Diameter of Fittings (2)D |      |      | Socket Wall Thickness (1) C |      |       |      |       |       | Body Wall G       |      |       |
|-----|----------------|-----------------------|--------------------------------|------|------|-----------------------------|------|-------|------|-------|-------|-------------------|------|-------|
|     |                |                       |                                |      |      | Class Designation           |      |       |      |       |       | Class Designation |      |       |
|     |                |                       | Class Designation              |      |      | 3000                        |      | 6000  |      | 9000  |       | 3000              | 6000 | 9000  |
|     |                |                       | 3000                           | 6000 | 9000 | Ave.                        | Min. | Ave.  | Min. | Ave.  | Min.  | Ave.              | Min. | Min.  |
| 6   | 1/8            | 11.2                  | 7.6                            | 4.8  |      | 3.18                        | 3.18 | 3.96  | 3.43 |       |       | 2.41              | 3.15 |       |
|     |                | 10.8                  | 6.1                            | 3.2  |      |                             |      |       |      |       |       |                   |      |       |
| 8   | 1/4            | 14.6                  | 10.0                           | 7.1  |      | 3.78                        | 3.30 | 4.60  | 4.01 |       |       | 3.02              | 3.68 |       |
|     |                | 14.2                  | 8.5                            | 5.6  |      |                             |      |       |      |       |       |                   |      |       |
| 10  | 3/8            | 18.0                  | 13.3                           | 9.9  |      | 4.01                        | 3.50 | 5.03  | 4.37 |       |       | 3.20              | 4.01 |       |
|     |                | 17.6                  | 11.8                           | 8.4  |      |                             |      |       |      |       |       |                   |      |       |
| 15  | 1/2            | 22.2                  | 16.6                           | 12.5 | 7.2  | 4.67                        | 4.09 | 5.97  | 5.18 | 9.35  | 8.18  | 3.73              | 4.78 | 7.47  |
|     |                | 21.8                  | 15.0                           | 11.0 | 5.6  |                             |      |       |      |       |       |                   |      |       |
| 20  | 3/4            | 27.6                  | 21.7                           | 16.3 | 11.8 | 4.90                        | 4.27 | 6.96  | 6.04 | 9.78  | 8.56  | 3.91              | 5.56 | 7.82  |
|     |                | 27.2                  | 20.2                           | 14.8 | 10.3 |                             |      |       |      |       |       |                   |      |       |
| 25  | 1              | 34.3                  | 27.4                           | 21.5 | 16.0 | 5.69                        | 4.98 | 7.92  | 6.93 | 11.38 | 9.96  | 4.55              | 6.35 | 9.09  |
|     |                | 33.9                  | 25.9                           | 19.9 | 14.4 |                             |      |       |      |       |       |                   |      |       |
| 32  | 1 1/4          | 43.1                  | 35.8                           | 30.2 | 23.5 | 6.07                        | 5.28 | 7.92  | 6.93 | 12.14 | 10.62 | 4.85              | 6.35 | 9.70  |
|     |                | 42.7                  | 34.3                           | 28.7 | 22.0 |                             |      |       |      |       |       |                   |      |       |
| 40  | 1 1/2          | 49.2                  | 41.6                           | 34.7 | 28.7 | 6.35                        | 5.54 | 8.92  | 7.80 | 12.70 | 11.12 | 5.08              | 7.14 | 10.15 |
|     |                | 48.8                  | 40.1                           | 33.2 | 27.2 |                             |      |       |      |       |       |                   |      |       |
| 50  | 2              | 61.7                  | 53.3                           | 43.6 | 38.9 | 6.93                        | 6.04 | 10.92 | 9.50 | 13.84 | 12.12 | 5.54              | 8.74 | 11.07 |
|     |                | 61.2                  | 51.7                           | 42.1 | 37.4 |                             |      |       |      |       |       |                   |      |       |
| 65  | 2 1/2          | 74.4                  | 64.2                           |      |      | 8.76                        | 7.67 |       |      |       |       | 7.01              |      |       |
|     |                | 73.9                  | 61.2                           |      |      |                             |      |       |      |       |       |                   |      |       |
| 80  | 3              | 90.3                  | 79.4                           |      |      | 9.52                        | 8.30 |       |      |       |       | 7.62              |      |       |
|     |                | 89.8                  | 76.4                           |      |      |                             |      |       |      |       |       |                   |      |       |
| 100 | 4              | 115.7                 | 103.8                          |      |      | 10.69                       | 9.35 |       |      |       |       | 8.56              |      |       |
|     |                | 115.2                 | 100.7                          |      |      |                             |      |       |      |       |       |                   |      |       |

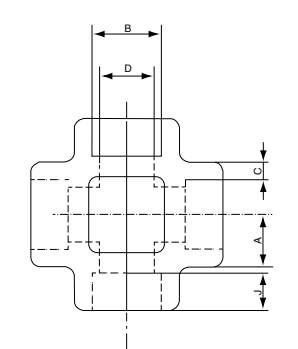
HALF COUPLING



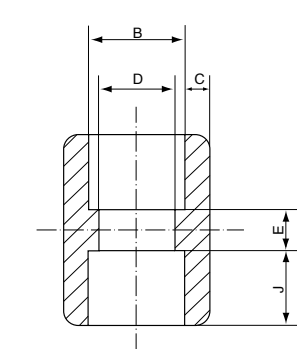
TEE



CROSS



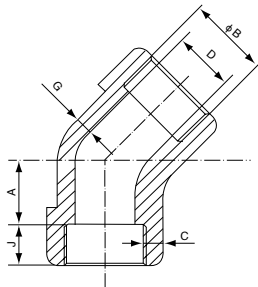
COUPLING



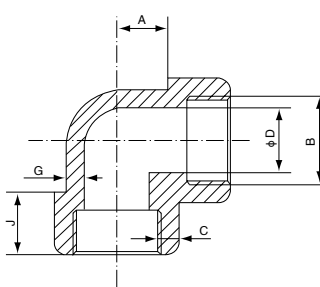
| Depth of<br>Socket J | Center to Bottom of Socket–A |      |      |            |      |      | Laying Lengths |                        | Tolerances        |     |     | End Wall Thickness K |      |      |
|----------------------|------------------------------|------|------|------------|------|------|----------------|------------------------|-------------------|-----|-----|----------------------|------|------|
|                      | 90° Elbows,Tee,and Crosses   |      |      | 45° Elbows |      |      | Couplings<br>E | Half<br>Couplings<br>F |                   |     |     |                      |      |      |
|                      | Class Designation            |      |      |            |      |      |                |                        | Class Designation |     |     |                      |      |      |
| Min.                 | 3000                         | 6000 | 9000 | 3000       | 6000 | 9000 |                |                        | A                 | E   | F   | 3000                 | 6000 | 9000 |
| 9.5                  | 11.0                         | 11.0 |      | 8.0        | 8.0  |      | 6.50           | 16.0                   | 1.0               | 1.5 | 1.0 | 5.0                  | 6.5  |      |
| 9.5                  | 11.0                         | 13.5 |      | 8.0        | 8.0  |      | 6.50           | 16.0                   | 1.0               | 1.5 | 1.0 | 5.0                  | 6.5  |      |
| 9.5                  | 13.5                         | 15.5 |      | 8.0        | 11.0 |      | 6.50           | 17.5                   | 1.5               | 3.0 | 1.5 | 5.0                  | 6.5  |      |
| 9.5                  | 15.5                         | 19.0 | 25.5 | 11.0       | 12.5 | 15.5 | 9.50           | 22.5                   | 1.5               | 3.0 | 1.5 | 6.5                  | 8.0  | 11.0 |
| 12.5                 | 19.0                         | 22.5 | 28.5 | 13.0       | 14.0 | 19.0 | 9.50           | 24.0                   | 1.5               | 3.0 | 1.5 | 7.0                  | 9.0  | 13.0 |
| 12.5                 | 22.5                         | 27.0 | 32.0 | 14.0       | 17.5 | 20.5 | 12.50          | 28.5                   | 2.0               | 4.0 | 2.0 | 10.0                 | 11.0 | 14.0 |
| 12.5                 | 27.0                         | 32.0 | 35.0 | 17.5       | 20.5 | 22.5 | 12.50          | 30.0                   | 2.0               | 4.0 | 2.0 | 10.0                 | 12.0 | 14.0 |
| 12.5                 | 32.0                         | 38.0 | 38.0 | 20.5       | 25.5 | 25.5 | 12.50          | 32.0                   | 2.0               | 4.0 | 2.0 | 11.0                 | 13.5 | 16.0 |
| 16.0                 | 38.0                         | 41.0 | 54.0 | 25.5       | 28.5 | 28.5 | 19.0           | 41.0                   | 2.0               | 4.0 | 2.0 | 13.0                 | 16.5 | 19.0 |
| 16.0                 | 41.0                         |      |      | 28.5       |      |      | 19.0           | 43.0                   | 2.5               | 5.0 | 2.5 | 16.0                 | 19.5 |      |
| 16.0                 | 57.0                         |      |      | 32.0       |      |      | 19.0           | 44.5                   | 2.5               | 5.0 | 2.5 | 19.0                 | 23.0 |      |
| 19.0                 | 66.5                         |      |      | 41.0       |      |      | 19.0           | 48.0                   | 2.5               | 5.0 | 2.5 | 20.0                 | 28.5 |      |



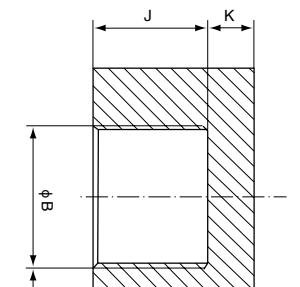
ELBOW 45°



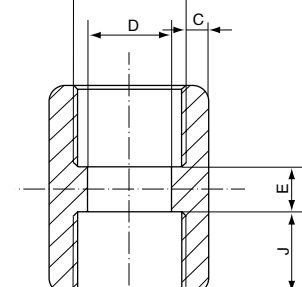
ELBOW 90°



CAP

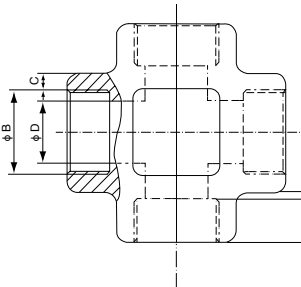


COPLING



| DN  | Nom. Pipe Size | Threaded BSPT NPT B | Bore Diameter of Fittings (2) D |      |      | Socket Wall Thickness (1) C |      |       |      |       |       | Body Wall G       |      |       |
|-----|----------------|---------------------|---------------------------------|------|------|-----------------------------|------|-------|------|-------|-------|-------------------|------|-------|
|     |                |                     |                                 |      |      | Class Designation           |      |       |      |       |       | Class Designation |      |       |
|     |                |                     | Class Designation               |      |      | 3000                        |      | 6000  |      | 9000  |       | 3000              | 6000 | 9000  |
|     |                |                     | 3000                            | 6000 | 9000 | Ave.                        | Min. | Ave.  | Min. | Ave.  | Min.  | Ave.              | Min. | Min.  |
| 6   | 1/8            | 1/8"                | 7.6                             | 4.8  |      | 3.18                        | 3.18 | 3.96  | 3.43 |       |       | 2.41              | 3.15 |       |
|     |                |                     | 6.1                             | 3.2  |      |                             |      |       |      |       |       |                   |      |       |
| 8   | 1/4            | 1/4"                | 10.0                            | 7.1  |      | 3.78                        | 3.3  | 4.6   | 4.01 |       |       | 3.02              | 3.68 |       |
|     |                |                     | 8.5                             | 5.6  |      |                             |      |       |      |       |       |                   |      |       |
| 10  | 3/8            | 3/8"                | 13.3                            | 9.9  |      | 4.01                        | 3.5  | 5.03  | 4.37 |       |       | 3.2               | 4.01 |       |
|     |                |                     | 11.8                            | 8.4  |      |                             |      |       |      |       |       |                   |      |       |
| 15  | 1/2            | 1/2"                | 16.6                            | 12.5 | 7.2  | 4.67                        | 4.09 | 5.97  | 5.18 | 9.35  | 8.18  | 3.73              | 4.78 | 7.47  |
|     |                |                     | 15.0                            | 11.0 | 5.6  |                             |      |       |      |       |       |                   |      |       |
| 20  | 3/4            | 3/4"                | 21.7                            | 16.3 | 11.8 | 4.9                         | 4.27 | 6.96  | 6.04 | 9.78  | 8.56  | 3.91              | 5.56 | 7.82  |
|     |                |                     | 20.2                            | 14.8 | 10.3 |                             |      |       |      |       |       |                   |      |       |
| 25  | 1              | 1"                  | 27.4                            | 21.5 | 16.0 | 5.69                        | 4.98 | 7.92  | 6.93 | 11.38 | 9.96  | 4.55              | 6.35 | 9.09  |
|     |                |                     | 25.9                            | 19.9 | 14.4 |                             |      |       |      |       |       |                   |      |       |
| 32  | 1 1/4          | 1 1/4"              | 35.8                            | 30.2 | 23.5 | 6.07                        | 5.28 | 7.92  | 6.93 | 12.14 | 10.62 | 4.85              | 6.35 | 9.7   |
|     |                |                     | 34.3                            | 28.7 | 22.0 |                             |      |       |      |       |       |                   |      |       |
| 40  | 1 1/2          | 1 1/2"              | 41.6                            | 34.7 | 28.7 | 6.35                        | 5.54 | 8.92  | 7.8  | 12.7  | 11.12 | 5.08              | 7.14 | 10.15 |
|     |                |                     | 40.1                            | 33.2 | 27.2 |                             |      |       |      |       |       |                   |      |       |
| 50  | 2              | 2"                  | 53.3                            | 43.6 | 38.9 | 6.93                        | 6.04 | 10.92 | 9.5  | 13.84 | 12.12 | 5054              | 8.74 | 11.07 |
|     |                |                     | 51.7                            | 42.1 | 37.4 |                             |      |       |      |       |       |                   |      |       |
| 65  | 2 1/2          | 2 1/2"              | 64.2                            |      |      | 8.76                        | 7.67 |       |      |       |       | 7.01              |      |       |
|     |                |                     | 61.2                            |      |      |                             |      |       |      |       |       |                   |      |       |
| 80  | 3              | 3"                  | 79.4                            |      |      | 9.52                        | 8.3  |       |      |       |       | 7.62              |      |       |
|     |                |                     | 76.4                            |      |      |                             |      |       |      |       |       |                   |      |       |
| 100 | 4              | 4"                  | 103.8                           |      |      | 10.69                       | 9.35 |       |      |       |       | 8.56              |      |       |
|     |                |                     | 100.7                           |      |      |                             |      |       |      |       |       |                   |      |       |

CROSS





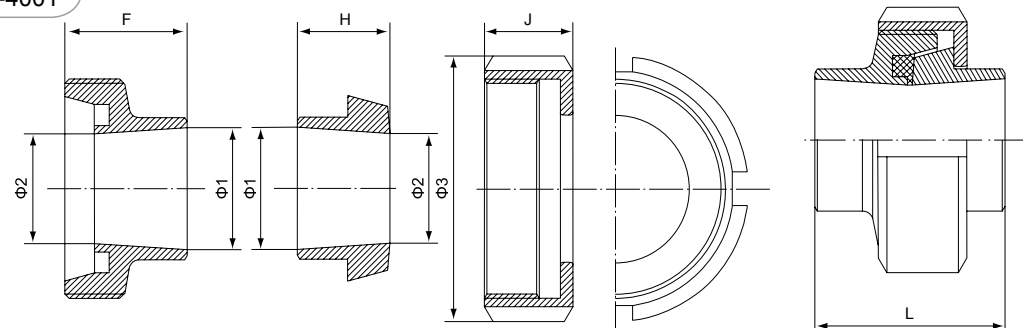


## → DIN11851



KH-4001

□ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT



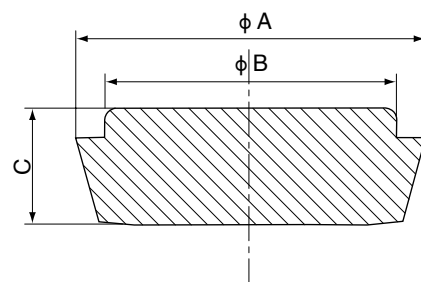
| Standard    | SIZE | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|-------------|------|------|------|------|------|-------|-------|------|-------|------|-------|
|             | Φ3   | 38   | 44   | 54   | 63   | 70    | 78    | 92   | 112   | 127  | 148   |
|             | J    | 18   | 18   | 21   | 21   | 21    | 21    | 22   | 25    | 30   | 31    |
|             | L    | 36   | 45   | 51   | 53   | 57    | 65    | 75   | 89    | 70   | 76    |
| DIN-TURKISH | Φ1   | 14   | 16   | 22   | 29   | 37    | 43    | 55   | 71    | 84   | 109   |
|             | Φ2   | 10   | 16   | 20   | 26   | 32    | 38    | 50   | 66    | 81   | 100   |
|             | F    | 21   | 21   | 24   | 29   | 32    | 33    | 35   | 40    | 45   | 54    |
|             | H    | 17   | 17   | 18   | 22   | 25    | 26    | 28   | 32    | 37   | 44    |
| DIN-ISO     | Φ1   | 14.4 | 18.1 | 23.7 | 29.7 | 38.4  | 44.3  | 56.3 | 72.1  | 84.9 | 109.1 |
|             | Φ2   | 10   | 16   | 20   | 26   | 32    | 38    | 50   | 66    | 81   | 100   |
|             | F    | 21   | 21   | 24   | 29   | 32    | 33    | 35   | 40    | 45   | 54    |
|             | H    | 17   | 17   | 18   | 22   | 25    | 26    | 28   | 32    | 37   | 44    |

## → DIN11851 Blank Liner



KH-4002

□ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT



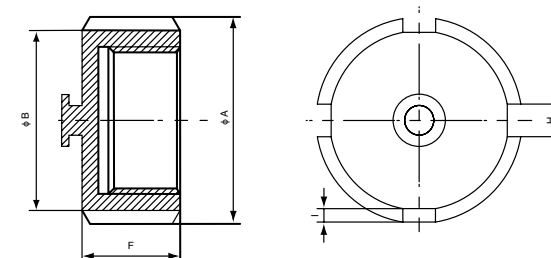
| SIZE | 3/8 | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3   | 4   | 5   | 6   |
|------|-----|-----|-----|----|-------|-------|----|-------|-----|-----|-----|-----|
| A    | 22  | 28  | 36  | 44 | 50    | 56    | 68 | 86    | 100 | 170 | 149 | 175 |
| B    | 18  | 24  | 30  | 35 | 41    | 48    | 61 | 79    | 93  | 114 | 137 | 163 |
| C    | 9   | 9   | 11  | 13 | 13    | 13    | 14 | 16    | 16  | 20  | 22  | 24  |

## → DIN11851 Blank Nut with Chain and Clip



KH-4003

□ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT



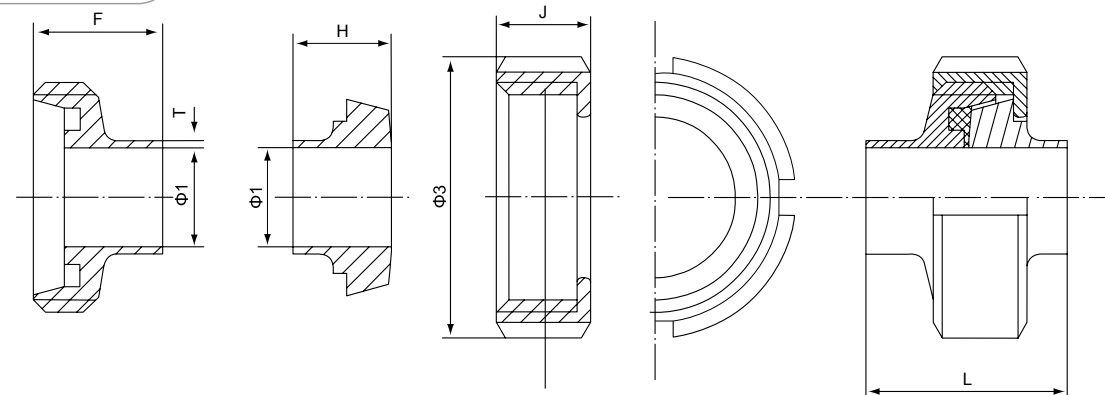
| SIZE | 3/8 | 1/2 | 3/4 | 1   | 1 1/4 | 1 1/2 | 2  | 2 1/2 | 3   | 4   | 5   | 6   |
|------|-----|-----|-----|-----|-------|-------|----|-------|-----|-----|-----|-----|
| A    | 38  | 44  | 54  | 63  | 70    | 78    | 92 | 112   | 127 | 148 | 178 | 210 |
| B    | 33  | 38  | 48  | 56  | 62    | 70    | 84 | 102   | 117 | 138 | 168 | 200 |
| I    | 3   | 3   | 3   | 3.5 | 4     | 4     | 4  | 5     | 5   | 5   | 5   | 5   |
| H    | 6   | 7   | 7   | 8   | 8     | 10    | 10 | 10    | 10  | 12  | 12  | 12  |
| F    | 18  | 18  | 21  | 21  | 21    | 21    | 22 | 25    | 30  | 31  | 35  | 40  |

## → DIN11850



KH-4004

□ Material conform to  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT



| Standard           | SIZE | 3/8 | 1/2 | 3/4 | 1   | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3   | 4   | 5   | 6   |
|--------------------|------|-----|-----|-----|-----|-------|-------|-----|-------|-----|-----|-----|-----|
| DIN11850 (Irish)   | T    | 1.5 | 1.5 | 1.5 | 1.5 | 1.5   | 1.5   | 1.5 | 2     | 2   | 2   | 2   | 2   |
|                    | Φ1   | 10  | 16  | 20  | 26  | 32    | 38    | 50  | 66    | 81  | 100 | 125 | 150 |
|                    | Φ3   | 38  | 44  | 54  | 63  | 70    | 78    | 92  | 112   | 127 | 148 | 178 | 210 |
|                    | F    | 21  | 21  | 24  | 29  | 32    | 33    | 35  | 40    | 45  | 54  | 46  | 50  |
|                    | H    | 17  | 17  | 18  | 22  | 25    | 26    | 28  | 32    | 37  | 44  | 34  | 37  |
|                    | J    | 18  | 18  | 21  | 21  | 21    | 21    | 22  | 25    | 29  | 31  | 34  | 40  |
|                    | L    | 34  | 34  | 36  | 51  | 51    | 53    | 57  | 65    | 65  | 89  | 70  | 76  |
| DIN11850 (Turkish) | T    | 2.5 | 2.5 | 2.5 | 2.5 | 2.5   | 2.5   | 2.5 | 3     | 3   | 3   | 3.5 | 3.5 |
|                    | Φ1   | 10  | 16  | 20  | 26  | 32    | 38    | 50  | 66    | 81  | 100 | 125 | 150 |
|                    | Φ3   | 38  | 44  | 54  | 63  | 70    | 78    | 92  | 112   | 127 | 148 | 178 | 210 |
|                    | F    | 21  | 21  | 24  | 29  | 32    | 33    | 35  | 40    | 45  | 54  | 46  | 50  |
|                    | H    | 17  | 17  | 18  | 22  | 25    | 26    | 28  | 32    | 37  | 44  | 34  | 37  |
|                    | J    | 18  | 18  | 21  | 21  | 21    | 21    | 22  | 25    | 29  | 31  | 34  | 40  |
|                    | L    | 34  | 34  | 36  | 45  | 51    | 53    | 57  | 65    | 65  | 89  | 70  | 76  |

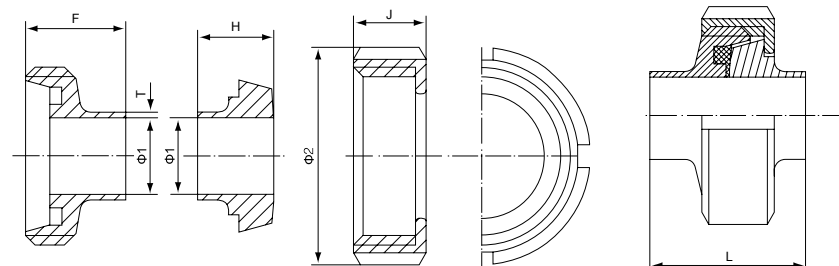


## ➔ DIN



## □ Material conform to

ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



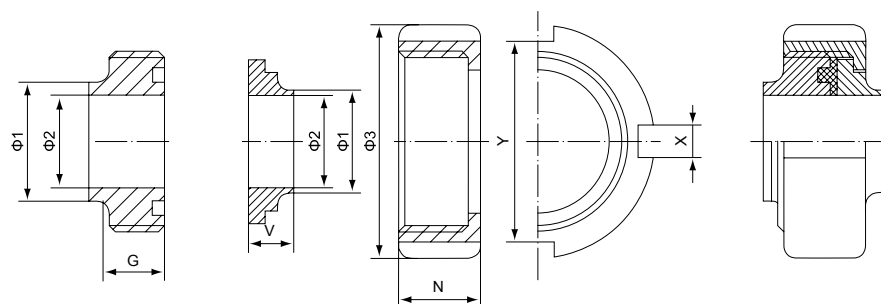
| Standard  | SIZE | 3/8 | 1/2 | 3/4 | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|-----------|------|-----|-----|-----|------|-------|-------|------|-------|------|-------|
| DIN       | Φ2   |     |     |     | 78   | 92    | 112   | 127  | 148   | 178  | 210   |
|           | J    |     |     |     | 21   | 22    | 25    | 30   | 31    | 35   | 40    |
|           | L    |     |     |     | 45   | 51    | 53    | 57   | 65    | 75   | 89    |
|           | T    |     |     |     | 1.6  | 1.6   | 1.6   | 1.6  | 1.6   | 1.6  | 2     |
| DIN-INCH  | Φ1   |     |     |     | 25.4 | 31.8  | 38.1  | 50.8 | 63.5  | 76.2 | 101.6 |
|           | F    |     |     |     | 29   | 32    | 33    | 35   | 40    | 45   | 54    |
|           | H    |     |     |     | 22   | 25    | 26    | 28   | 32    | 37   | 44    |
|           | T    |     |     |     | 2.5  |       | 2.45  | 2.6  | 2.5   | 2.4  | 3.2   |
| DIN-DIN   | Φ1   |     |     |     | 22.9 |       | 35.1  | 47.8 | 60.5  | 73.2 | 97.6  |
|           | F    |     |     |     | 29   |       | 33    | 35   | 40    | 40   | 54    |
|           | H    |     |     |     | 22   |       | 26    | 28   | 32    | 32   | 44    |
|           | T    | 2.5 | 2.5 | 2.5 | 2.5  | 2.5   | 2.5   | 2.5  | 3     | 3    | 3     |
| DIN-IRISH | Φ1   | 10  | 16  | 20  | 26   | 32    | 38    | 50   | 66    | 81   | 100   |
|           | F    | 21  | 21  | 24  | 29   | 32    | 33    | 35   | 40    | 45   | 54    |
|           | H    | 17  | 17  | 18  | 22   | 25    | 26    | 28   | 32    | 37   | 44    |
|           | T    | 1.5 | 1.5 | 1.5 | 1.5  | 1.5   | 1.5   | 1.5  | 2     | 2    | 2     |

## ➔ DS



## □ Material conform to

ASTM A351-CF8M/1.4408 ASTM A351-CF8/1.4401 ASTM A216-WCB  
AISI 304, 304L, 316, 316L, 301, 430 ECT



| SIZE | 1    | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|------|------|-------|------|-------|------|-------|
| Φ1   | 25   | 38    | 51   | 63.5  | 76.1 | 101.6 |
| Φ2   | 22.6 | 35.6  | 48.6 | 60.5  | 72   | 97.6  |
| Φ3   | 57   | 71    | 86   | 103   | 115  | 150   |
| G    | 18.5 | 20    | 20   | 24    | 24   | 24    |
| V    | 11   | 11    | 11   | 12    | 12   | 12    |
| N    | 20   | 20    | 22   | 24    | 25   | 28    |
| Y    | 49   | 63    | 78   | 95    | 107  | 139   |
| X    | 8    | 8     | 8    | 8     | 8    | 10    |
| L    | 31   | 32.5  | 32.5 | 37.5  | 37.5 | 37.5  |

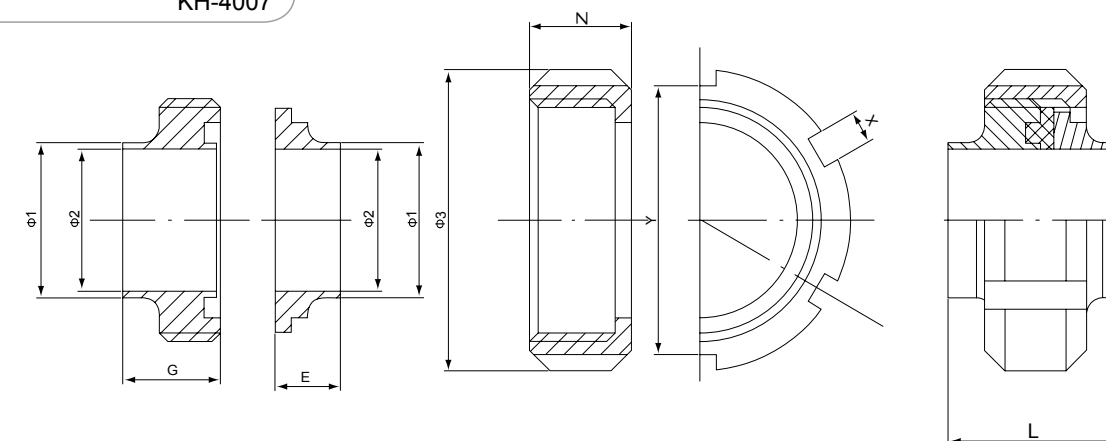
## ➔ SMS Standard Pattern



## □ Material conform to

ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT

| SIZE | 1    | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|------|------|-------|------|-------|------|-------|
| Φ1   | 25.4 | 38.1  | 50.8 | 63.5  | 76.2 | 101.6 |
| Φ2   | 22.2 | 34.9  | 47.6 | 60.3  | 72.9 | 97.53 |
| Φ3   | 42   | 64    | 74   | 90    | 104  | 142   |
| G    | 19   | 23    | 23   | 27    | 27   | 30    |
| E    | 15.5 | 16    | 17   | 17    | 19   | 19    |
| N    | 20   | 25    | 26   | 30    | 32   | 32    |
| X    | 6    | 8     | 8    | 10    | 10   | 10    |
| Y    | 45   | 66    | 76   | 90    | 104  | 141   |
| L    | 36   | 40.5  | 41.5 | 45.5  | 47.5 | 50.5  |



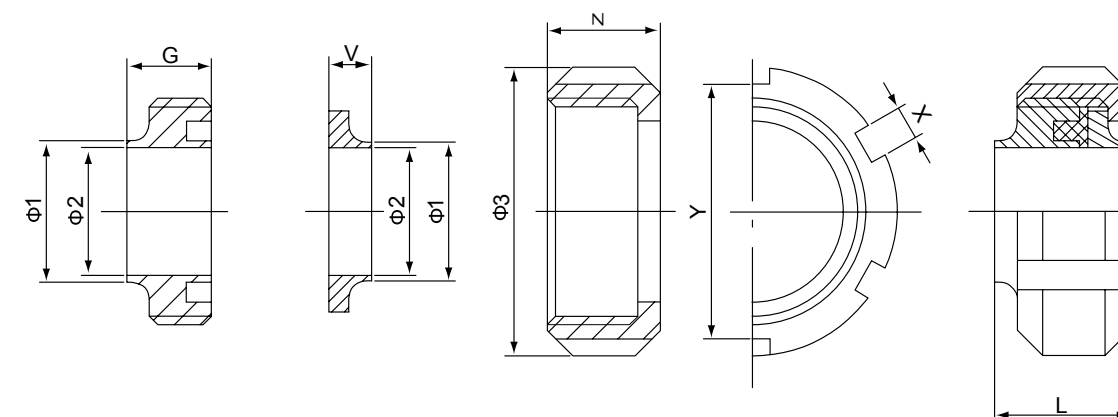
## ➔ SMS Short Pattern



## □ Material conform to

ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT

| SIZE | 1    | 1 1/2 | 2    | 2 1/2 | 3    | 4     |
|------|------|-------|------|-------|------|-------|
| Φ1   | 25   | 38    | 51   | 63.5  | 76.1 | 101.6 |
| Φ2   | 22.6 | 35.6  | 48.6 | 60.3  | 72.9 | 97.6  |
| Φ3   | 42   | 64    | 74   | 90    | 104  | 142   |
| G    | 15   | 20    | 20   | 24    | 24   | 25    |
| V    | 7.5  | 9     | 9    | 9     | 10   | 12    |
| N    | 20   | 25    | 26   | 30    | 32   | 32    |
| X    | 6    | 8     | 8    | 10    | 10   | 10    |
| Y    | 45   | 66    | 76   | 90    | 104  | 141   |
| L    | 24   | 30.5  | 30.5 | 34.5  | 35.5 | 38.5  |



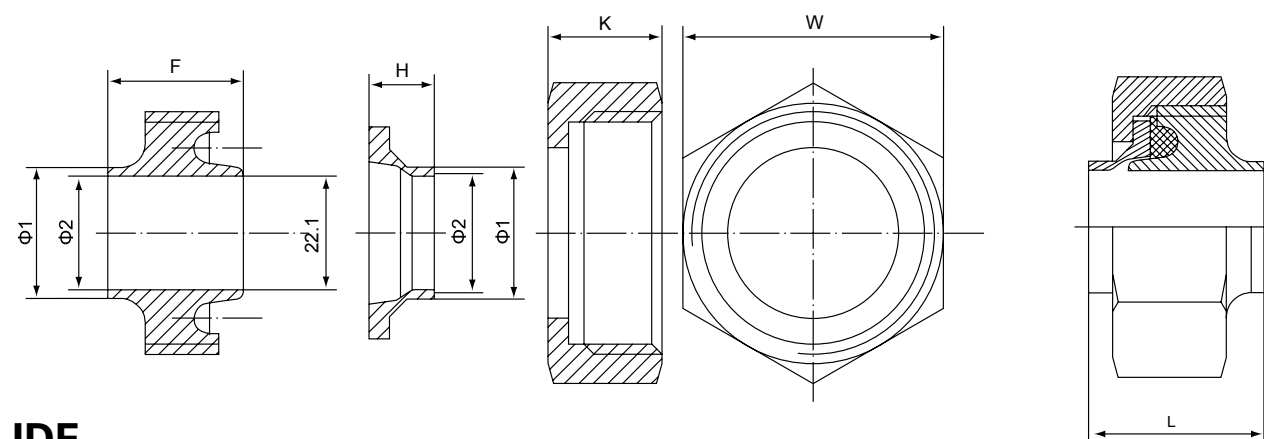


## ➔ RJT



□ **Material conform to**  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT

| SIZE | 1     | 1 1/2 | 2    | 2 1/2 | 3     | 4     |
|------|-------|-------|------|-------|-------|-------|
| φ 1  | 25.6  | 38.3  | 51   | 63.7  | 76.4  | 102   |
| φ 2  | 22.14 | 34.8  | 47.5 | 60.2  | 72.9  | 97.5  |
| F    | 26.4  | 26.4  | 26.4 | 26.4  | 26.4  | 26.4  |
| H    | 12.7  | 12.7  | 12.7 | 12.7  | 12.7  | 25.4  |
| K    | 22.2  | 22.2  | 22.2 | 22.2  | 22.2  | 22.2  |
| W    | 50.8  | 65    | 79.4 | 92.1  | 104.8 | 130.2 |
| L    | 35.3  | 35.3  | 35.3 | 35.3  | 35.3  | 48    |

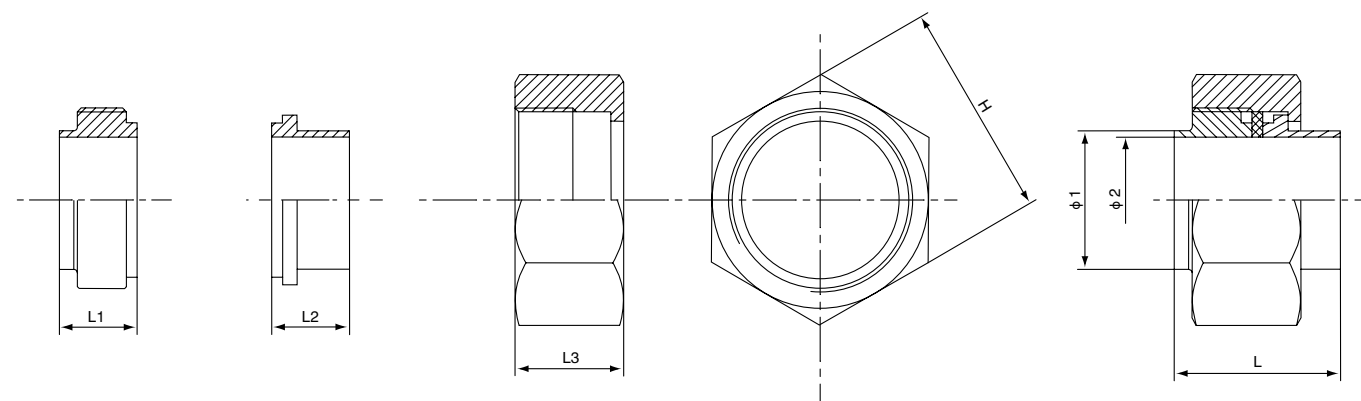


## ➔ IDF



□ **Material conform to**  
ASTM A351-CF8M/1.4408  
ASTM A351-CF8/1.4401  
ASTM A216-WCB  
AISI 304, 304L, 316, 316L,  
301, 430 ECT

| SIZE | 1     | 1 1/2 | 2     | 2 1/2 | 3     | 4      |
|------|-------|-------|-------|-------|-------|--------|
| φ 1  | 22.14 | 34.82 | 47.52 | 60.2  | 72.9  | 97.49  |
| φ 2  | 25.65 | 38.35 | 51.05 | 63.75 | 76.45 | 101.85 |
| L1   | 21.5  | 21.5  | 21.5  | 21.5  | 21.5  | 30     |
| L2   | 21.5  | 21.5  | 21.5  | 21.5  | 21.5  | 30     |
| L3   | 30    | 30    | 30    | 30    | 30    | 35     |
| H    | 46    | 60    | 75    | 90    | 105   | 133    |
| L    | 46    | 46    | 46    | 46    | 46    | 63     |



KH-5001



KH-5002

Sanitary pneumatic  
welded butterfly valve



KH-5003

Sanitary quick-install  
electric butterfly valve



KH-5004

Sanitary manual-operate  
cut-off/reversal valve



KH-5005

Sanitary manual-operate  
cut-off/reversal valve





## SANITARY VALVE

PED97/23/EC



KH-5006

Sanitary quick-install butterfly valve



KH-5007

Sanitary threaded butterfly valve



KH-5008

Sanitary welded butterfly valve



KH-5009

Sanitary three-piece butterfly valve



KH-5010

Sanitary flange butterfly valve



KH-5011

Sanitary welded butterfly valve



KH-5012

Sanitary threaded butterfly valve



KH-5013

Sanitary threaded butterfly valve



KH-5014

Sanitary threaded triplet ball valve



KH-5015

Sanitary zero-retention ball valve



KH-5016

Sanitary cassette ball valve



KH-5017

Sanitary clamp type ball valve



KH-5018

Sanitary quick-install commutation diaphragm valve



KH-5019

Sanitary 'U' type commutation diaphragm valve



KH-5020

Sanitary welded commutation diaphragm valve

ISO9001:2000

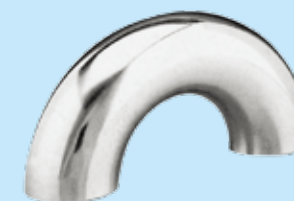
## SANITARY FITTINGS

[HTTP://WWW.CZFITTINGS.CN](http://www.czfittings.cn)  
[HTTP://WWW.STAINLESSFITTINGS.COM.CN](http://www.stainlessfittings.com.cn)



KH-6001

Sanitary polishing pipe



KH-6002

Elbow 180° (Long)



KH-6003

Sanitary quick-install elbow



KH-6004

Sanitary welded bend



KH-6005

Sanitary quick-install Tee



KH-6006

Sanitary welded Tee



KH-6007

Sanitary 'U' type triplet



KH-6008

Sanitary welded cross



KH-6009

Sanitary welded reducer



KH-6010

Sanitary grade stainless steel sampling bend



KH-6011

Sanitary quickly-install elbow



KH-6012

Hoop



KH-6013

Hoop



KH-6014

Hoop



KH-6015

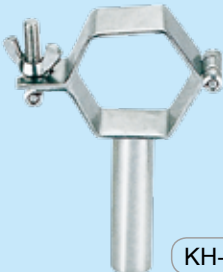
Tubing hanger







**KH-6016**  
Stainless steel tubing hanger



**KH-6017**  
Stainless steel hexagonal tubing hanger



**KH-6018**  
Stainless steel tubing hanger



**KH-6019**  
Sanitary grade revolved cleaning ball



**KH-6020**  
Sanitary fixed cleaning ball



**KH-6021**  
Sanitary T-shaped cleaner



**KH-6022**  
Double-circulating tank cleaner



**KH-6023**  
Sanitary quick-install sampling valve



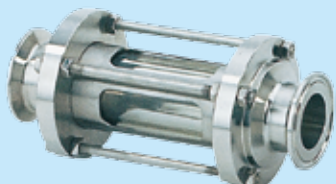
**KH-6024**  
Sanitary rebreather



**KH-6025**  
Sanitary loose joint visual light



**KH-6026**  
Sanitary welded four-way visual mirror



**KH-6027**  
Sanitary pipeline visual mirror



**KH-6028**  
Sanitary three-piece flange check valve(model H33X-B)



**KH-6029**  
Sanitary welded check valve

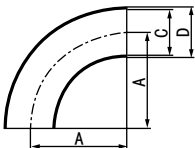


**KH-6030**  
Sanitary floor drain

Elbow 90° (LONG)



(1.4301/AISI 304L)  
(1.4404/AISI 316L)



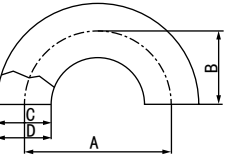
Norm 5:r=2,5 × d, 90°

| DN  | A     | B | C   | D  | D   |
|-----|-------|---|-----|----|-----|
|     |       |   |     | 1  | 2   |
| 15  | 50    |   | 15  | 18 | 19  |
| 20  | 60    |   | 19  | 22 | 23  |
| 25  | 65    |   | 25  | 28 | 29  |
| 32  | 75    |   | 31  | 34 | 35  |
| 40  | 95    |   | 37  | 40 | 41  |
| 50  | 122   |   | 49  | 52 | 53  |
| 65  | 160   |   | 66  |    | 70  |
| 80  | 200   |   | 81  |    | 85  |
| 100 | 250   |   | 100 |    | 104 |
| 125 | 312.5 |   | 125 |    | 129 |
| 150 | 375   |   | 150 |    | 154 |

Elbow 180° (LONG)



KH-6002

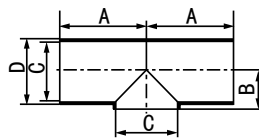


TEE



KH-6006

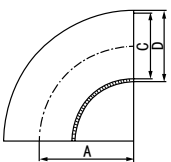
(1.4301/AISI 304L), (1.4404/AISI 316L)



KH-6006-1

TEE (Straight) S-S-S

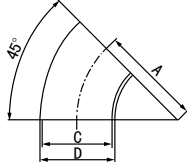
| DN  | A     | B    | C   | D  | D   |
|-----|-------|------|-----|----|-----|
|     |       |      |     | 1  | 2   |
| 15  | 35    | 11   | 16  | 18 | 19  |
| 20  | 40    | 13   | 20  | 22 | 23  |
| 25  | 50    | 16   | 26  | 28 | 29  |
| 32  | 55    | 19.5 | 32  | 34 | 35  |
| 40  | 60    | 23   | 38  | 40 | 41  |
| 50  | 70    | 30   | 50  | 52 | 53  |
| 65  | 80    | 40   | 66  |    | 70  |
| 80  | 90    | 47.5 | 81  |    | 85  |
| 100 | 100   | 58   | 100 |    | 104 |
| 125 | 187.5 | 74   | 125 |    | 129 |
| 150 | 225   | 90   | 150 |    | 154 |
| 200 | 300   | 115  | 200 |    | 204 |



KH-6004-1

Elbow 90° (Short) DIN 11852

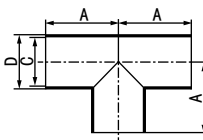
| DN  | A     | C   | D  | D   |
|-----|-------|-----|----|-----|
|     |       |     | 1  | 2   |
| 10  | 26    | 10  | 12 | 13  |
| 15  | 35    | 16  | 18 | 19  |
| 20  | 40    | 20  | 22 | 23  |
| 25  | 50    | 26  | 28 | 29  |
| 32  | 55    | 32  | 34 | 35  |
| 40  | 60    | 38  | 40 | 41  |
| 50  | 70    | 50  | 52 | 53  |
| 65  | 80    | 66  |    | 70  |
| 80  | 90    | 81  |    | 85  |
| 100 | 100   | 100 |    | 104 |
| 125 | 187.5 | 125 |    | 129 |
| 150 | 225   | 150 |    | 154 |
| 200 | 300   | 200 |    | 204 |



KH-6004-2

Elbow 45° (Short)

| DN  | A   | B     | C   | D   | E |
|-----|-----|-------|-----|-----|---|
| 10  | 52  | 26    | 10  | 13  |   |
| 15  | 70  | 35    | 16  | 19  |   |
| 20  | 80  | 40    | 20  | 23  |   |
| 25  | 100 | 50    | 26  | 29  |   |
| 32  | 110 | 55    | 32  | 35  |   |
| 40  | 120 | 60    | 38  | 41  |   |
| 50  | 140 | 70    | 50  | 53  |   |
| 65  | 160 | 80    | 66  | 70  |   |
| 80  | 180 | 90    | 81  | 85  |   |
| 100 | 200 | 100   | 100 | 104 |   |
| 125 | 375 | 187.5 | 125 | 129 |   |



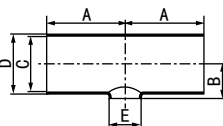
KH-6006-2

TEE S-S-S

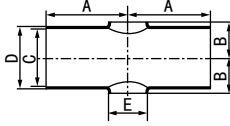
| DN  | A     | B | C   | D  | D   |
|-----|-------|---|-----|----|-----|
|     |       |   |     | 1  | 2   |
| 10  | 35    |   | 10  | 12 | 13  |
| 15  | 35    |   | 16  | 18 | 19  |
| 20  | 40    |   | 20  | 22 | 23  |
| 25  | 50    |   | 26  | 28 | 29  |
| 32  | 55    |   | 32  | 34 | 35  |
| 40  | 60    |   | 38  | 40 | 41  |
| 50  | 70    |   | 50  | 52 | 53  |
| 65  | 80    |   | 66  |    | 70  |
| 80  | 90    |   | 81  |    | 85  |
| 100 | 100   |   | 100 |    | 104 |
| 125 | 187.5 |   | 125 |    | 129 |
| 150 | 225   |   | 150 |    | 154 |
| 200 | 300   |   | 200 |    | 204 |



Cross



KH-6006-3  
Red. Tee

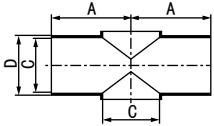


KH-6031-1  
Red. Cross

| DN      | A     | B    | C   | D   | E   |
|---------|-------|------|-----|-----|-----|
| 20/15   | 40    | 12   | 20  | 23  | 16  |
| 25/15   | 50    | 16   | 26  | 29  | 16  |
| 25/20   | 50    | 16   | 32  | 29  | 20  |
| 32/15   | 55    | 20   | 32  | 35  | 16  |
| 32/20   | 55    | 20   | 32  | 35  | 20  |
| 32/25   | 55    | 20   | 32  | 35  | 26  |
| 40/15   | 60    | 23   | 38  | 41  | 16  |
| 40/20   | 60    | 23   | 38  | 41  | 20  |
| 40/25   | 60    | 23   | 38  | 41  | 26  |
| 40/32   | 60    | 23   | 38  | 41  | 32  |
| 50/15   | 70    | 29   | 50  | 53  | 16  |
| 50/20   | 70    | 29   | 50  | 53  | 20  |
| 50/25   | 70    | 29   | 50  | 53  | 26  |
| 50/32   | 70    | 29   | 50  | 53  | 32  |
| 50/40   | 70    | 29   | 50  | 53  | 38  |
| 65/15   | 80    | 39   | 66  | 70  | 16  |
| 65/20   | 80    | 39   | 66  | 70  | 20  |
| 65/25   | 80    | 39   | 66  | 70  | 26  |
| 65/32   | 80    | 39   | 66  | 70  | 32  |
| 65/40   | 80    | 39   | 66  | 70  | 38  |
| 65/50   | 80    | 39   | 66  | 70  | 50  |
| 80/20   | 90    | 47   | 81  | 85  | 20  |
| 80/25   | 90    | 47   | 81  | 85  | 26  |
| 80/32   | 90    | 47   | 81  | 85  | 32  |
| 80/40   | 90    | 47   | 81  | 85  | 38  |
| 80/50   | 90    | 47   | 81  | 85  | 50  |
| 80/65   | 90    | 47   | 81  | 85  | 66  |
| 100/25  | 100   | 57   | 100 | 104 | 26  |
| 100/32  | 100   | 57   | 100 | 104 | 32  |
| 100/40  | 100   | 57   | 100 | 104 | 38  |
| 100/50  | 100   | 57   | 100 | 104 | 50  |
| 100/65  | 100   | 58   | 100 | 104 | 66  |
| 100/80  | 100   | 58   | 100 | 104 | 81  |
| 125/25  | 187.5 | 71.5 | 125 | 129 | 26  |
| 125/32  | 187.5 | 71.5 | 125 | 129 | 32  |
| 125/40  | 187.5 | 71.5 | 125 | 129 | 38  |
| 125/50  | 187.5 | 71.5 | 125 | 129 | 50  |
| 125/65  | 187.5 | 71.5 | 125 | 129 | 66  |
| 125/80  | 187.5 | 71.5 | 125 | 129 | 81  |
| 125/100 | 187.5 | 71.5 | 125 | 129 | 100 |
| 150/40  | 225   | 87   | 150 | 154 | 38  |
| 150/50  | 225   | 87   | 150 | 154 | 50  |
| 150/65  | 225   | 87   | 150 | 154 | 66  |
| 150/80  | 225   | 87   | 150 | 154 | 81  |
| 150/100 | 225   | 87   | 150 | 154 | 100 |
| 150/125 | 225   | 87   | 150 | 154 | 125 |

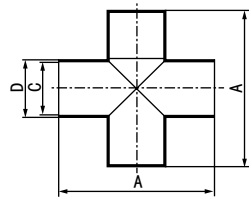


KH-6031



KH-6031-2  
Cross (Short)

| DN  | A     | B    | C   | D   | E |
|-----|-------|------|-----|-----|---|
| 10  | 26    | -    | 10  | 13  |   |
| 15  | 35    | -    | 16  | 19  |   |
| 20  | 40    | -    | 20  | 23  |   |
| 25  | 50    | 15.5 | 26  | 29  |   |
| 32  | 55    | 19.5 | 32  | 35  |   |
| 40  | 60    | 23   | 38  | 41  |   |
| 50  | 70    | 29.5 | 50  | 53  |   |
| 65  | 80    | 39.5 | 66  | 70  |   |
| 80  | 90    | 47.5 | 81  | 85  |   |
| 100 | 100   | 59   | 100 | 104 |   |
| 125 | 187.5 |      | 125 | 129 |   |
| 150 | 225   |      | 150 | 154 |   |
| 200 | 300   |      | 200 | 204 |   |



KH-6031-3  
Cross

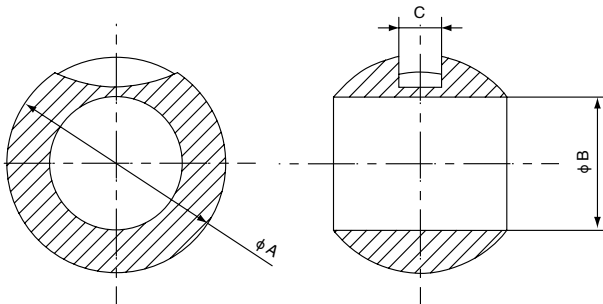
| DN  | A   | B | C   | D   | E |
|-----|-----|---|-----|-----|---|
| 10  | 52  |   | 10  | 13  |   |
| 15  | 70  |   | 16  | 19  |   |
| 20  | 80  |   | 20  | 23  |   |
| 25  | 100 |   | 26  | 29  |   |
| 32  | 110 |   | 32  | 35  |   |
| 40  | 120 |   | 38  | 41  |   |
| 50  | 140 |   | 50  | 53  |   |
| 65  | 160 |   | 66  | 70  |   |
| 80  | 180 |   | 81  | 85  |   |
| 100 | 200 |   | 100 | 104 |   |
| 125 | 375 |   | 125 | 129 |   |
| 150 | 450 |   | 150 | 154 |   |
| 200 | 600 |   | 200 | 204 |   |

NORMAL BALL



KH-7001

- Material conform to
- ASTM A351-CF8M/1.4408
  - ASTM A351-CF8/1.4401
  - ASTM A216-WCB
  - AISI 304, 304L, 316, 316L, 301, 430 ECT
- Special dimensions on request



| DN | 8    | 10   | 15   | 20 | 25 | 32 | 40   | 50   | 65 | 80  |
|----|------|------|------|----|----|----|------|------|----|-----|
| A  | 20.5 | 20.5 | 25.5 | 32 | 39 | 50 | 58.5 | 76.5 | 97 | 115 |
| B  | 12.5 | 12.5 | 15   | 20 | 25 | 32 | 38   | 50   | 65 | 76  |
| C  | 4    | 4    | 5    | 5  | 8  | 8  | 8    | 9.5  | 12 | 12  |

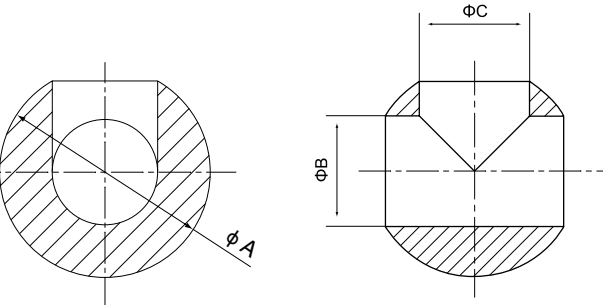
| NPS | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    |
|-----|------|------|------|------|------|-------|-------|------|-------|------|
| A   | 0.81 | 0.81 | 1    | 1.26 | 1.54 | 1.97  | 2.3   | 3    | 3.82  | 4.53 |
| B   | 0.49 | 0.49 | 0.59 | 0.79 | 0.98 | 1.26  | 1.5   | 1.97 | 2.56  | 3    |
| C   | 0.16 | 0.16 | 0.2  | 0.2  | 0.32 | 0.32  | 0.32  | 0.37 | 0.47  | 0.47 |

T TYPE BALL



KH-7002

- Material conform to
- ASTM A351-CF8M/1.4408
  - ASTM A351-CF8/1.4401
  - ASTM A216-WCB
  - AISI 304, 304L, 316, 316L, 301, 430 ECT
- Special dimensions on request

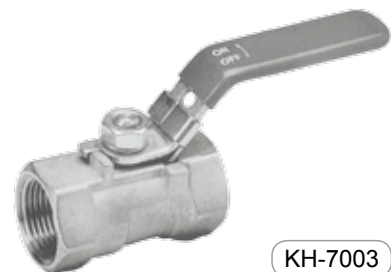


| DN | 8    | 10   | 15   | 20 | 25 | 32 | 40   | 50   | 65 | 80  |
|----|------|------|------|----|----|----|------|------|----|-----|
| A  | 20.5 | 20.5 | 25.5 | 32 | 39 | 50 | 58.5 | 76.5 | 97 | 115 |
| B  | 12.5 | 12.5 | 15   | 20 | 25 | 32 | 38   | 50   | 65 | 76  |
| C  | 12.5 | 12.5 | 15   | 20 | 25 | 32 | 38   | 50   | 65 | 76  |

| NPS | 1/4  | 3/8  | 1/2  | 3/4  | 1    | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    |
|-----|------|------|------|------|------|-------|-------|------|-------|------|
| A   | 0.81 | 0.81 | 1    | 1.26 | 1.54 | 1.97  | 2.3   | 3    | 3.82  | 4.53 |
| B   | 0.49 | 0.49 | 0.59 | 0.79 | 0.98 | 1.26  | 1.5   | 1.97 | 2.56  | 3    |
| C   | 0.49 | 0.49 | 0.59 | 0.79 | 0.98 | 1.26  | 1.5   | 1.97 | 2.56  | 3    |



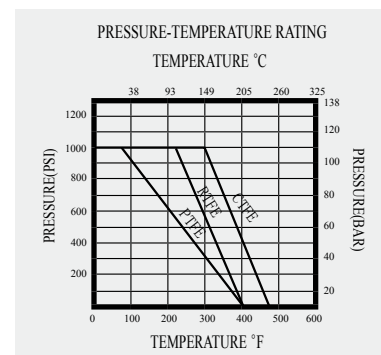
## ➔ 1000 WOG/PN63 1-PIECE FULL PORT (1PC)



KH-7003

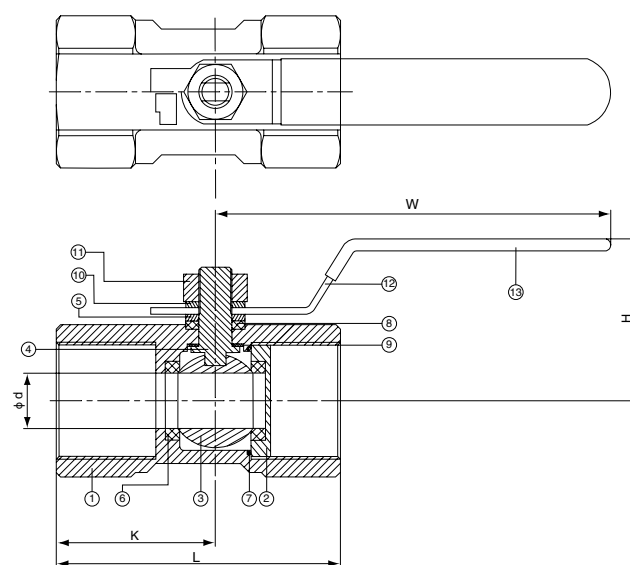
## FEATURES

- ☐ The thread ends conform to  
ASME B1.20.1.(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
- ☐ Investment casting
- ☐ Blow-out proof stem
- ☐ Reduce Port
- ☐ 1000 W.O.G./PN 63
- ☐ PTFE seal & packing
- ☐ 800 W.O.G. /PN 50(option)
- ☐ Latch Lock Handle(option)



| Applicable Standard |               |                |
|---------------------|---------------|----------------|
| Test and Inspection | API 598       |                |
| ITEM                | PARTS         | MATERIAL       |
| 1                   | BODY          | ASTM A351-CF8M |
| 2                   | RETAINER      | ASTM A351-CF8M |
| 3                   | BALL          | ASTM A351-CF8M |
| 4                   | STEM          | ASTM A276-316  |
| 5                   | GLAND RING    | AISI 304       |
| 6                   | BALL SEAT     | RTFE / PTFE    |
| 7                   | BODY SEAL     | PTFE           |
| 8                   | PACKING       |                |
| 9                   | THRUST WASHER |                |
| 10                  | SPRING WASHER | AISI 304       |
| 11                  | STEM NUT      | AISI 304       |
| 12                  | HANDLE        | AISI 304       |
| 13                  | HANDLE SLEEVE | PVC            |

\*RTFE=15% GLASS FIBER+TFE



| PN63 | DN | 8    | 10 | 15   | 20   | 25  | 32   | 40   | 50  |
|------|----|------|----|------|------|-----|------|------|-----|
|      | d  | 5    | 7  | 9.2  | 12.5 | 16  | 20   | 25   | 32  |
|      | L  | 39   | 44 | 56.5 | 59   | 71  | 78   | 83   | 100 |
|      | H  | 38   | 40 | 51   | 53.5 | 56  | 61.5 | 68   | 73  |
|      | W  | 62.5 | 73 | 85   | 87   | 107 | 107  | 130  | 130 |
|      | K  | 19   | 21 | 27.5 | 30   | 36  | 40   | 42.5 | 51  |

Unit:mm

| 1000 WOG | DN | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|----------|----|------|------|------|------|------|--------|--------|------|
|          | d  | 0.2  | 0.28 | 0.36 | 0.49 | 0.63 | 0.79   | 0.98   | 1.26 |
|          | L  | 1.54 | 1.73 | 2.22 | 2.32 | 2.8  | 3.07   | 3.27   | 3.94 |
|          | H  | 1.5  | 1.57 | 2.01 | 2.11 | 2.2  | 2.42   | 2.68   | 2.87 |
|          | W  | 2.46 | 2.87 | 3.35 | 3.43 | 4.21 | 4.21   | 5.12   | 5.12 |
|          | K  | 0.75 | 0.83 | 1.08 | 1.18 | 1.42 | 1.57   | 1.67   | 2.01 |

Unit:in

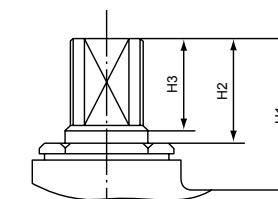
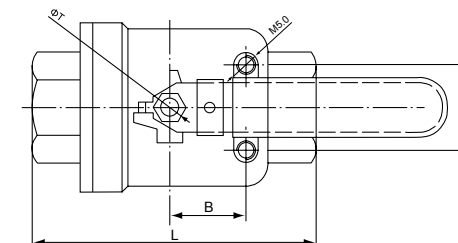
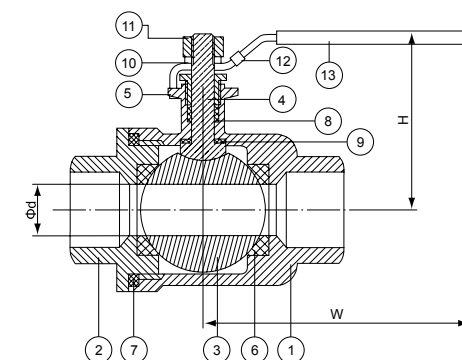
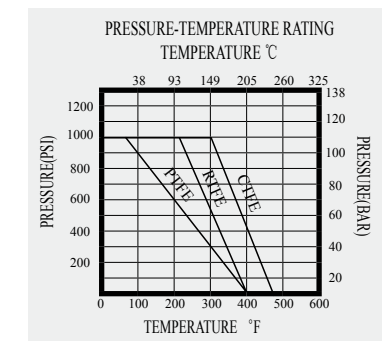
## ➔ 1000 WOG/PN63 2-PIECE REDUCE PORT (2PC)



KH-7004

## FEATURES

- ☐ The thread ends conform to  
ASME B1.20.1(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
- ☐ Dimensoin conform to  
DIN 3202/4-M3
- ☐ Investment casting
- ☐ Blow-out proof stem
- ☐ Full Port
- ☐ PTFE seal & packing
- ☐ Latch lock handle(option)
- ☐ Mounting pad Tapping(option)
- ☐ 1/4"-1" W.O.G.(option)
- ☐ 1-1/4"-2"1500W.O.G. (option)



| Applicable Standard |               |                       |               |
|---------------------|---------------|-----------------------|---------------|
| Test and Inspection | API 598       |                       |               |
| ITEM                | PARTS         | MATERIAL              |               |
| 1                   | BODY          | ASTM A351-CF8M        | ASTM A216-WCB |
| 2                   | CAP           | 1.4408                | 1.0619        |
| 3                   | BALL          | ASTM A351-CF8M/1.4408 |               |
| 4                   | STEM          | ASTM A276-316         |               |
| 5                   | GLAND NUT     | AISI 304              |               |
| 6                   | BALL SEAT     | PTFE/RTFE             |               |
| 7                   | BODY SEAL     | PTFE                  |               |
| 8                   | PACKING       |                       |               |
| 9                   | THRUST WASHER |                       |               |
| 10                  | SPRING WASHER | AISI 304              |               |
| 11                  | NUT           |                       |               |
| 12                  | HANDLE        |                       |               |
| 13                  | HANDLE SLEEVE | PVC                   |               |

\*RTFE=15% GLASS FIBER+TFE

| PN63 | DN         | 8    | 10   | 15   | 20   | 25   | 32   | 40    | 50    | 65   | 80    | 100  |
|------|------------|------|------|------|------|------|------|-------|-------|------|-------|------|
|      | d          | 11.6 | 12.7 | 15   | 20   | 25   | 32   | 38    | 50    | 65   | 80    | 100  |
|      | L          | 55   | 60   | 75   | 80   | 90   | 110  | 120   | 140   | 185  | 205   | 240  |
|      | H          | 50   | 50   | 50   | 60   | 70   | 80   | 90    | 90    | 145  | 145   | 175  |
|      | W          | 100  | 100  | 100  | 125  | 160  | 160  | 190   | 190   | 250  | 250   | 320  |
|      | S          | 28   | 28   | 28   | 35   | 35   | 38   | 38    | 38    | 55   | 55    | 61   |
|      | B          | 14   | 14   | 14   | 22   | 22   | 24   | 24    | 24    | 35   | 35    | 48   |
|      | T          | 7.8  | 7.8  | 7.8  | 9.4  | 108  | 10.8 | 12.5  | 12.5  | 18.2 | 18.2  | 24.8 |
|      | H1         | 25   | 25   | 25   | 31.5 | 36.5 | 36.5 | 42.5  | 42.5  | 58.5 | 58.5  | 45   |
|      | H2         | 11   | 11   | 11   | 16   | 18   | 18   | 20.5  | 18.5  | 32.5 | 32.5  | 37.5 |
|      | H3         | 10   | 10   | 10   | 13   | 15   | 15   | 17.5  | 17.5  | 30   | 30    | 32.5 |
|      | TORQUE N-M | 4.07 | 4.07 | 4.41 | 5.88 | 7.35 | 8.82 | 13.23 | 16.17 | 44.1 | 46.55 |      |

Unit:mm

| 1000 WOG | NPS          | 1/4"  | 3/8"  | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"   | 4"   |
|----------|--------------|-------|-------|------|------|------|--------|--------|------|--------|------|------|
|          | d            | 0.46  | 0.5   | 0.59 | 0.79 | 0.98 | 1.26   | 1.5    | 1.97 | 2.56   | 3.15 | 3.94 |
|          | L            | 2.17  | 2.36  | 2.95 | 3.15 | 3.54 | 4.33   | 4.72   | 5.51 | 7.28   | 8.07 | 9.45 |
|          | H            | 1.97  | 1.97  | 1.97 | 2.36 | 2.76 | 3.15   | 3.54   | 3.54 | 5.71   | 5.71 | 6.89 |
|          | W            | 3.94  | 3.94  | 3.94 | 4.92 | 6.3  | 6.3    | 7.48   | 7.48 | 9.84   | 9.84 | 12.6 |
|          | S            | 1.1   | 1.1   | 1.1  | 1.38 | 1.38 | 1.5    | 1.5    | 1.5  | 2.17   | 2.17 | 2.4  |
|          | B            | 0.55  | 0.55  | 0.55 | 0.87 | 0.87 | 0.94   | 0.94   | 0.94 | 1.38   | 1.38 | 1.89 |
|          | T            | 0.31  | 0.31  | 0.31 | 0.37 | 0.43 | 0.43   | 0.49   | 0.49 | 0.72   | 0.72 | 0.98 |
|          | H1           | 0.98  | 0.98  | 0.98 | 1.24 | 1.44 | 1.4    | 1.67   | 1.67 | 2.3    | 2.3  | 1.77 |
|          | H2           | 0.43  | 0.43  | 0.43 | 0.63 | 0.71 | 0.71   | 0.81   | 0.73 | 1.28   | 1.28 | 1.48 |
|          | H3           | 0.39  | 0.39  | 0.39 | 0.51 | 0.59 | 0.59   | 0.69   | 0.69 | 1.18   | 1.18 | 1.28 |
|          | TORQUE IN-LB | 36.02 | 36.02 | 39   | 52   | 65   | 78     | 117    | 143  | 390    | 412  |      |

Unit:in





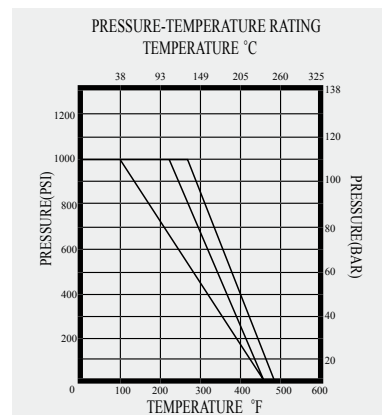
## ➔ 1000 WOG/PN63 2-PIECE FULL PORT (2PC)



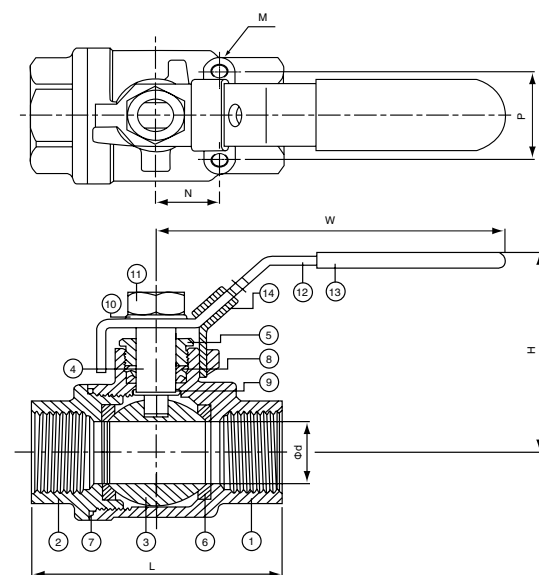
KH-7005

## FEATURES

- ☐ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS 21 ISO 228/1 & ISO 7/1
- ☐ Investment casting
- ☐ Blow-out proof stem
- ☐ Full Port
- ☐ 1000 W.O.G./PN 63
- ☐ PTFE seal & packing
- ☐ Latch lock handle (option)
- ☐ Mounting pad Tapping(option)
- ☐ 1/4"-1"2000 W.O.G.(option)
- ☐ 1/4"-2"1500 W.O.G.(option)



| Applicable Standard |               |                          |
|---------------------|---------------|--------------------------|
| Test and Inspection |               | API 598                  |
| ITEM                | PARTS         | MATERIAL                 |
| 1                   | BODY          | ASTM A351-CF8M<br>1.4408 |
| 2                   | CAP           |                          |
| 3                   | BALL          |                          |
| 4                   | STEM          | ASTM A276-316            |
| 5                   | GLAND RING    | AISI 304                 |
| 6                   | BALL SEAT     | PTFE/RTFE                |
| 7                   | BODY SEAL     | PTFE                     |
| 8                   | PACKING       |                          |
| 9                   | THRUST WASHER |                          |
| 10                  | SPRING WASHER | AISI 304                 |
| 11                  | NUT           |                          |
| 12                  | HANDLE        |                          |
| 13                  | HANDLE SLEEVE | PVC                      |
| 14                  | LOCK DEVICE   | AISI304                  |



\*RTFE=15% GLASS FIBER+TFE

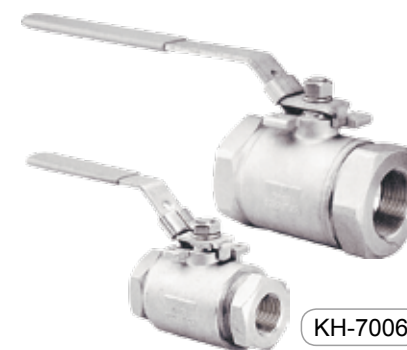
| PN63 | DN | d  | L     | H   | W   | N    | P    | M  | Torque N-M |        | Weight KG |
|------|----|----|-------|-----|-----|------|------|----|------------|--------|-----------|
|      |    |    |       |     |     |      |      |    | Breakaway  | Action |           |
|      |    |    |       |     |     |      |      |    |            |        |           |
|      | 8  | 10 | 50.8  | 64  | 98  | 12.7 | 28.5 | M5 | 3          | 2.5    | 0.26      |
|      | 10 | 12 | 50.8  | 64  | 98  | 12.7 | 28.5 | M5 | 3          | 2.5    | 0.25      |
|      | 15 | 15 | 58    | 66  | 98  | 12.7 | 28.5 | M5 | 4          | 3      | 0.31      |
|      | 20 | 20 | 65.6  | 66  | 125 | 12.7 | 28.5 | M5 | 7          | 5      | 0.46      |
|      | 25 | 25 | 78.7  | 80  | 143 | 22.4 | 35   | M5 | 9          | 7      | 0.77      |
|      | 32 | 32 | 90    | 86  | 143 | 25.4 | 38.1 | M6 | 12         | 10     | 1.12      |
|      | 40 | 38 | 105   | 97  | 200 | 25.4 | 38.1 | M6 | 19         | 15     | 1.74      |
|      | 50 | 50 | 124   | 105 | 200 | 25.4 | 38.1 | M6 | 26         | 20     | 2.65      |
|      | 65 | 63 | 146.2 | 146 | 250 | 29   | 50   | M6 | 38         | 28     | 5.37      |
|      | 80 | 76 | 163.7 | 155 | 250 | 35   | 56   | M6 | 55         | 40     | 7.43      |

Unit:mm

| 1000 WOG | NPS    | d    | L    | H    | W    | N    | P    | M  | Torque IN-LB |        | Weight LB |
|----------|--------|------|------|------|------|------|------|----|--------------|--------|-----------|
|          |        |      |      |      |      |      |      |    | Breakaway    | Action |           |
|          |        |      |      |      |      |      |      |    |              |        |           |
|          | 1/4"   | 0.39 | 2.00 | 2.52 | 3.86 | 0.5  | 1.12 | M5 | 26.55        | 22.13  | 0.57      |
|          | 3/8"   | 0.47 | 2.00 | 2.52 | 3.86 | 0.5  | 1.12 | M5 | 26.55        | 22.13  | 0.55      |
|          | 1/2"   | 0.59 | 2.28 | 2.6  | 3.86 | 0.5  | 1.12 | M5 | 35.40        | 26.55  | 0.68      |
|          | 3/4"   | 0.79 | 2.58 | 2.6  | 4.92 | 0.5  | 1.12 | M5 | 61.95        | 44.25  | 1.01      |
|          | 1"     | 0.98 | 3.10 | 3.15 | 5.63 | 0.88 | 1.38 | M5 | 79.66        | 61.95  | 1.7       |
|          | 1-1/4" | 1.26 | 3.54 | 3.39 | 5.63 | 1    | 1.5  | M6 | 106.21       | 88.51  | 2.47      |
|          | 1-1/2" | 1.50 | 4.13 | 3.82 | 7.87 | 1    | 1.5  | M6 | 168.16       | 132.76 | 3.84      |
|          | 2"     | 1.97 | 4.88 | 4.13 | 7.87 | 1    | 1.5  | M6 | 230.12       | 177.01 | 5.84      |
|          | 2-1/2" | 2.48 | 5.76 | 5.75 | 9.84 | 1.14 | 1.97 | M6 | 336.33       | 247.82 | 11.84     |
|          | 3"     | 2.99 | 6.44 | 6.10 | 9.84 | 1.38 | 2.2  | M6 | 486.79       | 354.03 | 16.38     |

Unit:in

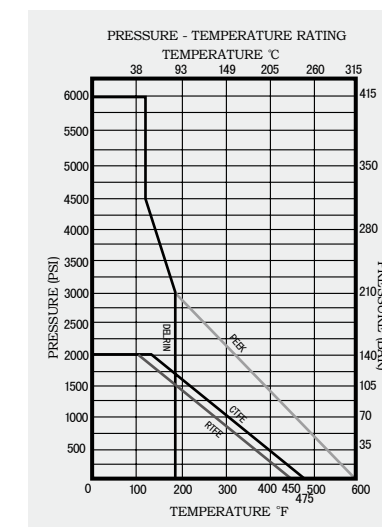
## ➔ 6000 WOG/PN 420 2-PIECE FULL PORT (2PC)



KH-7006

## FEATURES

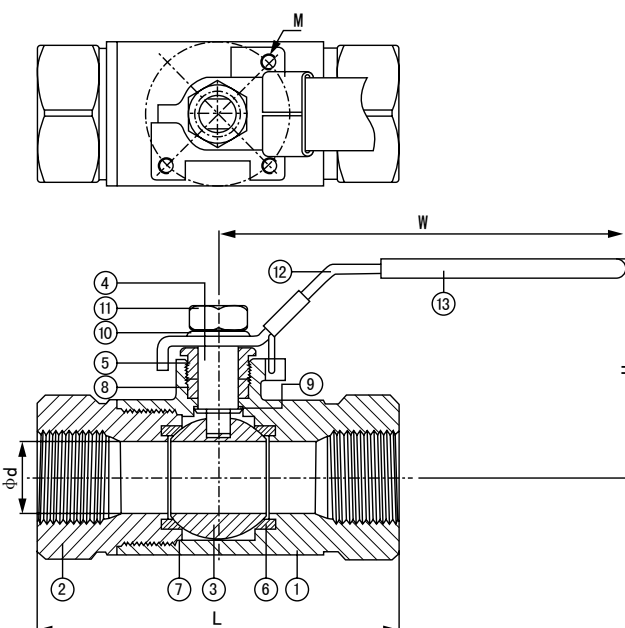
- ☐ The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS 21 ISO 228/1 & ISO 7/1
- ☐ Investment casting
- ☐ Blow-out proof stem
- ☐ Full Port 1/2" ~ 1-1/2"
- ☐ Standard Port 2"
- ☐ PTFE seal & packing
- ☐ Latch lock handle (option)
- ☐ ISO 5211 Mounting Pad
- ☐ NYLON,PEEK,TFM Seats(option)



| Applicable Standard |               |                      |
|---------------------|---------------|----------------------|
| Wall Thickness      |               | ASME B16.34          |
| Test and Inspection |               | API 598              |
| ITEM                | PARTS         | MATERIAL             |
| 1                   | BODY          | ASTM A351-CF8M       |
| 2                   | CAP           |                      |
| 3                   | BALL          |                      |
| 4                   | STEM          | ASTM A276-316        |
| 5                   | GLAND NUT     | AISI 304             |
| 6                   | BALL SEAT     | PTFE/RTFE            |
| 7                   | BODY SEAL     | PTFE<br>PTFE<br>PTFE |
| 8                   | PACKING       |                      |
| 9                   | THRUST WASHER |                      |
| 10                  | SPRING WASHER | AISI 304             |
| 11                  | NUT           |                      |
| 12                  | HANDLE        |                      |
| 13                  | HANDLE SLEEVE | PVC                  |

\*RTFE=15% GLASS FIBER+TFE

\*CTFE=25% CARBON+TFE



| PN420 | NPS    | L     | H   | W   | d    | ISO 5211 | M           |
|-------|--------|-------|-----|-----|------|----------|-------------|
|       | 1/4"   | 76.1  | 56  | 125 | 5    | F03      | 3/16"-24UNC |
|       | 1/2"   | 101.5 | 60  | 128 | 12.6 | F03      | 3/16"-24UNC |
|       | 3/4"   | 107.8 | 70  | 148 | 19.2 | F04      | 1/4"-20UNC  |
|       | 1"     | 120   | 86  | 190 | 25.2 | F05      | 5/16"-18UNC |
|       | 1-1/2" | 134.5 | 108 | 350 | 38   | F07      | 3/8"-16UNC  |
|       | 2"     | 158.6 | 108 | 350 | 38   | F07      | 3/8"-16UNC  |

Unit:mm

| 6000 WOG | NPS    | L    | H    | W     | d    | ISO 5211 | M           |
|----------|--------|------|------|-------|------|----------|-------------|
|          | 1/4"   | 3.00 | 2.20 | 4.92  | 0.20 | F03      | 3/16"-24UNC |
|          | 1/2"   | 4.00 | 2.36 | 4.92  | 0.50 | F03      | 3/16"-24UNC |
|          | 3/4"   | 4.24 | 2.76 | 5.83  | 0.76 | F04      | 1/4"-20UNC  |
|          | 1"     | 4.72 | 3.39 | 7.48  | 0.99 | F05      | 5/16"-18UNC |
|          | 1-1/2" | 5.30 | 4.25 | 13.78 | 1.50 | F07      | 3/8"-16UNC  |
|          | 2"     | 6.24 | 4.25 | 13.78 | 1.50 | F07      | 3/8"-16UNC  |

Unit:in

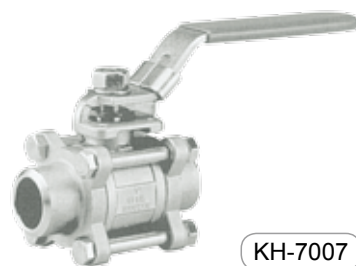




BUTT WELD END BALL VALVES

PED97/23/EC

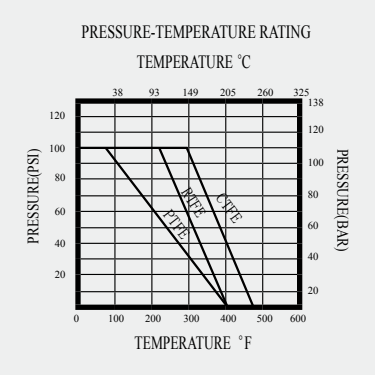
➔ 1000 WOG/PN 63 3-PIECE FULL PORT (3PC)



KH-7007

FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS 21 ISO 228/1 & ISO 7/1
- Investment casting
- Blow-out proof stem
- Full Port
- 1000 W.O.G./PN 63
- PTFE seal & packing
- Latch lock handle (option)
- Mounting pad Tapping(option)
- 1/4"-1"2000 W.O.G.(option)
- 1/4"-2"1500 W.O.G.(option)



| Applicable Standard |         |
|---------------------|---------|
| Test and Inspection | API 598 |

| ITEM | PARTS         | MATERIAL              |               |
|------|---------------|-----------------------|---------------|
| 1    | BODY          | ASTM A351-CF8M        | ASTM A216-WCB |
| 2    | CAP           | 1.4408                | 1.0619        |
| 3    | BALL          | ASTM A351-CF8M/1.4408 |               |
| 4    | STEM          | ASTM A276-316         |               |
| 5    | GLAND NUT     | AISI 304              |               |
| 6    | BALL SEAT     | PTFE/RTFE/CTFE        |               |
| 7    | BODY SEAL     | PTFE                  |               |
| 8    | PACKING       |                       |               |
| 9    | THRUST WASHER | AISI 304              |               |
| 10   | SPRING WASHER |                       |               |
| 11   | STEM NUT      |                       |               |
| 12   | BOLT          |                       |               |
| 13   | BOLT NUT      |                       |               |
| 14   | SPRING WASHER |                       |               |
| 15   | HANDLE        | PVC                   |               |
| 16   | HANDLE SLEEVE |                       |               |

\*RTFE=15% GLASS FILBER+TFE  
\*CTFE=25% CARBON+TFE

|      |    |          |          |          |         |          |          |          |          |         |         |       |
|------|----|----------|----------|----------|---------|----------|----------|----------|----------|---------|---------|-------|
| PN63 | DN | 8        | 10       | 15       | 20      | 25       | 32       | 40       | 50       | 65      | 80      | 100   |
|      | d  | 11.5     | 12.7     | 15       | 20      | 25       | 32       | 38       | 50       | 65      | 80      | 100   |
|      | D  | 17.5     | 17.5     | 22       | 27      | 34       | 42.5     | 48.5     | 61       | 73      | 92      | 115   |
|      | L  | 64.5     | 65.5     | 66       | 83      | 95       | 111      | 131      | 151      | 186     | 212     | 235   |
|      | W  | 117      | 117      | 117      | 137     | 157      | 157      | 195      | 200      | 285     | 285     | 315   |
|      | H  | 57       | 57       | 57       | 60      | 80       | 85       | 95       | 110      | 135     | 148     | 170   |
|      | H1 | 11       | 11       | 11       | 14      | 15.5     | 15.5     | 18       | 18       | 31      | 31      | 40    |
|      | H2 | 15       | 15       | 15       | 19.5    | 23.5     | 20       | 26       | 26       | 40      | 38      | 53    |
|      | T  | 5        | 5        | 5        | 6.5     | 8        | 8        | 9        | 9        | 12      | 12      | 16    |
|      | S  | 5/16"UNF | 5/16"UNF | 5/16"UNF | 3/8"UNF | 7/16"UNF | 7/16"UNF | 9/16"UNF | 9/16"UNF | 3/4"UNF | 3/4"UNF | 1"UNF |
|      | A  | 36       | 36       | 36       | 36      | 42       | 50       | 50       | 70       | 102     | 102     | 102   |
|      | M  | M5       | M5       | M5       | M5      | M5       | M6       | M6       | M8       | M12     | M12     | M12   |

Unit:mm

|          |    |          |          |          |         |          |          |          |          |         |         |       |
|----------|----|----------|----------|----------|---------|----------|----------|----------|----------|---------|---------|-------|
| 1000 WOG | DN | 1/4"     | 3/8"     | 1/2"     | 3/4"    | 1"       | 1 1/4"   | 1 1/2"   | 2"       | 2 1/2"  | 3"      | 4"    |
|          | d  | 0.45     | 0.5      | 0.59     | 0.79    | 0.98     | 1.26     | 1.5      | 1.97     | 2.56    | 3.15    | 3.94  |
|          | D  | 0.69     | 0.69     | 0.87     | 1.06    | 1.34     | 1.67     | 1.91     | 2.4      | 2.87    | 3.62    | 4.53  |
|          | L  | 2.54     | 2.58     | 2.6      | 3.27    | 3.74     | 4.37     | 5.16     | 5.94     | 7.32    | 8.35    | 9.25  |
|          | W  | 4.61     | 4.61     | 4.61     | 5.39    | 6.18     | 6.18     | 7.68     | 7.87     | 11.22   | 11.22   | 12.4  |
|          | H  | 2.24     | 2.24     | 2.24     | 2.36    | 3.15     | 3.35     | 3.74     | 4.33     | 5.31    | 5.83    | 6.69  |
|          | H1 | 0.43     | 0.43     | 0.43     | 0.55    | 0.61     | 0.61     | 0.71     | 0.71     | 1.22    | 1.22    | 1.57  |
|          | H2 | 0.59     | 0.59     | 0.59     | 0.77    | 0.93     | 0.79     | 1.02     | 1.02     | 1.57    | 1.5     | 2.09  |
|          | T  | 0.2      | 0.2      | 0.2      | 0.26    | 0.31     | 0.31     | 0.35     | 0.35     | 0.47    | 0.47    | 0.63  |
|          | S  | 5/16"UNF | 5/16"UNF | 5/16"UNF | 3/8"UNF | 7/16"UNF | 7/16"UNF | 9/16"UNF | 9/16"UNF | 3/4"UNF | 3/4"UNF | 1"UNF |
|          | A  | 1.42     | 1.42     | 1.42     | 1.42    | 1.65     | 1.97     | 1.97     | 2.76     | 4.02    | 4.02    | 4.02  |
|          | M  | M5       | M5       | M5       | M5      | M5       | M6       | M6       | M8       | M12     | M12     | M12   |

Unit:in/lb

ISO9001:2000

SCREWED END BALL VALVES

HTTP://WWW.CZFITTINGS.CN  
HTTP://WWW.STAINLESSFITTINGS.COM.CN

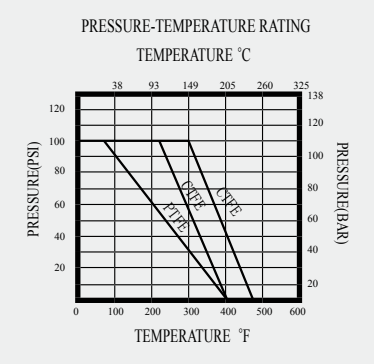
➔ 1000 WOG/PN 63 3-PIECE FULL BORE (3PC)



KH-7008

FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & ISO 7/1
- Investment casting
- Blow-out proof stem
- Full Port
- 1000W.O.G./PN 63
- PTFE seal & packing
- Latch lock handle(option)



| Applicable Standard |         |
|---------------------|---------|
| Test and Inspection | API 598 |

| ITEM | PARTS         | MATERIAL              |               |
|------|---------------|-----------------------|---------------|
| 1    | BODY          | ASTM A351-CF          | ASTM A216-WCB |
| 2    | CAP           | 1.4408                | 1.0619        |
| 3    | BALL          | ASTM A351-CF8M/1.4408 |               |
| 4    | STEM          | ASTM A276-316         |               |
| 5    | GLAND NUT     | AISI 304              |               |
| 6    | BALL SEAT     | PTFE/RTFE/CTFE        |               |
| 7    | BODY SEAL     | PTFE                  |               |
| 8    | PACKING       |                       |               |
| 9    | THRUST WASHER | AISI 304              |               |
| 10   | SPRING WASHER |                       |               |
| 11   | STEM NUT      | ASTM A194 GR.8        |               |
| 12   | BOLT          | ASTM A193-B8          |               |
| 13   | BOLT NUT      |                       |               |
| 14   | SPRING WASHER | AISI 304              |               |
| 15   | HANDLE        | ASTM A167-304         |               |
| 16   | LATCH LOCK    |                       |               |
| 17   | HANDLE SLEEVE | PVC                   |               |

\*RTFE=15% GLASS FIBER+TFE  
\*CTFE=25% CARBON+TFE

|      |    |       |       |       |       |       |       |       |      |      |      |       |
|------|----|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|
| PN63 | DN | 8     | 10    | 15    | 20    | 25    | 32    | 40    | 50   | 65   | 80   | 100   |
|      | d  | 11.6  | 12.7  | 15    | 20    | 25    | 32    | 38    | 50   | 65   | 80   | 100   |
|      | L  | 64.5  | 64.5  | 66    | 83.5  | 95    | 111.2 | 129.8 | 151  | 184  | 209  | 234.4 |
|      | H  | 54    | 54    | 57    | 66    | 76    | 81    | 98    | 106  | 138  | 154  | 178   |
|      | W  | 102   | 102   | 102   | 120.5 | 158.5 | 158.5 | 188   | 188  | 245  | 245  | 320   |
|      | S  | 35.5  | 35.5  | 38    | 43    | 54    | 65    | 75    | 88   | 114  | 132  | 158   |
|      | T  | 21.5  | 21.5  | 24    | 28    | 35    | 45    | 55    | 66   | 86   | 100  | 125   |
|      | M  | 29    | 29    | 33.2  | 37.5  | 42.4  | 50.9  | 59.4  | 73.4 | 96.5 | 81   | 102   |
|      | N  | 5     | 5     | 5     | 6.5   | 8     | 8     | 9     | 9    | 12   | 12   | 16    |
|      | V  | 29.7  | 29.7  | 30.1  | 36.5  | 40.6  | 41.8  | 48.5  | 49.4 | 72.1 | 65.6 | 76.2  |
|      | P  | 10.5  | 10.5  | 10.5  | 13.5  | 15.5  | 15.5  | 17.5  | 17.5 | 33   | 33   | 42    |
|      | K  | 5/16W | 5/16W | 5/16W | 3/8W  | 7/16W | 7/16W | 1/2W  | 1/2W | 3/4W | 3/4W | 1W    |

Unit:mm/kg

|          |    |       |       |       |      |       |        |        |      |        |      |      |
|----------|----|-------|-------|-------|------|-------|--------|--------|------|--------|------|------|
| 1000 WOG | DN | 1/4"  | 3/8"  | 1/2"  | 3/4" | 1"    | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"   | 4"   |
|          | d  | 0.46  | 0.5   | 0.59  | 0.79 | 0.98  | 1.26   | 1.5    | 1.97 | 2.56   | 3.15 | 3.94 |
|          | L  | 2.54  | 2.54  | 2.6   | 3.29 | 3.74  | 4.38   | 5.11   | 5.94 | 7.24   | 8.23 | 9.23 |
|          | H  | 2.13  | 2.13  | 2.24  | 2.6  | 2.99  | 3.19   | 3.86   | 4.17 | 5.43   | 6.06 | 7.01 |
|          | W  | 4.02  | 4.02  | 4.02  | 4.74 | 6.24  | 6.24   | 7.4    | 7.4  | 9.65   | 9.65 | 12.6 |
|          | S  | 1.4   | 1.4   | 1.5   | 1.69 | 2.13  | 2.56   | 2.95   | 3.46 | 4.49   | 5.2  | 6.22 |
|          | T  | 0.85  | 0.85  | 0.94  | 1.1  | 1.38  | 1.77   | 2.17   | 2.6  | 3.39   | 3.94 | 4.92 |
|          | M  | 1.14  | 1.14  | 1.31  | 1.48 | 1.67  | 2      | 2.34   | 2.89 | 3.8    | 3.19 | 4.02 |
|          | N  | 0.2   | 0.2   | 0.2   | 0.26 | 0.31  | 0.31   | 0.35   | 0.35 | 0.47   | 0.47 | 0.63 |
|          | V  | 1.17  | 1.17  | 1.19  | 1.44 | 1.6   | 1.65   | 1.91   | 1.94 | 2.84   | 2.58 | 3    |
|          | P  | 0.41  | 0.41  | 0.41  | 0.53 | 0.61  | 0.61   | 0.69   | 0.69 | 1.3    | 1.3  | 1.65 |
|          | K  | 5/16W | 5/16W | 5/16W | 3/8W | 7/16W | 7/16W  | 1/2W   | 1/2W | 3/4W   | 3/4W | 1W   |

Unit:in/lb



SCREWED END BALL VALVES

PED97/23/EC

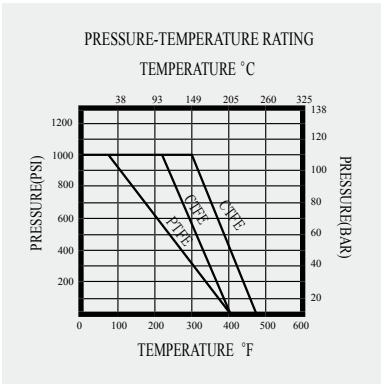
➔ 1000 WOG/PN 63 3-PIECE FULL PORT (3PC)



KH-7009

FEATURES

- The thread ends conform to ASME B1.20.1(NPT) DIN 2999 & BS 21 ISO 228/1 & ISO 7/1
- Dimension conform to DIN 3202/4-M3
- Spring system on stem
- Fixed spring load
- Blow-out-proof stem
- Full Port
- 1000W.O.G/PN 63
- Anti-Static Device
- ISO 5211 Direct mounting pad
- 2012D-Butt weld ends available
- 2011D-Socket weld ends available



| ITEM | Parts \ Material   | Stainless Steel       | Carbon Steel  |
|------|--------------------|-----------------------|---------------|
| 1    | Body               | ASTM A351-CF8M        | ASTM A216-WCB |
| 2    | Cap                | 1.4408                | 1.0691        |
| 3    | Ball               | ASTM A351-CF8M/1.4408 |               |
| 4    | Stem               | ASTM A276-316         |               |
| 5    | Ball Seat          | PTFE/RTFE/CTFE        |               |
| 6    | Gasket             | PTFE                  |               |
| 7    | Thrust Washer      |                       |               |
| 8    | Packing            |                       |               |
| 9    | O Ring             | Vtion                 |               |
| 10   | Belleville Washer  | 50CrV4                |               |
| 11   | Handle             | ASTM A167-304         |               |
| 12   | Stem Nut           | AISI 304              |               |
| 13   | Stopper (Lock Pad) |                       |               |
| 14   | Gland Ring         |                       |               |
| 15   | Lock Device        |                       |               |
| 16   | Bolt               |                       |               |
| 17   | Nut                |                       |               |
| 18   | Spring Washer      | PVC                   |               |
| 19   | Handle Sleeve      |                       |               |

\*RTFE=15% GLASS FIBER+TFE  
\*CTFE=25% CARBON+TFE

| PN63 | DN | d  | L     | H   | W   | ISO5211 | A  | B   | S  | h1 | d1   | d2   | d3 | d4 | R1   | R2   | Torque N-m |       |
|------|----|----|-------|-----|-----|---------|----|-----|----|----|------|------|----|----|------|------|------------|-------|
|      | 8  | 8  | 55    | 63  | 120 | F03/F04 | 42 | 6   | 9  | 8  | 14   | 31   | 36 | 42 | 2.75 | 2.75 | 3.4        | 5.1   |
|      | 10 | 10 | 60    |     |     |         |    |     |    |    | 17.5 |      |    |    |      |      |            |       |
|      | 15 | 15 | 75    |     |     |         |    |     |    |    | 22   |      |    |    |      |      |            |       |
| PN63 | 20 | 20 | 80    | 69  | 148 | F04/F05 | 50 | 7.5 | 11 | 9  | 27.2 | 35.5 | 42 | 50 | 2.75 | 3.5  | 6.21       | 7.91  |
|      | 25 | 25 | 90    | 76  |     |         |    |     |    | 10 | 34.5 |      |    |    |      |      | 7.34       | 9.04  |
|      | 32 | 32 | 109.8 | 84  |     |         |    |     |    | 11 | 43.3 |      |    |    |      |      | 10.73      | 13.56 |
|      | 40 | 38 | 119.8 | 99  |     |         |    |     |    | 14 | 48.7 |      |    |    |      |      | 11.3       | 20.34 |
|      | 50 | 50 | 140   | 108 |     |         |    |     |    |    | 61.2 |      |    |    |      |      | 15.82      | 28.25 |

Unit:mm

| 1000 WOG | NPS    | d    | L    | H    | W    | ISO5211 | A    | B    | S    | h1   | d1   | d2   | d3   | d4   | R1   | R2   | Torque N-m |     |
|----------|--------|------|------|------|------|---------|------|------|------|------|------|------|------|------|------|------|------------|-----|
|          | 1/4"   | 0.31 | 2.17 | 2.48 | 4.72 | F03/F04 | 1.65 | 0.24 | 0.35 | 0.31 | 0.55 | 1.22 | 1.42 | 1.65 | 0.11 | 0.11 | 30         | 45  |
|          | 3/8"   | 0.39 | 2.36 |      |      |         |      |      |      |      | 0.69 |      |      |      |      |      |            |     |
|          | 1/2"   | 0.59 | 2.95 |      |      |         |      |      |      |      | 0.87 |      |      |      |      |      |            |     |
|          | 3/4"   | 0.79 | 3.15 | 2.72 | 5.83 | F04/F05 | 1.97 | 0.3  | 0.43 | 0.35 | 1.07 | 1.4  | 1.65 | 1.97 | 0.11 | 0.14 | 55         | 70  |
|          | 1"     | 0.98 | 3.54 | 2.99 |      |         |      |      |      | 0.39 | 1.36 |      |      |      |      |      | 65         | 80  |
|          | 1 1/4" | 1.26 | 4.32 | 3.31 |      |         |      |      |      | 0.43 | 1.7  |      |      |      |      |      | 95         | 120 |
|          | 1 1/2" | 1.5  | 4.7  | 3.9  |      |         |      |      |      | 0.55 | 1.92 | 2.2  | 1.97 | 2.76 | 0.14 | 0.18 | 100        | 180 |
|          | 2"     | 1.97 | 5.51 | 4.25 |      |         |      |      |      |      | 2.41 |      |      |      |      |      | 140        | 250 |

Unit:in

ISO9001:2000

SCREWED END BALL VALVES

HTTP://WWW.CZFITTINGS.CN  
HTTP://WWW.STAINLESSFITTINGS.COM.CN

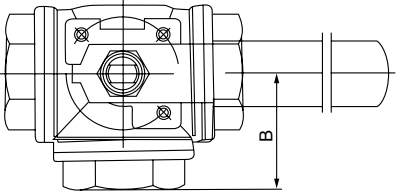
➔ T/L TYPE THREE WAY BALL VALVE (1000PSI)



KH-7010

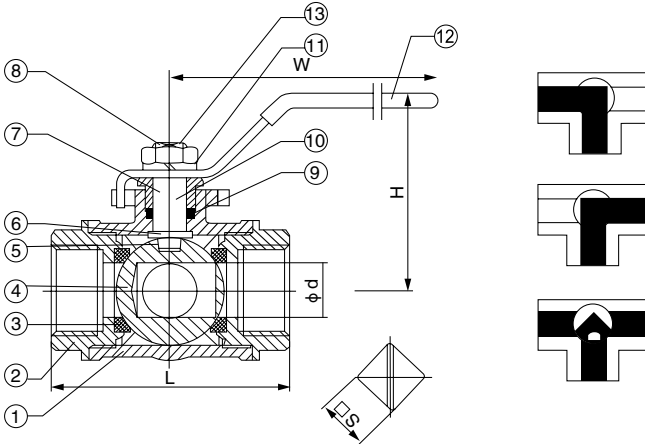
"L" type or "T" type

- Reduce bore
- Size:1/4"-2"
- Working pressure:1000PSI
- Threaded end:BSPT.NPT.ISO 228/1
- ISO 5211 top-mount pad
- Optional locked device handle
- Materials:CF8M(SS316),CF8(SS304)



MATERIAL LIST

| NO. | PART NAME          | MATERIAL |
|-----|--------------------|----------|
| 1   | BODY               | CF8M     |
| 2   | CAP                | CF8M     |
| 3   | SEAT               | PTFE     |
| 4   | BALL               | SS 316   |
| 5   | SEAL RING          | PTFE     |
| 6   | STEM SEAL          | PTFE     |
| 7   | STEM               | SS 316   |
| 8   | ANTI-STATIC DEVICE | SS 304   |
| 9   | STEM PACKING       | PTFE     |
| 10  | PACKING GLAND      | SS 304   |
| 11  | SPRING WASHER      | SS 304   |
| 12  | HANDLE             | SS 304   |
| 13  | STEM NUT           | SS 304   |



DIMENSION LIST

| SIZE   | φ d | L   | H  | W   | B    | ISO5211 | □S   |
|--------|-----|-----|----|-----|------|---------|------|
| 1/4"   | 4.2 | 64  | 32 | 85  | 32.0 | F2      | (7)  |
| 3/8"   | 6   | 64  | 32 | 95  | 32.0 | F2      | (7)  |
| 1/2"   | 10  | 68  | 34 | 108 | 34.0 | F3      | (9)  |
| 3/4"   | 15  | 78  | 60 | 115 | 39.0 | F3      | (9)  |
| 1"     | 20  | 86  | 60 | 135 | 43.0 | F4      | (9)  |
| 1-1/4" | 25  | 111 | 76 | 150 | 55.5 | F4      | (11) |
| 1-1/2" | 32  | 126 | 85 | 175 | 63.0 | F5      | (11) |
| 2"     | 40  | 143 | 95 | 190 | 71.5 | F5      | (11) |

NOTE:( )FOR OPTIONAL DIMENSION

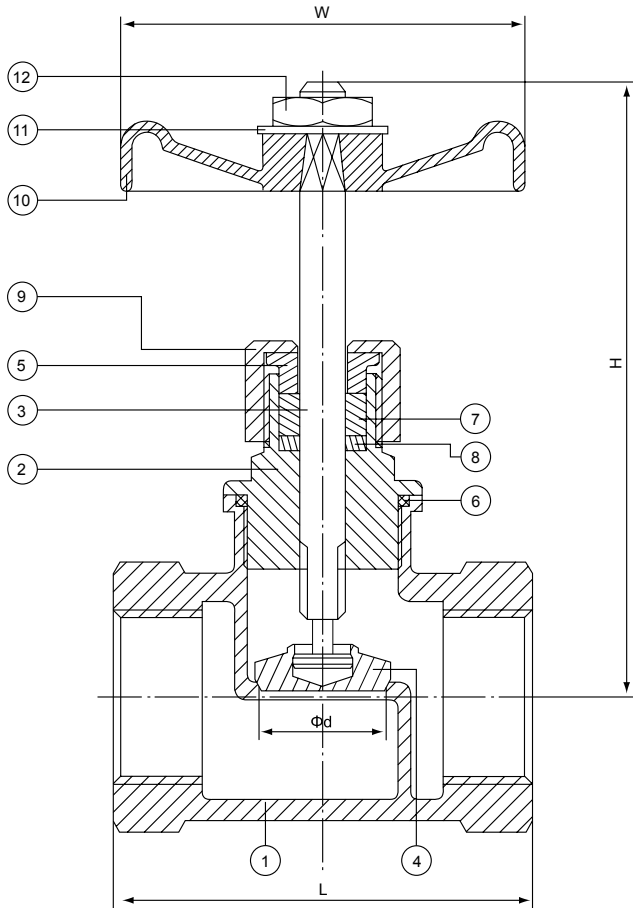


➔ CHECK VALVE (200 W.O.G.)



KH-7011

- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
  - ❑ Investment casting
  - ❑ Rising stem
  - ❑ 200 W.O.G
  - ❑ Max working temperature 445° F



| Applicable Standard |              |                           |
|---------------------|--------------|---------------------------|
| Test and Inspection |              | API 598                   |
| ITEM                | PARTS        | MATERIAL                  |
| 1                   | BODY         | ASTM A 351-CF8M<br>1.4408 |
| 2                   | BONNET       |                           |
| 3                   | STEM         | AISI 316                  |
| 4                   | DISC         | AISI 316                  |
| 5                   | GLAND RING   | AISI 316                  |
| 6                   | GASKET       | PTFE                      |
| 7                   | PACKING      | PTFE                      |
| 8                   | WASHER       | AISI 316                  |
| 9                   | GLAND NUT    | ASTM A351-CF8M/1.4408     |
| 10                  | HANDLE WHEEL | SS 400                    |
| 11                  | HAME PLATE   | ALUMINUM                  |
| 12                  | NUT          | AISI 304                  |

| DN | 15   | 20   | 25   | 32    | 40    | 50    |
|----|------|------|------|-------|-------|-------|
| d  | 12   | 15   | 20   | 25    | 33    | 40    |
| L  | 66   | 68.5 | 78.3 | 86    | 98    | 110.5 |
| H  | 89.4 | 89.2 | 92.5 | 118   | 117   | 142   |
| W  | 70   | 70   | 76.5 | 103.5 | 103.5 | 121   |

unit:mm

| NPS | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   |
|-----|------|------|------|--------|--------|------|
| d   | 0.47 | 0.59 | 0.79 | 0.98   | 1.3    | 1.57 |
| L   | 2.6  | 2.7  | 3.08 | 3.39   | 3.86   | 4.35 |
| H   | 3.52 | 3.51 | 3.64 | 4.65   | 4.61   | 5.59 |
| W   | 2.76 | 2.76 | 3.01 | 4.07   | 4.07   | 4.76 |

unit:in

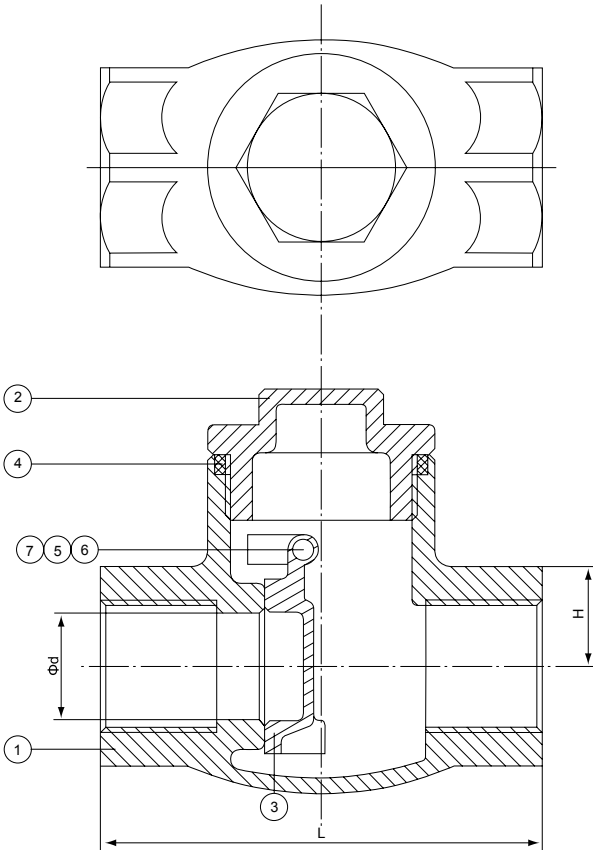
➔ SWING CHECK VALVE (200 W.O.G. Screwed End)



KH-7012

- FEATURES**
- ❑ The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
  - ❑ Investment casting
  - ❑ 200 W.O.G.
  - ❑ Max working temperature 445° F
  - ❑ Socket weld end(option)
  - ❑ Y pattern (option)

| Applicable Standard |           |                          |
|---------------------|-----------|--------------------------|
| Test and Inspection |           | API 598                  |
| ITEM                | PARTS     | MATERIAL                 |
| 1                   | BODY      | ASTM A351-CF8M<br>1.4408 |
| 2                   | CAP       |                          |
| 3                   | DISC      | PTFE                     |
| 4                   | GASKET    |                          |
| 5                   | PLUG SEAL | AISI 316                 |
| 6                   | PLUG      |                          |
| 7                   | PIN       |                          |



| DN | d  | L     | H   | Weight<br>KG |
|----|----|-------|-----|--------------|
| 15 | 15 | 66    | 45  | 0.3          |
| 20 | 20 | 81    | 54  | 0.5          |
| 25 | 25 | 91    | 60  | 0.8          |
| 32 | 32 | 106.5 | 72  | 1.2          |
| 40 | 40 | 121   | 75  | 1.5          |
| 50 | 50 | 142   | 82  | 2.5          |
| 65 | 60 | 159   | 90  | 3.8          |
| 80 | 80 | 190   | 104 | 5.9          |

unit:mm

| NPS    | d    | L    | H    | Weight<br>LB |
|--------|------|------|------|--------------|
| 1/2"   | 1.59 | 2.6  | 1.81 | 0.7          |
| 3/4"   | 0.79 | 3.19 | 2.13 | 1.1          |
| 1"     | 0.98 | 3.58 | 2.36 | 1.7          |
| 1 1/4" | 1.26 | 4.19 | 2.83 | 2.5          |
| 1 1/2" | 1.57 | 4.76 | 2.95 | 3.4          |
| 2"     | 1.97 | 5.59 | 3.23 | 5.6          |
| 2 1/2" | 2.56 | 6.26 | 3.54 | 8.4          |
| 3"     | 3.15 | 7.48 | 4.09 | 13           |

unit:in



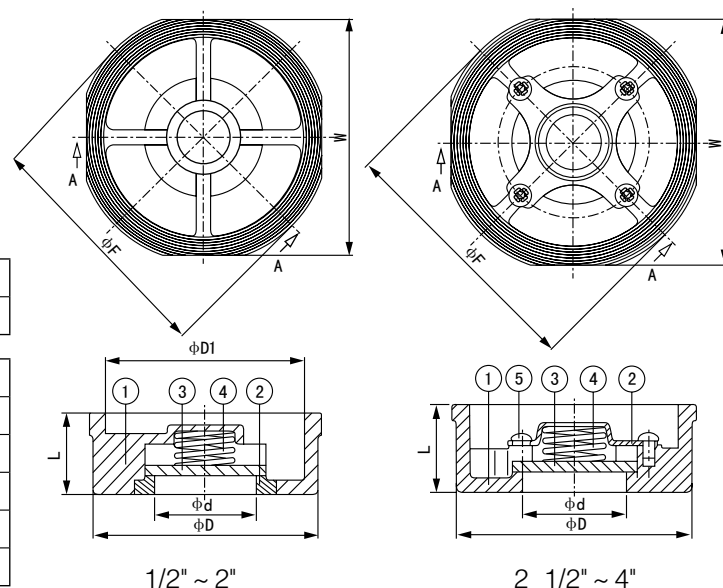
## ➔ DISC CHECK VALVE (PN 40)



KH-7013

## FEATURES

- The face to face conform to DIN 3202 part 3-K4
- Investment casting
- Max working temperature 480 ° F
- Pressure Rating PN 40



| Applicable Standard |          |                       |
|---------------------|----------|-----------------------|
| Test and Inspection |          | API 598               |
| ITEM                | PARTS    | MATERIAL              |
| 1                   | BODY     | ASTM A351-CF8M/1.4408 |
| 2                   | RETAINER | AISI 316              |
| 3                   | DISC     | AISI 316              |
| 4                   | SPRING   | AISI 316              |
| 5                   | SCREW    | AISI 316              |

| DN  | d    | D   | F   | W   | L  |
|-----|------|-----|-----|-----|----|
| 15  | 15   | 45  | 53  | 45  | 16 |
| 20  | 20   | 55  | 63  | 55  | 19 |
| 25  | 25   | 65  | 73  | 65  | 22 |
| 32  | 32   | 78  | 84  | 78  | 28 |
| 40  | 38   | 89  | 94  | 89  | 32 |
| 50  | 50   | 98  | 107 | 98  | 40 |
| 65  | 82   | 118 | 126 | 118 | 46 |
| 80  | 76.5 | 134 | 144 | 134 | 50 |
| 100 | 96   | 154 | 162 | 154 | 60 |

unit:mm

| NPS    | d    | D    | F    | W    | L    |
|--------|------|------|------|------|------|
| 1/2"   | 0.59 | 1.77 | 2.09 | 1.77 | 0.63 |
| 3/4"   | 0.79 | 2.17 | 2.48 | 2.17 | 0.75 |
| 1"     | 0.98 | 2.56 | 2.87 | 2.56 | 0.87 |
| 1-1/4" | 1.26 | 3.07 | 3.31 | 3.07 | 1.1  |
| 1-1/2" | 1.5  | 3.5  | 3.7  | 3.5  | 1.26 |
| 2"     | 1.97 | 3.86 | 4.21 | 3.86 | 1.57 |
| 2-2/1" | 3.23 | 4.65 | 4.96 | 4.65 | 1.81 |
| 3"     | 3.01 | 5.28 | 5.67 | 5.28 | 1.97 |
| 4"     | 3.78 | 6.06 | 6.38 | 6.06 | 2.36 |

unit:in

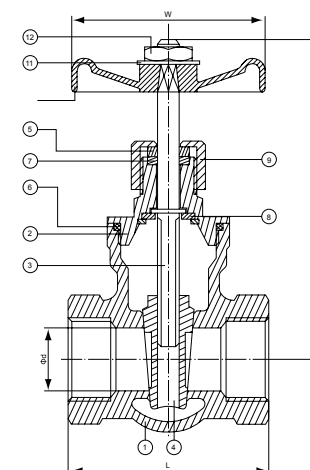
## ➔ GATE VALVE (200 W.O.G.)



KH-7014

## FEATURES

- The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
- 200 W.O.G
- Max working temperature 445° F
- Non-rising stem



| Applicable Standard |              |                           |
|---------------------|--------------|---------------------------|
| Test and Inspection |              | API 598                   |
| ITEM                | PARTS        | MATERIAL                  |
| 1                   | BODY         | ASTM A 351-CF8M<br>1.4408 |
| 2                   | BONNET       |                           |
| 3                   | STEM         | AISI 316                  |
| 4                   | DISC         | ASTM A315-CF8M/1.4408     |
| 5                   | GLAND RING   | AISI 316                  |
| 6                   | GASKET       | PTFE                      |
| 7                   | PACKING      | PTFE                      |
| 8                   | SNAP RING    | AISI 316                  |
| 9                   | GLAND NUT    | ASTM A351-CF8M/1.4408     |
| 10                  | HANDLE WHEEL | SS 400                    |
| 11                  | NAME PLATE   | ALUMINUM                  |
| 12                  | NUT          | SISI 304                  |

| DN | 15   | 20   | 25   | 32   | 40    | 50   | 65  | 80  |
|----|------|------|------|------|-------|------|-----|-----|
| d  | 16.1 | 20.3 | 26   | 31.8 | 40    | 50.3 | 62  | 76  |
| L  | 57   | 60.5 | 67   | 76   | 87    | 95   | 116 | 131 |
| H  | 98   | 104  | 115  | 127  | 172   | 189  | 260 | 295 |
| W  | 70   | 70   | 76.5 | 76.5 | 103.5 | 121  | 121 | 121 |

unit:mm

| NPS | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"    |
|-----|------|------|------|--------|--------|------|--------|-------|
| d   | 0.63 | 0.8  | 1.02 | 1.25   | 1.57   | 1.98 | 2.44   | 2.99  |
| L   | 2.24 | 2.38 | 2.64 | 2.99   | 3.43   | 3.74 | 4.57   | 5.16  |
| H   | 3.86 | 4.09 | 4.53 | 5      | 6.77   | 7.44 | 10.24  | 11.61 |
| W   | 2.76 | 2.76 | 3.01 | 3.01   | 4.07   | 4.76 | 4.76   | 4.76  |

unit:in

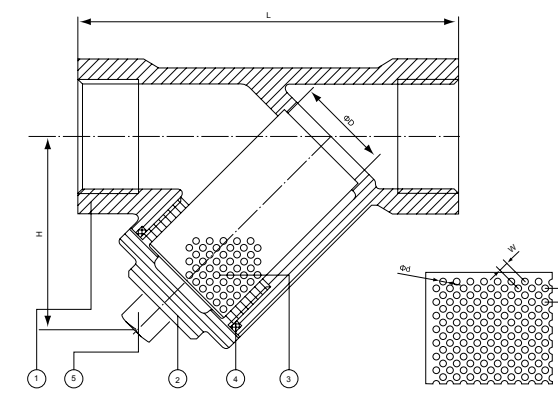
## ➔ Y TYPE STRAINER (600/800 W.O.G.)



KH-7015

## FEATURES

- The thread ends conform to ASME B1.20.1(NPT)  
DIN 2999 & BS 21  
ISO 228/1 & ISO 7/1
- Investment casting
- Max working temperature 445° F
- 600 W.O.G.
- 800 W.O.G.(Option)



| Applicable Standard |            |                          |
|---------------------|------------|--------------------------|
| Test and Inspection |            | API 598                  |
| ITEM                | PARTS      | MATERIAL                 |
| 1                   | BODY       | ASTM A351-CF8M<br>1.4408 |
| 2                   | CAP        |                          |
| 3                   | SCREEN     | AISI 316                 |
| 4                   | GASKET     | PTFE                     |
| 5                   | DRAIN PLUG | ASTM A351-CF8M/1.4408    |

| DN | 8  | 10 | 15 | 20 | 25 | 32 | 40  | 50  | 65  | 80  |
|----|----|----|----|----|----|----|-----|-----|-----|-----|
| L  | 57 | 57 | 60 | 69 | 85 | 99 | 111 | 137 | 172 | 205 |
| H  | 35 | 35 | 38 | 42 | 50 | 55 | 59  | 73  | 91  | 110 |
| D  | 10 | 10 | 15 | 20 | 25 | 32 | 38  | 51  | 65  | 80  |
| d  | 1  | 1  | 1  | 1  | 1  | 1  | 1   | 1   | 1   | 1   |
| W  | 2  | 2  | 2  | 2  | 2  | 2  | 2   | 2   | 2   | 2   |

unit:mm

| NPS | 1/4" | 3/8" | 1/2" | 3/4" | 1"   | 1 1/4" | 1 1/2" | 2"   | 2 1/2" | 3"   |
|-----|------|------|------|------|------|--------|--------|------|--------|------|
| L   | 2.24 | 2.24 | 2.36 | 2.72 | 3.35 | 3.9    | 4.37   | 5.39 | 6.77   | 8.07 |
| H   | 1.38 | 1.38 | 1.5  | 1.65 | 1.97 | 2.17   | 2.32   | 1.87 | 3.58   | 4.33 |
| D   | 0.39 | 0.39 | 0.59 | 0.79 | 0.98 | 1.26   | 1.5    | 2    | 2.56   | 3.15 |
| d   | 0.04 | 0.04 | 0.04 | 0.04 | 0.04 | 0.04   | 0.04   | 0.04 | 0.04   | 0.04 |
| W   | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08   | 0.08   | 0.08 | 0.08   | 0.08 |

unit:in



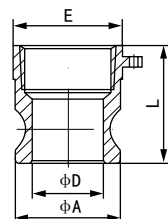


QUICK COUPLING

PED97/23/EC



KH-8001  
TYPE:A

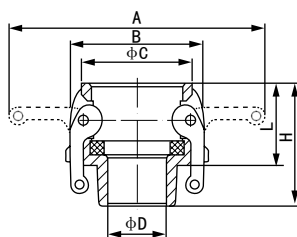


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| D    | 16   | 21   | 25   | 29   | 36     | 45     | 56   | 73.3   | 98    |    |
| A    | 32   | 32   | 36.5 | 45.5 | 53.3   | 63     | 75.5 | 91.7   | 119.7 |    |
| E    | 32.5 | 32.5 | 40   | 47.5 | 55     | 66.5   | 81.5 | 95     | 126   |    |
| L    | 38.5 | 38.5 | 49   | 56   | 60.5   | 64     | 87   | 74     | 79    |    |



KH-8002  
TYPE:B

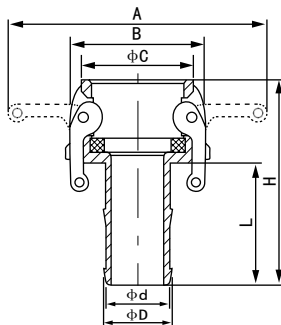


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| D    | 14   | 19   | 24   | 28   | 35     | 48     | 58   | 71     | 98.5  |    |
| A    | 108  | 108  | 124  | 177  | 186    | 196    | 208  | 232    | 260   |    |
| B    | 53   | 53   | 60   | 80   | 88     | 98     | 109  | 138    | 167   |    |
| C    | 42   | 42   | 47   | 57.5 | 66     | 77.5   | 91.5 | 108.5  | 139.5 |    |
| L    | 33   | 33   | 41   | 48   | 48     | 53.5   | 59   | 61     | 62    |    |
| H    | 53   | 53   | 65   | 72   | 73     | 80     | 91   | 95     | 101   |    |



KH-8003  
TYPE:C

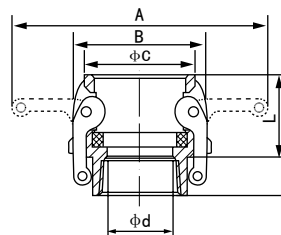


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| d    | 14   | 14   | 20   | 25   | 31     | 43     | 55   | 67     | 92    |    |
| D    | 21   | 21   | 26   | 34   | 39.5   | 52     | 65   | 77.3   | 104.5 |    |
| A    | 108  | 108  | 124  | 177  | 186    | 196    | 208  | 232    | 260   |    |
| B    | 53   | 53   | 60   | 80   | 88     | 98     | 109  | 138    | 167   |    |
| C    | 42   | 42   | 47   | 57.5 | 66     | 77.5   | 91.5 | 108.5  | 139.5 |    |
| L    | 60.5 | 60.5 | 66   | 72   | 73     | 84.5   | 96   | 104    | 114   |    |
| H    | 93   | 93   | 106  | 120  | 121    | 138    | 155  | 164    | 175   |    |



KH-8004  
TYPE:D



DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| d    | 16   | 19.5 | 26   | 34   | 39     | 50     | 59   | 72     | 98    |    |
| A    | 108  | 108  | 124  | 177  | 186    | 196    | 208  | 232    | 260   |    |
| B    | 53   | 53   | 60   | 80   | 89     | 98     | 109  | 138    | 167   |    |
| C    | 42   | 42   | 47   | 57.5 | 66     | 77.5   | 91.5 | 108.5  | 139.5 |    |
| L    | 32.5 | 32.5 | 41   | 48   | 48     | 53.5   | 59   | 59.5   | 62.5  |    |
| H    | 53   | 53   | 63   | 68.5 | 71.5   | 78     | 85   | 90     | 95.5  |    |

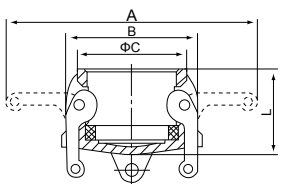
ISO9001:2000

QUICK COUPLING

HTTP://WWW.CZFITTINGS.CN  
HTTP://WWW.STAINLESSFITTINGS.COM.CN



KH-8005  
TYPE:DC

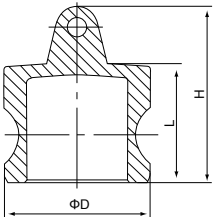


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| A    | 108  | 108  | 124  | 177  | 186    | 196    | 208  | 232    | 260   |    |
| B    | 53   | 53   | 60   | 80   | 88     | 98     | 109  | 138    | 167   |    |
| C    | 42   | 42   | 47   | 57.5 | 66     | 77.5   | 91.5 | 108.5  | 139.5 |    |
| L    | 35   | 35   | 42   | 52   | 52     | 57.5   | 64   | 65     | 66    |    |



KH-8006  
TYPE:DP

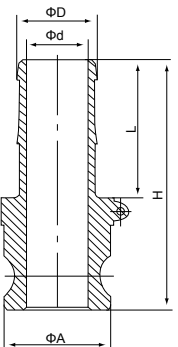


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| D    | 32   | 32   | 36.5 | 45.5 | 53.5   | 63     | 75.5 | 91.7   | 119.7 |    |
| L    | 26   | 26   | 32   | 41   | 44     | 47     | 51   | 56     | 56    |    |
| H    | 36.5 | 36.5 | 45   | 55   | 62     | 65     | 69   | 76     | 76    |    |



KH-8007  
TYPE:E

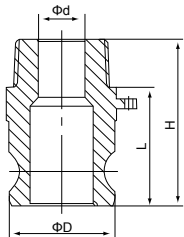


DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| d    | 14   | 14   | 20   | 25   | 31     | 43     | 55   | 67.5   | 92    |    |
| D    | 20   | 20   | 26   | 34   | 39.5   | 52     | 65   | 78     | 104   |    |
| A    | 32   | 32   | 36.5 | 45.5 | 53.3   | 63     | 75.5 | 91.7   | 119.7 |    |
| L    | 58   | 58   | 64.5 | 68.5 | 68.5   | 80     | 94   | 104    | 113   |    |
| H    | 98   | 98   | 111  | 121  | 125    | 141    | 158  | 170    | 183   |    |



KH-8008  
TYPE:F



DIMENSIONS UNIT:mm

| SIZE | inch | 1/2" | 3/4" | 1"   | 1-1/4" | 1-1/2" | 2"   | 2-1/2" | 3"    | 4" |
|------|------|------|------|------|--------|--------|------|--------|-------|----|
| d    | 14   | 21   | 25   | 29   | 36     | 45     | 56   | 73.3   | 98    |    |
| D    | 32   | 32   | 36.5 | 45.5 | 53.3   | 63     | 75.5 | 91.7   | 119.7 |    |
| L    | 39   | 39   | 49   | 56   | 58.5   | 62     | 69   | 75     | 78    |    |
| H    | 57   | 57   | 72.5 | 80   | 84.5   | 88     | 100  | 106.5  | 116   |    |



## → CLAW QUICK COUPLING



KH-8009

- ☐ **Connection:**  
H–Welding, Y–Male, N–Female,  
R–Flexible Hose.  
All of them could be changed.
- ☐ **ZK is normal useful parts.**
- ☐ **H<sub>1</sub> and Y<sub>1</sub>, H<sub>2</sub> and Y<sub>2</sub>,**  
the dimensions are same.

| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 26.0 | 35.0  | 41.0  | 51.7 | 65.0  | 78.0  | 105.0 |
| B   | 34.0 | 38.0  | 38.0  | 45.0 | 56.0  | 61.0  | 69.0  |
| C   | 52.0 | 61.0  | 67.0  | 69.5 | 99.0  | 115.0 | 149.0 |
| D   | 34.3 | 43.0  | 49.0  | 60.1 | 76.0  | 88.5  | 113.7 |

| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 26.5 | 35.0  | 41.0  | 51.7 | 65.0  | 78.0  | 105.0 |
| B   | 34.0 | 40.0  | 40.0  | 51.0 | 53.0  | 65.0  | 64.0  |
| C   | 44.5 | 54.0  | 60.0  | 71.0 | 89.0  | 105.0 | 136.0 |
| D   | 34.3 | 43.0  | 49.0  | 60.1 | 76.0  | 88.5  | 113.7 |

| DIM | 1    | 1-1/4 | 1-1/2 | 2     | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|-------|-------|-------|-------|
| A   | 37.7 | 46.5  | 53    | 65.5  | 83.0  | 94.5  | 121.5 |
| B   | 24.0 | 25.8  | 26.8  | 29.0  | 38.0  | 39.0  | 44.0  |
| C   | 82.0 | 91.0  | 97.0  | 116.0 | 139.0 | 163.0 | 194.0 |

| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 28.5 | 37.0  | 42.8  | 51.7 | 65.0  | 78.0  | 105.5 |
| B   | 34.0 | 36.0  | 36.0  | 45.0 | 56.0  | 54.0  | 69.0  |
| C   | 52.0 | 61.0  | 67.0  | 78.5 | 99.0  | 115.0 | 149.0 |
| D   | 36.5 | 45.0  | 51.0  | 64.0 | 81.0  | 93.0  | 120.0 |

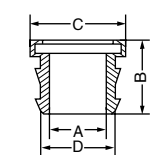
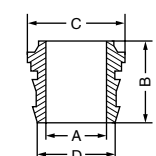
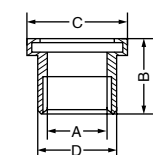
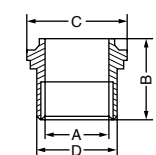
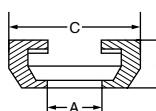
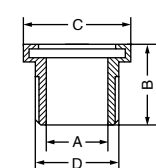
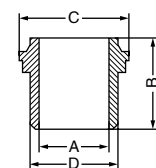
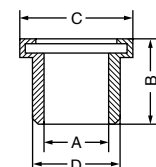
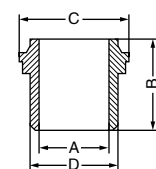
| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 28.5 | 37.0  | 42.8  | 55.0 | 65.0  | 81.5  | 105.8 |
| B   | 34.0 | 40.0  | 38.0  | 40.0 | 48.0  | 54.0  | 56.0  |
| C   | 44.5 | 54.0  | 60.0  | 71.0 | 89.0  | 105.0 | 136.0 |
| D   | 36.5 | 45.0  | 51.0  | 64.0 | 81.0  | 93.0  | 120.0 |

| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 20.0 | 26.0  | 34.0  | 45.0 | 55.0  | 67.0  | 93.0  |
| B   | 67.0 | 73.0  | 78.0  | 90.5 | 118.0 | 121.0 | 138.0 |
| C   | 52.0 | 61.0  | 67.0  | 78.5 | 99.0  | 115.0 | 149.0 |
| D   | 26.0 | 33.0  | 39.0  | 52.0 | 65.0  | 77.0  | 105.0 |

| DIM | 1    | 1-1/4 | 1-1/2 | 2    | 2-1/2 | 3     | 4     |
|-----|------|-------|-------|------|-------|-------|-------|
| A   | 20.0 | 26.0  | 31.0  | 45.0 | 55.0  | 67.0  | 93.0  |
| B   | 67.0 | 73.0  | 78.0  | 90.0 | 106.0 | 112.0 | 133.0 |
| C   | 44.5 | 54.0  | 60.0  | 71.0 | 89.0  | 105.0 | 136.0 |
| D   | 26.0 | 33.0  | 39.0  | 52.0 | 65.0  | 77.0  | 105.0 |

TYPE:H<sub>1</sub>TYPE:H<sub>2</sub>TYPE:Y<sub>1</sub>TYPE:Y<sub>2</sub>

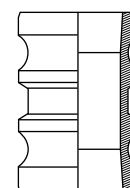
TYPE:ZK

TYPE:N<sub>1</sub>TYPE:N<sub>2</sub>TYPE:R<sub>1</sub>TYPE:R<sub>2</sub>

## → SPECIAL STYLE CAM-LOCK COUPLING

To satisfy different working conditions we not only make standard types, but also develop a practical and economical safety-cam.

Under special application conditions we can also produce special style adaptors and couplers.

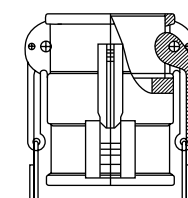


KH-AA

Both ends adaptors per MIL-27487 specifications. KH-AAN same as style AA, except that between the two adaptors there is a nozzle pipe for sample testing of the inside liquid.

Material: KH Code:

- ☐ SS ASTM A351-CF8M by lost wax investment casting.  
☐ BR Brass by forging bronze by sand casting.  
☐ AL Aluminum alloy by investment casting or sand casting.

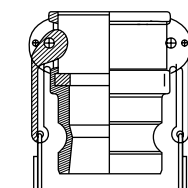


KH-DD

Both ends couplers per MIL-27487 specifications. KH-DDN same as style DD, except that between the two couplers there is a nozzle pipe for sample testing of the inside liquid.

Material: KH Code:

- ☐ SS ASTM A351-CF8M by lost wax investment casting.  
☐ BR Brass by forging bronze by sand casting.  
☐ AL Aluminum alloy by investment casting or sand casting.

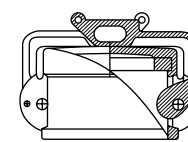


KH-DA

One end coupler and the other end adaptor. KH-DAN same as style DA, except that between the adaptor and the coupler there is a nozzle pipe for sample testing of the inside liquid.

Material: KH Code:

- ☐ SS ASTM A351-CF8M by lost wax investment casting.  
☐ BR Brass by forging bronze by sand casting.  
☐ AL Aluminum alloy by investment casting.



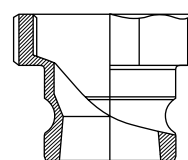
KH-DCL

The female dust cap has a cam lever opening at 90° angle and also has a groove for cam-locking. The safety-cam to prevent accidental opening.

Applications:

As an underground oil tank inlet dust cap and transport vibration of the tanktruck discharge dust cap.

Recommended sizes: (1.25" 1.5" 2" 2.5" 3" & 4")

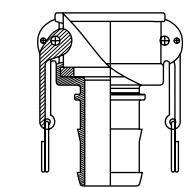


KH-AR

Female thread and male adaptor of different size thread.

Material: KH Code:

- ☐ SS ASTM A351-CF8M by lost wax investment casting.  
☐ BR Brass by forging or bronze by sand casting.  
☐ AL Aluminum alloy by sand casting.



KH-CR

Reduced hose shank female coupler

Material: KH Code:

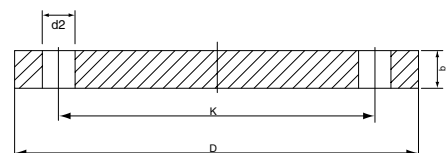
- ☐ SS ASTM A351-CF8M by lost wax investment casting.  
☐ BR Brass by forging or bronze by sand casting.  
☐ AL Aluminum alloy by sand casting.



## ➔ DIN 2527,PN 6,Form B



KH-9001

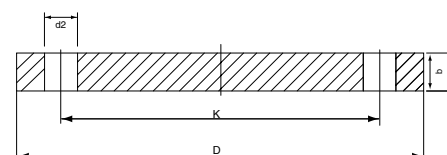


| DN  | D   | b  | k   | d <sub>2</sub> | Weight |
|-----|-----|----|-----|----------------|--------|
| 10  | 75  | 12 | 50  | 4×M 10×45mm    | 0.380  |
| 15  | 80  | 12 | 55  | 4×M 10×45mm    | 0.440  |
| 20  | 90  | 14 | 65  | 4×M 10×50mm    | 0.650  |
| 25  | 100 | 14 | 75  | 4×M 10×50mm    | 0.820  |
| 32  | 120 | 14 | 90  | 4×M 12×50mm    | 1.170  |
| 40  | 130 | 14 | 100 | 4×M 12×50mm    | 1.390  |
| 50  | 140 | 14 | 110 | 4×M 12×50mm    | 1.620  |
| 65  | 160 | 14 | 130 | 4×M 12×50mm    | 2.440  |
| 80  | 190 | 16 | 150 | 4×M 16×55mm    | 3.430  |
| 100 | 210 | 16 | 170 | 4×M 16×55mm    | 4.760  |
| 125 | 240 | 18 | 200 | 8×M 16×60mm    | 6.110  |
| 150 | 265 | 18 | 225 | 8×M 16×60mm    | 7.510  |
| 200 | 320 | 20 | 280 | 8×M 16×65mm    | 12.30  |
| 250 | 375 | 22 | 335 | 12×M 16×70mm   | 18.30  |
| 300 | 440 | 22 | 395 | 12×M 20×70mm   | 25.30  |
| 350 | 490 | 22 | 445 | 12×M 20×70mm   | 31.60  |
| 400 | 540 | 22 | 495 | 16×M 20×70mm   | 38.40  |

## ➔ DIN 2527,PN 10,Form B

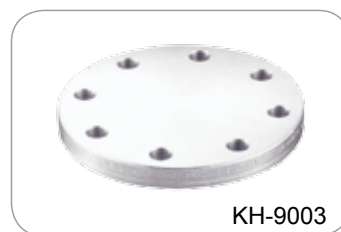


KH-9002

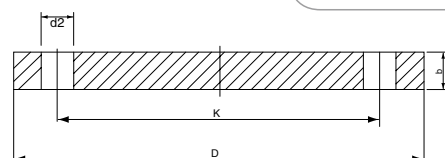


| DN     | D                                          | b  | k   | d <sub>2</sub> | Weight |
|--------|--------------------------------------------|----|-----|----------------|--------|
| 10–175 | Blindflansche nach DIN 2527,PN16 verwenden |    |     |                |        |
| 200    | 340                                        | 24 | 295 | 8×M 20×75mm    | 16.50  |
| 250    | 395                                        | 26 | 350 | 12×M 20×80mm   | 24.00  |
| 300    | 445                                        | 26 | 400 | 12×M 20×80mm   | 30.90  |
| 350    | 505                                        | 26 | 460 | 16×M 20×80mm   | 40.60  |
| 400    | 565                                        | 26 | 515 | 16×M 24×80mm   | 49.40  |

## ➔ DIN 2527,PN16,Form B



KH-9003

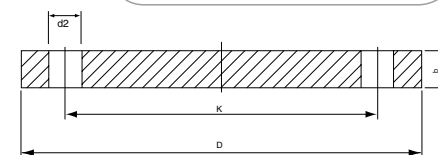


| DN  | D   | b  | k   | d <sub>2</sub> | Weight |
|-----|-----|----|-----|----------------|--------|
| 10  | 90  | 14 | 60  | 4×M 12×50mm    | 0.630  |
| 15  | 95  | 14 | 65  | 4×M 12×50mm    | 0.720  |
| 20  | 105 | 16 | 75  | 4×M 12×55mm    | 1.010  |
| 25  | 115 | 16 | 85  | 4×M 12×55mm    | 1.230  |
| 32  | 140 | 16 | 100 | 4×M 16×55mm    | 1.800  |
| 40  | 150 | 16 | 110 | 4×M 16×55mm    | 2.090  |
| 50  | 165 | 18 | 125 | 4×M 16×60mm    | 2.880  |
| 65  | 185 | 18 | 145 | 4×M 16×60mm    | 3.660  |
| 80  | 200 | 20 | 160 | 8×M 16×65mm    | 4.770  |
| 100 | 220 | 20 | 180 | 8×M 16×65mm    | 5.650  |
| 125 | 250 | 22 | 210 | 8×M 16×70mm    | 8.420  |
| 150 | 285 | 22 | 240 | 8×M 20×70mm    | 10.40  |
| 200 | 340 | 24 | 295 | 12×M 20×75mm   | 16.10  |
| 250 | 405 | 26 | 355 | 12×M 24×80mm   | 24.90  |
| 300 | 460 | 28 | 410 | 12×M 24×85mm   | 35.10  |
| 350 | 520 | 30 | 470 | 16×M 24×90mm   | 47.80  |
| 400 | 580 | 32 | 525 | 16×M 27×95mm   | 63.50  |

## ➔ DIN 2527,PN 40,Form B



KH-9004

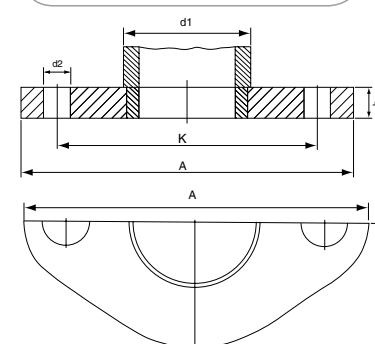


| DN  | D   | b  | k   | d <sub>2</sub> | Weight |
|-----|-----|----|-----|----------------|--------|
| 10  | 90  | 16 | 60  | 4×M 12×55mm    | 0.720  |
| 15  | 95  | 16 | 65  | 4×M 12×55mm    | 0.810  |
| 20  | 105 | 18 | 75  | 4×M 12×60mm    | 1.240  |
| 25  | 115 | 18 | 85  | 4×M 12×60mm    | 1.380  |
| 32  | 140 | 18 | 100 | 4×M 16×60mm    | 2.030  |
| 40  | 150 | 18 | 110 | 4×M 16×60mm    | 2.350  |
| 50  | 165 | 20 | 125 | 4×M 16×65mm    | 3.200  |
| 65  | 185 | 22 | 145 | 8×M 16×70mm    | 4.290  |
| 80  | 200 | 24 | 160 | 8×M 16×75mm    | 5.880  |
| 100 | 235 | 24 | 190 | 8×M 20×75mm    | 7.540  |
| 125 | 270 | 26 | 220 | 8×M 24×80mm    | 10.80  |
| 150 | 300 | 28 | 250 | 8×M 24×85mm    | 14.50  |
| 200 | 375 | 34 | 320 | 12×M 27×100mm  | 27.20  |
| 250 | 450 | 38 | 385 | 12×M 30×110mm  | 43.80  |
| 300 | 515 | 42 | 450 | 16×M 30×120mm  | 63.30  |
| 350 | 580 | 46 | 510 | 16×M 33×130mm  | 89.50  |
| 400 | 660 | 50 | 585 | 16×M 36×140mm  | 127.0  |

## ➔ DIN 2558,PN 6,Form A

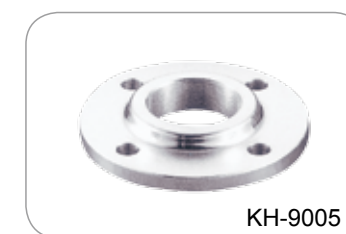


KH-9006

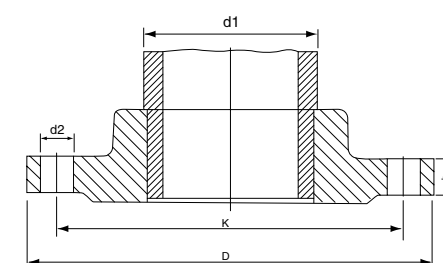


| DN  | d <sub>1</sub> | DIN2999 | A   | B   | b  | k   | d <sub>2</sub> | Weight |
|-----|----------------|---------|-----|-----|----|-----|----------------|--------|
| 6   | 10.2           | 1/8"    | 64  | 32  | 12 | 40  | 2×M 10×45mm    | 0.119  |
| 8   | 13.5           | 1/4"    | 72  | 36  | 12 | 45  | 2×M 10×45mm    | 0.147  |
| 10  | 17.2           | 3/8"    | 75  | 40  | 12 | 50  | 2×M 10×50mm    | 0.165  |
| 15  | 21.3           | 1/2"    | 80  | 45  | 12 | 55  | 2×M 10×50mm    | 0.194  |
| 20  | 26.9           | 3/4"    | 90  | 64  | 14 | 65  | 2×M 10×55mm    | 0.373  |
| 25  | 33.7           | 1"      | 100 | 72  | 14 | 75  | 2×M 10×55mm    | 0.455  |
| 32  | 42.4           | 1 1/4"  | 118 | 85  | 16 | 90  | 2×M 12×55mm    | 0.675  |
| 40  | 48.3           | 1 1/2"  | 132 | 95  | 16 | 100 | 2×M 12×55mm    | 0.850  |
| 50  | 60.3           | 2"      | 140 | 100 | 16 | 110 | 2×M 12×60mm    | 0.882  |
| 65  | 76.1           | 2 1/2"  | 160 | 118 | 16 | 130 | 2×M 12×60mm    | 1.100  |
| 80  | 88.9           | 3"      | 190 | 140 | 18 | 150 | 2×M 16×65mm    | 1.760  |
| 100 | 114.3          | 4"      | 210 | 160 | 18 | 170 | 2×M 16×65mm    | 1.890  |

## ➔ DIN 2566,PN 10/16,Form C



KH-9005



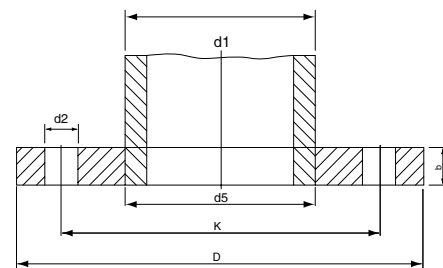
| DN  | d <sub>1</sub> | DIN2999 | D   | b  | k   | d <sub>2</sub> | Weight |
|-----|----------------|---------|-----|----|-----|----------------|--------|
| 6   | 10.2           | 1/8"    | 75  | 12 | 50  | 4×M 10×45mm    | 0.326  |
| 8   | 13.5           | 1/4"    | 80  | 12 | 55  | 4×M 10×45mm    | 0.380  |
| 10  | 17.2           | 3/8"    | 90  | 14 | 60  | 4×M 12×50mm    | 0.544  |
| 15  | 21.3           | 1/2"    | 95  | 14 | 65  | 4×M 12×50mm    | 0.613  |
| 20  | 26.9           | 3/4"    | 105 | 16 | 75  | 4×M 12×55mm    | 0.910  |
| 25  | 33.7           | 1"      | 115 | 16 | 85  | 4×M 12×55mm    | 1.100  |
| 32  | 42.4           | 1 1/4"  | 140 | 16 | 100 | 4×M 16×55mm    | 1.600  |
| 40  | 48.3           | 1 1/2"  | 150 | 16 | 110 | 4×M 16×55mm    | 1.780  |
| 50  | 60.3           | 2"      | 165 | 18 | 125 | 4×M 16×60mm    | 2.430  |
| 65  | 76.1           | 2 1/2"  | 185 | 18 | 145 | 4×M 16×60mm    | 3.180  |
| 80  | 88.9           | 3"      | 200 | 20 | 160 | 8×M 16×65mm    | 4.120  |
| 100 | 114.3          | 4"      | 200 | 20 | 180 | 8×M 16×65mm    | 4.470  |



## FLANGE

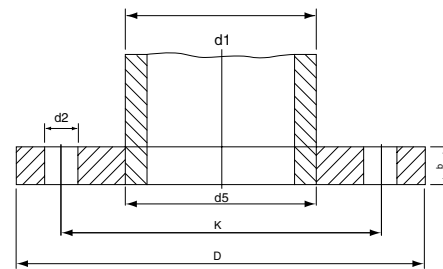
PED97/23/EC

## ➔ DIN 2753,PN 6,Form A



| DN  | d <sub>1</sub><br>Reihe 1 | d <sub>1</sub><br>Reihe 2 | D   | b  | k   | d <sub>5</sub><br>Reihe 1 | d <sub>5</sub><br>Reihe 2 | d <sub>2</sub><br>Schrauben | Weight |
|-----|---------------------------|---------------------------|-----|----|-----|---------------------------|---------------------------|-----------------------------|--------|
| 10  | 17.2                      | 14.0                      | 75  | 12 | 50  | 17.7                      | 14.5                      | 4×M 10×35mm                 | 0.363  |
| 15  | 21.3                      | 20.0                      | 80  | 12 | 55  | 22.0                      | 21.0                      | 4×M 10×35mm                 | 0.410  |
| 20  | 26.9                      | 25.0                      | 90  | 14 | 65  | 27.6                      | 26.0                      | 4×M 10×40mm                 | 0.600  |
| 25  | 33.7                      | 30.0                      | 100 | 14 | 75  | 34.4                      | 31.0                      | 4×M 10×40mm                 | 0.740  |
| 32  | 42.4                      | 38.0                      | 120 | 16 | 90  | 43.1                      | 39.0                      | 4×M 12×45mm                 | 1.190  |
| 40  | 48.3                      | 44.5                      | 130 | 16 | 100 | 49.0                      | 45.5                      | 4×M 12×45mm                 | 1.390  |
| 50  | 60.3                      | 57.0                      | 140 | 16 | 110 | 61.1                      | 58.1                      | 4×M 12×45mm                 | 1.530  |
| 65  | 76.1                      | -                         | 160 | 16 | 130 | 77.1                      | -                         | 4×M 12×45mm                 | 1.890  |
| 80  | 88.9                      | -                         | 190 | 18 | 150 | 90.3                      | -                         | 4×M 16×55mm                 | 2.980  |
| 100 | 114.3                     | 108.0                     | 210 | 18 | 170 | 115.9                     | 109.6                     | 4×M 16×55mm                 | 3.460  |
| 125 | 139.7                     | 133.0                     | 240 | 20 | 200 | 141.6                     | 134.8                     | 8×M 16×60mm                 | 4.600  |
| 150 | 168.3                     | 159.0                     | 265 | 20 | 225 | 170.5                     | 161.1                     | 8×M 16×60mm                 | 5.220  |
| 200 | 219.1                     | -                         | 320 | 22 | 280 | 221.8                     | -                         | 8×M 16×70mm                 | 7.150  |
| 250 | 273.0                     | 267.0                     | 375 | 24 | 335 | 276.2                     | 270.2                     | 12×M 16×75mm                | 9.610  |
| 300 | 323.9                     | -                         | 440 | 24 | 395 | 327.6                     | -                         | 12×M 20×75mm                | 12.60  |
| 350 | 355.6                     | 368.0                     | 490 | 26 | 445 | 359.7                     | 372.2                     | 12×M 20×80mm                | 15.60  |
| 400 | 406.4                     | 419.0                     | 540 | 28 | 495 | 411.0                     | 423.7                     | 16×M 20×85mm                | 18.40  |

## ➔ DIN 2576,PN 10,Form A



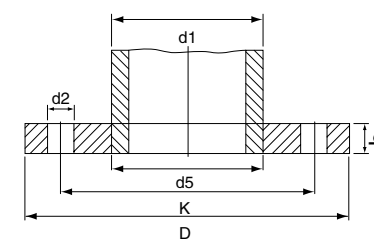
| DN  | d <sub>1</sub><br>Reihe 1 | d <sub>1</sub><br>Reihe 2 | D   | b  | k   | d <sub>5</sub><br>Reihe 1 | d <sub>5</sub><br>Reihe 2 | d <sub>2</sub><br>Schrauben | Weight<br>Reihe 1/2 |
|-----|---------------------------|---------------------------|-----|----|-----|---------------------------|---------------------------|-----------------------------|---------------------|
| 10  | 17.2                      | 14.0                      | 90  | 14 | 60  | 17.7                      | 14.5                      | 4×M 12×50mm                 | 0.605 / 0.613       |
| 15  | 21.3                      | 20.0                      | 95  | 14 | 65  | 22.0                      | 21.0                      | 4×M 12×50mm                 | 0.669 / 0.675       |
| 20  | 26.9                      | 25.0                      | 105 | 16 | 75  | 27.6                      | 26.0                      | 4×M 12×55mm                 | 0.936 / 0.749       |
| 25  | 33.7                      | 30.0                      | 115 | 16 | 85  | 34.4                      | 31.0                      | 4×M 12×55mm                 | 1.110 / 1.140       |
| 32  | 42.4                      | 38.0                      | 140 | 16 | 100 | 43.1                      | 39.0                      | 4×M 16×55mm                 | 1.620 / 1.660       |
| 40  | 48.3                      | 44.5                      | 150 | 16 | 110 | 49.0                      | 45.5                      | 4×M 16×55mm                 | 1.860 / 1.890       |
| 50  | 60.3                      | 57.0                      | 165 | 18 | 125 | 61.1                      | 58.1                      | 4×M 16×60mm                 | 2.470 / 2.510       |
| 65  | 76.1                      | -                         | 185 | 18 | 145 | 77.1                      | -                         | 4×M 16×60mm                 | 3.000               |
| 80  | 88.9                      | -                         | 200 | 20 | 160 | 90.3                      | -                         | 8×M 16×65mm                 | 3.790               |
| 100 | 114.3                     | 108.0                     | 220 | 20 | 180 | 115.9                     | 109.6                     | 8×M 16×65mm                 | 4.030 / 4.200       |
| 125 | 139.7                     | 133.0                     | 250 | 22 | 210 | 141.6                     | 134.8                     | 8×M 16×70mm                 | 5.460 / 5.710       |
| 150 | 168.3                     | 159.0                     | 285 | 22 | 240 | 170.5                     | 161.1                     | 8×M 20×70mm                 | 6.570 / 6.720       |
| 200 | 219.1                     | -                         | 340 | 24 | 295 | 221.8                     | -                         | 8×M 20×75mm                 | 9.310               |
| 250 | 273.0                     | 267.0                     | 395 | 26 | 350 | 276.2                     | 270.2                     | 12×M 20×80mm                | 11.90 / 12.50       |
| 300 | 323.9                     | -                         | 445 | 26 | 400 | 327.6                     | -                         | 12×M 20×80mm                | 13.80               |
| 350 | 355.6                     | 368.0                     | 505 | 28 | 460 | 359.7                     | 372.2                     | 16×M 20×85mm                | 20.60 / 19.00       |
| 400 | 406.4                     | 419.0                     | 565 | 32 | 515 | 411.0                     | 423.7                     | 16×M 24×95mm                | 27.90 / 25.90       |

ISO9001:2000

## FLANGE

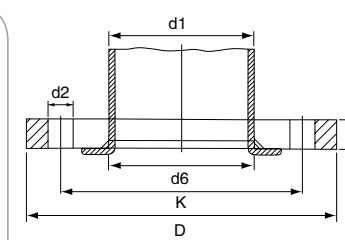
[HTTP://WWW.CZITTINGS.CN](http://www.czittings.cn)  
[HTTP://WWW.STAINLESSITTINGS.COM.CN](http://www.stainlessittings.com.cn)

## ➔ DIN 2576,M.Red.Butt,Form A



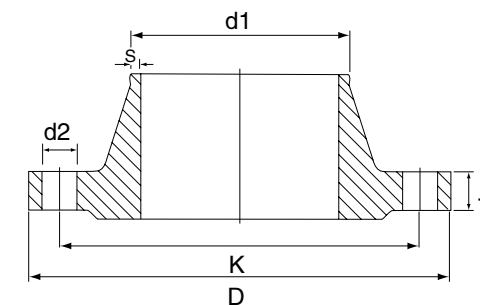
| DN  | d <sub>1</sub> | D   | b  | k   | d <sub>2</sub> | d <sub>2</sub><br>Schrauben | Weight |
|-----|----------------|-----|----|-----|----------------|-----------------------------|--------|
| 50  | 60.3           | 165 | 10 | 125 | 61.1           | 4×M 16×40mm                 | 1.493  |
| 65  | 76.1           | 185 | 10 | 145 | 77.1           | 4×M 16×40mm                 | 1.830  |
| 80  | 88.9           | 200 | 10 | 160 | 90.3           | 8×M 16×40mm                 | 1.900  |
| 100 | 114.3          | 220 | 10 | 180 | 115.9          | 8×M 16×40mm                 | 2.368  |
| 125 | 139.7          | 250 | 12 | 210 | 141.6          | 8×M 16×45mm                 | 2.870  |
| 150 | 168.3          | 285 | 12 | 240 | 170.5          | 8×M 20×45mm                 | 3.630  |
| 200 | 219.1          | 340 | 12 | 192 | 221.8          | 8×M 20×45mm                 | 4.374  |
| 250 | 273.0          | 395 | 15 | 350 | 276.2          | 12×M 20×55mm                | 6.839  |
| 300 | 323.9          | 445 | 15 | 400 | 327.6          | 12×M 20×55mm                | 8.000  |
| 350 | 355.6          | 505 | 15 | 460 | 359.7          | 16×M 20×55mm                | 10.50  |
| 400 | 406.4          | 565 | 15 | 515 | 411.0          | 16×M 24×55mm                | 13.50  |

## ➔ DIN 2642,M.Red.Butt



| DN  | d <sub>1</sub> | D   | b  | k   | d <sub>6</sub> | d <sub>2</sub><br>Schrauben | Weight |
|-----|----------------|-----|----|-----|----------------|-----------------------------|--------|
| 50  | 60.3           | 165 | 10 | 125 | 65.0           | 4×M 16×40mm                 | 1.370  |
| 65  | 76.1           | 185 | 10 | 145 | 81.0           | 4×M 16×40mm                 | 1.643  |
| 80  | 88.9           | 200 | 10 | 160 | 94.0           | 8×M 16×40mm                 | 1.845  |
| 100 | 114.3          | 220 | 10 | 180 | 119.0          | 8×M 16×40mm                 | 2.050  |
| 125 | 139.7          | 250 | 12 | 210 | 145.0          | 8×M 16×45mm                 | 3.050  |
| 150 | 168.3          | 285 | 12 | 240 | 173.0          | 8×M 20×45mm                 | 3.272  |
| 200 | 219.1          | 340 | 12 | 295 | 225.0          | 8×M 20×45mm                 | 4.500  |
| 250 | 273.0          | 395 | 15 | 350 | 279.0          | 12×M 20×55mm                | 6.633  |
| 300 | 323.9          | 445 | 15 | 400 | 329.0          | 12×M 20×55mm                | 8.500  |
| 350 | 355.6          | 505 | 15 | 460 | 362.0          | 16×M 20×55mm                | 10.56  |
| 400 | 406.4          | 565 | 15 | 515 | 413.0          | 16×M 24×55mm                | 15.00  |

## ➔ DIN 2633,PN 16,Form C



| DN  | d <sub>1</sub><br>Reihe 1 | d <sub>2</sub><br>Reihe 2 | D   | b  | k   | s   | d <sub>2</sub><br>Schrauben | Weight    |
|-----|---------------------------|---------------------------|-----|----|-----|-----|-----------------------------|-----------|
| 10  | 17.2                      | 14.0                      | 90  | 14 | 60  | 1.8 | 4×M 12×50mm                 | 0.580     |
| 15  | 21.3                      | 20.0                      | 95  | 14 | 65  | 2.0 | 4×M 12×50mm                 | 0.648     |
| 20  | 26.9                      | 25.0                      | 105 | 16 | 75  | 2.3 | 4×M 12×55mm                 | 0.952     |
| 25  | 33.7                      | 30.0                      | 115 | 16 | 85  | 2.6 | 4×M 12×55mm                 | 1.140     |
| 32  | 42.4                      | 38.0                      | 140 | 16 | 100 | 2.6 | 4×M 16×55mm                 | 1.690     |
| 40  | 48.3                      | 44.5                      | 150 | 16 | 110 | 2.6 | 4×M 16×55mm                 | 1.860     |
| 50  | 60.3                      | 57.0                      | 165 | 18 | 125 | 2.9 | 4×M 16×60mm                 | 2.530     |
| 65  | 76.1                      | -                         | 185 | 18 | 145 | 2.9 | 4×M 16×60mm                 | 3.060     |
| 80  | 88.9                      | -                         | 200 | 20 | 160 | 3.2 | 8×M 16×65mm                 | 3.700     |
| 100 | 114.3                     | 108.0                     | 220 | 20 | 180 | 3.6 | 8×M 16×65mm                 | 4.620     |
| 125 | 139.7                     | 133.0                     | 250 | 22 | 210 | 4.0 | 8×M 16×70mm                 | 6.300     |
| 150 | 168.3                     | 159.0                     | 285 | 22 | 240 | 4.5 | 8×M 20×70mm                 | 7.750     |
| 200 | 219.1                     | -                         | 340 | 24 | 295 | 5.9 | 12×M 20×75mm                | 11.00     |
| 250 | 273.0                     | 267.0                     | 405 | 26 | 355 | 6.3 | 12×M 24×80mm                | 15.60     |
| 300 | 323.9                     | -                         | 460 | 28 | 410 | 7.1 | 12×M 24×85mm                | 22.00     |
| 350 | 355.6                     | 368.0                     | 520 | 30 | 470 | 8.0 | 16×M 24×90mm                | 31.2/28.8 |
| 400 | 406.4                     | 419.0                     | 580 | 32 | 525 | 8.0 | 16×M 27×95mm                | 39.3/36.3 |

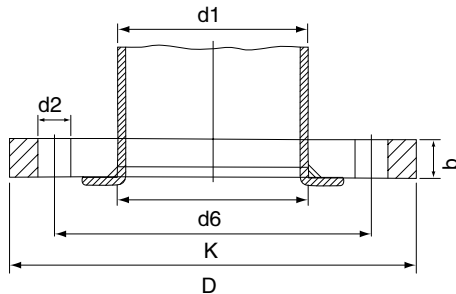




FLANGE

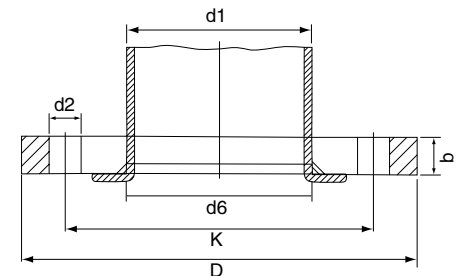
PED97/23/EC

➔ DIN 2641,PN 6



| DN  | d <sub>1</sub><br>Reihe 1 | d <sub>1</sub><br>Reihe 2 | D   | b  | K   | d <sub>6</sub><br>Reihe 1 | d <sub>6</sub><br>Reihe 2 | d <sub>2</sub><br>Schrauben | Weight |
|-----|---------------------------|---------------------------|-----|----|-----|---------------------------|---------------------------|-----------------------------|--------|
| 10  | 17.2                      | 14.0                      | 75  | 10 | 50  | 19.0                      | 16.0                      | 4×M 10×40mm                 | 0.298  |
| 15  | 21.3                      | 20.0                      | 80  | 10 | 55  | 24.0                      | 22.0                      | 4×M 10×40mm                 | 0.337  |
| 20  | 26.9                      | 25.0                      | 90  | 10 | 65  | 30.0                      | 28.0                      | 4×M 10×40mm                 | 0.418  |
| 25  | 33.7                      | 30.0                      | 100 | 12 | 75  | 36.0                      | 33.0                      | 4×M 10×45mm                 | 0.620  |
| 32  | 42.4                      | 38.0                      | 120 | 12 | 90  | 46.0                      | 42.0                      | 4×M 12×45mm                 | 0.874  |
| 40  | 48.3                      | 44.5                      | 130 | 12 | 100 | 54.0                      | 50.0                      | 4×M 12×45mm                 | 1.010  |
| 50  | 60.3                      | 57.0                      | 140 | 12 | 110 | 65.0                      | 62.0                      | 4×M 12×45mm                 | 1.120  |
| 65  | 76.1                      | -                         | 160 | 12 | 130 | 81.0                      | -                         | 4×M 12×45mm                 | 1.350  |
| 80  | 88.9                      | -                         | 190 | 14 | 150 | 94.0                      | -                         | 4×M 16×50mm                 | 2.240  |
| 100 | 114.3                     | 108.0                     | 210 | 14 | 170 | 119.0                     | 113.0                     | 4×M 16×50mm                 | 2.590  |
| 125 | 139.7                     | 133.0                     | 240 | 14 | 200 | 145.0                     | 138.0                     | 8×M 16×50mm                 | 3.100  |
| 150 | 168.3                     | 159.0                     | 265 | 14 | 225 | 173.0                     | 164.0                     | 8×M 16×50mm                 | 3.520  |
| 200 | 219.1                     | -                         | 320 | 16 | 280 | 225.0                     | -                         | 8×M 16×55mm                 | 4.980  |
| 250 | 273.0                     | 267.0                     | 375 | 20 | 335 | 279.0                     | 273.0                     | 12×M 16×65mm                | 7.670  |
| 300 | 323.9                     | -                         | 440 | 24 | 395 | 329.0                     | -                         | 12×M 20×75mm                | 12.30  |
| 350 | 355.6                     | 368.0                     | 490 | 26 | 445 | 362.0                     | 374.0                     | 12×M 20×80mm                | 15.10  |
| 400 | 406.4                     | 419.0                     | 540 | 28 | 495 | 413.0                     | 426.0                     | 12×M 20×85mm                | 17.70  |

➔ DIN 2642,PN 10



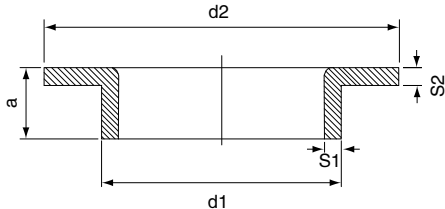
| DN  | d <sub>1</sub><br>Reihe 1 | d <sub>1</sub><br>Reihe 2 | D   | b  | K   | d <sub>6</sub><br>Reihe 1 | d <sub>6</sub><br>Reihe 2 | d <sub>2</sub><br>Schrauben | Weight |
|-----|---------------------------|---------------------------|-----|----|-----|---------------------------|---------------------------|-----------------------------|--------|
| 10  | 17.2                      | 14.0                      | 90  | 14 | 60  | 19.0                      | 16.0                      | 4×M 12×50mm                 | 0.599  |
| 15  | 21.3                      | 20.0                      | 95  | 14 | 65  | 24.0                      | 22.0                      | 4×M 12×50mm                 | 0.689  |
| 20  | 26.9                      | 25.0                      | 105 | 14 | 75  | 30.0                      | 28.0                      | 4×M 12×50mm                 | 0.806  |
| 25  | 33.7                      | 30.0                      | 115 | 16 | 85  | 36.0                      | 33.0                      | 4×M 12×55mm                 | 1.110  |
| 32  | 42.4                      | 38.0                      | 140 | 16 | 100 | 46.0                      | 42.0                      | 4×M 16×55mm                 | 1.640  |
| 40  | 48.3                      | 44.5                      | 150 | 16 | 110 | 54.0                      | 50.0                      | 4×M 16×55mm                 | 1.860  |
| 50  | 60.3                      | 57.0                      | 165 | 16 | 125 | 65.0                      | 62.0                      | 4×M 16×55mm                 | 2.200  |
| 65  | 76.1                      | -                         | 185 | 16 | 145 | 81.0                      | -                         | 4×M 16×55mm                 | 2.620  |
| 80  | 88.9                      | -                         | 200 | 18 | 160 | 94.0                      | -                         | 8×M 16×60mm                 | 3.320  |
| 100 | 114.3                     | 108.0                     | 220 | 18 | 180 | 119.0                     | 113.0                     | 8×M 16×60mm                 | 3.670  |
| 125 | 139.7                     | 133.0                     | 250 | 18 | 210 | 145.0                     | 138.0                     | 8×M 16×60mm                 | 4.540  |
| 150 | 168.3                     | 159.0                     | 285 | 18 | 240 | 173.0                     | 164.0                     | 8×M 20×60mm                 | 5.600  |
| 200 | 219.1                     | -                         | 340 | 20 | 295 | 225.0                     | -                         | 8×M 20×65mm                 | 7.460  |
| 250 | 273.0                     | 267.0                     | 395 | 22 | 350 | 279.0                     | 273.0                     | 12×M 20×70mm                | 10.30  |
| 300 | 323.9                     | -                         | 445 | 26 | 400 | 329.0                     | -                         | 12×M 20×80mm                | 14.00  |
| 350 | 355.6                     | 368.0                     | 505 | 28 | 460 | 362.0                     | 374.0                     | 16×M 20×85mm                | 18.50  |
| 400 | 406.4                     | 419.0                     | 565 | 32 | 515 | 413.0                     | 426.0                     | 16×M 24×95mm                | 25.00  |

ISO9001:2000

FLANGE

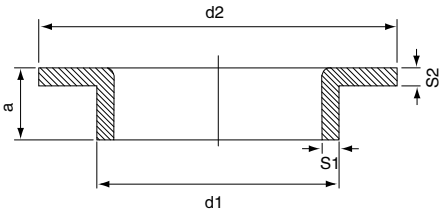
HTTP://WWW.CZFITTINGS.CN  
HTTP://WWW.STAINLESSFITTINGS.COM.CN

➔ DN 2642, PN 10



| DN | d <sub>1</sub> | s <sub>1</sub> | s <sub>2</sub> | a  | d <sub>2</sub> | Weight |
|----|----------------|----------------|----------------|----|----------------|--------|
| 10 | 17.2           | 1.8            | 2.5            | 9  | 40             | 0.03   |
| 15 | 18.0           | 1.5            | 2.5            | 9  | 45             | 0.04   |
|    | 19.0           | 2.0            | 3.0            | 9  | 45             | 0.04   |
|    | 20.0           | 2.0            | 3.0            | 9  | 45             | 0.04   |
|    | 21.3           | 2.0            | 3.0            | 9  | 45             | 0.04   |
|    | 21.3           | 2.6            | 3.5            | 9  | 45             | 0.05   |
| 20 | 22.0           | 1.5            | 2.5            | 12 | 58             | 0.06   |
|    | 23.0           | 1.5            | 2.5            | 12 | 58             | 0.06   |
|    | 25.0           | 2.0            | 3.0            | 12 | 58             | 0.07   |
|    | 26.9           | 2.0            | 3.0            | 12 | 58             | 0.07   |
|    | 26.9           | 2.6            | 3.5            | 12 | 58             | 0.08   |
| 25 | 28.0           | 1.5            | 2.5            | 15 | 68             | 0.08   |
|    | 29.0           | 2.0            | 3.0            | 15 | 68             | 0.09   |
|    | 30.0           | 2.0            | 3.0            | 15 | 68             | 0.09   |
|    | 33.7           | 2.0            | 3.0            | 15 | 68             | 0.09   |
|    | 33.7           | 2.6            | 4.0            | 15 | 78             | 0.12   |
| 32 | 34.0           | 1.5            | 2.5            | 15 | 78             | 0.10   |
|    | 35.0           | 1.5            | 2.5            | 15 | 78             | 0.10   |
|    | 36.0           | 2.0            | 3.0            | 15 | 78             | 0.12   |
|    | 38.0           | 2.0            | 3.0            | 15 | 78             | 0.12   |
|    | 38.0           | 2.6            | 3.5            | 15 | 78             | 0.13   |
|    | 42.4           | 2.0            | 3.0            | 15 | 78             | 0.11   |
|    | 42.4           | 2.6            | 3.5            | 15 | 78             | 0.13   |
|    | 42.4           | 3.0            | 4.0            | 15 | 78             | 0.15   |
|    | 40.0           | 1.5            | 2.5            | 17 | 88             | 0.12   |
|    | 40.0           | 2.0            | 3.0            | 17 | 88             | 0.15   |
| 40 | 42.0           | 2.0            | 3.0            | 17 | 88             | 0.15   |
|    | 43.0           | 1.5            | 2.5            | 17 | 88             | 0.12   |
|    | 44.5           | 2.0            | 3.0            | 17 | 88             | 0.14   |
|    | 44.5           | 2.6            | 3.5            | 17 | 88             | 0.17   |
|    | 48.3           | 2.0            | 3.0            | 17 | 88             | 0.14   |
|    | 48.3           | 2.6            | 3.5            | 17 | 88             | 0.17   |
|    | 48.3           | 3.0            | 4.0            | 17 | 88             | 0.19   |
|    | 52.0           | 1.5            | 2.5            | 20 | 102            | 0.16   |
|    | 53.0           | 1.5            | 2.5            | 21 | 102            | 0.16   |
|    | 54.0           | 2.0            | 3.0            | 23 | 102            | 0.19   |
| 50 | 57.0           | 2.0            | 3.0            | 23 | 102            | 0.19   |
|    | 57.0           | 2.6            | 4.0            | 23 | 102            | 0.25   |
|    | 60.3           | 2.0            | 3.0            | 23 | 102            | 0.19   |
|    | 60.3           | 2.6            | 4.0            | 23 | 102            | 0.25   |
|    | 60.3           | 3.0            | 4.0            | 23 | 102            | 0.25   |

➔ DIN 2642,PN 10



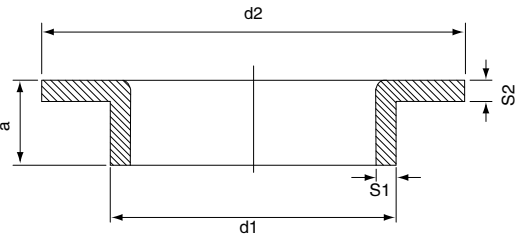
| DN  | d <sub>1</sub> | s <sub>1</sub> | s <sub>2</sub> | a  | d <sub>2</sub> | Weight |
|-----|----------------|----------------|----------------|----|----------------|--------|
| 65  | 69.0           | 2.0            | 3.0            | 23 | 122            | 0.27   |
|     | 70.0           | 2.0            | 3.0            | 23 | 122            | 0.27   |
|     | 76.1           | 2.0            | 3.0            | 23 | 122            | 0.27   |
|     | 76.1           | 2.6            | 3.5            | 23 | 122            | 0.30   |
|     | 76.1           | 3.0            | 4.0            | 23 | 122            | 0.34   |
| 80  | 84.0           | 2.0            | 2.5            | 23 | 138            | 0.27   |
|     | 85.0           | 2.0            | 2.5            | 23 | 138            | 0.27   |
|     | 86.0           | 3.0            | 3.5            | 23 | 138            | 0.37   |
|     | 88.9           | 2.0            | 2.5            | 23 | 138            | 0.26   |
|     | 88.9           | 2.3            | 3.0            | 23 | 138            | 0.32   |
| 100 | 88.9           | 2.6            | 3.5            | 23 | 138            | 0.37   |
|     | 88.9           | 3.2            | 4.0            | 23 | 138            | 0.42   |
|     | 104.0          | 2.0            | 3.0            | 28 | 160            | 0.42   |
|     | 106.0          | 3.0            | 4.0            | 28 | 160            | 0.56   |
|     | 108.0          | 2.0            | 2.5            | 28 | 160            | 0.35   |
| 125 | 108.0          | 3.0            | 4.0            | 28 | 160            | 0.56   |
|     | 114.3          | 2.0            | 3.0            | 28 | 160            | 0.40   |
|     | 114.3          | 2.6            | 3.5            | 28 | 160            | 0.47   |
|     | 114.3          | 3.2            | 4.0            | 28 | 160            | 0.53   |
|     | 129.0          | 2.0            | 3.0            | 30 | 188            | 0.56   |
|     | 130.0          | 2.5            | 3.0            | 30 | 188            | 0.56   |
|     | 131.0          | 3.0            | 4.0            | 30 | 188            | 0.72   |
|     | 133.0          | 2.0            | 2.5            | 30 | 188            | 0.44   |
|     | 133.0          | 2.5            | 3.0            | 30 | 188            | 0.54   |
|     | 139.7          | 2.0            | 2.5            | 30 | 188            | 0.44   |
| 150 | 139.7          | 2.6            | 3.5            | 30 | 188            | 0.61   |
|     | 139.7          | 3.2            | 4.0            | 30 | 188            | 0.70   |
|     | 154.0          | 2.0            | 2.5            | 31 | 212            | 0.55   |
|     | 155.0          | 2.5            | 3.0            | 31 | 212            | 0.66   |
|     | 156.0          | 3.0            | 3.5            | 31 | 212            | 0.76   |
|     | 159.0          | 2.0            | 2.5            | 30 | 212            | 0.52   |
|     | 159.0          | 2.5            | 3.0            | 30 | 212            | 0.62   |
|     | 159.0          | 3.0            | 3.5            | 30 | 212            | 0.73   |
|     | 168.3          | 2.0            | 2.5            | 30 | 212            | 0.49   |
|     | 168.3          | 2.6            | 3.0            | 30 | 212            | 0.59   |
| 150 | 168.3          | 3.2            | 4.0            | 30 | 212            | 0.76   |



FLANGE

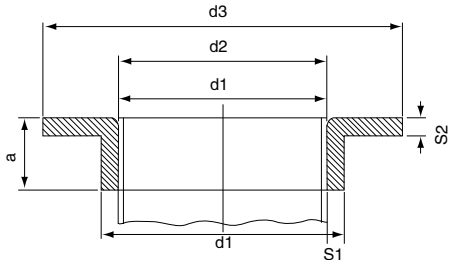
PED97/23/EC

➔ DIN 2642,PN 10



| DN  | d <sub>1</sub> | s <sub>1</sub> | s <sub>2</sub> | a  | d <sub>2</sub> | Weight |
|-----|----------------|----------------|----------------|----|----------------|--------|
| 200 | 204.0          | 2.0            | 2.5            | 30 | 270            | 0.78   |
|     | 205.0          | 2.5            | 3.0            | 30 | 270            | 0.93   |
|     | 206.0          | 3.0            | 3.5            | 30 | 270            | 1.09   |
|     | 219.1          | 2.0            | 2.5            | 30 | 270            | 0.69   |
|     | 219.1          | 2.6            | 3.0            | 30 | 270            | 0.82   |
|     | 219.1          | 3.2            | 4.0            | 30 | 270            | 1.09   |
| 250 | 254.0          | 2.0            | 2.5            | 30 | 320            | 0.95   |
|     | 255.0          | 2.5            | 3.0            | 30 | 320            | 1.14   |
|     | 256.0          | 3.0            | 3.5            | 30 | 320            | 1.32   |
|     | 258.0          | 4.0            | 4.0            | 30 | 320            | 1.54   |
|     | 267.0          | 3.0            | 3.0            | 30 | 320            | 1.10   |
|     | 267.0          | 4.0            | 4.0            | 30 | 320            | 1.48   |
| 300 | 273.0          | 3.0            | 3.0            | 30 | 320            | 1.08   |
|     | 273.0          | 4.0            | 4.0            | 30 | 320            | 1.44   |
|     | 305.0          | 2.5            | 2.5            | 35 | 370            | 1.26   |
|     | 306.0          | 3.0            | 3.0            | 35 | 370            | 1.51   |
| 350 | 323.9          | 3.0            | 3.0            | 35 | 370            | 1.36   |
|     | 323.9          | 4.0            | 4.0            | 35 | 370            | 1.80   |
|     | 355.6          | 3.0            | 3.0            | 35 | 430            | 1.89   |
|     | 355.6          | 4.0            | 4.0            | 35 | 430            | 2.51   |
| 400 | 356.0          | 3.0            | 3.0            | 35 | 430            | 1.89   |
|     | 358.0          | 4.0            | 4.0            | 35 | 430            | 2.53   |
|     | 368.0          | 3.0            | 3.0            | 35 | 430            | 1.68   |
|     | 406.4          | 3.0            | 3.0            | 35 | 482            | 2.16   |
| 450 | 406.4          | 4.0            | 4.0            | 35 | 482            | 2.87   |
|     | 419.1          | 3.0            | 3.0            | 40 | 482            | 2.20   |
|     | 419.1          | 4.0            | 4.0            | 40 | 482            | 2.93   |
| 500 | 456.0          | 3.0            | 3.0            | 35 | 532            | 2.43   |
|     | 458.0          | 4.0            | 4.0            | 35 | 532            | 3.24   |
| 500 | 506.0          | 3.0            | 3.0            | 35 | 585            | 2.77   |
|     | 508.0          | 4.0            | 4.0            | 35 | 585            | 3.70   |

➔ DIN 2642



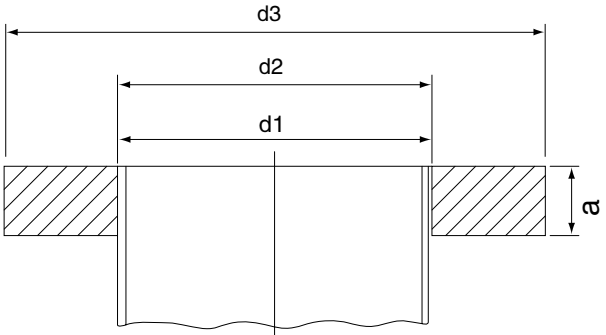
| DN  | d <sub>1</sub> | d <sub>2</sub> | s <sub>1</sub> | s <sub>2</sub> | a  | d <sub>2</sub> | Weight |
|-----|----------------|----------------|----------------|----------------|----|----------------|--------|
| 20  | 26.9           | 27.4           | 2.5            | 3.0            | 15 | 58             | 0.06   |
| 25  | 33.7           | 34.2           | 2.5            | 3.0            | 15 | 68             | 0.08   |
| 32  | 42.4           | 42.9           | 2.5            | 3.0            | 15 | 78             | 0.11   |
| 40  | 48.3           | 48.8           | 2.5            | 3.0            | 21 | 88             | 0.13   |
| 50  | 60.3           | 60.8           | 2.5            | 3.0            | 23 | 102            | 0.17   |
| 65  | 70.0           | 70.5           | 2.5            | 3.0            | 23 | 122            | 0.25   |
|     | 76.1           | 76.6           | 2.5            | 3.0            | 23 | 122            | 0.25   |
| 80  | 84.0           | 84.5           | 2.5            | 3.0            | 23 | 138            | 0.30   |
|     | 88.9           | 89.4           | 2.5            | 3.0            | 23 | 138            | 0.28   |
| 100 | 104.0          | 104.5          | 2.5            | 3.0            | 25 | 160            | 0.41   |
|     | 108.0          | 108.5          | 2.5            | 3.0            | 27 | 160            | 0.40   |
|     | 114.3          | 114.8          | 2.5            | 3.0            | 25 | 160            | 0.37   |
| 125 | 129.0          | 129.8          | 2.5            | 3.0            | 28 | 188            | 0.53   |
|     | 133.0          | 133.8          | 2.5            | 3.0            | 30 | 188            | 0.53   |
|     | 139.7          | 140.5          | 2.5            | 3.0            | 27 | 188            | 0.48   |
| 150 | 154.0          | 154.8          | 2.5            | 3.0            | 28 | 212            | 0.61   |
|     | 156.0          | 156.8          | 2.5            | 3.0            | 29 | 212            | 0.61   |
|     | 159.0          | 159.8          | 2.5            | 3.0            | 29 | 212            | 0.61   |
|     | 168.3          | 169.1          | 2.5            | 3.0            | 31 | 212            | 0.57   |
| 175 | 193.7          | 194.7          | 2.5            | 3.0            | 27 | 270            | 0.93   |
| 200 | 219.1          | 220.1          | 2.5            | 3.0            | 27 | 270            | 0.75   |
| 250 | 273.0          | 174.0          | 3.0            | 3.0            | 30 | 320            | 1.11   |
| 300 | 323.9          | 324.9          | 3.0            | 3.0            | 35 | 370            | 1.39   |

ISO9001:2000

FLANGE

HTTP://WWW.CZFITTINGS.CN  
HTTP://WWW.STAINLESSFITTINGS.COM.CN

➔ DIN 2642,PN 10



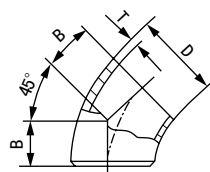
| DN  | d <sub>1</sub> | d <sub>2</sub> | d <sub>3</sub> | a nach DIN<br>a reduziert | Weight |
|-----|----------------|----------------|----------------|---------------------------|--------|
| 15  | 21.3           | 22             | 45             | 10                        | 0.105  |
|     |                |                |                | 6                         | 0.057  |
| 20  | 26.9           | 27.6           | 58             | 12                        | 0.203  |
|     |                |                |                | 8                         | 0.128  |
| 25  | 33.7           | 34.4           | 68             | 12                        | 0.276  |
|     |                |                |                | 8                         | 0.170  |
| 32  | 42.4           | 43.1           | 78             | 12                        | 0.343  |
|     |                |                |                | 8                         | 0.208  |
| 40  | 48.3           | 49             | 88             | 12                        | 0.426  |
|     |                |                |                | 8                         | 0.264  |
| 50  | 60.3           | 61.1           | 102            | 14                        | 0.618  |
|     |                |                |                | 8                         | 0.329  |
| 65  | 76.1           | 77.1           | 122            | 14                        | 0.786  |
|     |                |                |                | 8                         | 0.441  |
| 80  | 88.9           | 90.3           | 138            | 16                        | 1.100  |
|     |                |                |                | 8                         | 0.537  |
| 100 | 114.3          | 115.9          | 158            | 16                        | 1.310  |
|     |                |                |                | 10                        | 0.711  |
| 125 | 139.7          | 141.6          | 188            | 18                        | 1.960  |
|     |                |                |                | 10                        | 0.943  |
| 150 | 168.3          | 170.5          | 212            | 18                        | 2.180  |
|     |                |                |                | 10                        | 0.979  |
| 200 | 219.1          | 221.8          | 268            | 20                        | 3.100  |
|     |                |                |                | 10                        | 1.400  |
| 250 | 273.0          | 276.2          | 320            | 22                        | 4.220  |
|     |                |                |                | 12                        | 1.930  |
| 300 | 323.9          | 327.6          | 370            | 22                        | 4.850  |
|     |                |                |                | 12                        | 2.190  |
| 350 | 355.6          | 359.7          | 430            | 22                        | 6.710  |
|     |                |                |                | 12                        | 3.960  |
| 400 | 406.4          | 411            | 482            | 24                        | 8.280  |
|     |                |                |                | 12                        | 4.560  |
| 500 | 508.0          | 513.6          | 585            | 26                        | 11.50  |
|     |                |                |                | 15                        | 7.460  |



ANSI BUTT WELD FITTINGS



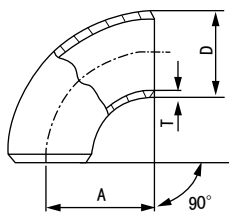
KH-10001



45° Elbows



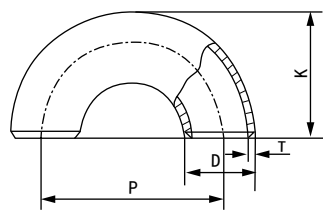
KH-10002



90° Elbows



KH-10003



180° Elbows

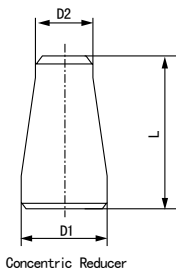
ASME/AHNSI B16.9, B16.28  
Dimensions of Elbows and Returns

| Nominal<br>Pipe Size<br>DN | Outside<br>Diameter<br>Bevel<br>D | Center to End |             |              | Center to Center |              | Back to Faces |       |
|----------------------------|-----------------------------------|---------------|-------------|--------------|------------------|--------------|---------------|-------|
|                            |                                   | 45° Elbows    | 90° Elbows  |              | 180° Elbows      |              |               |       |
|                            |                                   |               |             |              |                  |              |               |       |
|                            |                                   |               |             |              |                  |              |               |       |
| B                          | A                                 |               | P           |              | K                |              |               |       |
| Long Radius                | Long Radius                       | Short Radius  | Long Radius | Short Radius | Long Radius      | Short Radius |               |       |
| 1/2                        | 21.3                              | 15.7          | 38.1        | --           | 76.2             | --           | 47.8          | --    |
| 3/4                        | 26.7                              | 19.1          | 38.1        | --           | 76.2             | --           | 50.8          | --    |
| 1                          | 33.4                              | 22.4          | 38.1        | 25.4         | 76.2             | 50.8         | 55.6          | 41.4  |
| 1¼                         | 42.2                              | 25.4          | 47.8        | 31.8         | 95.3             | 63.6         | 69.9          | 52.3  |
| 1½                         | 48.3                              | 28.4          | 57.2        | 38.1         | 114.3            | 76.2         | 82.6          | 62.0  |
| 2                          | 60.3                              | 35.1          | 76.2        | 50.8         | 152.4            | 101.6        | 106.4         | 81.0  |
| 2½                         | 73.0                              | 44.5          | 95.3        | 63.5         | 190.5            | 127.0        | 131.8         | 100.1 |
| 3                          | 88.9                              | 50.8          | 114.3       | 76.2         | 228.6            | 152.4        | 158.8         | 120.7 |
| 3½                         | 101.6                             | 57.2          | 133.4       | 88.9         | 266.7            | 177.8        | 184.2         | 139.7 |
| 4                          | 114.3                             | 63.5          | 152.4       | 101.6        | 304.8            | 203.2        | 209.6         | 158.8 |
| 5                          | 141.3                             | 79.2          | 190.5       | 127.0        | 381.0            | 254.0        | 261.9         | 196.9 |
| 6                          | 168.3                             | 95.3          | 228.6       | 152.4        | 457.2            | 304.8        | 312.7         | 236.5 |
| 8                          | 219.1                             | 127.0         | 304.8       | 203.2        | 609.6            | 406.4        | 414.3         | 312.7 |
| 10                         | 273.1                             | 158.8         | 381.0       | 254.0        | 762.0            | 508.0        | 517.7         | 390.7 |
| 12                         | 323.9                             | 190.5         | 457.2       | 304.8        | 914.4            | 609.6        | 619.3         | 466.9 |
| 14                         | 355.6                             | 222.3         | 533.4       | 355.6        | 1066.8           | 711.2        | 711.2         | 533.4 |
| 16                         | 406.4                             | 254.0         | 609.6       | 406.4        | 1219.2           | 812.8        | 812.8         | 609.6 |
| 18                         | 457.2                             | 285.8         | 685.8       | 457.2        | 1371.6           | 914.4        | 914.4         | 685.8 |
| 20                         | 508.0                             | 317.5         | 762.0       | 508.0        | 1524.0           | 1016.0       | 1046.0        | 762.0 |
| 22                         | 558.8                             | 342.9         | 838.2       | 558.8        | 1676.4           | 1117.6       | 1117.6        | 838.2 |
| 24                         | 609.6                             | 381.0         | 914.4       | 609.6        | 1828.8           | 1219.2       | 1219.2        | 914.4 |
| 26                         | 660.4                             | 406.0         | 990.6       | --           | --               | --           | --            | --    |
| 28                         | 711.2                             | 438.2         | 1066.8      | --           | --               | --           | --            | --    |
| 30                         | 762.0                             | 469.9         | 1143.0      | --           | --               | --           | --            | --    |
| 32                         | 812.8                             | 501.7         | 1219.2      | --           | --               | --           | --            | --    |
| 34                         | 863.6                             | 533.4         | 1295.4      | --           | --               | --           | --            | --    |
| 36                         | 914.4                             | 565.2         | 1371.6      | --           | --               | --           | --            | --    |
| 38                         | 965.2                             | 599.9         | 1447.8      | --           | --               | --           | --            | --    |
| 40                         | 1016.0                            | 632.0         | 1524.0      | --           | --               | --           | --            | --    |
| 42                         | 1066.8                            | 660.4         | 1600.2      | --           | --               | --           | --            | --    |
| 44                         | 1117.6                            | 695.5         | 1676.4      | --           | --               | --           | --            | --    |
| 46                         | 1168.4                            | 726.9         | 1752.6      | --           | --               | --           | --            | --    |
| 48                         | 1219.2                            | 758.9         | 1828.8      | --           | --               | --           | --            | --    |

ANSI BUTT WELD FITTINGS



KH-10004



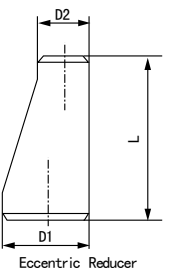
Concentric Reducer

ASME/ANSI B16.9  
Dimensions of Concentric & Eccentric Reducers

| Nominal<br>Pipe Size<br>DN                                                | Outside Diameter<br>at Bevel                                                 | End<br>to end |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------|
|                                                                           | D <sub>1</sub> × D <sub>2</sub>                                              | L             |
| 3/4 × 1/2<br>3/4 × 3/8                                                    | 26.7 × 21.3<br>26.7 × 17.1                                                   | 3.81          |
| 1 × 3/4<br>1 × 1/2                                                        | 33.4 × 26.7<br>33.4 × 21.3                                                   | 50.8          |
| 1-1/4 × 1<br>1-1/4 × 3/4<br>1-1/4 × 1/2                                   | 42.2 × 33.4<br>42.2 × 26.7<br>42.2 × 21.3                                    | 50.8          |
| 1-1/2 × 1-1/4<br>1-1/2 × 1<br>1-1/2 × 3/4<br>1-1/2 × 1/2                  | 48.3 × 42.2<br>48.3 × 33.4<br>48.3 × 26.7<br>48.3 × 21.3                     | 63.5          |
| 2 × 1-1/2<br>2-1/2 × 1-1/4<br>2 × 1<br>2 × 3/4                            | 60.3 × 48.3<br>60.3 × 42.2<br>60.3 × 33.4<br>60.3 × 26.7                     | 76.2          |
| 2-1/2 × 2<br>2-1/2 × 1-1/2<br>2-1/2 × 1-1/4<br>2-1/2 × 1                  | 73.0 × 60.3<br>73.0 × 48.3<br>73.0 × 42.2<br>73.0 × 33.4                     | 88.9          |
| 3 × 2-1/2<br>3 × 2<br>3 × 1-1/2<br>3 × 1-1/4                              | 88.9 × 73.0<br>88.9 × 60.3<br>88.9 × 48.3<br>88.9 × 42.2                     | 88.9          |
| 3-1/2 × 3<br>3-1/2 × 2-1/2<br>3-1/2 × 2<br>3-1/2 × 1-1/2<br>3-1/2 × 1-1/4 | 101.6 × 88.9<br>101.6 × 73.0<br>101.6 × 60.3<br>101.6 × 48.3<br>101.6 × 42.2 | 101.6         |
| 4 × 3-1/2<br>4 × 3                                                        | 114.3 × 101.6<br>114.3 × 88.9                                                | 101.6         |



KH-10005



Eccentric Reducer

ASME/ANSI B16.9  
Dimensions of Concentric & Eccentric Reducers

| Nominal<br>Pipe Size<br>DN(in)           | Outside Diameter<br>at Bevel                                     | End to<br>end |
|------------------------------------------|------------------------------------------------------------------|---------------|
|                                          | D <sub>1</sub> × D <sub>2</sub>                                  | E             |
| 16 × 12<br>16 × 10<br>16 × 8             | 406.4 × 323.9<br>406.4 × 273.1<br>406.4 × 219.1                  | 355.6         |
| 18 × 16<br>18 × 14<br>18 × 12<br>18 × 10 | 457.2 × 406.4<br>457.2 × 355.6<br>457.2 × 323.9<br>457.2 × 273.1 | 381.0         |
| 20 × 18<br>20 × 16<br>20 × 14<br>20 × 12 | 508.0 × 457.2<br>508.0 × 406.4<br>508.0 × 355.6<br>508.0 × 323.9 | 508.0         |
| 22 × 20<br>22 × 18<br>22 × 16<br>22 × 14 | 558.8 × 508.0<br>558.8 × 457.2<br>558.8 × 406.4<br>558.8 × 355.6 | 508.0         |
| 24 × 22<br>24 × 20<br>24 × 18<br>24 × 16 | 609.6 × 558.8<br>609.6 × 508.0<br>609.6 × 457.2<br>609.6 × 406.4 | 508.0         |
| 26 × 24<br>26 × 22<br>26 × 20<br>26 × 18 | 660.4 × 609.6<br>660.4 × 558.8<br>660.4 × 508.0<br>660.4 × 457.2 | 609.6         |
| 28 × 26<br>28 × 24<br>28 × 20<br>28 × 18 | 711.2 × 660.4<br>711.2 × 609.6<br>711.2 × 508.0<br>711.2 × 457.2 | 609.6         |
| 30 × 28<br>30 × 26<br>30 × 24<br>30 × 20 | 762.0 × 711.2<br>762.0 × 660.4<br>762.0 × 609.6<br>762.0 × 508.0 | 609.6         |
| 32 × 30<br>32 × 28<br>32 × 26<br>32 × 24 | 812.8 × 762.0<br>812.8 × 711.2<br>812.8 × 660.4<br>812.8 × 609.6 | 609.6         |
| 34 × 32<br>34 × 30                       | 863.6 × 812.8<br>863.6 × 762.0                                   | 609.6         |

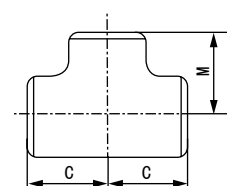
| Nominal<br>Pipe Size<br>DN(in)                                 | Outside Diameter<br>at Bevel                                                                              | End to<br>end |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------|
|                                                                | D <sub>1</sub> × D <sub>2</sub>                                                                           | L             |
| 34 × 26<br>34 × 24                                             | 863.6 × 660.4<br>863.6 × 609.6                                                                            | 609.6         |
| 36 × 34<br>36 × 32<br>36 × 30<br>36 × 28<br>36 × 24            | 914.4 × 863.6<br>914.4 × 812.8<br>914.4 × 762.0<br>914.4 × 711.2<br>914.4 × 660.4                         | 609.6         |
| 38 × 36<br>38 × 34<br>38 × 32<br>38 × 30<br>38 × 28<br>38 × 26 | 965.2 × 914.4<br>965.2 × 863.6<br>965.2 × 812.8<br>965.2 × 762.0<br>965.2 × 711.2<br>965.2 × 660.4        | 609.6         |
| 40 × 38<br>40 × 36<br>40 × 34<br>40 × 32<br>40 × 30            | 1016.0 × 965.2<br>1016.0 × 914.4<br>1016.0 × 863.6<br>1016.0 × 812.8<br>1016.0 × 762.0                    | 609.6         |
| 42 × 40<br>42 × 38<br>42 × 36<br>42 × 34<br>42 × 32<br>42 × 30 | 1066.8 × 1016.0<br>1066.8 × 965.2<br>1066.8 × 914.4<br>1066.8 × 863.6<br>1066.8 × 812.8<br>1066.8 × 762.0 | 609.6         |
| 44 × 42<br>44 × 40<br>44 × 38                                  | 1117.6 × 1066.8<br>1117.6 × 1016.0<br>1117.6 × 965.2                                                      | 609.6         |
| 46 × 44<br>46 × 42<br>46 × 40<br>46 × 38                       | 1168.4 × 1117.6<br>1168.4 × 1066.8<br>1168.4 × 1016.0<br>1168.4 × 965.2                                   | 711.2         |
| 48 × 46<br>48 × 44<br>48 × 42<br>48 × 40                       | 1219.2 × 1168.4<br>1219.2 × 1117.6<br>1219.2 × 1066.8<br>1219.2 × 1016.0                                  | 711.2         |



## ANSI BUTT WELD FITTINGS



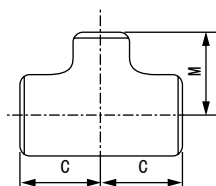
KH-10006



Straight Tee



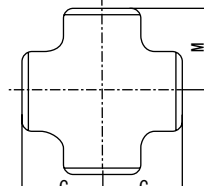
KH-10007



Reduced Tee



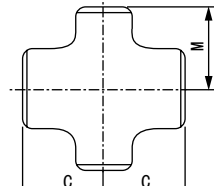
KH-10008



Straight Cross



KH-10009



Reduced Cross

ASME/AHNSI B16.9

Dimensions of Reducing outlet Tees and Reducing outlet Crosses

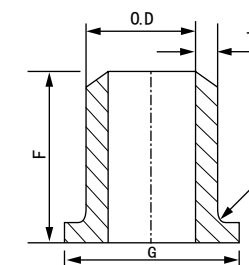
| Normal<br>Pipe Size<br>DN(in) | Outside Diameter at<br>Bevel | Conter to End |      |
|-------------------------------|------------------------------|---------------|------|
|                               |                              | C             | M    |
| 1/2×1/2                       | 21.3×21.3                    | 25.4          |      |
| 1/2×3/8                       | 21.3×17.1                    |               |      |
| 1/2×1/4                       | 21.3×13.7                    |               |      |
| 3/4×3/4                       | 26.7×26.7                    | 28.4          |      |
| 3/4×1/2                       | 26.7×21.3                    |               |      |
| 3/4×3/8                       | 26.7×17.1                    |               |      |
| 1×1                           | 33.4×33.4                    | 38.1          |      |
| 1×3/4                         | 33.4×26.7                    |               |      |
| 1×1/2                         | 33.4×21.3                    |               |      |
| 1-1/4×1-1/4                   | 42.2×42.2                    | 47.8          |      |
| 1-1/4×1                       | 42.2×33.4                    |               |      |
| 1-1/4×3/4                     | 42.2×26.7                    |               |      |
| 1-1/4×1/2                     | 42.2×21.3                    | 57.2          |      |
| 1-1/2×1-1/2                   | 48.3×48.3                    |               |      |
| 1-1/2×1-1/4                   | 48.3×42.2                    |               |      |
| 1-1/2×1                       | 48.3×33.4                    | 63.5          | 63.5 |
| 1-1/2×3/4                     | 48.3×26.7                    |               | 60.5 |
| 1-1/2×1/2                     | 48.3×21.3                    |               | 57.2 |
| 2×2                           | 60.3×60.3                    | 76.2          | 50.8 |
| 2×1-1/2                       | 60.3×48.3                    |               | 44.5 |
| 2×1-1/4                       | 60.3×42.2                    |               | 76.2 |
| 2×1                           | 60.3×33.4                    | 85.2          | 63.5 |
| 2×3/4                         | 60.3×26.7                    |               | 76.2 |
| 2-1/2×2-1/2                   | 73.0×73.0                    |               | 73.2 |
| 2-1/2×2                       | 73.0×60.3                    |               | 69.9 |
| 2-1/2×1-1/2                   | 73.0×48.3                    |               |      |
| 2-1/2×1-1/4                   | 73.0×42.2                    |               |      |
| 2-1/2×1                       | 73.0×33.4                    |               |      |
| 3×3                           | 88.9×88.9                    |               |      |
| 3×3-1/2                       | 88.9×73.0                    |               |      |
| 3×2                           | 88.9×60.3                    |               |      |
| 3×1-1/2                       | 88.9×48.3                    |               |      |
| 3×1-1/4                       | 88.9×42.2                    |               |      |

| Normal<br>Pipe Size<br>DN(in) | Outside Diameter at<br>Bevel | Conter to End |       |
|-------------------------------|------------------------------|---------------|-------|
|                               |                              | C             | M     |
| 3-1/2×3-1/2                   | 101.6×101.6                  | 95.3          | 95.3  |
| 3-1/2×3                       | 101.6×88.9                   |               | 91.9  |
| 3-1/2×2-1/2                   | 101.6×73.0                   |               | 88.9  |
| 3-1/2×2                       | 101.6×60.3                   | 104.6         | 82.6  |
| 3-1/2×1-1/2                   | 101.6×48.3                   |               | 79.2  |
| 4×4                           | 114.3×114.3                  |               | 104.6 |
| 4×3-1/2                       | 114.3×101.6                  | 104.6         | 101.6 |
| 4×3                           | 114.3×88.9                   |               | 98.6  |
| 4×2-1/2                       | 114.3×73.0                   |               | 95.3  |
| 4×2                           | 114.3×60.3                   | 124.0         | 88.9  |
| 4×1-1/2                       | 114.3×48.3                   |               | 85.9  |
| 5×5                           | 141.3×141.3                  |               | 124.0 |
| 5×4                           | 141.3×114.3                  | 142.7         | 117.3 |
| 5×3-1/2                       | 141.3×101.6                  |               | 114.3 |
| 5×3                           | 141.3×88.9                   |               | 111.3 |
| 5×2-1/2                       | 141.3×73.0                   | 177.8         | 108.0 |
| 5×2                           | 141.3×60.3                   |               | 104.6 |
| 6×6                           | 168.3×168.3                  |               | 142.7 |
| 6×5                           | 168.3×141.3                  | 215.9         | 136.7 |
| 6×4                           | 168.3×114.3                  |               | 130.0 |
| 6×3-1/2                       | 168.3×101.6                  |               | 127.0 |
| 6×3                           | 168.3×88.9                   | 215.9         | 124.0 |
| 6×2-1/2                       | 168.3×73.0                   |               | 120.7 |
| 8×8                           | 219.1×219.1                  |               | 177.8 |
| 8×6                           | 219.1×168.3                  | 215.9         | 168.1 |
| 8×5                           | 219.1×141.3                  |               | 162.1 |
| 8×4                           | 219.1×114.3                  |               | 155.4 |
| 8×3-1/2                       | 219.1×101.6                  | 215.9         | 152.4 |
| 10×10                         | 273.1×273.1                  |               | 215.9 |
| 10×8                          | 273.1×219.1                  |               | 203.2 |
| 10×6                          | 273.1×168.3                  | 215.9         | 193.5 |
| 10×5                          | 273.1×141.3                  |               | 190.5 |
| 10×4                          | 273.1×114.3                  |               | 184.2 |

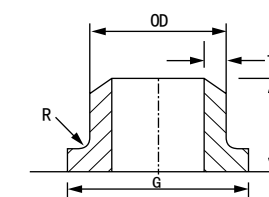
## ANSI BUTT WELD FITTINGS



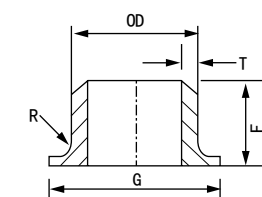
KH-10010

LAP JOINT STUB ENDS  
DIMENSION ASME/ASME/ANSI B16.9-1986 MSS SP-43

ANSI



MSS TYPE A



MSS TYPE B

| NOMINAL<br>PIPE SIZE<br>INCH | OUTSIDE<br>DIAMETER<br>O.D. | STUB END |      |    |     |            |             | NOMINAL<br>PIPE SIZE<br>INCH |
|------------------------------|-----------------------------|----------|------|----|-----|------------|-------------|------------------------------|
|                              |                             | G        | ANSI |    | MSS |            |             |                              |
|                              |                             |          | F    | R  | F   | TYPEA<br>R | TYPE B<br>R |                              |
| 1/2                          | 21.3                        | 35       | 76   | 3  | 51  | 3          | 0.8         | 1/2                          |
| 3/4                          | 26.7                        | 43       | 76   | 3  | 51  | 3          | 0.8         | 3/4                          |
| 1                            | 33.4                        | 51       | 102  | 3  | 51  | 3          | 0.8         | 1                            |
| 1-1/4                        | 42.2                        | 64       | 102  | 5  | 51  | 5          | 0.8         | 11/4                         |
| 1-1/2                        | 48.3                        | 73       | 102  | 6  | 51  | 6          | 0.8         | 12/2                         |
| 2                            | 60.3                        | 92       | 152  | 8  | 64  | 8          | 0.8         | 2                            |
| 2-1/2                        | 73.0                        | 105      | 152  | 8  | 64  | 8          | 0.8         | 21/2                         |
| 3                            | 88.9                        | 127      | 152  | 10 | 64  | 10         | 0.8         | 3                            |
| 3-1/2                        | 101.6                       | 140      | 152  | 10 | 76  | 10         | 0.8         | 31/2                         |
| 4                            | 114.3                       | 157      | 152  | 11 | 76  | 11         | 1.6         | 4                            |
| 5                            | 141.3                       | 186      | 203  | 11 | 76  | 11         | 1.6         | 5                            |
| 6                            | 168.3                       | 216      | 203  | 13 | 89  | 13         | 1.6         | 6                            |
| 8                            | 219.1                       | 270      | 203  | 13 | 102 | 13         | 1.6         | 8                            |
| 10                           | 273                         | 324      | 254  | 13 | 127 | 13         | 1.6         | 10                           |
| 12                           | 323.9                       | 381      | 254  | 13 | 152 | 13         | 1.6         | 12                           |
| 14                           | 355.6                       | 413      | 254  | 13 | 152 | 13         | 1.6         | 14                           |
| 16                           | 406.4                       | 470      | 254  | 13 | 152 | 13         | 1.6         | 16                           |
| 18                           | 457.2                       | 533.5    | 254  | 13 | 152 | 13         | 1.6         | 18                           |
| 20                           | 508                         | 584      | 254  | 13 | 152 | 13         | 1.6         | 20                           |
| 24                           | 609.1                       | 692      | 254  | 13 | 152 | 13         | 1.6         | 24                           |

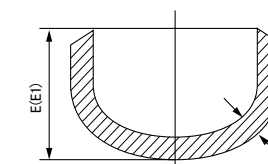
## CAP

ASME/ANSI B16.9

Dimensions of Caps



KH-10011



| Normal<br>Pipe Size<br>DN(in) | Outside<br>Diameter<br>at Bevel | Length |                | Limiting Wall<br>Thickness for<br>Length E |
|-------------------------------|---------------------------------|--------|----------------|--------------------------------------------|
|                               |                                 | D      | E <sub>1</sub> |                                            |
| 1/2                           | 21.3                            | 25.4   | 25.4           | 3.73                                       |
| 3/4                           | 26.7                            | 25.4   | 25.4           | 3.91                                       |
| 1                             | 33.4                            | 38.1   | 38.1           | 4.55                                       |
| 1-1/4                         | 42.2                            | 38.1   | 38.1           | 4.85                                       |
| 1-1/2                         | 48.3                            | 38.1   | 38.1           | 5.08                                       |
| 2                             | 60.3                            | 38.1   | 44.5           | 4.54                                       |
| 2-1/2                         | 73.0                            | 38.1   | 50.8           | 7.01                                       |
| 3                             | 88.9                            | 50.8   | 63.5           | 7.62                                       |
| 3-1/2                         | 101.6                           | 63.5   | 76.2           | 8.08                                       |
| 4                             | 114.3                           | 63.5   | 76.2           | 8.56                                       |
| 5                             | 141.3                           | 76.2   | 88.9           | 9.53                                       |
| 6                             | 168.3                           | 88.9   | 101.6          | 10.97                                      |
| 8                             | 219.1                           | 101.6  | 127.0          | 12.70                                      |
| 10                            | 273.1                           | 127.0  | 152.4          | 12.70                                      |
| 12                            | 323.9                           | 152.4  | 177.8          | 12.70                                      |
| 14                            | 355.6                           | 165.1  | 190.5          | 12.70                                      |
| 16                            | 406.4                           | 177.8  | 203.2          | 12.70                                      |

| Normal<br>Pipe Size<br>DN(in) | Outside<br>Diameter<br>at Bevel | Length |                | Limiting Wall<br>Thickness for<br>Length E |
|-------------------------------|---------------------------------|--------|----------------|--------------------------------------------|
|                               |                                 | D      | E <sub>1</sub> |                                            |
| 18                            | 457.2                           | 203.2  | 228.6          | 12.70                                      |
| 20                            | 508.0                           | 228.6  | 254.0          | 12.70                                      |
| 22                            | 558.8                           | 254.0  | 254.0          | 12.70                                      |
| 24                            | 609.6                           | 266.7  | 304.8          | 12.70                                      |
| 26                            | 660.4                           | 266.7  | --             | --                                         |
| 28                            | 711.2                           | 266.7  | --             | --                                         |
| 30                            | 762.0                           | 266.7  | --             | --                                         |
| 32                            | 812.8                           | 266.7  | --             | --                                         |
| 34                            | 863.6                           | 266.7  | --             | --                                         |
| 36                            | 914.4                           | 266.7  | --             | --                                         |
| 38                            | 965.2                           | 266.7  | --             | --                                         |
| 40                            | 1016.0                          | 304.8  | --             | --                                         |
| 42                            | 1066.8                          | 304.8  | --             | --                                         |
| 44                            | 1117.6                          | 304.8  | --             | --                                         |
| 46                            | 1168.4                          | 342.9  | --             | --                                         |
| 48                            | 1219.2                          | 342.9  | --             | --                                         |
|                               |                                 |        | --             | --                                         |



**→ AMERICAN WORM DRIVE HOSE CLAMPS**

KH-11001

05 series  
(12.7mm bandwidth,M8 screw)



KH-11001

06 series  
(8mm bandwidth,M6 screw)

**→ British worm drive hose clamps**

KH-11003

67-1 series  
(9.7mm,11.7mm bandwidth)



KH-11004

67-2 series



KH-11005

67-3 series

**→ German worm drive hose clamps**

KH-11006

01 series (9mm bandwidth)



KH-11007

01 series (12mm bandwidth)

**→ European type hose clamps**

KH-11008

European type  
(12.5mm,14.2mm,15.8mm bandwidth)

**→ CLIP DRIVE**

KH-11009

TYPE A-Hoop Strip Clip drive



KH-11010

Heavy Duty A-Type Pipe Coupling



KH-11011

Type B-Ear Plate Clip drive



KH-11012

Type C-S Clip drive



KH-11013

Type CHA-S Clip drive



KH-11014

Type D-Changeatle Diameter Clip drive



KH-11015

Type E-Fast Assemble Clip drive



KH-11016

Type F-High-rise Clip drive



KH-11017

Type E-Fast Assmble-rise Clip drive

**Advantages of Investment Casting:**

1.The products of intricate shapes can be mass-produced.

Complex components which are difficult to machine,or need a lot of machine can be economically produced by investment casting in large quantities.

2.Almost any metal can be cast.

As for those materials,which are hard to procss,or easily wasted swarf due to machining needs,investment casting has its obvious advantages.

3.Complex assemblies can be cast as a unit. Because of the difficulty in machining,the previous method for producing complex assembles is to divide it into several parts,produce them individually,and then assemble them together.Adopting one-body casting can both improve mechanical properties and make the designing simple.

4.The surface of casting is smooth and clean.

5.High dimensional precision and small dimension fluctuation product can be cast in large quantities.

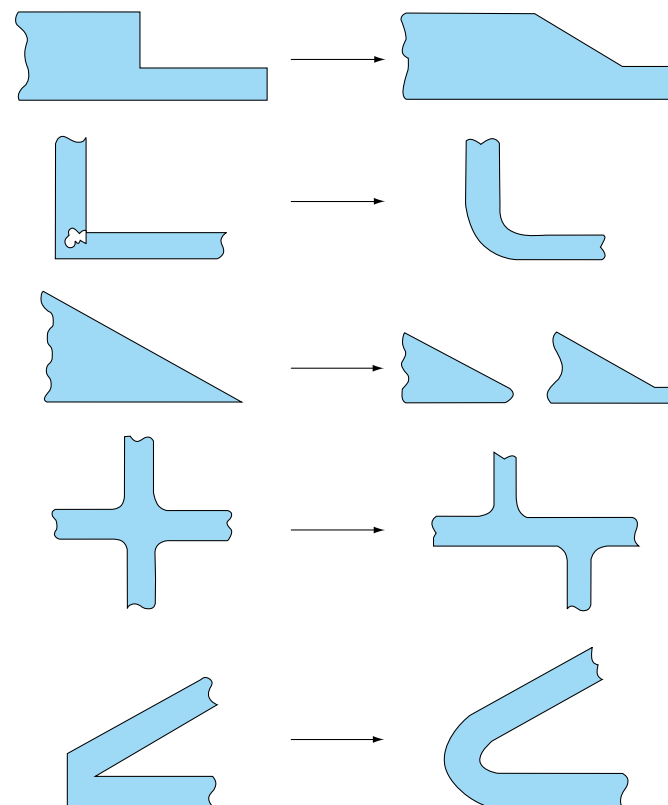
Compared to other casting methods,investment casting can produce lower fluctuation product in large quantities over a long period of time due to the high dimension precision and long life of mould.

6.No draft necessary.

7.Components in small quantities can be cast inexpensively.

**Design Guide:**

When adoping the new components to be manufactured by investment casting,it is necessary to change its shapes to be suitable to investment casing way.Even to the same components,changing its shape suitable to investment casting may improve quality and reduce cost.

**1.Shape Design:**

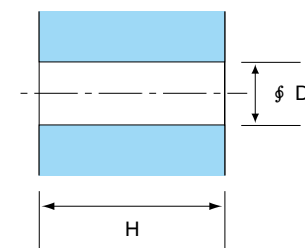
Avoid sharp change in wall thickness  
(apt to bend and crack)

Equalize wall thickness (prone to inner defects)

Avoid sharp tip

Avoid centralized thicker wall

Avoid sharp angle

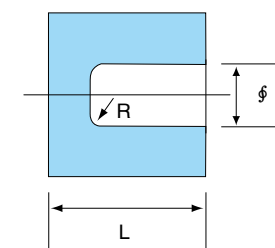
**2.Hole Design:**

$D > \phi 0.3$  inches(7mm): $H=3D$

$D > \phi 0.3$  inches(7mm): $H=2D$

(Note)  $D \geq \phi 0.08$  inches (2mm)

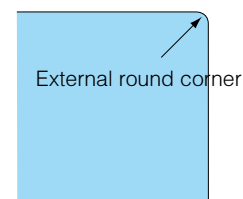
However,to from fine,deep and curved holes is also feasible on special occasions.



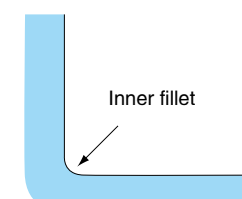
$D > \phi 0.3$  inches(7mm): $L=2D$

$D > \phi 0.3$  inches(7mm): $L=1D$

(Note)  $D \geq \phi 0.08$  inches (2mm)

**3.Redius of corner:**

minimum R0.01 inches(0.3mm)



minimum R0.02 inches(0.5mm)

**4.Minimum Wall Thickness:**

Usually 0.06 inches,Partially can reach 0.03 inches

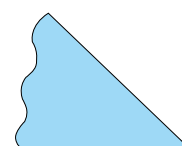
**5.Dimensional Tolerance:**

( Inches )

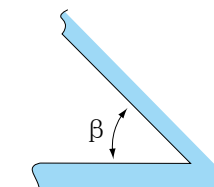
| Dimension Range | General Tolerance | Limit Tolerance |
|-----------------|-------------------|-----------------|
| 0~1             | $\pm 0.010$       | $\pm 0.005$     |
| 1~2             | $\pm 0.015$       | $\pm 0.010$     |
| 2~4             | $\pm 0.030$       | $\pm 0.020$     |
| >4              | $\pm 1\%$         | $\pm 0.5\%$     |

Higher precision can be achieved on special occasions.

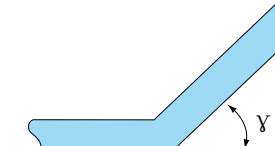
Dimensional tolerance is also suitable for straightness(bending,warping) roundness

**6.Angular Tolerance:**

General tolerance  $\pm 1^\circ$ .  
Limit tolerance  $\pm 0.5^\circ$ .



General tolerance  $\pm 1^\circ$ .  
Limit tolerance  $\pm 0.5^\circ$ .

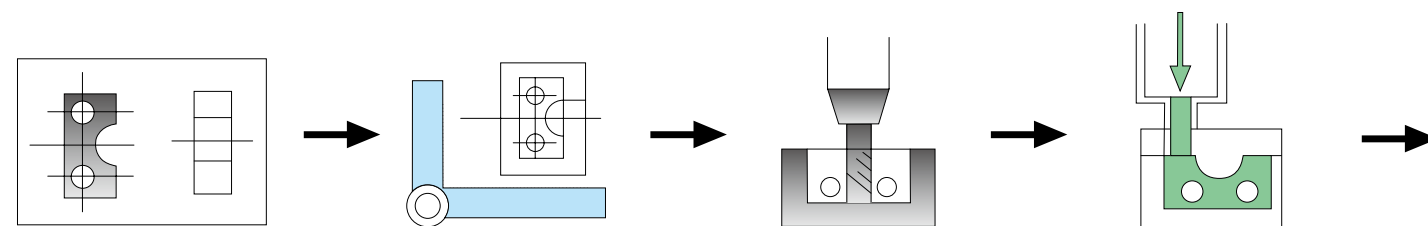


General tolerance  $\pm 1^\circ$ .  
Limit tolerance  $\pm 0.5^\circ$ .



## INVESTMENT CASTING PROCESS

PED97/23/EC



**Confirmation:**  
make drawings according to customer's sample and drawings, the drawing and requirement must be confirmed by two parties.

**Mould Designing:**  
design mould according to production batch and quality property.

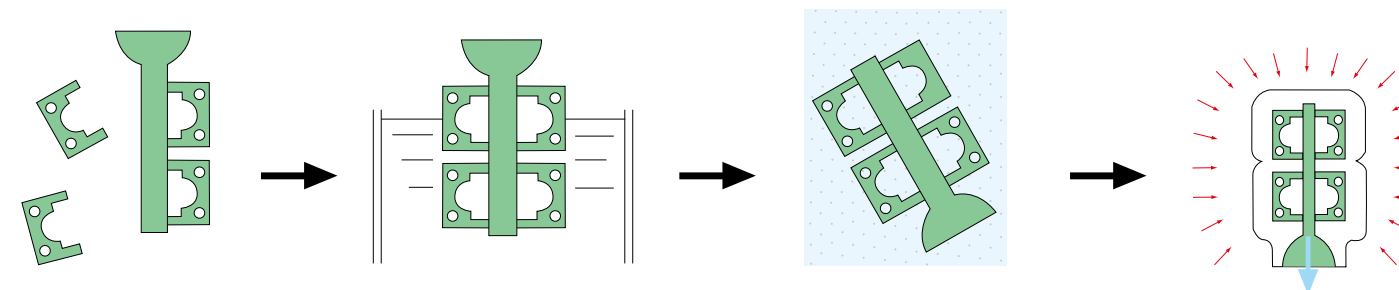
**Mould Making:**  
check the dimensions of mould before acceptance, then produce sample castings. If the samples are approved, then start the mass production.

**Injection of Wax:**  
use the wax injection machine to inject the treated wax into mould.

ISO9001:2000

## INVESTMENT CASTING PROCESS

[HTTP://WWW.CZFITINGS.CN](http://www.czfitings.cn)  
[HTTP://WWW.STAINLESSFITTINGS.COM.CN](http://www.stainlessfittings.com.cn)

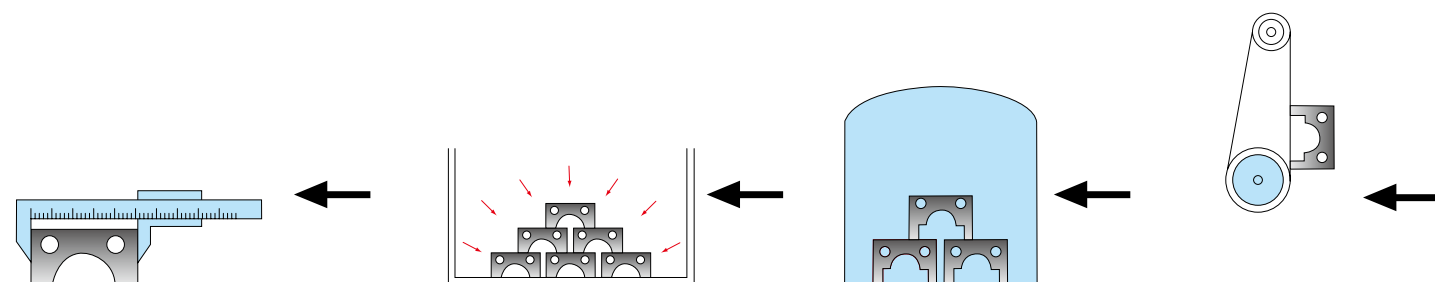


**Assembly of Clusters:**  
check and fix the wax patterns, then assemble them into wax clusters.

**Coating Refractory Slurry:**  
after washing up the wax clusters, the assembled wax patterns are dipped into ceramic slurry.

**Stuccoing:**  
after coating drained and coated with sand, then drying. Repeat this operation several times until it reaches the requirement.

**Dewaxing:**  
put the shell into a dewaxing autoclave to melt out the wax.

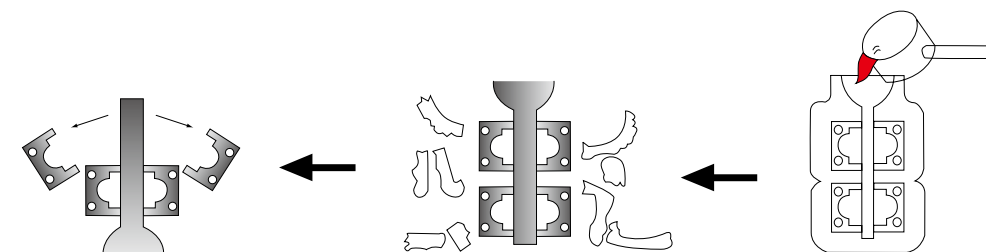


**Inspecting & Straightening:**  
inspect and straighten the castings strictly to meet the quality requirement.

**Heat Treating:**  
do heat treatment to meet the mechanical property requirement.

**Shot Blasting:**  
make surface treatment according to surface quality requirement.

**Grinding:**  
grinding off the remained roots of gating system.

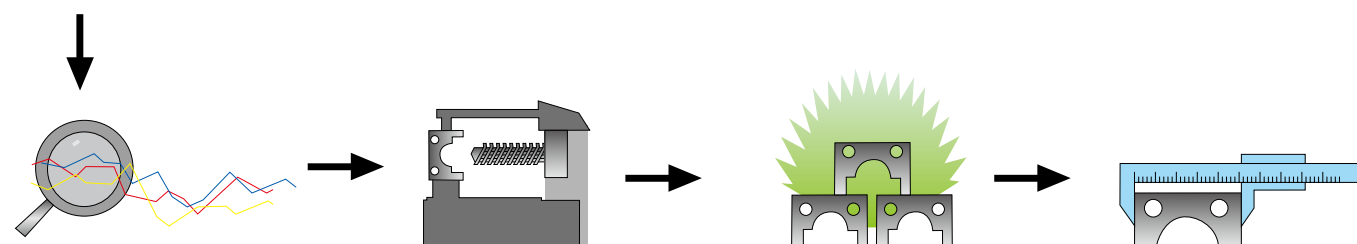


**Cutting Off:**  
cut castings away from the central sprue by a high-speed friction saw.

**Knockout:**  
break down the ceramic shell, take out the casting cluster, separate the remaining sand aside.

**Casting:**  
adjust the temperature and composition of the molten metal, pour it into the fired shell with high temperature.

**Firing the Mould:**  
put the ceramic shell into a firing furnace, heat in a fixed time by adjusting temperature.

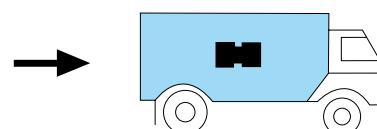


**Specified Inspection:**  
if special inspection is required, a given inspection must be done. (X-rays, magnetic particle detection, fluorescent penetrant inspection)

**Machining & Assembling:**  
do machining and assembling according to requirement.

**Special Machining:**  
make polishing and other surface treatment according to product requirement.

**Final Inspection:**  
make final inspection according to specification requirements, issue shipping instruction to the qualified products.



**Packing & Shipping.**



About 100 kinds of standard materials are available in our company.Other alloyed materials can also be made according to requirements

Steel Materials

| Type                               |                      | Equivalent SPEC |           | Chemical composition(%) |           |           |           |           |             |
|------------------------------------|----------------------|-----------------|-----------|-------------------------|-----------|-----------|-----------|-----------|-------------|
|                                    |                      | JIS             | AISI ASTM | C                       | Si        | Mn        | P         | S         | Ni          |
| Mechanical Structure Steel         | Carbon steel         | S15C            | 1015      | 0.13-0.18               | 0.15-0.35 | 0.30-0.60 | <0.030    | <0.035    |             |
|                                    |                      | S25C            | 1025      | 0.22-0.28               | 0.15-0.35 | 0.30-0.60 | <0.030    | <0.035    |             |
|                                    |                      | S45C            | 1045      | 0.42-0.48               | 0.15-0.35 | 0.60-0.90 | <0.030    | <0.035    |             |
|                                    | Low alloy steel      | SNC415          |           | 0.12-0.18               | 0.15-0.35 | 0.35-0.65 | <0.030    | <0.030    | 2.00-2.50   |
|                                    |                      | SCM415          |           | 0.13-0.18               | 0.15-0.35 | 0.60-0.85 | <0.030    | <0.030    |             |
|                                    |                      | SCM440          | 4140      | 0.38-0.43               | 0.15-0.35 | 0.60-0.85 | <0.030    | <0.030    |             |
| Stainless and heat-resisting steel | Stainless steel      | SNCM420         | 4320      | 0.17-0.23               | 0.15-0.35 | 0.40-0.70 | <0.030    | <0.040    | 1.60-2.00   |
|                                    |                      | SCS1            | CA15      | <0.15                   | <1.5      | <1.00     | <0.040    | <0.040    |             |
|                                    |                      | SCS2            | CA40      | 0.16-0.24               | <1.5      | <1.00     | <0.040    | <0.040    |             |
|                                    |                      | SCS2A           | CA40      | 0.25-0.40               | <1.5      | <1.00     | <0.040    | <0.040    |             |
|                                    |                      | SCS13           |           | <0.08                   | <2.00     | <2.00     | <0.040    | <0.040    | 8.00-11.00  |
|                                    |                      | SCS13A          | CF8       | <0.08                   | <2.00     | <1.50     | <0.040    | <0.040    | 8.00-11.00  |
|                                    |                      | SCS14           |           | <0.08                   | <2.00     | <2.00     | <0.040    | <0.040    | 10.00-14.00 |
|                                    |                      | SCS14A          | CF8M      | <0.08                   | <1.50     | <1.50     | <0.040    | <0.040    | 9.00-12.00  |
|                                    |                      | SCS16           |           | <0.03                   | <1.50     | <2.00     | <0.040    | <0.040    | 12.00-16.00 |
|                                    |                      | SCS16A          | CF3M      | <0.03                   | <1.50     | <1.50     | <0.040    | <0.040    | 9.00-13.00  |
|                                    |                      | SCS19A          | CF3       | <0.03                   | <2.00     | <1.50     | <0.040    | <0.040    | 8.00-12.00  |
|                                    |                      | SCS21           | CF8C      | <0.08                   | <2.00     | <2.00     | <0.040    | <0.040    | 9.00-12.00  |
|                                    |                      | SCS24           | CB7Cu-1   | <0.07                   | <1.00     | <1.00     | <0.040    | <0.030    | 3.00-5.00   |
|                                    | Heat-resisting steel | SCH2            | HC        | <0.40                   | <2.00     | <1.00     | <0.040    | <0.040    | <1.00       |
|                                    |                      | SCH13           | HH        | 0.20-0.50               | <2.00     | <2.00     | <0.040    | <0.040    | 11.00-14.00 |
|                                    |                      | SCH22           | HK40      | 0.35-0.45               | <1.75     | <1.50     | <0.040    | <0.040    | 19.00-22.00 |
| Special alloy                      | Tool steel           | SK105           | W1-10     | 1.00-1.10               | 0.10-0.35 | 0.10-0.50 | <0.030    | <0.030    |             |
|                                    |                      | SKD1            | D3        | 1.90-2.20               | 0.10-0.60 | 0.20-0.60 | <0.030    | <0.030    |             |
|                                    |                      | SKD11           | D2        | 1.40-1.60               | <0.40     | <0.60     | <0.030    | <0.030    |             |
|                                    | Bearing steel        | SUJ2            | 52100     | 0.95-1.10               | 0.15-0.35 | <0.50     | <0.025    | <0.025    |             |
|                                    | Free cutting         | SUM22           | 1213      | <0.13                   |           | 0.70-1.00 | 0.07-0.12 | 0.24-0.33 |             |
|                                    | Spring steel         | SUP6            |           | 0.56-0.64               | 1.50-1.80 | 0.70-1.00 | <0.035    | <0.035    |             |
|                                    | High pressure        | SCPH2           | WCB       | <0.30                   | <0.60     | <1.00     | <0.040    | <0.040    | <0.50       |
|                                    | Hastalloy            | C276            | CW12MW    | <0.03                   | <1.00     | <1.00     | <0.040    | <0.03     | Min50.05    |

Stainless Steel [DIN]

| Chemical composition |          |           |      |      |        |        |           |         |           |                 |
|----------------------|----------|-----------|------|------|--------|--------|-----------|---------|-----------|-----------------|
| Type                 |          | C         | Si   | Mn   | P      | S      | Cr        | Mo      | Ni        | Others          |
| Designation          | Material |           |      |      |        |        |           |         |           |                 |
| G-X8CrNi 13          | 1.4008   | 0.06-0.12 | ≤1.0 | ≤1.0 | ≤0.045 | ≤0.030 | 12.0-13.5 | ≤0.50   | 1.0-2.0   |                 |
| G-X20Cr 14           | 1.4027   | 0.16-0.23 | ≤1.0 | ≤1.0 | ≤0.045 | ≤0.030 | 12.0-14.5 | --      | ≤1.0      |                 |
| G-X22CrNi 17         | 1.4059   | 0.20-0.27 | ≤1.0 | ≤1.0 | ≤0.045 | ≤0.030 | 16.0-18.0 | --      | 1.0-2.0   |                 |
| G-X5CrNi 13 4        | 1.4313   | ≤0.07     | ≤1.0 | ≤1.5 | ≤0.035 | ≤0.025 | 12.0-13.5 | ≤0.70   | 3.5-5.0   |                 |
| G-X6CrNi 18 9        | 1.4308   | ≤0.07     | ≤2.0 | ≤1.5 | ≤0.045 | ≤0.030 | 18.0-20.0 | --      | 9.0-11.0  |                 |
| G-X5CrNiNb 18 9      | 1.4552   | ≤0.06     | ≤1.5 | ≤1.5 | ≤0.045 | ≤0.030 | 18.0-20.0 | --      | 9.0-11.0  | %Nb≥8xC%        |
| G-X5CrNiMoNb 18 10   | 1.4581   | ≤0.06     | ≤1.5 | ≤1.5 | ≤0.045 | ≤0.030 | 18.0-20.0 | 2.0-2.5 | 10.5-12.5 | %Nb≥8xC%        |
| G-X6CrNiMo 18 10     | 1.4408   | ≤0.07     | ≤1.5 | ≤1.5 | ≤0.045 | ≤0.030 | 18.0-20.0 | 2.0-3.0 | 10.0-12.0 | --              |
| G-X3CrNiMoN 17 13 5  | 1.4439   | ≤0.04     | ≤1.0 | ≤1.5 | ≤0.045 | ≤0.030 | 16.5-18.5 | 4.0-4.5 | 12.5-14.5 | N<br>0.12-0.22% |

| Chemical composition(%) |            |                            |              | Mechanical properties   |                                      |               |                |          |
|-------------------------|------------|----------------------------|--------------|-------------------------|--------------------------------------|---------------|----------------|----------|
| Cr                      | Mo         | Nb                         | Others       | Heat treatment          | Tensile strength(N/mm <sup>2</sup> ) | Elongation(%) | Contraction(%) | Hardness |
|                         |            |                            |              | Normalizing             |                                      |               |                | <HRB90   |
|                         |            |                            |              | Normalizing             |                                      |               |                | <HRB90   |
|                         |            |                            |              | Anneal                  |                                      |               |                | <HRB100  |
| 0.20-0.50               |            |                            |              | Normalizing             |                                      |               |                | <HRB90   |
| 0.90-1.20               |            |                            |              | Normalizing             |                                      |               |                | <HRB90   |
| 0.90-1.20               | 0.15-0.30  |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
| 0.40-0.65               | 0.15-0.630 |                            |              | Normalizing             |                                      |               |                | <HRB90   |
| 11.50-14.00             | 0.15-0.30  |                            |              | Anneal                  |                                      |               |                | <HRB100  |
| 11.50-14.00             |            |                            |              | Anneal                  |                                      |               |                | <HRB100  |
| 11.50-14.00             |            |                            |              | Anneal                  |                                      |               |                | <HRB100  |
| 18.00-21.00             |            |                            |              | Solution treatment      | ≥440                                 | ≥30           |                | <HB183   |
| 18.00-21.00             |            |                            |              | Solution treatment      | ≥480                                 | ≥33           |                | <HB183   |
| 17.00-20.00             | 2.00-3.00  |                            |              | Solution treatment      | ≥440                                 | ≥28           |                | <HB183   |
| 18.00-21.00             | 2.00-3.00  |                            |              | Solution treatment      | ≥480                                 | ≥33           |                | <HB183   |
| 17.00-20.00             | 2.00-3.00  |                            |              | Solution treatment      | ≥390                                 | ≥33           |                | <HB183   |
| 17.00-21.00             | 2.00-3.00  |                            |              | Solution treatment      | ≥480                                 | ≥33           |                | <HB183   |
| 17.00-21.00             |            |                            |              | Solution treatment      | ≥480                                 | ≥33           |                | <HB183   |
| 18.00-21.00             |            | 10%C-1.35                  |              | Solution treatment      | ≥480                                 | ≥28           |                | <HB183   |
| 15.00-17.50             |            | 0.15-0.45                  | Cu:2.50-4.00 | Precipitation hardening | ≥980                                 | ≥9            |                | <HB311   |
| 25.00-28.00             |            |                            |              | As cast                 | ≥340                                 |               |                | <HRB100  |
| 24.00-28.00             |            |                            |              | As cast                 | ≥490                                 | ≥8            |                | <HRB100  |
| 23.00-27.00             |            |                            |              | As cast                 | ≥440                                 | ≥8            |                | <HRB100  |
|                         |            |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
| 11.00-13.00             |            |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
| 11.00-13.00             | 0.80-1.20  |                            | V:0.20-0.50  | Cardurizing anneal      |                                      |               |                | <HRB100  |
| 1.30-1.60               |            |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
|                         |            |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
|                         |            |                            |              | Cardurizing anneal      |                                      |               |                | <HRB100  |
| <0.25                   | <0.25      | Cu:<0.50 CuNiCrMo<1.00     |              | Anneal                  | ≥480                                 | ≥90           | ≥35            | <HRB90   |
| 14.2-16.5               | 15.0-17.0  | Fe:4-7W3-4.5 Co:25 V:<0.35 |              | Solution treatment      | ≥480                                 | ≥90           |                | <HRB100  |

| Mechanical properties   |                |                          |                          |                       |                                                  |                    |        |
|-------------------------|----------------|--------------------------|--------------------------|-----------------------|--------------------------------------------------|--------------------|--------|
| Heat treatment          | Hardness (HBS) | Yield strength 0.2%(MPa) | Yield strength 0.1%(MPa) | Tensile strength(MPa) | Elongation (L <sub>0</sub> =5d <sub>0</sub> )(%) | Toughness(average) |        |
|                         |                |                          |                          |                       |                                                  | ISO-V(J)           | DVM(J) |
| Quenching and tempering | 170-240        | ≥440                     | --                       | 590-790               | ≥15                                              | ≥27                | ≥27    |
| Quenching and tempering | 170-240        | ≥440                     | --                       | 590-790               | ≥12                                              | --                 | ≥13    |
| Quenching and tempering | 230-300        | ≥590                     | --                       | 780-980               | ≥4                                               | --                 | --     |
| Quenching and tempering | 240-300        | ≥550                     | --                       | 760-960               | ≥15                                              | ≥50                | ≥55    |
| Quenching               | 130-200        | ≥175                     | ≥200                     | 440-640               | ≥20                                              | ≥60                | ≥70    |
|                         | 130-200        | ≥175                     | ≥200                     | 440-640               | ≥20                                              | ≥35                | ≥41    |
|                         | 130-200        | ≥185                     | ≥210                     | 440-640               | ≥20                                              | ≥35                | ≥41    |
|                         | 130-200        | ≥185                     | ≥210                     | 440-640               | ≥20                                              | ≥60                | ≥70    |
|                         | 130-200        | ≥210                     | ≥230                     | 490-690               | ≥20                                              | ≥50                | ≥60    |