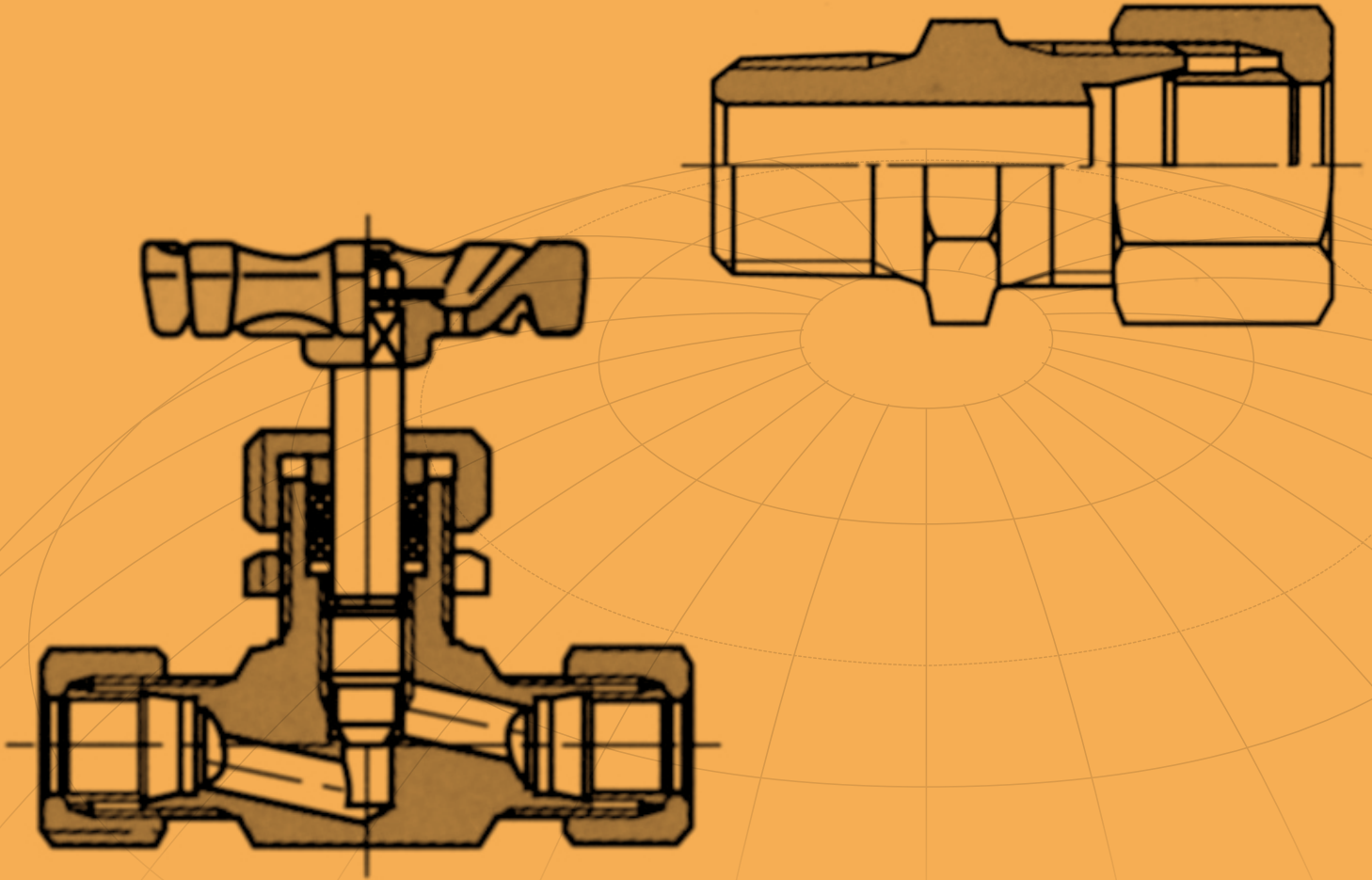


IHARA

Fittings and Valves for Copper Tube



B Series Bite Type Fittings for Copper Tube

B-1 Series Bite Type Fittings for Copper Tube


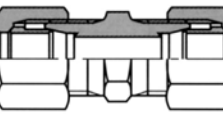
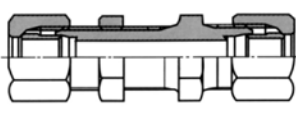
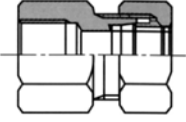
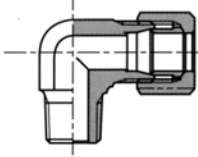
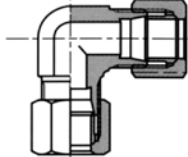
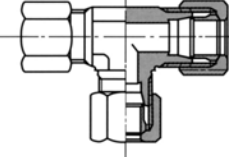
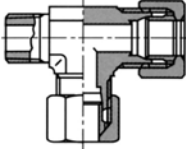
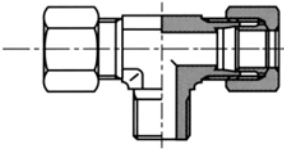
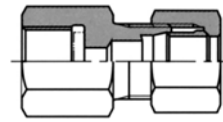
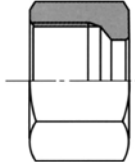

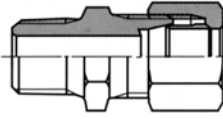
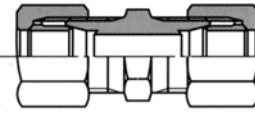
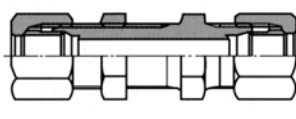
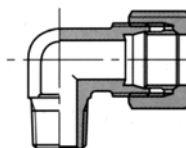
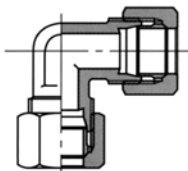
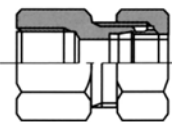
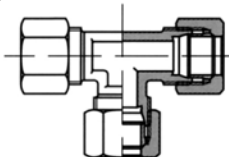
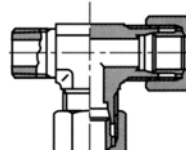
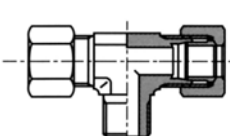
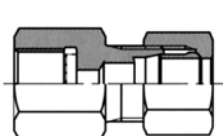
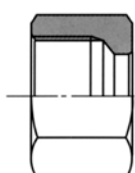
Brass Needle Stop Valves

VR Series Brass Ball Valves



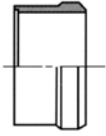
IHARA SCIENCE CORPORATION

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| <p>Female Connector KS 11</p>  | <p>Male Elbow KLN 12</p>  | <p>Union Elbow KL 13</p>  | <p>Union Tee KT 14</p>  |
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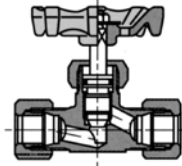
Sleeve KO

30



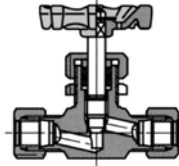
VO Series Brass Needle Stop Valves VO

32



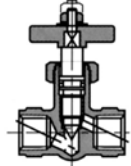
VT Series Brass Needle Stop Valves VT

33



VMII Series Brass Miniture Valves VMII

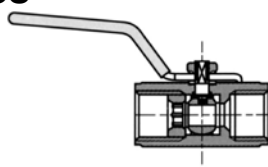
34



Brass Needle
Stop Valves

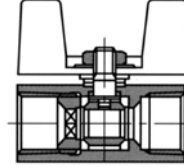
VR Series Brass Ball Valves VR

35



VR Series Brass Ball Valves VR

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VR Series Brass
Ball Valves

B AND B-1 SERIES BITE TYPE FITTINGS FOR COPPER TUBE

1. INTRODUCTION

Tube fittings designed for copper tube based on experience accumulated through years as the leading manufacturer of bite type fittings are the B series and B-1 series which are recommended to the users with complete confidence.

The area of application for B series and B-1 series is differentiated by:

B series: This series are used for hydraulic piping system that encounters impact pressure and vibration.

B-1 series: This series are a compact version of B series and used for piping system such as lubrication grease piping as well as pneumatic pressure piping where the maximum working pressure is less than 3.5 MPa (35 kgf/cm²) and neither impact pressure nor vibration is encountered. This series can be adaptable for used with nylon (6, 11 and 12) tubes.

2. CAUTION REGARDING USAGE ENVIRONMENT CONDITION

The material of the body, nut and sleeve which are the components of this bite type fitting for copper tubes is brass bar (C3604, C3771 or C2600). Alloy of copper-zinc series can invite stress corrosion cracking in an environment where ammonia, oxygen and moisture co-exist and use of such alloy in such environment should be avoided. Be noted that the thermal insulation material such as glass wool may contain a small amount of ammonia. These fittings should also not be used for salt water solution piping such as sea water and pure water which are inclined to generate dezincing corrosion.

3. RATED PRESSURE

The rated pressure of bite type fittings for copper tubes has the safety factor established at more than 4 times to the burst pressure by static test and shall be in accordance with the table below:

| Fitting size (OD of applicable tube) | φ 4~φ 16 | φ 18~φ 25 | φ 28~φ 35 |
|--------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| B series (for high pressure) | 14MPa (140kgf/cm ²) | 10.5MPa (105kgf/cm ²) | 7MPa (70kgf/cm ²) |
| B-1 series (for low pressure) | 7MPa (70kgf/cm ²) | 3.5MPa (35kgf/cm ²) | |

⚠ Warning: Refrain from using at the pressures more than the specified above.

4. MATERIAL

Material of parts for the fittings:

Body: JIS H3250 free-cutting brass (C3604) or brass for forging (C3771)

Nut: JIS H3250 brass for forging (C3771)

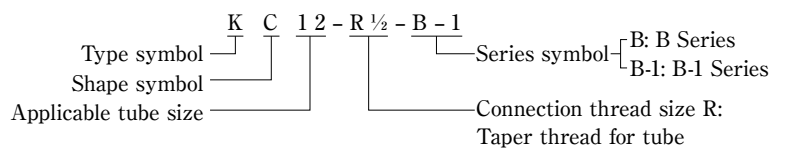
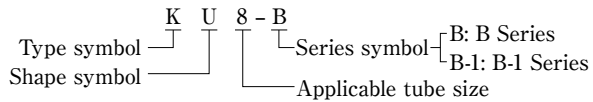
JIS H3260 brass (C2600)

5. APPLICABLE TUBES

Tubes applicable are :

JIS H3300 copper and copper alloy seamless tubes (C1020, CH00, C1201, C1220 annealed tubes) of less HV80.

6. PART NUMBERING SYSTEM



7. ORDERING

- When ordering use the part number designations shown in this catalogue.
- For requirements not listed in this catalogue, contact us specifying the following information:
Fluid to be handled, operating pressure, operating temperature, material, configuration, dimensions and all other pertinent information.

8. EXPLANATION OF WARNINGS AND CAUTIONS IN THIS CATALOGUE

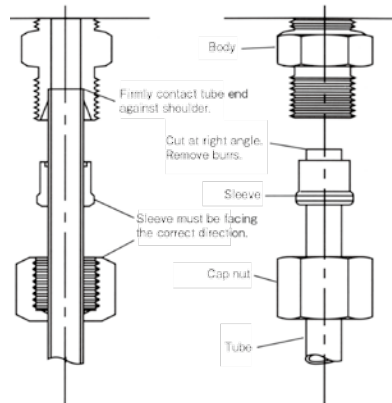
- ⚠ Warning:** When this sign is ignored and improperly used, there will be danger of accidents occurring that may result in physical injuries and/or death.
- ⚠ Caution:** When this sign is ignored and improperly used, there will be possibility of the product not performing as specified.

- The manufacturer reserves the right to implement improvements to the products and to modify the specifications and appearance of the products of this catalogue without notice.

TIGHTENING PROCEDURE

1. Cut the tube to the required length with the cutting edge cut to a right angle. Remove all burrs from both the inside and outside of the cut edge of the tube.

⚠ Caution: Exercise care not to nick or scratch the tube surface more than 0.1 mm in depth.



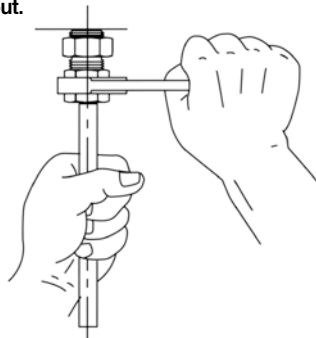
2. Next insert the nut and then the sleeve with the cutting edge facing the tube end into the tube.

⚠ Caution: Make certain the sleeve is facing the correct direction. If the sleeve should be inserted in the incorrect direction the sleeve will not bite into the tube and result in leak as well as the tube slipping out.

3. Insert the tube into the fitting body until the tube end firmly bottoms in the fitting body.

4. With the tube firmly pushed against the fitting with one hand, tighten down the nut using a spanner with the other hand. During the process of tightening the nut, a point will be reached where the tightening torque will suddenly increase (requiring higher force to further tighten), and the tube can no longer be turned with the hand. From this point the sleeve will bite into the tube as the nut is tightened with the spanner.

⚠ Caution: If the nut is tightened with the tube end not firmly contacting the shoulder of the fitting, the sleeve may not adequately bite into the tube and the tube may slip out.



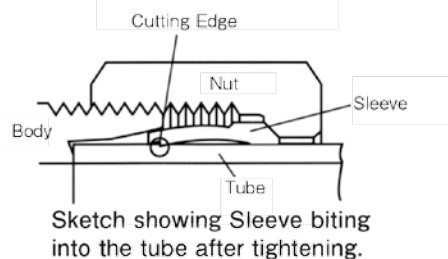
5. Further tighten the nut as follows from the point where the tightening torque had suddenly increased:

B series: $1\frac{1}{4} \sim 1\frac{1}{2}$ turns

B-1 series: $\frac{3}{4} \sim 1$ turn

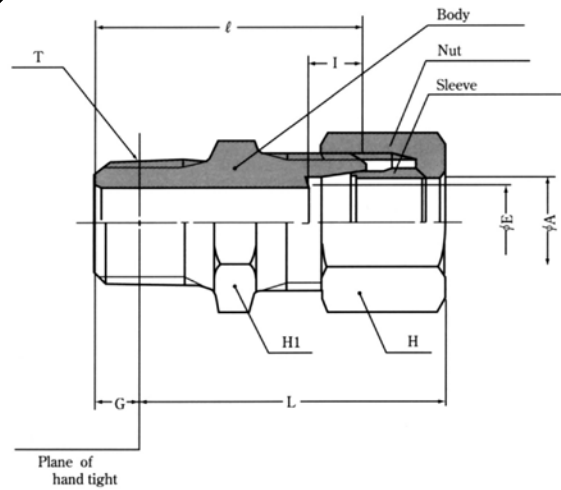
When the nut is being further tightened as explained above, the cutting edge of the sleeve will firmly bite into the tube.

⚠ Caution: Inadequate tightening can result in leakage and tube slippage, while excessive tightening can damage the fitting and result in impairing the performance



B Series Bite Type Fittings for Copper Tube

Male Connector KC



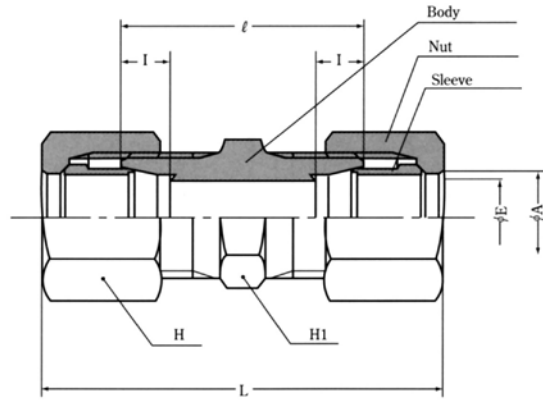
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Normal engagement of pipe thread by hand G | Width Across Hex. Flats | | I | ℓ | Approx. L | (R) T | Weight (kg) |
|--|----------------|-------------------------|--|----------------------------|----|-----|----|--------------|-------------------------------|----------------|
| | | | | H ₁ | H | | | | | |
| KC4-R ¹ / ₈ -B | 4 | 2.5 | 3.97 | 12 | 12 | 6 | 22 | 26 | ¹ / ₈ | 0.021 |
| KC6-R ¹ / ₈ -B | 6 | 4 | 3.97 | 14 | 14 | 7 | 28 | 33.5 | ¹ / ₈ | 0.033 |
| KC6-R ¹ / ₄ -B | 6 | 4 | 6.01 | 14 | 14 | 7 | 33 | 36.5 | ¹ / ₄ | 0.042 |
| KC6-R ³ / ₈ -B | 6 | 4 | 6.35 | 19 | 14 | 7 | 34 | 37 | ³ / ₈ | 0.057 |
| KC8-R ¹ / ₈ -B | 8 | 4 | 3.97 | 17 | 17 | 7 | 29 | 36 | ¹ / ₈ | 0.045 |
| KC8-R ¹ / ₄ -B | 8 | 6 | 6.01 | 17 | 17 | 7 | 33 | 38 | ¹ / ₄ | 0.050 |
| KC8-R ³ / ₈ -B | 8 | 6 | 6.35 | 19 | 17 | 7 | 34 | 39 | ³ / ₈ | 0.063 |
| KC10-R ¹ / ₄ -B | 10 | 6 | 6.01 | 17 | 19 | 7 | 33 | 39.5 | ¹ / ₄ | 0.058 |
| KC10-R ³ / ₈ -B | 10 | 8 | 6.35 | 19 | 19 | 7 | 34 | 40 | ³ / ₈ | 0.066 |
| KC10-R ¹ / ₂ -B | 10 | 8 | 8.16 | 23 | 19 | 7 | 39 | 43.5 | ¹ / ₂ | 0.103 |
| KC12-R ¹ / ₄ -B | 12 | 6 | 6.01 | 19 | 21 | 7 | 33 | 39.5 | ¹ / ₄ | 0.066 |
| KC12-R ³ / ₈ -B | 12 | 8.5 | 6.35 | 19 | 21 | 7 | 34 | 40 | ³ / ₈ | 0.071 |
| KC12-R ¹ / ₂ -B | 12 | 10 | 8.16 | 23 | 21 | 7 | 39 | 43.5 | ¹ / ₂ | 0.095 |
| KC15-R ³ / ₈ -B | 15 | 8.5 | 6.35 | 23 | 26 | 7.5 | 37 | 43 | ³ / ₈ | 0.112 |
| KC15-R ¹ / ₂ -B | 15 | 12 | 8.16 | 23 | 26 | 7.5 | 41 | 45.5 | ¹ / ₂ | 0.124 |
| KC16-R ³ / ₈ -B | 16 | 9 | 6.35 | 26 | 29 | 7.5 | 37 | 44 | ³ / ₈ | 0.127 |
| KC16-R ¹ / ₂ -B | 16 | 12 | 8.16 | 26 | 29 | 7.5 | 41 | 46.5 | ¹ / ₂ | 0.152 |
| KC18-R ¹ / ₂ -B | 18 | 12 | 8.16 | 29 | 32 | 8 | 43 | 47.5 | ¹ / ₂ | 0.177 |
| KC20-R ¹ / ₂ -B | 20 | 12 | 8.16 | 29 | 35 | 8 | 43 | 46 | ¹ / ₂ | 0.204 |
| KC20-R ³ / ₄ -B | 20 | 17 | 9.53 | 29 | 35 | 8 | 45 | 48 | ³ / ₄ | 0.207 |
| KC22-R ³ / ₄ -B | 22 | 17 | 9.53 | 32 | 35 | 9 | 45 | 48 | ³ / ₄ | 0.223 |
| KC25-R ³ / ₄ -B | 25 | 17 | 9.53 | 35 | 41 | 10 | 46 | 49 | ³ / ₄ | 0.291 |
| KC25-R1-B | 25 | 20 | 10.39 | 35 | 41 | 10 | 49 | 52 | 1 | 0.329 |
| KC28-R1-B | 28 | 22 | 10.39 | 38 | 41 | 10 | 51 | 54 | 1 | 0.324 |
| KC30-R1-B | 30 | 22 | 10.39 | 41 | 46 | 10 | 51 | 55 | 1 | 0.369 |
| KC30-R1 ¹ / ₄ -B | 30 | 22 | 12.7 | 46 | 46 | 10 | 55 | 57 | 1 ¹ / ₄ | 0.479 |
| KC32-R1 ¹ / ₄ -B | 32 | 26 | 12.7 | 46 | 50 | 11 | 55 | 57 | 1 ¹ / ₄ | 0.530 |
| KC35-R1 ¹ / ₄ -B | 35 | 29 | 12.7 | 46 | 54 | 11 | 55 | 60 | 1 ¹ / ₄ | 0.568 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Union KU



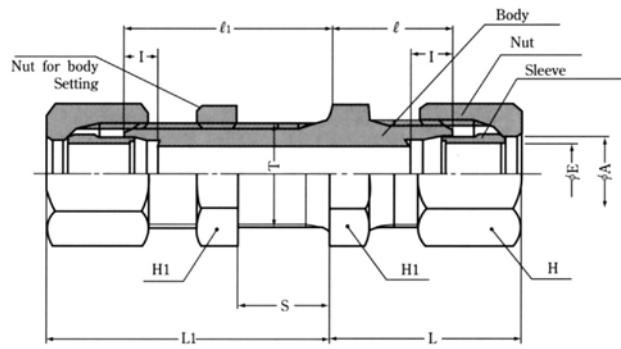
unit : mm

| Designations | A | Minimum Opening E | Width Across Hex. Flats | | I | l | Approx. L | Weight (kg) |
|--------------|----|-------------------|-------------------------|----|-----|----|-----------|-------------|
| | | | H ₁ | H | | | | |
| KU4-B | 4 | 2.5 | 12 | 12 | 6 | 20 | 36 | 0.026 |
| KU6-B | 6 | 4 | 14 | 14 | 7 | 30 | 49 | 0.048 |
| KU8-B | 8 | 6 | 17 | 17 | 7 | 31 | 53 | 0.064 |
| KU10-B | 10 | 8 | 17 | 19 | 7 | 31 | 56 | 0.076 |
| KU12-B | 12 | 10 | 19 | 21 | 7 | 31 | 56 | 0.091 |
| KU15-B | 15 | 12 | 23 | 26 | 7.5 | 36 | 61 | 0.163 |
| KU16-B | 16 | 13 | 26 | 29 | 7.5 | 36 | 63 | 0.200 |
| KU18-B | 18 | 15 | 29 | 32 | 8 | 38 | 63 | 0.253 |
| KU20-B | 20 | 17 | 29 | 35 | 8 | 38 | 63 | 0.267 |
| KU22-B | 22 | 18 | 32 | 35 | 9 | 38 | 63 | 0.281 |
| KU25-B | 25 | 20 | 35 | 41 | 10 | 39 | 66 | 0.383 |
| KU28-B | 28 | 22 | 38 | 41 | 10 | 43 | 70 | 0.402 |
| KU30-B | 30 | 25 | 41 | 46 | 10 | 43 | 72 | 0.468 |
| KU32-B | 32 | 26 | 46 | 50 | 11 | 44 | 73 | 0.495 |
| KU35-B | 35 | 29 | 46 | 54 | 11 | 44 | 79 | 0.713 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Bulkhead Union KSU



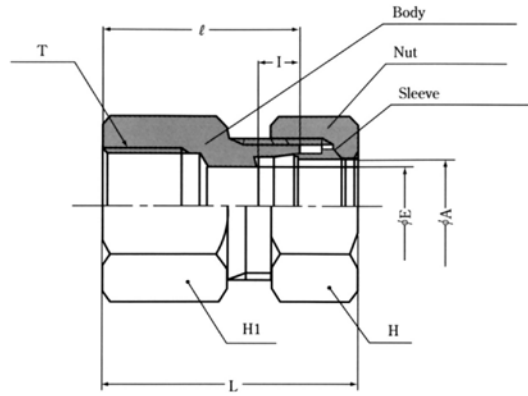
unit : mm

| Designations | A | Minimum Opening E | Width Across Hex. Flats | | I | l ₁ | l | Approx. L ₁ | Approx. L | T | S | | Weight (kg) |
|--------------|----|-------------------|-------------------------|----|-----|----------------|----|------------------------|-----------|----|------|-----|-------------|
| | | | H ₁ | H | | | | | | | Max | Min | |
| KSU4-B | 4 | 2.5 | 14 | 12 | 6 | 30 | 12 | 38 | 20 | 10 | 17.5 | 3 | 0.044 |
| KSU6-B | 6 | 4 | 17 | 14 | 7 | 36 | 18 | 45.5 | 27.5 | 12 | 20.5 | 4 | 0.072 |
| KSU8-B | 8 | 6 | 19 | 17 | 7 | 37 | 19 | 48 | 30 | 14 | 20 | 4 | 0.093 |
| KSU10-B | 10 | 8 | 21 | 19 | 7 | 37 | 19 | 49.5 | 31.5 | 16 | 20.5 | 4 | 0.119 |
| KSU12-B | 12 | 10 | 23 | 21 | 7 | 37 | 19 | 49.5 | 31.5 | 18 | 19 | 4 | 0.147 |
| KSU15-B | 15 | 12 | 26 | 26 | 7.5 | 40 | 22 | 52.5 | 34.5 | 22 | 19.5 | 4 | 0.238 |
| KSU16-B | 16 | 13 | 29 | 29 | 7.5 | 40 | 22 | 53.5 | 35.5 | 24 | 20.5 | 4 | 0.278 |
| KSU18-B | 18 | 15 | 32 | 32 | 8 | 42 | 24 | 54.5 | 36.5 | 26 | 19.5 | 4 | 0.348 |
| KSU20-B | 20 | 17 | 32 | 35 | 8 | 42 | 24 | 54.5 | 36.5 | 28 | 19.5 | 4 | 0.386 |
| KSU22-B | 22 | 18 | 35 | 35 | 9 | 42 | 24 | 54.5 | 36.5 | 30 | 19.5 | 4 | 0.400 |
| KSU25-B | 25 | 20 | 38 | 41 | 10 | 43 | 25 | 56.5 | 38.5 | 34 | 20 | 4 | 0.630 |
| KSU28-B | 28 | 22 | 41 | 41 | 10 | 45 | 27 | 58.5 | 40.5 | 36 | 20.5 | 4 | 0.650 |
| KSU30-B | 30 | 25 | 46 | 46 | 10 | 45 | 27 | 59.5 | 41.5 | 40 | 20.5 | 4 | 0.721 |
| KSU32-B | 32 | 26 | 46 | 50 | 11 | 46 | 28 | 60.5 | 42.5 | 42 | 20.5 | 4 | 0.904 |
| KSU35-B | 35 | 29 | 50 | 54 | 11 | 46 | 28 | 63.5 | 45.5 | 45 | 20.5 | 4 | 1.100 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Female Connector KS



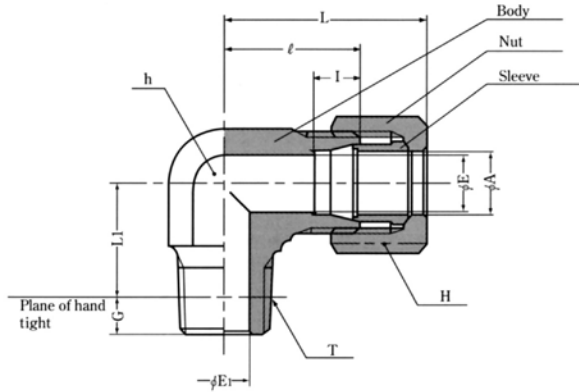
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Hex. Flats | | I | ℓ | Approx. L | (Rc) T | Weight (kg) |
|-----------------------------|----------------|-------------------------|----------------------------|----|-----|----|--------------|-----------------|----------------|
| | | | H ₁ | H | | | | | |
| KS4 - R $\frac{1}{8}$ - B | 4 | 2.5 | 14 | 12 | 6 | 21 | 29 | $\frac{1}{8}$ | 0.016 |
| KS6 - R $\frac{1}{8}$ - B | 6 | 4 | 14 | 14 | 7 | 25 | 34.5 | $\frac{1}{8}$ | 0.038 |
| KS6 - R $\frac{1}{4}$ - B | 6 | 4 | 19 | 14 | 7 | 30 | 39.5 | $\frac{1}{4}$ | 0.049 |
| KS6 - R $\frac{3}{8}$ - B | 6 | 4 | 21 | 14 | 7 | 32 | 41.5 | $\frac{3}{8}$ | 0.055 |
| KS8 - R $\frac{1}{8}$ - B | 8 | 6 | 19 | 17 | 7 | 25 | 36 | $\frac{1}{8}$ | 0.050 |
| KS8 - R $\frac{1}{4}$ - B | 8 | 6 | 19 | 17 | 7 | 30 | 41 | $\frac{1}{4}$ | 0.054 |
| KS8 - R $\frac{3}{8}$ - B | 8 | 6 | 21 | 17 | 7 | 32 | 43 | $\frac{3}{8}$ | 0.060 |
| KS10 - R $\frac{1}{4}$ - B | 10 | 8 | 19 | 19 | 7 | 30 | 42.5 | $\frac{1}{4}$ | 0.059 |
| KS10 - R $\frac{3}{8}$ - B | 10 | 8 | 21 | 19 | 7 | 32 | 44.5 | $\frac{3}{8}$ | 0.065 |
| KS10 - R $\frac{1}{2}$ - B | 10 | 8 | 29 | 19 | 7 | 37 | 49.5 | $\frac{1}{2}$ | 0.125 |
| KS12 - R $\frac{1}{4}$ - B | 12 | 10 | 21 | 21 | 7 | 30 | 42.5 | $\frac{1}{4}$ | 0.099 |
| KS12 - R $\frac{3}{8}$ - B | 12 | 10 | 21 | 21 | 7 | 32 | 44.5 | $\frac{3}{8}$ | 0.091 |
| KS12 - R $\frac{1}{2}$ - B | 12 | 10 | 29 | 21 | 7 | 37 | 49.5 | $\frac{1}{2}$ | 0.130 |
| KS15 - R $\frac{3}{8}$ - B | 15 | 12 | 29 | 26 | 7.5 | 34 | 46.5 | $\frac{3}{8}$ | 0.149 |
| KS15 - R $\frac{1}{2}$ - B | 15 | 12 | 29 | 26 | 7.5 | 39 | 51.5 | $\frac{1}{2}$ | 0.153 |
| KS16 - R $\frac{3}{8}$ - B | 16 | 13 | 29 | 29 | 7.5 | 34 | 47.5 | $\frac{3}{8}$ | 0.165 |
| KS16 - R $\frac{1}{2}$ - B | 16 | 13 | 29 | 29 | 7.5 | 39 | 52.5 | $\frac{1}{2}$ | 0.169 |
| KS18 - R $\frac{1}{2}$ - B | 18 | 15 | 29 | 32 | 8 | 39 | 51.5 | $\frac{1}{2}$ | 0.183 |
| KS20 - R $\frac{1}{2}$ - B | 20 | 17 | 35 | 35 | 8 | 39 | 51.5 | $\frac{1}{2}$ | 0.257 |
| KS20 - R $\frac{3}{4}$ - B | 20 | 17 | 35 | 35 | 8 | 41 | 53.5 | $\frac{3}{4}$ | 0.233 |
| KS22 - R $\frac{3}{4}$ - B | 22 | 18 | 35 | 35 | 9 | 41 | 53.5 | $\frac{3}{4}$ | 0.237 |
| KS25 - R $\frac{3}{4}$ - B | 25 | 20 | 41 | 41 | 10 | 41 | 54.5 | $\frac{3}{4}$ | 0.367 |
| KS25 - R1 - B | 25 | 20 | 41 | 41 | 10 | 45 | 58.5 | 1 | 0.341 |
| KS28 - R1 - B | 28 | 22 | 41 | 41 | 10 | 47 | 60.5 | 1 | 0.357 |
| KS30 - R $\frac{3}{4}$ - B | 30 | 25 | 41 | 46 | 10 | 43 | 57.5 | $\frac{3}{4}$ | 0.423 |
| KS30 - R1 - B | 30 | 25 | 41 | 46 | 10 | 47 | 61.5 | 1 | 0.372 |
| KS30 - R1 $\frac{1}{4}$ - B | 30 | 25 | 50 | 46 | 10 | 51 | 65.5 | 1 $\frac{1}{4}$ | 0.498 |
| KS32 - R1 $\frac{1}{4}$ - B | 32 | 26 | 50 | 50 | 11 | 51 | 65.5 | 1 $\frac{1}{4}$ | 0.534 |
| KS35 - R1 $\frac{1}{4}$ - B | 35 | 29 | 50 | 54 | 11 | 51 | 68.5 | 1 $\frac{1}{4}$ | 0.594 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Male Elbow KLN



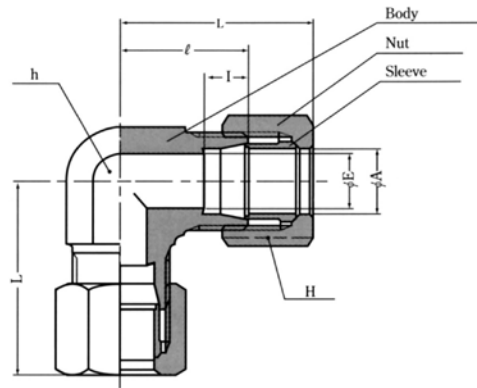
unit : mm

| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | I | \varnothing | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|-----------------------------|----------------|-----------------|----------------|---|-------------------------|------------------------------|-----|---------------|-----------|------------------------|---------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KLN4 - R $\frac{1}{8}$ - B | 4 | 2.5 | 4 | 3.97 | 12 | 12 | 6 | 15 | 23 | 13 | $\frac{1}{8}$ | 0.028 |
| KLN6 - R $\frac{1}{8}$ - B | 6 | 4 | 4 | 3.97 | 14 | 14 | 7 | 20 | 29.5 | 14 | $\frac{1}{8}$ | 0.043 |
| KLN6 - R $\frac{1}{4}$ - B | 6 | 4 | 6 | 6.01 | 17 | 14 | 7 | 22 | 31.5 | 18 | $\frac{1}{4}$ | 0.069 |
| KLN6 - R $\frac{3}{8}$ - B | 6 | 4 | 8.5 | 6.35 | 19 | 14 | 7 | 24 | 33.5 | 21 | $\frac{3}{8}$ | 0.084 |
| KLN8 - R $\frac{1}{8}$ - B | 8 | 6 | 8.5 | 6.35 | 19 | 17 | 7 | 24 | 35 | 21 | $\frac{3}{8}$ | 0.071 |
| KLN8 - R $\frac{1}{4}$ - B | 8 | 6 | 4 | 3.97 | 17 | 17 | 7 | 22 | 33 | 16 | $\frac{1}{8}$ | 0.073 |
| KLN8 - R $\frac{3}{8}$ - B | 8 | 6 | 6 | 6.01 | 17 | 17 | 7 | 22 | 33 | 18 | $\frac{1}{4}$ | 0.096 |
| KLN10 - R $\frac{1}{4}$ - B | 10 | 8 | 6 | 6.01 | 17 | 19 | 7 | 23 | 35.5 | 19 | $\frac{1}{4}$ | 0.081 |
| KLN10 - R $\frac{3}{8}$ - B | 10 | 8 | 8.5 | 6.35 | 19 | 19 | 7 | 24 | 35.5 | 21 | $\frac{3}{8}$ | 0.103 |
| KLN10 - R $\frac{1}{2}$ - B | 10 | 8 | 12 | 8.16 | 23 | 19 | 7 | 27 | 39.5 | 25.8 | $\frac{1}{2}$ | 0.190 |
| KLN12 - R $\frac{1}{4}$ - B | 12 | 10 | 6 | 6.01 | 19 | 21 | 7 | 24 | 36.5 | 20 | $\frac{1}{4}$ | 0.103 |
| KLN12 - R $\frac{3}{8}$ - B | 12 | 10 | 8.5 | 6.35 | 19 | 21 | 7 | 24 | 36.5 | 21 | $\frac{3}{8}$ | 0.106 |
| KLN12 - R $\frac{1}{2}$ - B | 12 | 10 | 12 | 8.16 | 23 | 21 | 7 | 29 | 41.5 | 25.8 | $\frac{1}{2}$ | 0.163 |
| KLN15 - R $\frac{3}{8}$ - B | 15 | 12 | 8.5 | 6.35 | 23 | 26 | 7.5 | 29 | 41.5 | 24 | $\frac{3}{8}$ | 0.179 |
| KLN15 - R $\frac{1}{2}$ - B | 15 | 12 | 12 | 8.16 | 23 | 26 | 7.5 | 29 | 41.5 | 25.8 | $\frac{1}{2}$ | 0.189 |
| KLN16 - R $\frac{3}{8}$ - B | 16 | 13 | 8.5 | 6.35 | 26 | 29 | 7.5 | 31 | 44.5 | 26 | $\frac{3}{8}$ | 0.252 |
| KLN16 - R $\frac{1}{2}$ - B | 16 | 13 | 12 | 8.16 | 26 | 29 | 7.5 | 31 | 44.5 | 27.8 | $\frac{1}{2}$ | 0.260 |
| KLN18 - R $\frac{1}{2}$ - B | 18 | 15 | 12 | 8.16 | 29 | 32 | 8 | 33 | 45.5 | 29.9 | $\frac{1}{2}$ | 0.317 |
| KLN20 - R $\frac{1}{2}$ - B | 20 | 17 | 12 | 8.16 | 29 | 35 | 8 | 33 | 45.5 | 30 | $\frac{1}{2}$ | 0.312 |
| KLN20 - R $\frac{3}{4}$ - B | 20 | 17 | 17 | 9.53 | 29 | 35 | 8 | 33 | 45.5 | 30.5 | $\frac{3}{4}$ | 0.322 |
| KLN22 - R $\frac{3}{4}$ - B | 22 | 18 | 17 | 9.53 | 32 | 35 | 9 | 35 | 47.5 | 32.5 | $\frac{3}{4}$ | 0.383 |
| KLN25 - R $\frac{3}{4}$ - B | 25 | 20 | 17 | 9.53 | 35 | 41 | 10 | 36 | 49.5 | 33.5 | $\frac{3}{4}$ | 0.489 |
| KLN25 - R1 - B | 25 | 20 | 22 | 10.39 | 35 | 41 | 10 | 36 | 49.5 | 35.6 | 1 | 0.509 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Union Elbow KL



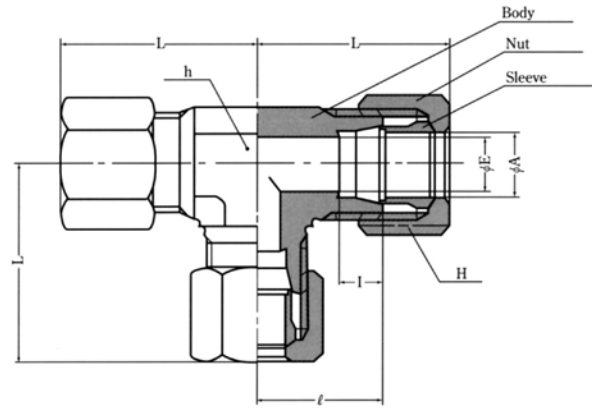
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Flats h | Width Across Hex. Flats H | I | l | Approx. L | Weight (kg) |
|--------------|----------------|-------------------------|-------------------------------|---------------------------------|-----|----|--------------|----------------|
| KL4-B | 4 | 2.5 | 12 | 12 | 6 | 15 | 23 | 0.036 |
| KL6-B | 6 | 4 | 14 | 14 | 7 | 20 | 29.5 | 0.063 |
| KL8-B | 8 | 6 | 17 | 17 | 7 | 22 | 33 | 0.090 |
| KL10-B | 10 | 8 | 17 | 19 | 7 | 23 | 35.5 | 0.105 |
| KL12-B | 12 | 10 | 19 | 21 | 7 | 24 | 36.5 | 0.124 |
| KL15-B | 15 | 12 | 23 | 26 | 7.5 | 29 | 41.5 | 0.228 |
| KL16-B | 16 | 13 | 29 | 26 | 7.5 | 31 | 44.5 | 0.304 |
| KL18-B | 18 | 15 | 32 | 29 | 8 | 33 | 45.5 | 0.354 |
| KL20-B | 20 | 17 | 29 | 35 | 8 | 33 | 45.5 | 0.384 |
| KL22-B | 22 | 18 | 35 | 32 | 9 | 35 | 47.5 | 0.446 |
| KL25-B | 25 | 20 | 35 | 41 | 10 | 36 | 49.5 | 0.598 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Union Tee KT



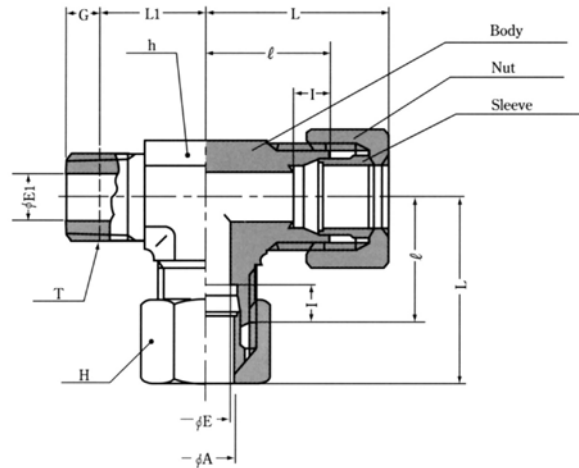
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Flats h | Width Across Hex. Flats H | l | ϕ | Approx. L | Weight (kg) |
|--------------|----------------|-------------------------|-------------------------------|---------------------------------|-----|----|--------------|----------------|
| KT4-B | 4 | 2.5 | 12 | 12 | 6 | 15 | 23 | 0.050 |
| KT6-B | 6 | 4 | 14 | 14 | 7 | 20 | 29.5 | 0.084 |
| KT8-B | 8 | 6 | 17 | 17 | 7 | 22 | 33 | 0.121 |
| KT10-B | 10 | 8 | 17 | 19 | 7 | 23 | 35.5 | 0.142 |
| KT12-B | 12 | 10 | 19 | 21 | 7 | 24 | 36.5 | 0.174 |
| KT15-B | 15 | 12 | 23 | 26 | 7.5 | 29 | 41.5 | 0.308 |
| KT16-B | 16 | 13 | 26 | 29 | 7.5 | 31 | 44.5 | 0.406 |
| KT18-B | 18 | 15 | 29 | 32 | 8 | 33 | 45.5 | 0.481 |
| KT20-B | 20 | 17 | 29 | 35 | 8 | 33 | 45.5 | 0.516 |
| KT22-B | 22 | 18 | 32 | 35 | 9 | 35 | 47.5 | 0.599 |
| KT25-B | 25 | 20 | 35 | 41 | 10 | 36 | 49.5 | 0.792 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Male Run Tee KTK



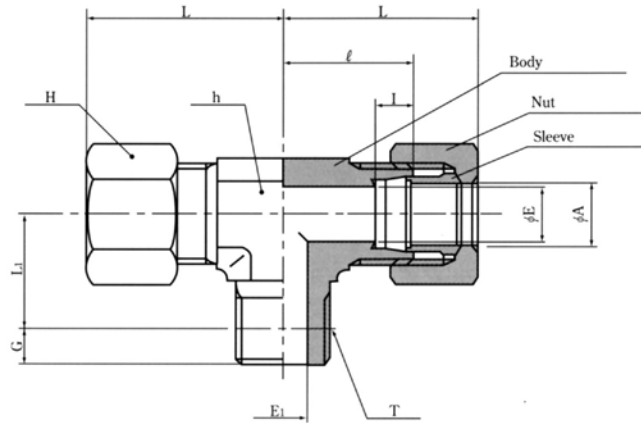
unit : mm

| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | I | ϕ | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|---------------------------|-------------|-----------------|----------------|--|----------------------|---------------------------|-----|--------|-----------|------------------------|---------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KTK 4-R $\frac{1}{8}$ -B | 4 | 2.5 | 4 | 3.97 | 12 | 12 | 6 | 15 | 23 | 13 | $\frac{1}{8}$ | 0.024 |
| KTK 6-R $\frac{1}{8}$ -B | 6 | 4 | 4 | 3.97 | 14 | 14 | 7 | 20 | 29.5 | 14 | $\frac{1}{8}$ | 0.068 |
| KTK 6-R $\frac{1}{4}$ -B | 6 | 4 | 6 | 6.01 | 17 | 14 | 7 | 22 | 31.5 | 18 | $\frac{1}{4}$ | 0.121 |
| KTK 6-R $\frac{3}{8}$ -B | 6 | 4 | 8.5 | 6.35 | 19 | 14 | 7 | 24 | 35 | 21 | $\frac{3}{8}$ | 0.173 |
| KTK 8-R $\frac{1}{8}$ -B | 8 | 6 | 4 | 3.97 | 17 | 17 | 7 | 22 | 33 | 16 | $\frac{1}{8}$ | 0.078 |
| KTK 8-R $\frac{1}{4}$ -B | 8 | 6 | 6 | 6.01 | 17 | 17 | 7 | 22 | 33 | 18 | $\frac{1}{4}$ | 0.106 |
| KTK 8-R $\frac{3}{8}$ -B | 8 | 6 | 8.5 | 6.35 | 19 | 17 | 7 | 24 | 35 | 21 | $\frac{3}{8}$ | 0.182 |
| KTK 10-R $\frac{1}{4}$ -B | 10 | 8 | 6 | 6.01 | 17 | 19 | 7 | 23 | 34.5 | 19 | $\frac{1}{4}$ | 0.139 |
| KTK 10-R $\frac{3}{8}$ -B | 10 | 8 | 8.5 | 6.35 | 19 | 19 | 7 | 24 | 35.5 | 21 | $\frac{3}{8}$ | 0.190 |
| KTK 12-R $\frac{1}{4}$ -B | 12 | 10 | 6 | 6.01 | 19 | 21 | 7 | 24 | 36.5 | 20 | $\frac{1}{4}$ | 0.183 |
| KTK 12-R $\frac{3}{8}$ -B | 12 | 10 | 8.5 | 6.35 | 19 | 21 | 7 | 24 | 36.5 | 21 | $\frac{3}{8}$ | 0.156 |
| KTK 15-R $\frac{3}{8}$ -B | 15 | 12 | 8.5 | 6.35 | 23 | 26 | 7.5 | 29 | 41.5 | 24 | $\frac{3}{8}$ | 0.256 |
| KTK 15-R $\frac{1}{2}$ -B | 15 | 12 | 12 | 8.16 | 23 | 26 | 7.5 | 29 | 41.5 | 25.8 | $\frac{1}{2}$ | 0.268 |
| KTK 16-R $\frac{3}{8}$ -B | 16 | 13 | 8.5 | 6.35 | 26 | 29 | 7.5 | 31 | 44.5 | 26 | $\frac{3}{8}$ | 0.349 |
| KTK 16-R $\frac{1}{2}$ -B | 16 | 13 | 12 | 8.16 | 26 | 29 | 7.5 | 31 | 44.5 | 27.8 | $\frac{1}{2}$ | 0.358 |
| KTK 18-R $\frac{1}{2}$ -B | 18 | 15 | 12 | 8.16 | 29 | 32 | 8 | 33 | 45.5 | 29.8 | $\frac{1}{2}$ | 0.450 |
| KTK 20-R $\frac{1}{2}$ -B | 20 | 17 | 12 | 8.16 | 29 | 35 | 8 | 33 | 45.5 | 30 | $\frac{1}{2}$ | 0.572 |
| KTK 20-R $\frac{3}{4}$ -B | 20 | 17 | 16 | 9.53 | 29 | 35 | 8 | 33 | 45.5 | 30.5 | $\frac{3}{4}$ | 0.475 |
| KTK 22-R $\frac{3}{4}$ -B | 22 | 18 | 16 | 9.53 | 32 | 35 | 9 | 35 | 47.5 | 32.5 | $\frac{3}{4}$ | 0.544 |
| KTK 25-R $\frac{3}{4}$ -B | 25 | 20 | 16 | 9.53 | 35 | 41 | 10 | 36 | 49.5 | 33.5 | $\frac{3}{4}$ | 0.701 |
| KTK 25-R1-B | 25 | 20 | 22 | 10.39 | 35 | 41 | 10 | 36 | 49.5 | 35.6 | 1 | 0.711 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Male Branch Tee KTN



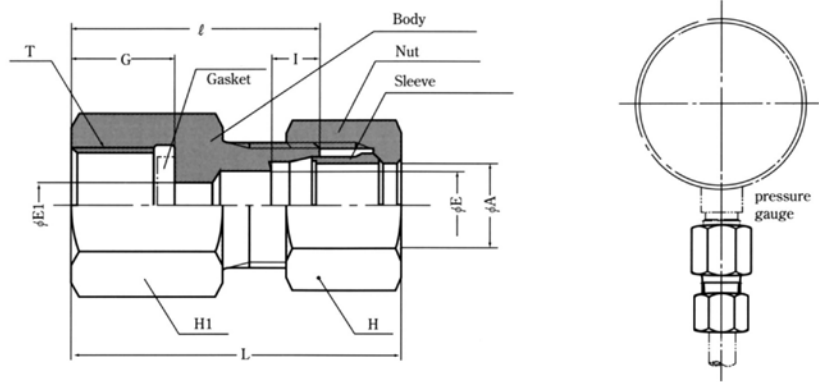
unit : mm

| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | l | l ₁ | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|------------------------------|-------------|-----------------|----------------|--|----------------------|---------------------------|-----|----------------|-----------|------------------------|---------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KTN 4 - R $\frac{1}{8}$ - B | 4 | 2.5 | 4 | 3.97 | 12 | 12 | 6 | 15 | 23 | 13 | $\frac{1}{8}$ | 0.024 |
| KTN 6 - R $\frac{1}{8}$ - B | 6 | 4 | 4 | 3.97 | 14 | 14 | 7 | 20 | 29.5 | 14 | $\frac{1}{8}$ | 0.071 |
| KTN 6 - R $\frac{1}{4}$ - B | 6 | 4 | 6 | 6.01 | 17 | 14 | 7 | 22 | 31.5 | 18 | $\frac{1}{4}$ | 0.121 |
| KTN 6 - R $\frac{3}{8}$ - B | 6 | 4 | 8.5 | 6.35 | 19 | 14 | 7 | 24 | 33.5 | 21 | $\frac{3}{8}$ | 0.173 |
| KTN 8 - R $\frac{1}{8}$ - B | 8 | 6 | 4 | 3.97 | 17 | 17 | 7 | 22 | 33 | 16 | $\frac{1}{8}$ | 0.078 |
| KTN 8 - R $\frac{1}{4}$ - B | 8 | 6 | 6 | 6.01 | 17 | 17 | 7 | 22 | 33 | 18 | $\frac{1}{4}$ | 0.106 |
| KTN 8 - R $\frac{3}{8}$ - B | 8 | 6 | 8.5 | 6.35 | 19 | 17 | 7 | 24 | 35 | 21 | $\frac{3}{8}$ | 0.182 |
| KTN 10 - R $\frac{1}{4}$ - B | 10 | 8 | 6 | 6.01 | 17 | 19 | 7 | 23 | 34.5 | 19 | $\frac{1}{4}$ | 0.123 |
| KTN 10 - R $\frac{3}{8}$ - B | 10 | 8 | 8.5 | 6.35 | 19 | 19 | 7 | 24 | 35.5 | 21 | $\frac{3}{8}$ | 0.190 |
| KTN 12 - R $\frac{1}{4}$ - B | 12 | 10 | 6 | 6.01 | 19 | 21 | 7 | 24 | 36.5 | 20 | $\frac{1}{4}$ | 0.183 |
| KTN 12 - R $\frac{3}{8}$ - B | 12 | 10 | 8.5 | 6.35 | 19 | 21 | 7 | 24 | 36.5 | 21 | $\frac{3}{8}$ | 0.156 |
| KTN 15 - R $\frac{3}{8}$ - B | 15 | 12 | 8.5 | 6.35 | 23 | 26 | 7.5 | 29 | 41.5 | 24 | $\frac{3}{8}$ | 0.256 |
| KTN 15 - R $\frac{1}{2}$ - B | 15 | 12 | 12 | 8.16 | 23 | 26 | 7.5 | 29 | 41.5 | 25.8 | $\frac{1}{2}$ | 0.268 |
| KTN 16 - R $\frac{3}{8}$ - B | 16 | 13 | 8.5 | 6.35 | 26 | 29 | 7.5 | 31 | 44.5 | 26 | $\frac{3}{8}$ | 0.349 |
| KTN 16 - R $\frac{1}{2}$ - B | 16 | 13 | 12 | 8.16 | 26 | 29 | 7.5 | 31 | 44.5 | 27.8 | $\frac{1}{2}$ | 0.358 |
| KTN 18 - R $\frac{1}{2}$ - B | 18 | 15 | 12 | 8.16 | 29 | 32 | 8 | 33 | 45.5 | 29.8 | $\frac{1}{2}$ | 0.446 |
| KTN 20 - R $\frac{1}{2}$ - B | 20 | 17 | 12 | 8.16 | 29 | 35 | 8 | 33 | 45.5 | 29.8 | $\frac{1}{2}$ | 0.572 |
| KTN 20 - R $\frac{3}{4}$ - B | 20 | 17 | 16 | 9.53 | 29 | 35 | 8 | 33 | 45.5 | 30.5 | $\frac{3}{4}$ | 0.475 |
| KTN 22 - R $\frac{3}{4}$ - B | 22 | 18 | 16 | 9.53 | 32 | 35 | 9 | 35 | 47.5 | 32.5 | $\frac{3}{4}$ | 0.544 |
| KTN 25 - R $\frac{3}{4}$ - B | 25 | 20 | 16 | 9.53 | 35 | 41 | 10 | 36 | 49.5 | 33.5 | $\frac{3}{4}$ | 0.701 |
| KTN 25 - R1 - B | 25 | 20 | 22 | 10.39 | 35 | 41 | 10 | 36 | 49.5 | 35.6 | 1 | 0.714 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B Series Bite Type Fittings for Copper Tube

Pressure Gauge Connector KSP



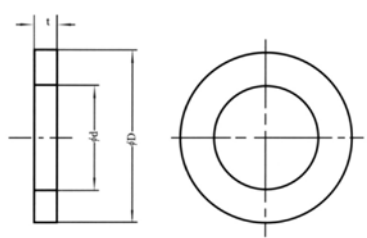
unit : mm

| Designations | Tube O.D. A | (G) T | Minimum Opening | | G | Width Across Hex. Flats | | l | ℓ | Approx. L | Designation for suitable gasket | Weight (kg) |
|----------------|-------------|-------|-----------------|----------------|----|-------------------------|----|---|----|-----------|---------------------------------|-------------|
| | | | E | E ₁ | | H ₁ | H | | | | | |
| KSP - ¼×4 - B | 4 | ¼ | 2.5 | 6 | 14 | 19 | 12 | 6 | 30 | 38 | KP - B - 01 | 0.050 |
| KSP - ¼×6 - B | 6 | ¼ | 4 | 6 | 14 | 19 | 14 | 7 | 34 | 43.5 | KP - B - 01 | 0.061 |
| KSP - ¼×8 - B | 8 | ¼ | 6 | 6 | 14 | 19 | 17 | 7 | 34 | 45 | KP - B - 01 | 0.067 |
| KSP - ¼×10 - B | 10 | ¼ | 8 | 6 | 14 | 19 | 19 | 7 | 34 | 46.5 | KP - B - 01 | 0.073 |
| KSP - ¼×12 - B | 12 | ¼ | 10 | 6 | 14 | 19 | 21 | 7 | 34 | 46.5 | KP - B - 01 | 0.080 |
| KSP - ⅜×4 - B | 4 | ⅜ | 2.5 | 6 | 15 | 23 | 12 | 6 | 32 | 40 | KP - B - 02 | 0.075 |
| KSP - ⅜×6 - B | 6 | ⅜ | 4 | 6 | 15 | 23 | 14 | 7 | 36 | 45.5 | KP - B - 02 | 0.082 |
| KSP - ⅜×8 - B | 8 | ⅜ | 6 | 6 | 15 | 23 | 17 | 7 | 36 | 47 | KP - B - 02 | 0.089 |
| KSP - ⅜×10 - B | 10 | ⅜ | 8 | 6 | 15 | 23 | 19 | 7 | 36 | 48.5 | KP - B - 02 | 0.094 |
| KSP - ⅜×12 - B | 12 | ⅜ | 10 | 6 | 15 | 23 | 21 | 7 | 36 | 48.5 | KP - B - 02 | 0.101 |
| KSP - ½×6 - B | 6 | ½ | 4 | 6 | 16 | 29 | 14 | 7 | 38 | 47.5 | KP - B - 03 | 0.126 |
| KSP - ½×8 - B | 8 | ½ | 6 | 6 | 16 | 29 | 17 | 7 | 38 | 49 | KP - B - 03 | 0.132 |
| KSP - ½×10 - B | 10 | ½ | 8 | 8 | 16 | 29 | 19 | 7 | 38 | 50.5 | KP - B - 03 | 0.142 |
| KSP - ½×12 - B | 12 | ½ | 10 | 10 | 16 | 29 | 21 | 7 | 38 | 50.5 | KP - B - 03 | 0.148 |

Note 1. Gasket are not provided as standard accessories. Please specify when required. For such case, ※dimension and material of Ihara's standard gasket is as below.

Note 2. L dimension is finger tight.

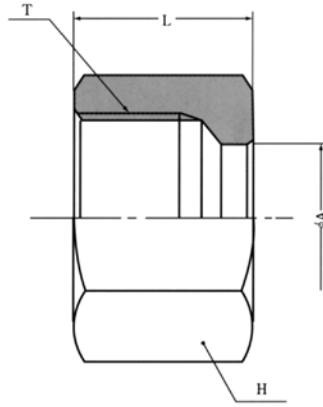
| Nominal of Gasket | Dimension | | | Material | Maximum working pressure |
|-------------------|-----------|----|---|----------------|--------------------------|
| | d | D | t | | |
| KP - B - 01 | 6 | 11 | 3 | Chrome leather | 100°C |
| KP - B - 02 | 6 | 14 | 3 | | |
| KP - B - 03 | 6 | 18 | 3 | | |



⚠ Note: Dimension might be modified due to improvement of quality and performance.


B Series Bite Type Fittings for Copper Tube

Nut KN



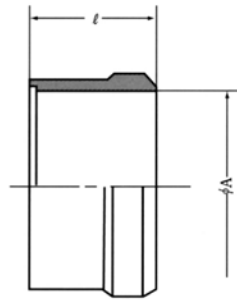
unit : mm

| Designations | Tube O.D. A | Approx. L | Width Across Hex. Flats H | T | Weight (kg) |
|--------------|----------------|--------------|---------------------------------|----------|----------------|
| KN4 - B | 4 | 10.5 | 12 | M10×1.25 | 0.007 |
| KN6 - B | 6 | 15 | 14 | M12×1.5 | 0.012 |
| KN8 - B | 8 | 15 | 17 | M14×1.5 | 0.016 |
| KN10 - B | 10 | 16 | 19 | M16×1.5 | 0.020 |
| KN12 - B | 12 | 17 | 21 | M18×1.5 | 0.024 |
| KN15 - B | 15 | 19 | 26 | M22×1.5 | 0.045 |
| KN16 - B | 16 | 19 | 29 | M24×1.5 | 0.057 |
| KN18 - B | 18 | 19 | 32 | M26×1.5 | 0.071 |
| KN20 - B | 20 | 19 | 35 | M28×1.5 | 0.075 |
| KN22 - B | 22 | 19 | 35 | M30×1.5 | 0.077 |
| KN25 - B | 25 | 19.5 | 41 | M34×1.5 | 0.110 |
| KN28 - B | 28 | 21 | 41 | M36×1.5 | 0.110 |
| KN30 - B | 30 | 22 | 46 | M40×1.5 | 0.140 |
| KN32 - B | 32 | 22 | 50 | M42×1.5 | 0.171 |
| KN35 - B | 35 | 25 | 54 | M45×1.5 | 0.238 |

 Note: Dimension might be modified due to improvement of quality and performance.


B Series Bite Type Fittings for Copper Tube

Sleeve KO



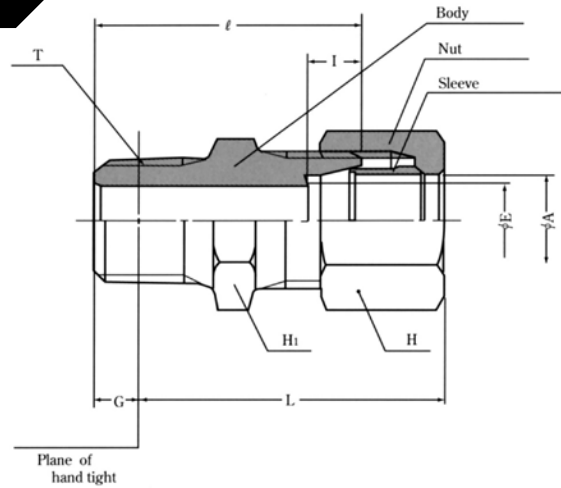
unit : mm

| Designations | Tube O.D. A | l | Weight (kg) |
|--------------|----------------|-----|----------------|
| KO4-B | 4 | 7 | 0.001 |
| KO6-B | 6 | 9 | 0.002 |
| KO8-B | 8 | 9 | 0.002 |
| KO10-B | 10 | 10 | 0.003 |
| KO12-B | 12 | 10 | 0.004 |
| KO15-B | 15 | 10 | 0.004 |
| KO16-B | 16 | 10 | 0.005 |
| KO18-B | 18 | 10 | 0.006 |
| KO20-B | 20 | 10 | 0.006 |
| KO22-B | 22 | 10 | 0.006 |
| KO25-B | 25 | 11 | 0.009 |
| KO28-B | 28 | 11 | 0.010 |
| KO30-B | 30 | 11 | 0.011 |
| KO32-B | 32 | 11 | 0.012 |
| KO35-B | 35 | 14 | 0.016 |

 Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Male Connector KC



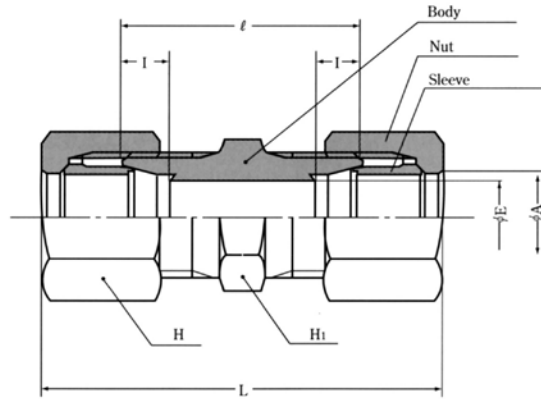
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Normal engagement of pipe thread by hand G | Width Across Hex. Flats | | I | ℓ | Approx. L | (R) T | Weight (kg) |
|---|----------------|-------------------------|--|----------------------------|----|-----|----|--------------|-----------------------------|----------------|
| | | | | H ₁ | H | | | | | |
| KC4-R ¹ / ₈ -B-1 | 4 | 2.5 | 3.97 | 10 | 10 | 6.5 | 23 | 26.5 | ¹ / ₈ | 0.014 |
| KC6-R ¹ / ₈ -B-1 | 6 | 4 | 3.97 | 10 | 12 | 6.5 | 24 | 28 | ¹ / ₈ | 0.017 |
| KC6-R ¹ / ₄ -B-1 | 6 | 4 | 6.01 | 14 | 12 | 6.5 | 29 | 31 | ¹ / ₄ | 0.030 |
| KC6-R ³ / ₈ -B-1 | 6 | 4 | 6.35 | 17 | 12 | 6.5 | 31 | 32.5 | ³ / ₈ | 0.038 |
| KC8-R ¹ / ₈ -B-1 | 8 | 4 | 3.97 | 12 | 14 | 6.5 | 25 | 29 | ¹ / ₈ | 0.023 |
| KC8-R ¹ / ₄ -B-1 | 8 | 6 | 6.01 | 14 | 14 | 6.5 | 29 | 31 | ¹ / ₄ | 0.030 |
| KC8-R ³ / ₈ -B-1 | 8 | 6 | 6.35 | 17 | 14 | 6.5 | 31 | 32.5 | ³ / ₈ | 0.046 |
| KC10-R ¹ / ₄ -B-1 | 10 | 6 | 6.01 | 14 | 17 | 6.5 | 30 | 32.5 | ¹ / ₄ | 0.038 |
| KC10-R ³ / ₈ -B-1 | 10 | 8 | 6.35 | 17 | 17 | 6.5 | 32 | 34 | ³ / ₈ | 0.049 |
| KC10-R ¹ / ₂ -B-1 | 10 | 8 | 8.16 | 23 | 17 | 6.5 | 37 | 37.5 | ¹ / ₂ | 0.082 |
| KC12-R ¹ / ₄ -B-1 | 12 | 6 | 6.01 | 17 | 19 | 6.5 | 31 | 35 | ¹ / ₄ | 0.047 |
| KC12-R ³ / ₈ -B-1 | 12 | 8.5 | 6.35 | 17 | 19 | 6.5 | 32 | 35.5 | ³ / ₈ | 0.052 |
| KC12-R ¹ / ₂ -B-1 | 12 | 10 | 8.16 | 23 | 19 | 6.5 | 37 | 39 | ¹ / ₂ | 0.085 |
| KC15-R ³ / ₈ -B-1 | 15 | 8.5 | 6.35 | 21 | 23 | 8 | 33 | 36 | ³ / ₈ | 0.072 |
| KC15-R ¹ / ₂ -B-1 | 15 | 12 | 8.16 | 23 | 23 | 8 | 37 | 38 | ¹ / ₂ | 0.087 |
| KC20-R ¹ / ₂ -B-1 | 20 | 12 | 8.16 | 26 | 29 | 8 | 39 | 41 | ¹ / ₂ | 0.120 |
| KC20-R ³ / ₄ -B-1 | 20 | 17 | 9.53 | 29 | 29 | 8 | 42 | 42.5 | ³ / ₄ | 0.143 |
| KC25-R ³ / ₄ -B-1 | 25 | 17 | 9.53 | 32 | 36 | 9 | 43 | 43.5 | ³ / ₄ | 0.189 |
| KC25-R ¹ -B-1 | 25 | 20 | 10.39 | 36 | 36 | 9 | 48 | 47.5 | 1 | 0.262 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Union KU



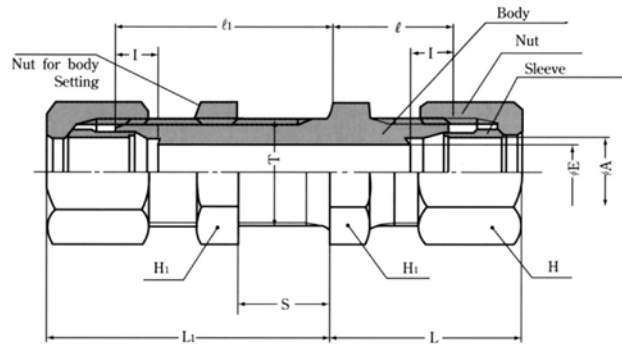
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Hex. Flats | | I | ℓ | Approx. L | Weight (kg) |
|--------------|----------------|-------------------------|----------------------------|----|-----|----|--------------|----------------|
| | | | H ₁ | H | | | | |
| KU4-B-1 | 4 | 2.5 | 8 | 10 | 6.5 | 20 | 35 | 0.014 |
| KU6-B-1 | 6 | 4 | 10 | 12 | 6.5 | 22 | 38 | 0.022 |
| KU8-B-1 | 8 | 6 | 12 | 14 | 6.5 | 23 | 39 | 0.029 |
| KU10-B-1 | 10 | 8 | 14 | 17 | 6.5 | 25 | 42 | 0.046 |
| KU12-B-1 | 12 | 10 | 17 | 19 | 6.5 | 26 | 46 | 0.054 |
| KU15-B-1 | 15 | 12 | 21 | 23 | 8 | 27 | 46 | 0.080 |
| KU20-B-1 | 20 | 17 | 26 | 29 | 8 | 30 | 50 | 0.129 |
| KU25-B-1 | 25 | 20 | 32 | 36 | 9 | 32 | 52 | 0.207 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Bulkhead Union KSU



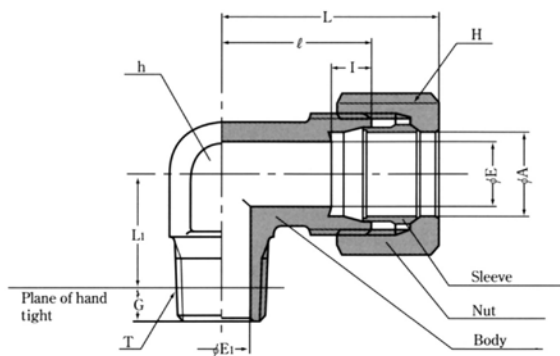
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Hex. Flats | | I | l ₁ | l | Approx. L ₁ | Approx. L | T | S | | Weight (kg) |
|--------------|-------------|-------------------|-------------------------|----|-----|----------------|----|------------------------|-----------|----|-----|-----|-------------|
| | | | H _i | H | | | | | | | Max | Min | |
| KSU4-B-1 | 4 | 2.5 | 12 | 10 | 6.5 | 28 | 13 | 35.5 | 20.5 | 8 | 15 | 2 | 0.027 |
| KSU6-B-1 | 6 | 4 | 14 | 12 | 6.5 | 30 | 15 | 38 | 23 | 10 | 15 | 2.5 | 0.042 |
| KSU8-B-1 | 8 | 6 | 17 | 14 | 6.5 | 31 | 16 | 39 | 24 | 12 | 15 | 2.5 | 0.065 |
| KSU10-B-1 | 10 | 8 | 19 | 17 | 6.5 | 32 | 17 | 40.5 | 25.5 | 14 | 15 | 3 | 0.081 |
| KSU12-B-1 | 12 | 10 | 21 | 19 | 6.5 | 33 | 18 | 43 | 28 | 16 | 15 | 3 | 0.097 |
| KSU15-B-1 | 15 | 12 | 26 | 23 | 8 | 35 | 20 | 44.5 | 29.5 | 20 | 15 | 3 | 0.164 |
| KSU20-B-1 | 20 | 17 | 32 | 29 | 8 | 38 | 23 | 48 | 33 | 26 | 15 | 3 | 0.268 |
| KSU25-B-1 | 25 | 20 | 38 | 36 | 9 | 40 | 25 | 50 | 35 | 32 | 15 | 3 | 0.441 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Male Elbow KLN



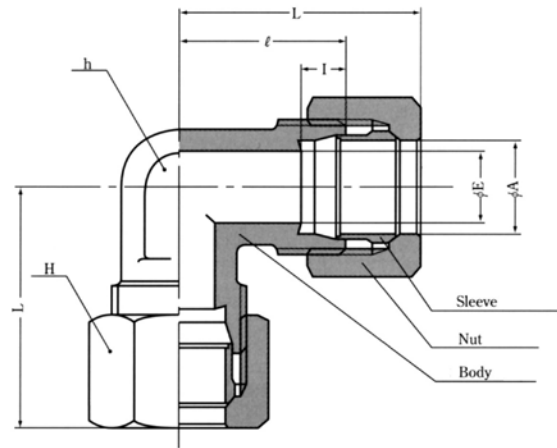
unit : mm

| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | I | ℓ | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|--|-------------|-----------------|----------------|--|----------------------|---------------------------|-----|----|-----------|------------------------|-----------------------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KLN4-R ¹ / ₈ -B-1 | 4 | 2.5 | 2.5 | 3.97 | 8 | 10 | 6.5 | 16 | 23.5 | 13 | ¹ / ₈ | 0.017 |
| KLN6-R ¹ / ₈ -B-1 | 6 | 4 | 4 | 3.97 | 8 | 12 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.020 |
| KLN6-R ¹ / ₄ -B-1 | 6 | 4 | 4 | 6.01 | 8 | 12 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.026 |
| KLN6-R ³ / ₈ -B-1 | 6 | 4 | 8.5 | 6.35 | 12 | 12 | 6.5 | 21 | 29 | 18.5 | ³ / ₈ | 0.043 |
| KLN8-R ¹ / ₈ -B-1 | 8 | 6 | 4 | 3.97 | 10 | 14 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.026 |
| KLN8-R ¹ / ₄ -B-1 | 8 | 6 | 6 | 6.01 | 10 | 14 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.028 |
| KLN8-R ³ / ₈ -B-1 | 8 | 6 | 8.5 | 6.35 | 12 | 14 | 6.5 | 21 | 29 | 18.5 | ³ / ₈ | 0.047 |
| KLN10-R ¹ / ₄ -B-1 | 10 | 8 | 6 | 6.01 | 12 | 17 | 6.5 | 21 | 29.5 | 18 | ³ / ₄ | 0.042 |
| KLN10-R ³ / ₈ -B-1 | 10 | 8 | 8.5 | 6.35 | 12 | 17 | 6.5 | 21 | 29.5 | 18.5 | ³ / ₈ | 0.045 |
| KLN10-R ¹ / ₂ -B-1 | 10 | 8 | 12 | 8.16 | 17 | 17 | 6.5 | 25 | 33.5 | 23 | ¹ / ₂ | 0.105 |
| KLN12-R ¹ / ₄ -B-1 | 12 | 10 | 6 | 6.01 | 14 | 19 | 6.5 | 22 | 32 | 19 | ¹ / ₄ | 0.054 |
| KLN12-R ³ / ₈ -B-1 | 12 | 10 | 8.5 | 6.35 | 14 | 19 | 6.5 | 22 | 32 | 19.5 | ³ / ₈ | 0.056 |
| KLN12-R ¹ / ₂ -B-1 | 12 | 10 | 12 | 8.16 | 17 | 19 | 6.5 | 24 | 35 | 23 | ¹ / ₂ | 0.118 |
| KLN15-R ³ / ₈ -B-1 | 15 | 12 | 8.5 | 6.35 | 17 | 23 | 8 | 25 | 34.5 | 21.5 | ³ / ₈ | 0.085 |
| KLN15-R ¹ / ₂ -B-1 | 15 | 12 | 12 | 8.16 | 17 | 23 | 8 | 25 | 34.5 | 23 | ¹ / ₂ | 0.088 |
| KLN20-R ¹ / ₂ -B-1 | 20 | 17 | 12 | 8.16 | 23 | 29 | 8 | 29 | 39 | 26 | ¹ / ₂ | 0.154 |
| KLN20-R ³ / ₄ -B-1 | 20 | 17 | 17 | 9.53 | 23 | 29 | 8 | 29 | 39 | 26.5 | ³ / ₄ | 0.153 |
| KLN25-R ³ / ₄ -B-1 | 25 | 20 | 17 | 9.53 | 30 | 36 | 9 | 35 | 46 | 30.5 | ³ / ₄ | 0.295 |
| KLN25-R1-B-1 | 25 | 20 | 23 | 10.39 | 30 | 36 | 9 | 35 | 46 | 32 | 1 | 0.291 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Union Elbow KL



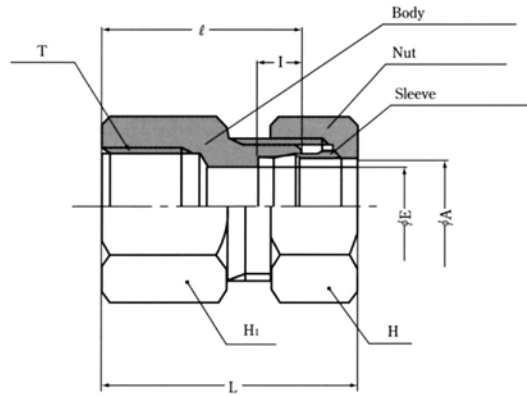
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Flats h | Width Across Hex. Flats H | I | l | Approx. L | Weight (kg) |
|--------------|----------------|-------------------------|-------------------------------|------------------------------------|-----|----|--------------|----------------|
| KL4-B-1 | 4 | 2.5 | 8 | 10 | 6.5 | 16 | 23.5 | 0.018 |
| KL6-B-1 | 6 | 4 | 8 | 12 | 6.5 | 19 | 27 | 0.026 |
| KL8-B-1 | 8 | 6 | 10 | 14 | 6.5 | 19 | 27 | 0.034 |
| KL10-B-1 | 10 | 8 | 12 | 17 | 6.5 | 21 | 29.5 | 0.052 |
| KL12-B-1 | 12 | 10 | 14 | 19 | 6.5 | 22 | 32 | 0.061 |
| KL15-B-1 | 15 | 12 | 17 | 23 | 8 | 25 | 34.5 | 0.095 |
| KL20-B-1 | 20 | 17 | 23 | 29 | 8 | 29 | 39 | 0.166 |
| KL25-B-1 | 25 | 20 | 30 | 36 | 9 | 35 | 46 | 0.328 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Female Connector KS



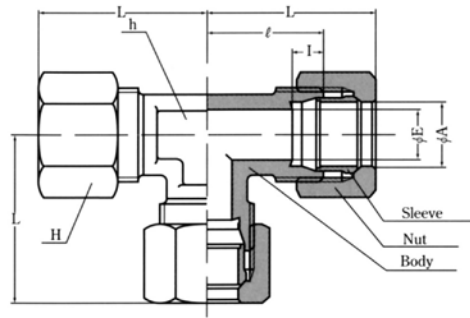
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Hex. Flats | | I | ℓ | Approx. L | (R) T | Weight (kg) |
|---|----------------|-------------------------|----------------------------|----|-----|----|--------------|-----------------------------|----------------|
| | | | H ₁ | H | | | | | |
| KS4-R ¹ / ₈ -B-1 | 4 | 2.5 | 14 | 10 | 6.5 | 21 | 28.5 | ¹ / ₈ | 0.015 |
| KS6-R ¹ / ₈ -B-1 | 6 | 4 | 14 | 12 | 6.5 | 23 | 31 | ¹ / ₈ | 0.024 |
| KS6-R ¹ / ₄ -B-1 | 6 | 4 | 19 | 12 | 6.5 | 27 | 35 | ¹ / ₄ | 0.040 |
| KS6-R ³ / ₈ -B-1 | 6 | 4 | 21 | 12 | 6.5 | 29 | 37 | ³ / ₈ | 0.049 |
| KS8-R ¹ / ₈ -B-1 | 8 | 6 | 14 | 14 | 6.5 | 23 | 31 | ¹ / ₈ | 0.028 |
| KS8-R ¹ / ₄ -B-1 | 8 | 6 | 19 | 14 | 6.5 | 27 | 35 | ¹ / ₄ | 0.046 |
| KS8-R ³ / ₈ -B-1 | 8 | 6 | 21 | 14 | 6.5 | 29 | 37 | ³ / ₈ | 0.051 |
| KS10-R ¹ / ₄ -B-1 | 10 | 8 | 19 | 17 | 6.5 | 28 | 36 | ¹ / ₄ | 0.054 |
| KS10-R ³ / ₈ -B-1 | 10 | 8 | 21 | 17 | 6.5 | 30 | 38 | ³ / ₈ | 0.060 |
| KS10-R ¹ / ₂ -B-1 | 10 | 8 | 26 | 17 | 6.5 | 35 | 43 | ¹ / ₂ | 0.093 |
| KS12-R ¹ / ₄ -B-1 | 12 | 10 | 19 | 19 | 6.5 | 28 | 38 | ¹ / ₄ | 0.077 |
| KS12-R ³ / ₈ -B-1 | 12 | 10 | 21 | 19 | 6.5 | 30 | 40 | ³ / ₈ | 0.064 |
| KS12-R ¹ / ₂ -B-1 | 12 | 10 | 26 | 19 | 6.5 | 35 | 43 | ¹ / ₂ | 0.097 |
| KS15-R ³ / ₈ -B-1 | 15 | 12 | 21 | 23 | 8 | 30 | 39.5 | ³ / ₈ | 0.072 |
| KS15-R ¹ / ₂ -B-1 | 15 | 12 | 26 | 23 | 8 | 33 | 42.5 | ¹ / ₂ | 0.096 |
| KS20-R ¹ / ₂ -B-1 | 20 | 17 | 26 | 29 | 8 | 34 | 44 | ¹ / ₂ | 0.117 |
| KS20-R ³ / ₄ -B-1 | 20 | 17 | 35 | 29 | 8 | 38 | 48 | ³ / ₄ | 0.197 |
| KS25-R ³ / ₄ -B-1 | 25 | 20 | 35 | 36 | 9 | 38 | 49 | ³ / ₄ | 0.223 |
| KS25-R1-B-1 | 25 | 20 | 41 | 36 | 9 | 42 | 53 | 1 | 0.288 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Union Tee KT



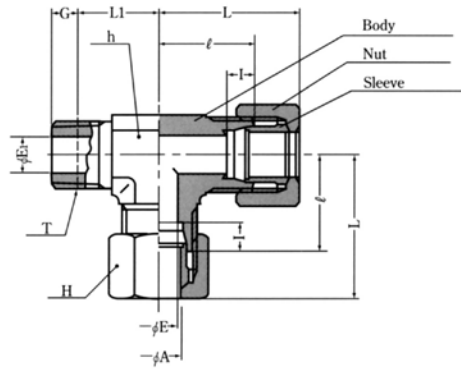
unit : mm

| Designations | Tube O.D. A | Minimum Opening E | Width Across Flats h | Width Across Hex. Flats H | l | l | Approx. L | Weight (kg) |
|--------------|----------------|-------------------------|-------------------------------|------------------------------------|-----|----|--------------|----------------|
| KT4-B-1 | 4 | 2.5 | 8 | 10 | 6.5 | 16 | 23.5 | 0.025 |
| KT6-B-1 | 6 | 4 | 8 | 12 | 6.5 | 19 | 27 | 0.036 |
| KT8-B-1 | 8 | 6 | 10 | 14 | 6.5 | 19 | 27 | 0.047 |
| KT10-B-1 | 10 | 8 | 12 | 17 | 6.5 | 21 | 29.5 | 0.073 |
| KT12-B-1 | 12 | 10 | 14 | 19 | 6.5 | 22 | 32 | 0.087 |
| KT15-B-1 | 15 | 12 | 17 | 23 | 8 | 25 | 34.5 | 0.134 |
| KT20-B-1 | 20 | 17 | 23 | 29 | 8 | 29 | 39 | 0.226 |
| KT25-B-1 | 25 | 20 | 30 | 36 | 9 | 35 | 46 | 0.438 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Male Run Tee KTK



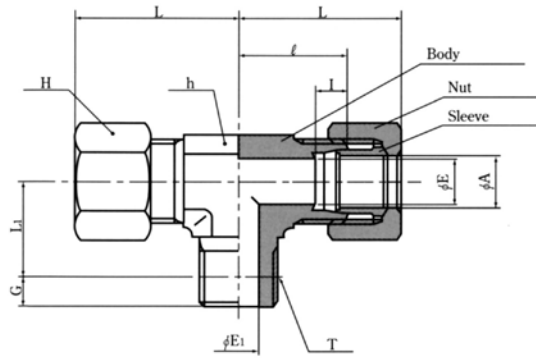
unit : mm

| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | I | ℓ | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|--|-------------|-----------------|----------------|--|----------------------|---------------------------|-----|----|-----------|------------------------|-----------------------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KTK4-R ¹ / ₈ -B-1 | 4 | 2.5 | 2.5 | 3.97 | 12 | 10 | 6.5 | 16 | 23.5 | 13 | ¹ / ₈ | 0.036 |
| KTK6-R ¹ / ₈ -B-1 | 6 | 4 | 4 | 3.97 | 14 | 12 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.059 |
| KTK6-R ¹ / ₄ -B-1 | 6 | 4 | 6 | 6.01 | 14 | 12 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.061 |
| KTK6-R ³ / ₈ -B-1 | 6 | 4 | 8.5 | 6.35 | 17 | 12 | 6.5 | 19 | 27 | 18.5 | ³ / ₈ | 0.087 |
| KTK8-R ¹ / ₈ -B-1 | 8 | 6 | 4 | 3.97 | 14 | 14 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.063 |
| KTK8-R ¹ / ₄ -B-1 | 8 | 6 | 6 | 6.01 | 14 | 14 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.062 |
| KTK8-R ³ / ₈ -B-1 | 8 | 6 | 8.5 | 6.35 | 17 | 14 | 6.5 | 19 | 27 | 18.5 | ³ / ₈ | 0.091 |
| KTK10-R ¹ / ₄ -B-1 | 10 | 8 | 6 | 6.01 | 17 | 17 | 6.5 | 21 | 29.5 | 18 | ¹ / ₄ | 0.105 |
| KTK10-R ³ / ₈ -B-1 | 10 | 8 | 8.5 | 6.35 | 17 | 17 | 6.5 | 21 | 29.5 | 18.5 | ³ / ₈ | 0.113 |
| KTK10-R ¹ / ₂ -B-1 | 10 | 8 | 12 | 8.16 | 23 | 17 | 6.5 | 25 | 33.5 | 23 | ¹ / ₂ | 0.151 |
| KTK12-R ¹ / ₄ -B-1 | 12 | 10 | 6 | 6.01 | 17 | 19 | 6.5 | 22 | 32 | 19 | ¹ / ₄ | 0.116 |
| KTK12-R ³ / ₈ -B-1 | 12 | 10 | 8.5 | 6.35 | 17 | 19 | 6.5 | 22 | 32 | 19.5 | ³ / ₈ | 0.120 |
| KTK12-R ¹ / ₂ -B-1 | 12 | 10 | 12 | 8.16 | 23 | 19 | 6.5 | 25 | 35 | 23 | ¹ / ₂ | 0.152 |
| KTK15-R ³ / ₈ -B-1 | 15 | 12 | 8.5 | 6.35 | 23 | 23 | 8 | 25 | 34.5 | 21.5 | ³ / ₈ | 0.162 |
| KTK15-R ¹ / ₂ -B-1 | 15 | 12 | 12 | 8.16 | 23 | 23 | 8 | 25 | 34.5 | 23 | ¹ / ₂ | 0.157 |
| KTK20-R ¹ / ₂ -B-1 | 20 | 17 | 12 | 8.16 | 29 | 29 | 8 | 29 | 39 | 26 | ¹ / ₂ | 0.256 |
| KTK20-R ³ / ₄ -B-1 | 20 | 17 | 17 | 9.53 | 29 | 29 | 8 | 29 | 39 | 26.5 | ³ / ₄ | 0.251 |
| KTK25-R ³ / ₄ -B-1 | 25 | 20 | 17 | 9.53 | 32 | 36 | 9 | 35 | 46 | 30.5 | ³ / ₄ | 0.374 |
| KTK25-R1-B-1 | 25 | 20 | 23 | 10.39 | 35 | 36 | 9 | 35 | 46 | 32 | 1 | 0.374 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Male Branch Tee KTN

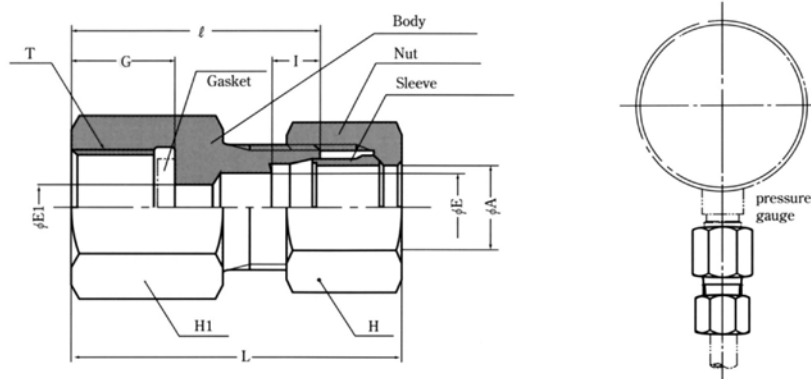


| Designations | Tube O.D. A | Minimum Opening | | Normal engagement of pipe thread by hand G | Width Across Flats h | Width Across Hex. Flats H | l | l | Approx. L | Approx. L ₁ | (R) T | Weight (kg) |
|--|-------------|-----------------|----------------|--|----------------------|---------------------------|-----|----|-----------|------------------------|-----------------------------|-------------|
| | | E | E ₁ | | | | | | | | | |
| KTN4-R ¹ / ₈ -B-1 | 4 | 2.5 | 2.5 | 3.97 | 12 | 10 | 6.5 | 16 | 23.5 | 13 | ¹ / ₈ | 0.036 |
| KTN6-R ¹ / ₈ -B-1 | 6 | 4 | 4 | 3.97 | 14 | 12 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.059 |
| KTN6-R ¹ / ₄ -B-1 | 6 | 4 | 6 | 6.01 | 14 | 12 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.061 |
| KTN6-R ³ / ₈ -B-1 | 6 | 4 | 8.5 | 6.35 | 17 | 12 | 6.5 | 19 | 27 | 18.5 | ³ / ₈ | 0.087 |
| KTN8-R ¹ / ₈ -B-1 | 8 | 6 | 4 | 3.97 | 14 | 14 | 6.5 | 19 | 27 | 15 | ¹ / ₈ | 0.063 |
| KTN8-R ¹ / ₄ -B-1 | 8 | 6 | 6 | 6.01 | 14 | 14 | 6.5 | 19 | 27 | 16 | ¹ / ₄ | 0.062 |
| KTN8-R ³ / ₈ -B-1 | 8 | 6 | 8.5 | 6.35 | 17 | 14 | 6.5 | 19 | 27 | 18.5 | ³ / ₈ | 0.091 |
| KTN10-R ¹ / ₄ -B-1 | 10 | 8 | 6 | 6.01 | 17 | 17 | 6.5 | 21 | 29.5 | 18 | ¹ / ₄ | 0.105 |
| KTN10-R ³ / ₈ -B-1 | 10 | 8 | 8.5 | 6.35 | 17 | 17 | 6.5 | 21 | 29.5 | 18.5 | ³ / ₈ | 0.113 |
| KTN10-R ¹ / ₂ -B-1 | 10 | 8 | 12 | 8.16 | 23 | 17 | 6.5 | 25 | 33.5 | 23 | ¹ / ₂ | 0.151 |
| KTN12-R ¹ / ₄ -B-1 | 12 | 10 | 6 | 6.01 | 17 | 19 | 6.5 | 22 | 32 | 19 | ¹ / ₄ | 0.116 |
| KTN12-R ³ / ₈ -B-1 | 12 | 10 | 8.5 | 6.35 | 17 | 19 | 6.5 | 22 | 32 | 19.5 | ³ / ₈ | 0.120 |
| KTN12-R ¹ / ₂ -B-1 | 12 | 10 | 12 | 8.16 | 23 | 19 | 6.5 | 25 | 35 | 23 | ¹ / ₂ | 0.152 |
| KTN15-R ³ / ₈ -B-1 | 15 | 12 | 8.5 | 6.35 | 23 | 23 | 8 | 25 | 34.5 | 21.5 | ³ / ₈ | 0.162 |
| KTN15-R ¹ / ₂ -B-1 | 15 | 12 | 12 | 8.16 | 23 | 23 | 8 | 25 | 34.5 | 23 | ¹ / ₂ | 0.157 |
| KTN20-R ¹ / ₂ -B-1 | 20 | 17 | 12 | 8.16 | 29 | 29 | 8 | 29 | 39 | 26 | ¹ / ₂ | 0.256 |
| KTN20-R ³ / ₄ -B-1 | 20 | 17 | 17 | 9.53 | 29 | 29 | 8 | 29 | 39 | 26.5 | ³ / ₄ | 0.251 |
| KTN25-R ³ / ₄ -B-1 | 25 | 20 | 17 | 9.53 | 36 | 36 | 9 | 35 | 46 | 30.5 | ³ / ₄ | 0.374 |
| KTN25-R1-B-1 | 25 | 20 | 23 | 10.39 | 36 | 36 | 9 | 35 | 46 | 32 | 1 | 0.374 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Pressure Gauge Connector KSP



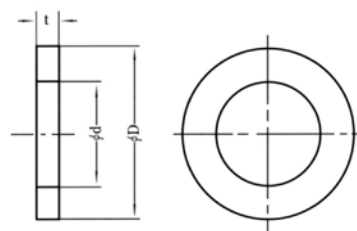
unit : mm

| Designations | Tube O.D. A | (G) T | Minimum Opening | | G | Width Across Hex. Flats | | l | φ | Approx. L | Designation for suitable gasket | Weight (kg) |
|--------------|-------------|-------|-----------------|----------------|----|-------------------------|----|-----|----|-----------|---------------------------------|-------------|
| | | | E | E ₁ | | H ₁ | H | | | | | |
| KSP-¼×4-B-1 | 4 | ¼ | 2.5 | 6 | 14 | 17 | 10 | 6.5 | 28 | 35.5 | KP-B-01 | 0.032 |
| KSP-¼×6-B-1 | 6 | ¼ | 4 | 6 | 14 | 17 | 12 | 6.5 | 29 | 37 | KP-B-01 | 0.035 |
| KSP-¼×8-B-1 | 8 | ¼ | 6 | 6 | 14 | 17 | 14 | 6.5 | 29 | 37 | KP-B-01 | 0.038 |
| KSP-¼×10-B-1 | 10 | ¼ | 8 | 6 | 14 | 17 | 17 | 6.5 | 30 | 38.5 | KP-B-01 | 0.045 |
| KSP-¼×12-B-1 | 12 | ¼ | 10 | 6 | 14 | 17 | 19 | 6.5 | 30 | 40 | KP-B-01 | 0.049 |
| KSP-⅜×4-B-1 | 4 | ⅜ | 2.5 | 6 | 15 | 23 | 10 | 6.5 | 30 | 37.5 | KP-B-02 | 0.046 |
| KSP-⅜×6-B-1 | 6 | ⅜ | 4 | 6 | 15 | 23 | 12 | 6.5 | 31 | 39 | KP-B-02 | 0.050 |
| KSP-⅜×8-B-1 | 8 | ⅜ | 6 | 6 | 15 | 23 | 14 | 6.5 | 31 | 39 | KP-B-02 | 0.054 |
| KSP-⅜×10-B-1 | 10 | ⅜ | 8 | 6 | 15 | 23 | 17 | 6.5 | 32 | 40.5 | KP-B-02 | 0.060 |
| KSP-⅜×12-B-1 | 12 | ⅜ | 10 | 6 | 15 | 23 | 19 | 6.5 | 32 | 42 | KP-B-02 | 0.064 |
| KSP-½×6-B-1 | 6 | ½ | 4 | 6 | 16 | 29 | 12 | 6.5 | 33 | 41 | KP-B-03 | 0.078 |
| KSP-½×8-B-1 | 8 | ½ | 6 | 6 | 16 | 29 | 14 | 6.5 | 33 | 41 | KP-B-03 | 0.082 |
| KSP-½×10-B-1 | 10 | ½ | 8 | 8 | 16 | 29 | 17 | 6.5 | 34 | 42.5 | KP-B-03 | 0.090 |
| KSP-½×12-B-1 | 12 | ½ | 10 | 10 | 16 | 29 | 19 | 6.5 | 34 | 44 | KP-B-03 | 0.091 |

Note 1. Gasket are not provided as standard accessories. Please specify when required. For such case, ※dimension and material of Ihara's standard gasket is as below.

Note 2. L dimension is finger tight.

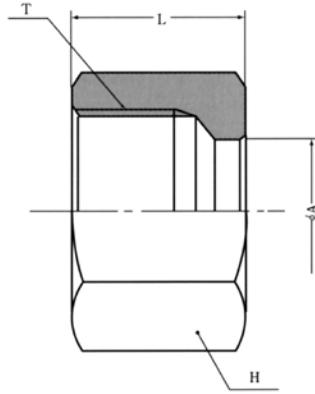
| Nominal of Gasket | Dimension | | | Material | Maximum working pressure |
|-------------------|-----------|----|---|----------------|--------------------------|
| | d | D | t | | |
| KP-B-01 | 6 | 11 | 3 | Chrome leather | 100°C |
| KP-B-02 | 6 | 14 | 3 | | |
| KP-B-03 | 6 | 18 | 3 | | |



⚠ Note: Dimension might be modified due to improvement of quality and performance.

B-1 Series Bite Type Fittings For Copper Tube

Nut KN

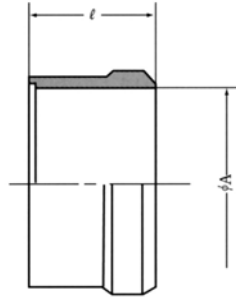


unit : mm

| Designations | Tube O.D. A | Approx. L | Width Across Hex. Flats H | T | Weight (kg) |
|--------------|----------------|--------------|---------------------------------|----------|----------------|
| KN4-B-1 | 4 | 10 | 10 | M8×1 | 0.004 |
| KN6-B-1 | 6 | 11 | 12 | M10×1.25 | 0.006 |
| KN8-B-1 | 8 | 12 | 14 | M12×1.25 | 0.008 |
| KN10-B-1 | 10 | 12 | 17 | M14×1.5 | 0.014 |
| KN12-B-1 | 12 | 13 | 19 | M16×1.5 | 0.016 |
| KN15-B-1 | 15 | 13 | 23 | M20×1.5 | 0.021 |
| KN20-B-1 | 20 | 13.5 | 29 | M26×1.5 | 0.032 |
| KN25-B-1 | 25 | 14 | 36 | M32×1.5 | 0.050 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

Sleeve KO



unit : mm

| Designations | Tube O.D. A | l | Weight (kg) |
|--------------|----------------|-----|----------------|
| KO4-B-1 | 4 | 7 | 0.001 |
| KO6-B-1 | 6 | 7 | 0.001 |
| KO8-B-1 | 8 | 7.5 | 0.001 |
| KO10-B-1 | 10 | 7.5 | 0.001 |
| KO12-B-1 | 12 | 7.5 | 0.002 |
| KO15-B-1 | 15 | 8.5 | 0.003 |
| KO20-B-1 | 20 | 8.5 | 0.003 |
| KO25-B-1 | 25 | 9 | 0.006 |

⚠ Note: Dimension might be modified due to improvement of quality and performance.

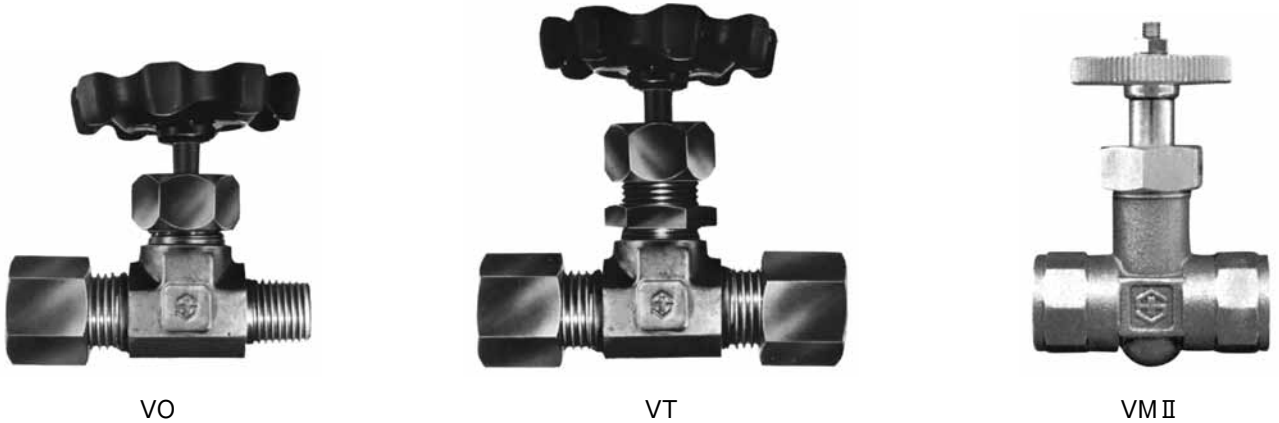
Brass Needle Stop Valves

Brass Needle Stop Valves

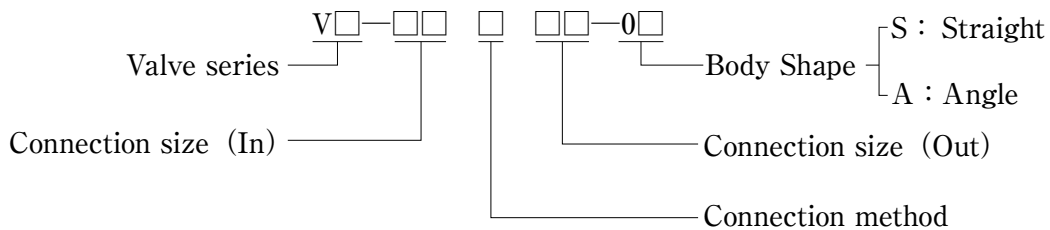
The VO Series Valves with O-ring seals and the VT Series Valves with teflon packing seals are both brass needle stop valves without bonnets for 7MPa (70kgf/cm²) use.

The standard connections are bite type fittings with male screwed ends.

The VM II Series Valves are compact miniature valves made of brass forgings for 1MPa (10kgf/cm²) use and provided with female screwed end connections.



PART NUMBER DESCRIPTION



| Connection method | | Connection size | | | | | | | |
|-------------------|-----------------------------|-----------------|-----|-----|-----|-----|-----|------|------|
| Symbol | Type of Fittings | 01 | 02 | 03 | 04 | 06 | 08 | 10 | 12 |
| K | B-series Fittings (Tube OD) | | | | | 6mm | 8mm | 10mm | 12mm |
| P | Screwed Fittings (R) | 1/8 | 1/4 | 3/8 | 1/2 | | | | |
| L | B-series Fittings (Tube OD) | 1/8 | 1/4 | 3/8 | | | | | |
| | With Screwed Fittings (R) | | | | | | | | |

Brass Needle Stop Valves

VO Series Brass Needle Stop Valves VO

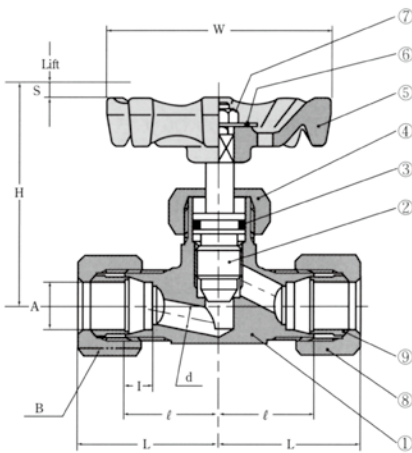
1. Specifications

Max. Working Pressure: 7MPa (70kgf/cm²)

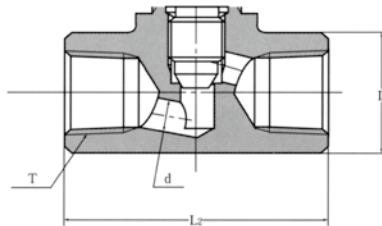
Max. Working Temperature: 100°C

2. Material

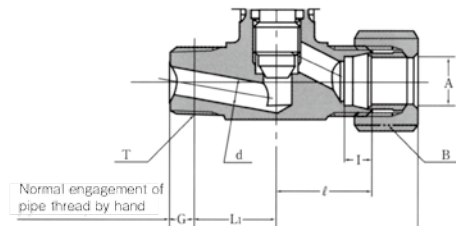
| | | | |
|--------------|-------|-------------|----------------|
| ①Body | C3771 | ⑥Name Plate | A1080P |
| ②Stem | C3604 | ⑦Nut | SUS304 |
| ③O Ring | NBR | ⑧Nut | C3771 or C2700 |
| ④Packing Nut | C3604 | ⑨Sleeve | C3604 |
| ⑤Handle | ADC12 | | |



VO-***K***-OS



VO-***P***-OS



VO-***L***-OS

3. Dimensions

unit : mm

| Part No. | Connection method (T, A) | d | Hex. B | l | ℓ | Approx. | | | Normal engagement of pipe thread by hand G | D | Open H | Lift S | W |
|-------------|--|-----|--------|---|----|---------|----------------|----------------|--|----|--------|--------|----|
| | | | | | | L | L ₁ | L ₂ | | | | | |
| VO-06K06-OS | 6mm Bite | 3.0 | 14 | 7 | 20 | 30.5 | | | | | 43.5 | 2.5 | 47 |
| VO-08K08-OS | 8mm Bite | 4.5 | 17 | 7 | 23 | 33.5 | | | | | 49.0 | 3.0 | 47 |
| VO-10K10-OS | 10mm Bite | 5.5 | 19 | 7 | 23 | 34.5 | | | | | 49.5 | 3.5 | 47 |
| VO-12K12-OS | 12mm Bite | 7.0 | 22 | 7 | 24 | 35.5 | | | | | 56.0 | 4.0 | 57 |
| VO-06L01-OS | R ¹ / ₈ ×6mm Bite | 3.0 | 14 | 7 | 20 | 30.5 | 14.0 | | 3.97 | | 43.5 | 2.5 | 47 |
| VO-08L02-OS | R ¹ / ₄ ×8mm Bite | 4.5 | 17 | 7 | 23 | 33.5 | 18.0 | | 6.01 | | 49.0 | 3.0 | 47 |
| VO-10L02-OS | R ¹ / ₄ ×10mm Bite | 5.5 | 19 | 7 | 23 | 34.5 | 19.0 | | 6.01 | | 49.5 | 3.5 | 47 |
| VO-12L03-OS | R ³ / ₈ ×12mm Bite | 7.0 | 22 | 7 | 24 | 35.5 | 20.5 | | 6.35 | | 56.0 | 4.0 | 57 |
| VO-01P01-OS | Rc ¹ / ₈ | 4.5 | | | | | | 36 | | 18 | 43.5 | 3.0 | 47 |
| VO-02P02-OS | Rc ¹ / ₄ | 5.0 | | | | | | 48 | | 20 | 49.0 | 3.5 | 47 |
| VO-03P03-OS | Rc ³ / ₈ | 6.0 | | | | | | 54 | | 24 | 49.5 | 4.0 | 57 |
| VO-04P04-OS | Rc ¹ / ₂ | 7.5 | | | | | | 66 | | 30 | 56.0 | 6.0 | 57 |

⚠ The manufacturer reserves the right to modify the quality and performance and make changes in the dimensions of the fittings without notice to implement improvements.

Brass Needle Stop Valves

VT Series Brass Needle Stop Valves VT

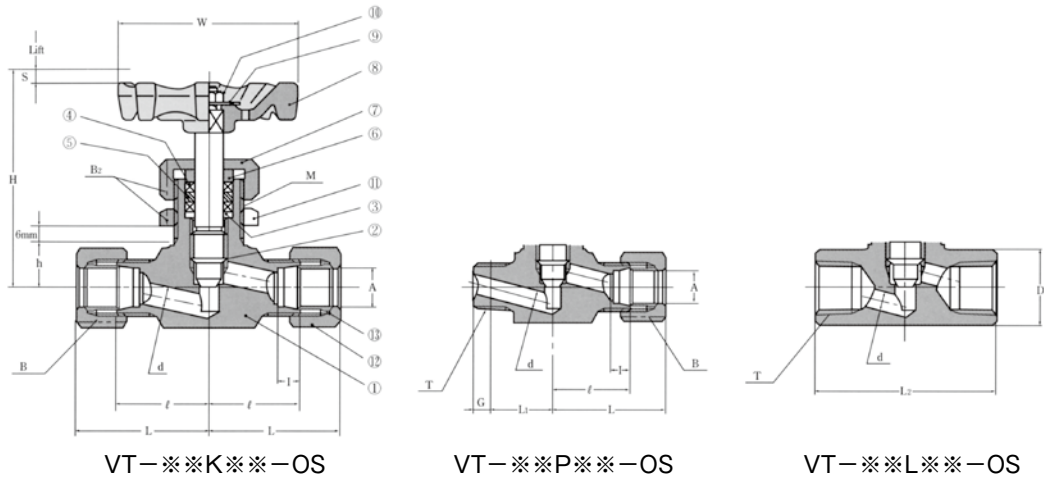
1. Specifications

Max. Working Pressure: 7MPa (70kgf/cm²) (@ -29°C ~ 38°C)

Max. Working Temperature: 200°C

2. Material

| | | | |
|---------------|--------------|-------------|----------------|
| ①Body | C3771 | ⑧Handle | ADC12 |
| ②Stem | C6782 | ⑨Name Plate | A1080P |
| ③Packing Ring | C3604 | ⑩Nut | SUS304 |
| ④Packing | Non asbestos | ⑪Lock nut | C3604 or C2700 |
| ⑤Packing | Teflon | ⑫Nut | C3771 |
| ⑥Gland | C3604 | ⑬Sleeve | C3604 |
| ⑦Packing Nut | C3604 | | |



3. Dimensions

unit : mm

| Part No. | Connection method (T, A) | d | Hex. B | φ | Approx. | | | Normal engagement of pipe thread by hand G | D | Open H | Lift S | W | M | h | Hex. B ₂ |
|-------------|--|-----|--------|----|---------|----------------|----------------|--|------|--------|--------|-----|------|----|---------------------|
| | | | | | L | L ₁ | L ₂ | | | | | | | | |
| VT-06K06-OS | 6mm Bite | 3.0 | 14 | 23 | 33.5 | | | | 52.5 | 2.5 | 47 | M16 | 9.0 | 19 | |
| VT-08K08-OS | 8mm Bite | 4.5 | 17 | 24 | 34.5 | | | | 55.0 | 3.0 | 47 | M18 | 10.5 | 22 | |
| VT-10K10-OS | 10mm Bite | 5.5 | 19 | 26 | 37.5 | | | | 61.5 | 3.5 | 47 | M20 | 12.0 | 24 | |
| VT-12K12-OS | 12mm Bite | 7.0 | 21 | 29 | 40.5 | | | | 68.0 | 4.0 | 57 | M22 | 13.5 | 27 | |
| VT-06L01-OS | R ¹ / ₈ ×6mm Bite | 3.0 | 14 | 23 | 33.5 | 14.0 | | 3.97 | 52.5 | 2.5 | 47 | M16 | 9.0 | 19 | |
| VT-08L02-OS | R ¹ / ₄ ×8mm Bite | 4.5 | 17 | 24 | 34.5 | 18.0 | | 6.01 | 55.0 | 3.0 | 47 | M18 | 10.5 | 22 | |
| VT-10L02-OS | R ¹ / ₄ ×10mm Bite | 5.5 | 19 | 26 | 37.5 | 22.0 | | 6.01 | 61.5 | 3.5 | 47 | M20 | 12.0 | 24 | |
| VT-12L03-OS | R ³ / ₈ ×12mm Bite | 7.0 | 21 | 29 | 40.5 | 22.5 | | 6.35 | 68.0 | 4.0 | 57 | M22 | 13.5 | 27 | |
| VT-01P01-OS | Rc ¹ / ₈ | 4.5 | | | | | 40 | | 20 | 55.0 | 3.0 | 47 | M18 | | 22 |
| VT-02P02-OS | Rc ¹ / ₄ | 5.0 | | | | | 52 | | 22 | 61.5 | 3.5 | 47 | M20 | | 24 |
| VT-03P03-OS | Rc ³ / ₈ | 6.0 | | | | | 58 | | 24 | 68.0 | 4.0 | 57 | M22 | | 27 |
| VT-04P04-OS | Rc ¹ / ₂ | 7.5 | | | | | 66 | | 30 | 81.0 | 6.0 | 57 | M26 | | 30 |

⚠ The manufacturer reserves the right to modify the quality and performance and make changes in the dimensions of the fittings without notice to implement improvements.

Brass Needle Stop Valves

VMII Series Brass Miniture Valves VMII

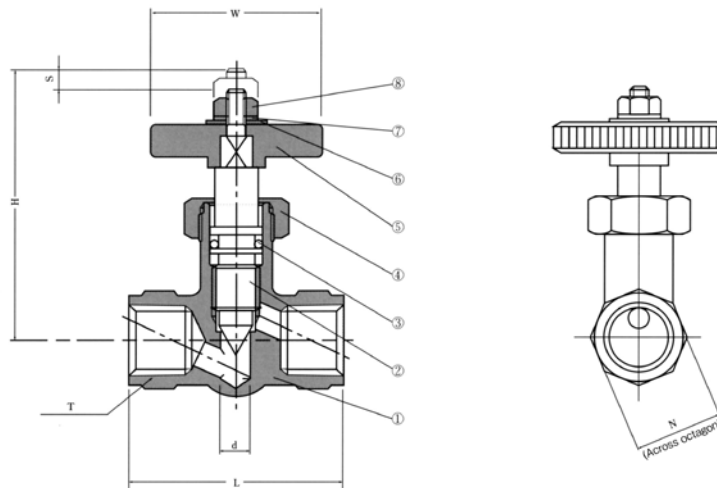
1. Specifications

Max. Working Pressure: 1MPa (10kgf/cm²)

Max. Working Temperature: 100°C

2. Material

| | |
|----------------|-------|
| ①Body | C3771 |
| ②Stem | C3604 |
| ③O Ring | NBR |
| ④Packing Nut | C3604 |
| ⑤Handle | C3604 |
| ⑥Washer | C2600 |
| ⑦Spring Washer | C5191 |
| ⑧Nut | C3604 |



3. Dimensions

unit : mm

| Part No. | (Rc) T | d | L | H | Lift S | W | Across octagon N |
|---------------|-----------|-----|----|----|-----------|----|---------------------|
| VMII-02P02-OS | ¼ | 5.5 | 40 | 52 | 4.0 | 28 | 17 |
| VMII-03P03-OS | ⅜ | 6.0 | 44 | 60 | 5.0 | 28 | 22 |

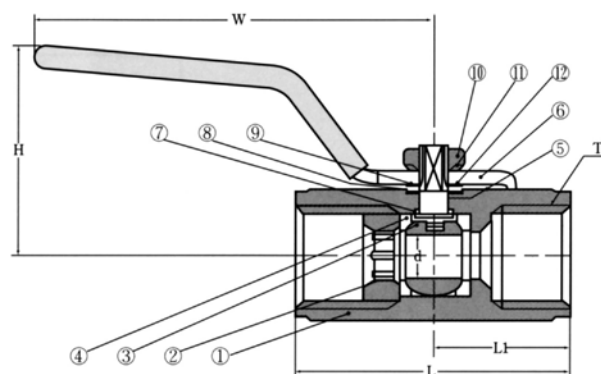
1. Specifications

Max. Working Pressure: 2MPa (20kgf/cm²)

Max. Working Temperature: 100°C

2. Material

- ① Body C3771 or C3604
- ② End cap C3604
- ③ Valve ball C3604
- ④ Seat packing Pure Teflon
- ⑤ Stem C3604
- ⑥ Lever handle SUS430
- ⑦ Grand washer SPCC
- ⑧ Packing Pure Teflon
- ⑨ Packing Resin
- ⑩ Nut SS41
- ⑪ Washer SWRH62A
- ⑫ Washer SK5APC



3. Dimensions

unit : mm

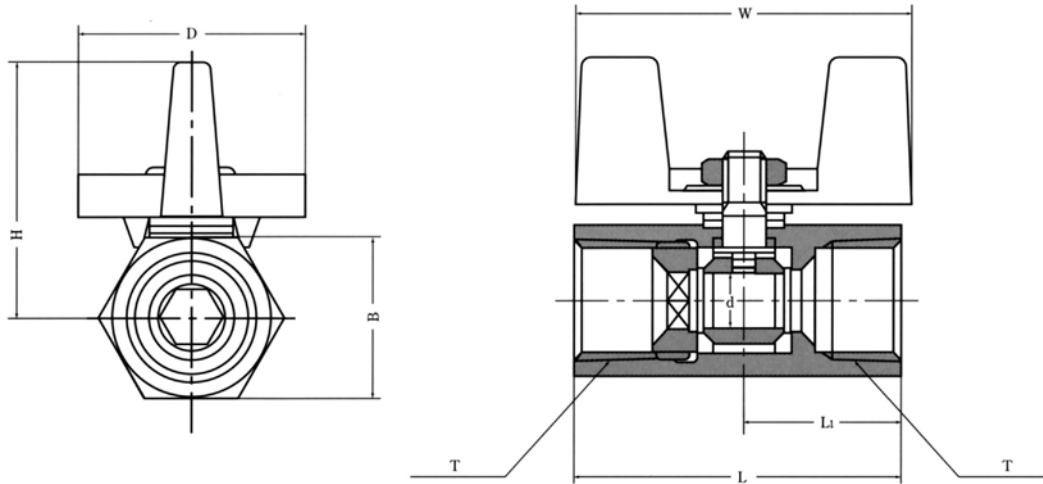
| Part No. | (Rc) T | d | L | L ₁ | W | H |
|-------------|-----------|------|-------|----------------|-----|----|
| VR-02P02-OF | ¼ | 5.0 | 40.0 | 19.0 | 60 | 31 |
| VR-03P03-OF | ⅜ | 7.5 | 44.5 | 21.7 | 80 | 40 |
| VR-04P04-OF | ½ | 9.0 | 54.5 | 26.5 | 80 | 42 |
| VR-06P06-OF | ¾ | 12.5 | 61.0 | 30.0 | 100 | 51 |
| VR-08P08-OF | 1 | 16.0 | 75.0 | 36.5 | 100 | 55 |
| VR-10P10-OF | 1¼ | 21.0 | 86.0 | 43.0 | 153 | 65 |
| VR-12P12-OF | 1½ | 24.0 | 90.0 | 45.0 | 150 | 67 |
| VR-16P16-OF | 2 | 32.0 | 108.0 | 54.0 | 147 | 75 |

⚠ The manufacturer reserves the right to modify the quality and performance and make changes in the dimensions of the fittings without notice to implement improvements.

VR Series Brass Ball Valves

VR Series Brass Ball Valves VR

The handles on the VR Series brass ball valves have been replaced from the lever type to the wing handle type to improve operation in restricted space. The specifications and material are identical with the lever type, but with following dimensional modifications :



3. Dimensions

unit : mm

| Part No. | $\frac{(Rc)}{T}$ | d | L | L ₁ | D | W | H | Width across B |
|-------------|------------------|------|------|----------------|----|----|----|----------------|
| VR-02P02-OB | $\frac{1}{4}$ | 5.0 | 40.0 | 19.0 | 30 | 46 | 30 | 17 |
| VR-03P03-OB | $\frac{3}{8}$ | 7.5 | 44.5 | 21.7 | 30 | 46 | 32 | 21 |
| VR-04P04-OB | $\frac{1}{2}$ | 9.0 | 54.5 | 26.5 | 30 | 46 | 35 | 26 |
| VR-06P06-OB | $\frac{3}{4}$ | 12.5 | 61.0 | 30.0 | 34 | 50 | 38 | 32 |

⚠ The manufacturer reserves the right to modify the quality and performance and make changes in the dimensions of the fittings without notice to implement improvements.

**WARNING**

If you don't select and handle fittings, valves and related accessories in an adequate manner, it may damage human beings and applicable systems.
Within the responsibility and authorization of users and piping designers, fittings, valves and related accessories shall be adequately selected, assembled, used and maintained based on the applicable conditions and product conformity to the system to be applied. Please read carefully our operation manual and feel free to contact with Ihara if you have any question or request.

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