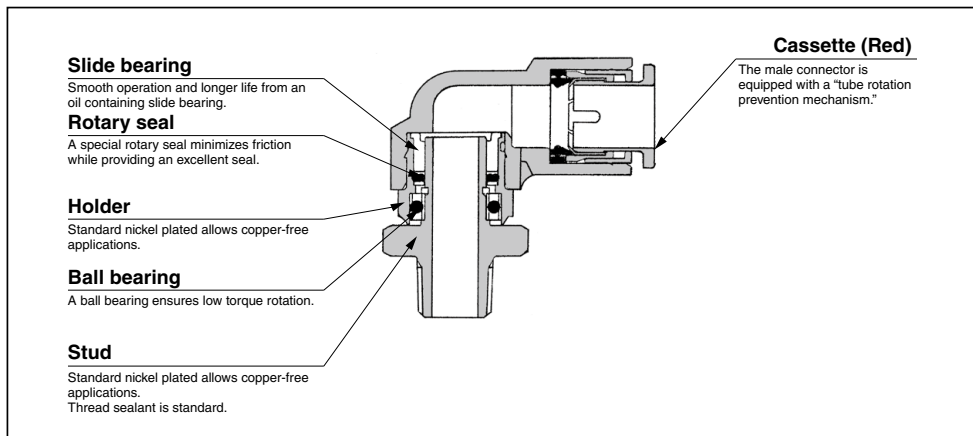


Inch size Rotary One-touch Fittings Standard Type

KS Series

Applicable Tubing: Inch Size



Low-torque rotation type rotary One-touch fittings

Applicable to use for oscillating and rotating sections in robots.

Applicable to non-copper type (With electroless nickel plated)

Thread sealant is standard.



Male elbow



Male connector

Applicable Tubing

| | |
|-----------------|---|
| Tubing material | FEP, PFA, Nylon, Soft nylon, Polyurethane |
| Tubing O.D. | ø 5/32", ø 1/4", ø 5/16", ø 3/8" |

Specification

| | |
|--|---|
| Fluid | Air |
| Operating pressure range ¹⁾ | -100 kPa to 1 MPa |
| Proof pressure | 3 MPa |
| Ambient and fluid temperature | -5 to 60°C (No freezing) |
| Thread | ANSI/ASME B1.20.1 (NPT thread) JIS B 0212 (UNF thread) |

Note 1) Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Also, when using in a vacuum, grease may enter the inside due to the nature of its construction.

Rotating Torque/Allowable Number of Rotations

| Applicable tubing O.D. | ø5/32" | ø1/4" | ø5/16" | ø3/8" |
|---|--------|-------|--------|-------|
| Rotating torque (N·m) ⁽²⁾ | 0.006 | 0.012 | 0.014 | 0.020 |
| Allowable number of rotations (S ⁻¹) ⁽³⁾ | 8.3 | 8.3 | 6.7 | 5 |



Note 2) Rotating torque under pressure 0.5 MPa

Note 3) Do not use the fittings with a leak tester or for vacuum retention because they are not guaranteed for zero leakage.

Principal Parts Material

| Principal parts | KS Series |
|--|--|
| Body | PBT |
| Stud, Holder, Guide | Stainless steel 304, C3604 (With electroless nickel plated), PBT |
| Chuck, Retainer | Stainless steel 304 |
| Collet, Release button, Retaining ring | Polycetal |
| O-ring, Packing | NBR |
| Rotary seal | NBR |
| Slide bearing | Oil-containing polycetal |
| Scraper | — |
| Ball bearing | Bearing steel |
| Gasket | Stainless steel 304, NBR |

KS Series

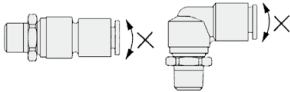
| Model | Connection thread | Applicable tubing O.D. (inch) | | | |
|---|-------------------|-------------------------------|-------|--------|-------|
| | | ø5/32" | ø1/4" | ø5/16" | ø3/8" |
|  Male connector KSH | 10-32 UNF | ● | | | |
| | NPT 1/8 | ● | ● | ● | |
| | NPT 1/4 | | ● | ● | ● |
| | NPT 3/8 | | | | ● |
|  Male elbow KSL | 10-32 UNF | ● | | | |
| | NPT 1/8 | ● | ● | ● | |
| | NPT 1/4 | | ● | ● | ● |
| | NPT 3/8 | | | | ● |

⚠ Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 13 to 17 for Fittings and Tubing Precautions.

⚠ Caution

1. Implement the tube piping in such a way that lateral load should not be applied on the ball bearings at the rotating part, otherwise it may adversely affect the life expectancy.
A flexible polyurethane tube is recommended when lateral load is applied.



2. Do not use in an environment where it will be exposed to water.
Contact with water will cause outflow of the lubricating oil used in the ball bearings, and adversely affect rotating performance and equipment lifespan.
3. Fluorine based grease is used on the rotating portions.

KQ2

KQB2

KS
KX

KM

KF

M

H/DL
L/LL

KC

KK

KK130

DM

KDM

KB

KR

KA

KQG2

KG

KFG2

MS

KKA

KP

LQ

MQR

T

IDK

KS Series

Male Connector: KSH (Standard)

<UNF>



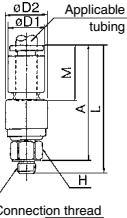
| Applicable tubing O.D. (inch) | Connection thread UNF NPT | Model | H (Width across flats) | D1 | D2 | L | A * | M | Min. port size | Effective area (mm ²) Nylon Urethane | Weight (g) |
|-------------------------------|---------------------------|-----------|------------------------|------|----|------|------|------|----------------|---|------------|
| 5/32 | 10-32 UNF | KSH03-32 | 8 | 10.4 | 12 | 36.5 | 33 | 16 | 2.5 | 4.0 | 4.0 |
| | 1/8 | KSH03-34S | 12.7 | | | | | | | | |
| | 1/4 | KSH07-35S | 14.29 | | | | | | | | |
| 1/4 | 1/8 | KSH07-34S | 14.29 | 13.2 | 14 | 38.6 | 35.5 | 17 | 4 | 13.4 | 10.4 |
| | 1/4 | KSH07-35S | | | | 42 | 36.5 | | | | |
| | 5/16 | KSH09-34S | | | | 43.1 | 40 | | | | |
| 5/16 | 1/8 | KSH09-35S | 17.46 | 15.2 | 17 | 46.5 | 41 | 18.5 | 6 | 26.1 | 18.0 |
| | 1/4 | KSH11-35S | | | | 53.5 | 48 | | | | |
| | 3/8 | KSH11-36S | | | | 53.9 | 48.5 | | | | |

* Reference dimensions after NPT thread installation.

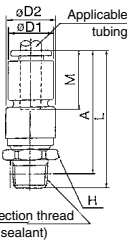
<NPT>



<UNF>



<NPT>



Male Elbow: KSL (Standard)

<UNF>



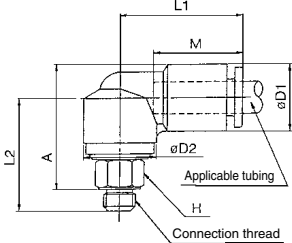
| Applicable tubing O.D. (inch) | Connection thread UNF NPT | Model | H (Width across flats) | D1 | D2 | L1 | L2 | A * | M | Min. port size | Effective area (mm ²) Nylon Urethane | Weight (g) |
|-------------------------------|---------------------------|-----------|------------------------|------|----|------|------|------|------|----------------|---|------------|
| 5/32 | 10-32 UNF | KSL03-32 | 8 | 10.4 | 12 | 21 | 20.5 | 22 | 16 | 2.5 | 3.5 | 3.5 |
| | 1/8 | KSL03-34S | 12.7 | | | | 21.1 | 23.5 | | | | |
| | 1/4 | KSL07-35S | 14.29 | | | 14 | 23.5 | 25.5 | | | | |
| 1/4 | 1/8 | KSL07-34S | 14.29 | 13.2 | 14 | 23.5 | 25.6 | 30 | 17 | 4 | 8.6 | 8.6 |
| | 1/4 | KSL07-35S | | | | | | | | | | |
| | 5/16 | KSL09-34S | | | | | | | | | | |
| 5/16 | 1/8 | KSL09-34S | 17.46 | 15.2 | 17 | 26 | 29 | 31 | 18.5 | 6 | 21.6 | 14.9 |
| | 1/4 | KSL09-35S | | | | | | | | | | |
| | 3/8 | KSL11-35S | | | | | | | | | | |
| 3/8 | 1/4 | KSL11-35S | 22.23 | 17.9 | 22 | 31.5 | 33.5 | 37 | 21 | 7 | 30.5 | 25.0 |
| | 3/8 | KSL11-36S | | | | | | | | | | |
| | | | | | | | | | | | | |

* Reference dimensions after NPT thread installation.

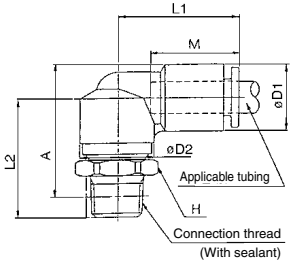
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<UNF>



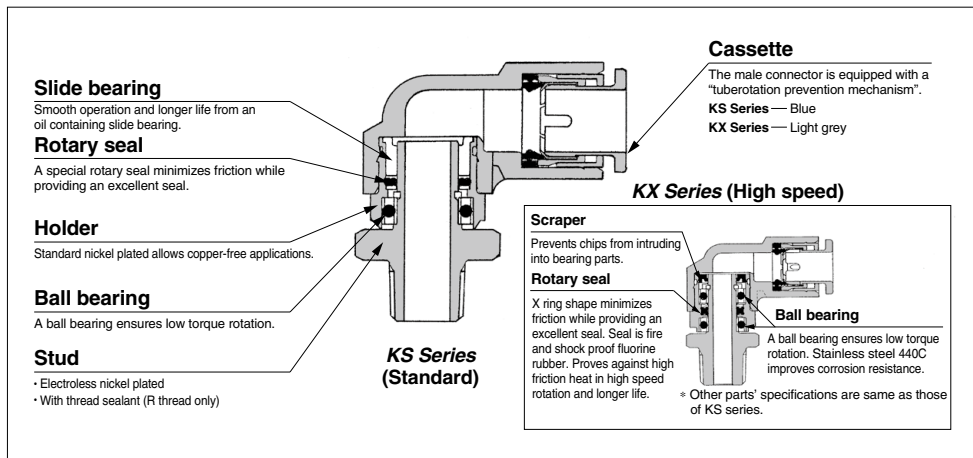
<NPT>



[Click here for applicable color caps.](#)

Rotary One-touch Fittings Standard Type/High Speed Type **KS/KX Series**

RoHS



**Low torque rotation type
Rotary One-touch fittings**
**Applicable to use for
oscillating and rotating
sections in robots.**
Copper-free specifications
**Brass parts are all
electroless nickel plated.**
Sealant is standard.



Applicable Tubing

| | |
|-----------------|---|
| Tubing material | FEP, PFA, Nylon, Soft nylon, Polyurethane |
| Tubing O.D. | ø4, ø6, ø8, ø10, ø12 |

Specifications

| | |
|---|--|
| Fluid | Air |
| Operating pressure range ⁽¹⁾ | —100 kPa to 1 MPa |
| Proof pressure | 3 MPa |
| Ambient and fluid temperature | —5 to 60°C (No freezing) |
| Thread | JIS B 0203 (Taper thread for piping), JIS B 0205 (Metric coarse thread) |

Note 1) Please avoid using in a vacuum holding application such as a leak tester, since there is leakage.
Also, when using in a vacuum, grease may enter the inside due to the nature of its construction.

Rotating Torque/Allowable Number of Rotations

| Applicable tubing O.D. | ø4 | ø6 | ø8 | ø10 | ø12 |
|--|------------------|------------------|------------------|-------------------|-------------------|
| Rotating torque (N·m) ⁽²⁾ | 0.006 | 0.012 | 0.014 | 0.020 | 0.022 |
| Allowable number of rotations(S ⁻¹) ⁽³⁾ | KS Series 8.4 | KS Series 8.4 | KS Series 6.7 | KS Series 5 | KS Series 4.2 |
| | KX Series 25 | KX Series 20 | KX Series 20 | KX Series 16.7 | KX Series 16.7 |

Note 2) Rotating torque under pressure 0.5 MPa

Note 3) Number of rotations per second

Principal Parts Material

| Principal parts | KS Series | KX Series |
|--|--|----------------------|
| Body | PBT | |
| Stud, Holder, Guide | C3604 (Electroless nickel plated), Stainless steel 304 | |
| Chuck, Retainer | Stainless steel (Stainless steel 304) (Retainer (C) of KX series: C3604 (electroless nickel plated)) | |
| Collet, Release button, Retaining ring | Polyacetal | |
| O-ring, Packing | NBR | |
| Rotary seal | NBR | FKM |
| Slide bearing | Oil-containing polyacetal | — |
| Scraper | — | NBR |
| Ball bearing | Bearing steel | Stainless steel 440C |
| Gasket | Stainless steel 304, NBR | |

KS Series/KX Series

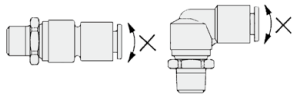
| Model | Connection thread | Applicable tubing O.D. (mm) | | | | |
|------------------------------|-------------------|-----------------------------|----|----|-----|-----|
| | | ø4 | ø6 | ø8 | ø10 | ø12 |
| Male connector KSH KXH | M5 x 0.8 | ● | ● | | | |
| | M6 x 1 | ● | ● | | | |
| | R 1/8 | ● | ● | ● | | |
| | R 1/4 | | ● | ● | ● | |
| | R 3/8 | | | ● | ● | ● |
| | R 1/2 | | | | ● | ● |
| Male elbow KSL KXL | M5 x 0.8 | ● | ● | | | |
| | M6 x 1 | ● | ● | | | |
| | R 1/8 | ● | ● | ● | | |
| | R 1/4 | | ● | ● | ● | |
| | R 3/8 | | | ● | ● | ● |
| | R 1/2 | | | | ● | ● |

⚠ Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 13 to 17 for Fittings and Tubing Precautions.

⚠ Caution

1. Implement the tube piping in such a way that lateral load should not be applied on the ball bearings at the rotating part, otherwise it may adversely affect the life expectancy.
A flexible polyurethane tube is recommended when lateral load is applied.



2. Do not use in an environment where it will be exposed to water.
Contact with water will cause outflow of the lubricating oil used in the ball bearings, and adversely affect rotating performance and equipment lifespan.
3. Fluorine grease is used on the rotating portions.

| |
|--------------|
| KQ2 |
| KQB2 |
| KS KX |
| KM |
| KF |
| M |
| H/DL L/LL |
| KC |
| KK |
| KK130 |
| DM |
| KDM |
| KB |
| KR |
| KA |
| KQG2 |
| KG |
| KFG2 |
| MS |
| KKA |
| KP |
| LQ |
| MQR |
| T |
| IDK |

KS/KX Series

Male connector: KSH (Standard)

<M5, M6>



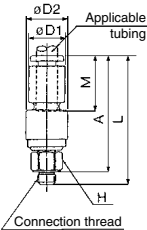
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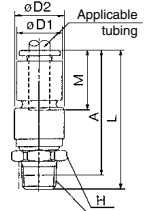
| | Applicable tubing O.D. (mm) | Connection thread R M | Model | H (width across flats) | D1 | D2 | L | A * | M | Min. port size | Effective area (mm ²) Nylon Urethane | Weight (g) |
|----|-----------------------------|-----------------------|-----------|------------------------|------|------|------|------|------|----------------|---|------------|
| 4 | M5 x 0.8 | | KSH04-M5 | 8 | 10.4 | 12 | 36.5 | 33 | 16 | 2.5 | 4.0 | 4.0 |
| | M6 x 1 | | KSH04-M6 | | | | 37 | | | | | |
| | 1/8 | | KSH04-O1S | 12 | | | 37.1 | 34 | | | | |
| 6 | M5 x 0.8 | | KSH06-M5 | 8 | 12.8 | 14 | 37.5 | 33.5 | 17 | 2.5 | 4.0 | 4.0 |
| | M6 x 1 | | KSH06-M6 | | | | 38 | 34 | | | | |
| | 1/8 | | KSH06-O1S | | | | 38.6 | 35.5 | | | | |
| | 1/4 | | KSH06-O2S | 14 | | | 42 | 36.5 | 4 | 10.4 | 10.4 | 17 |
| 8 | 1/8 | | KSH08-O1S | | 17 | 15.2 | 43.1 | 40 | 18.5 | 6 | 26.1 | 18.0 |
| | 1/4 | | KSH08-O1S | | | | 46.5 | 41 | | | | |
| | 3/8 | | KSH08-O3S | | | | 46.9 | 41.5 | | | | |
| | 1/2 | | KSH08-O2S | | | | 53.5 | 48 | | | | |
| 10 | 3/8 | | KSH10-O3S | 22 | 18.5 | 22 | 53.9 | 48.5 | 21 | 7 | 36.3 | 29.5 |
| | 1/2 | | KSH10-O4S | | | | 56.6 | 49.5 | | | | |
| | 3/4 | | KSH10-O2S | | | | 55.9 | 50.5 | | | | |
| 12 | 3/4 | | KSH12-O3S | 24 | 20.9 | 24 | 59.1 | 52 | 22 | 8 | 46.1 | 46.1 |
| | 1/2 | | KSH12-O4S | | | | | | | | | |

* Reference dimensions after R thread installation.

<M5, M6>



<R>



Male Connector: KXH (High speed)

<M5, M6>



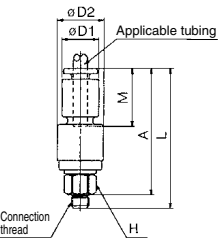
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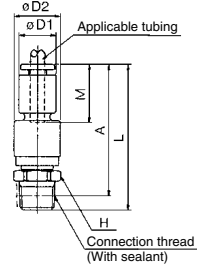
| | Applicable tubing O.D. (mm) | Connection thread R M | Model | H (width across flats) | D1 | D2 | L | A * | M | Min. port size | Effective area (mm ²) Nylon Urethane | Weight (g) |
|----|-----------------------------|-----------------------|-----------|------------------------|------|------|------|-----|------|----------------|---|------------|
| 4 | M5 x 0.8 | | KXH04-M5 | 8 | 10.4 | 13 | 38.5 | 35 | 16 | 2.5 | 4.0 | 4.0 |
| | M6 x 1 | | KXH04-M6 | | | | 39 | | | | | |
| | 1/8 | | KXH04-O1S | 12 | | | 39.1 | 36 | | | | |
| 6 | M5 x 0.8 | | KXH06-M5 | 8 | 12.8 | 15.5 | 39.5 | 36 | 17 | 2.5 | 4.0 | 4.0 |
| | M6 x 1 | | KXH06-M6 | | | | 40 | | | | | |
| | 1/8 | | KXH06-O1S | | | | 41.1 | 38 | | | | |
| | 1/4 | | KXH06-O2S | 14 | | | 44.5 | 39 | 4 | 10.4 | 10.4 | 20 |
| 8 | 1/8 | | KXH08-O1S | | 17 | 15.2 | 45.1 | 42 | 18.5 | 6 | 26.1 | 18.0 |
| | 1/4 | | KXH08-O2S | | | | 48.5 | 43 | | | | |
| | 3/8 | | KXH08-O3S | | | | 48.9 | 44 | | | | |
| | 1/2 | | KXH08-O2S | | | | 57.5 | 52 | | | | |
| 10 | 3/8 | | KXH10-O3S | 22 | 18.5 | 24.5 | 57.9 | 53 | 21 | 7 | 36.3 | 29.5 |
| | 1/2 | | KXH10-O4S | | | | 61.1 | 53 | | | | |
| | 3/4 | | KXH10-O2S | | | | 58.9 | 54 | | | | |
| 12 | 3/4 | | KXH12-O3S | 24 | 20.9 | 27.5 | 62.1 | 55 | 22 | 8 | 46.1 | 46.1 |
| | 1/2 | | KXH12-O4S | | | | | | | | | |

* Reference dimensions after R thread installation.

<M5, M6>



<R>



[Click here for applicable color caps.](#)

Union Elbow: KSL (Standard)

<M5, M6>



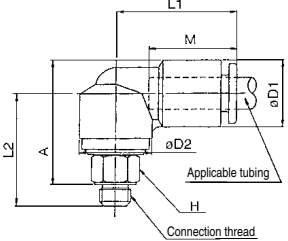
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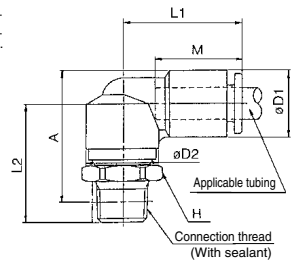
| Applicable tubing O.D. (mm) | Connection thread R M | Model | H (width across flats) | D1 | D2 | L1 | L2 | A * | M | Min. port size | Effective area (mm ²) Nylon Urethane | | Weight (g) |
|--------------------------------|--------------------------|-----------|---------------------------|------|----|------|------|------|------|----------------|---|------|------------|
| 4 | M5 x 0.8 | KSL04-M5 | 8 | 10.4 | 12 | 21 | 20.5 | 22 | 16 | 2.5 | 3.5 | 3.5 | 9 |
| | M6 x 1 | KSL04-M6 | 12 | | | | 21 | 23.5 | | | | | 14 |
| | 1/8 | KSL04-01S | 12 | | | | 21.1 | 23.5 | | | | | 14 |
| 6 | M5 x 0.8 | KSL06-M5 | 8 | 12.8 | 14 | 23 | 21 | 23.5 | 17 | 2.5 | 3.5 | 3.5 | 12 |
| | M6 x 1 | KSL06-M6 | 14 | | | | 21.5 | 24 | | | | | 17 |
| | 1/8 | KSL06-01S | 14 | | | | 22.1 | 25.5 | | | | | 23 |
| 8 | 1/4 | KSL08-02S | 17 | 15.2 | 17 | 26 | 29.9 | 32 | 18.5 | 6 | 21.6 | 14.9 | 29 |
| | 3/8 | KSL08-03S | 17 | | | | 29.9 | 31 | | | | | 38 |
| | 1/4 | KSL10-02S | 22 | | | | 33.5 | 37.5 | | | | | 56 |
| 10 | 3/8 | KSL10-03S | 22 | 18.5 | 22 | 31.5 | 33.9 | 38 | 21 | 7 | 30.5 | 25.0 | 64 |
| | 1/2 | KSL10-04S | 24 | | | | 37.1 | 39.5 | | | | | 82 |
| | 3/8 | KSL12-03S | 24 | | | | 35.4 | 40.5 | | | | | 93 |
| 12 | 1/2 | KSL12-04S | 24 | 20.9 | 24 | 34 | 38.6 | 42 | 22 | 8 | 35.1 | 35.1 | 76 |

* Reference dimensions after R thread installation.

<M5, M6>



<R>



Male Elbow: KXL (High speed)

<M5, M6>



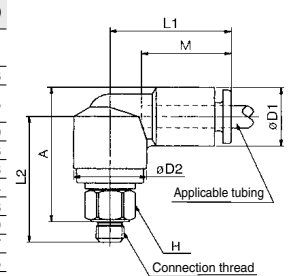
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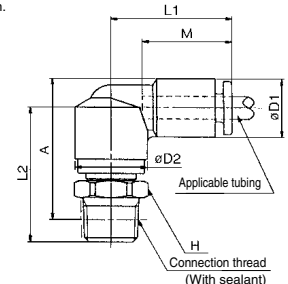
| Applicable tubing O.D. (mm) | Connection thread R M | Model | H (width across flats) | D1 | D2 | L1 | L2 | A * | M | Min. port size | Effective area (mm²) Nylon Urethane | Weight (g) | |
|-----------------------------|-----------------------|-----------|------------------------|------|------|----|------|-----|----|----------------|--|------------|-----|
| 4 | M5 x 0.8 | KXL04-M5 | 8 | 10.4 | 13 | 22 | 22.5 | 24 | 16 | 2.5 | 3.5 | 3.5 | 11 |
| | M6 x 1 | KXL04-M6 | 12 | | | | 23 | 25 | | | | | 16 |
| | 1/8 | KXL04-01S | 12 | | | | 23.1 | 25 | | | | | 16 |
| 6 | M5 x 0.8 | KXL06-M5 | 8 | 12.8 | 15.5 | 24 | 23.5 | 26 | 17 | 2.5 | 3.5 | 3.5 | 15 |
| | M6 x 1 | KXL06-M6 | 14 | | | | 24 | 28 | | | | | 20 |
| | 1/8 | KXL06-01S | 14 | | | | 24.1 | 28 | | | | | 26 |
| 8 | M5 x 0.8 | KXL08-M5 | 8 | 15.2 | 18 | 27 | 27.5 | 29 | 4 | 8.6 | 8.6 | 8.6 | 28 |
| | 1/4 | KXL08-01S | 17 | | | | 28.1 | 32 | | | | | 34 |
| | 3/8 | KXL08-03S | 17 | | | | 31.5 | 33 | | | | | 43 |
| 10 | M5 x 0.8 | KXL10-M5 | 8 | 18.5 | 24.5 | 32 | 31.9 | 34 | 21 | 7 | 30.5 | 25.0 | 69 |
| | 1/4 | KXL10-01S | 22 | | | | 37.5 | 42 | | | | | 77 |
| | 3/8 | KXL10-03S | 22 | | | | 37.9 | 42 | | | | | 89 |
| 12 | M5 x 0.8 | KXL12-M5 | 8 | 20.9 | 27.5 | 35 | 41.1 | 43 | 22 | 8 | 35.1 | 35.1 | 95 |
| | 1/2 | KXL12-01S | 24 | | | | 38.9 | 44 | | | | | 106 |
| | 3/8 | KXL12-03S | 24 | | | | 42.1 | 45 | | | | | 106 |

* Reference dimensions after R thread installation.

<M5, M6>



<R>



[Click here for applicable color caps.](#)