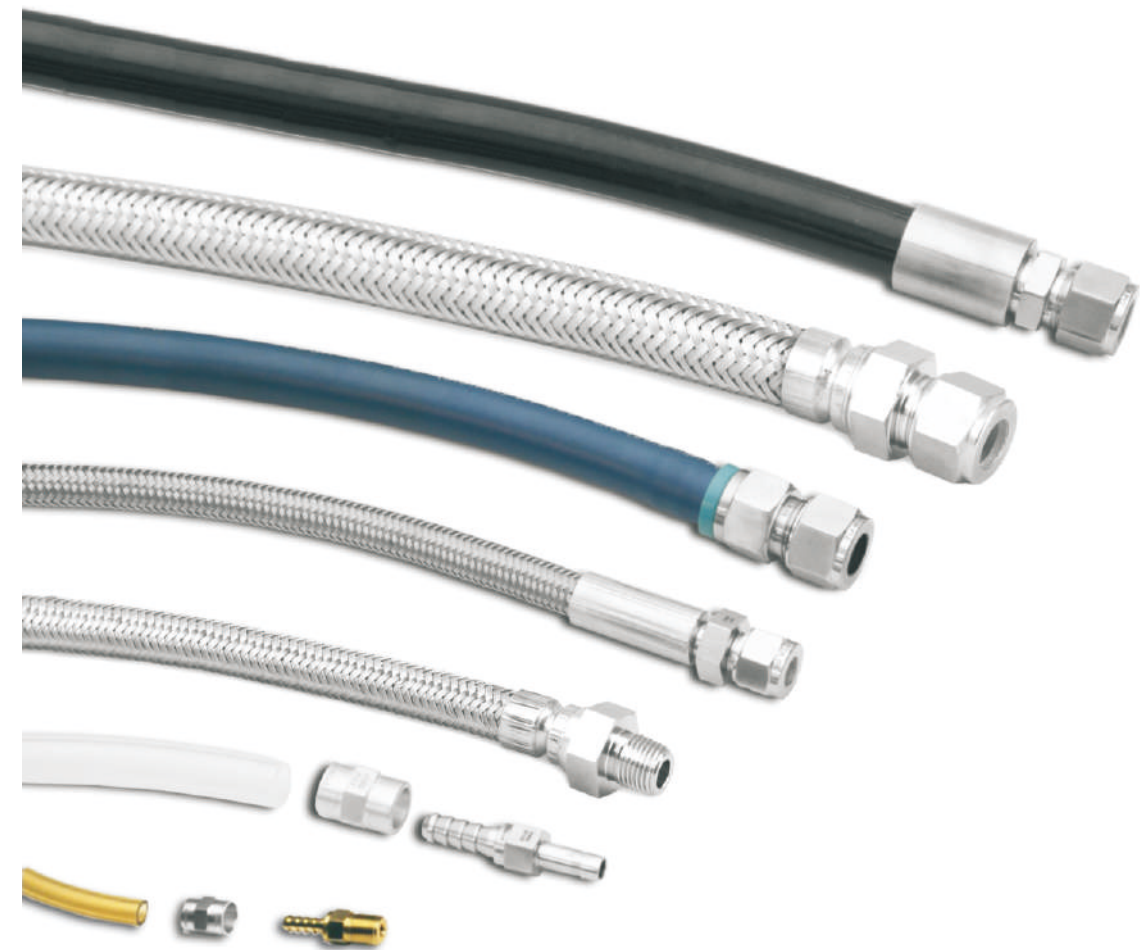


Hoses and Connectors

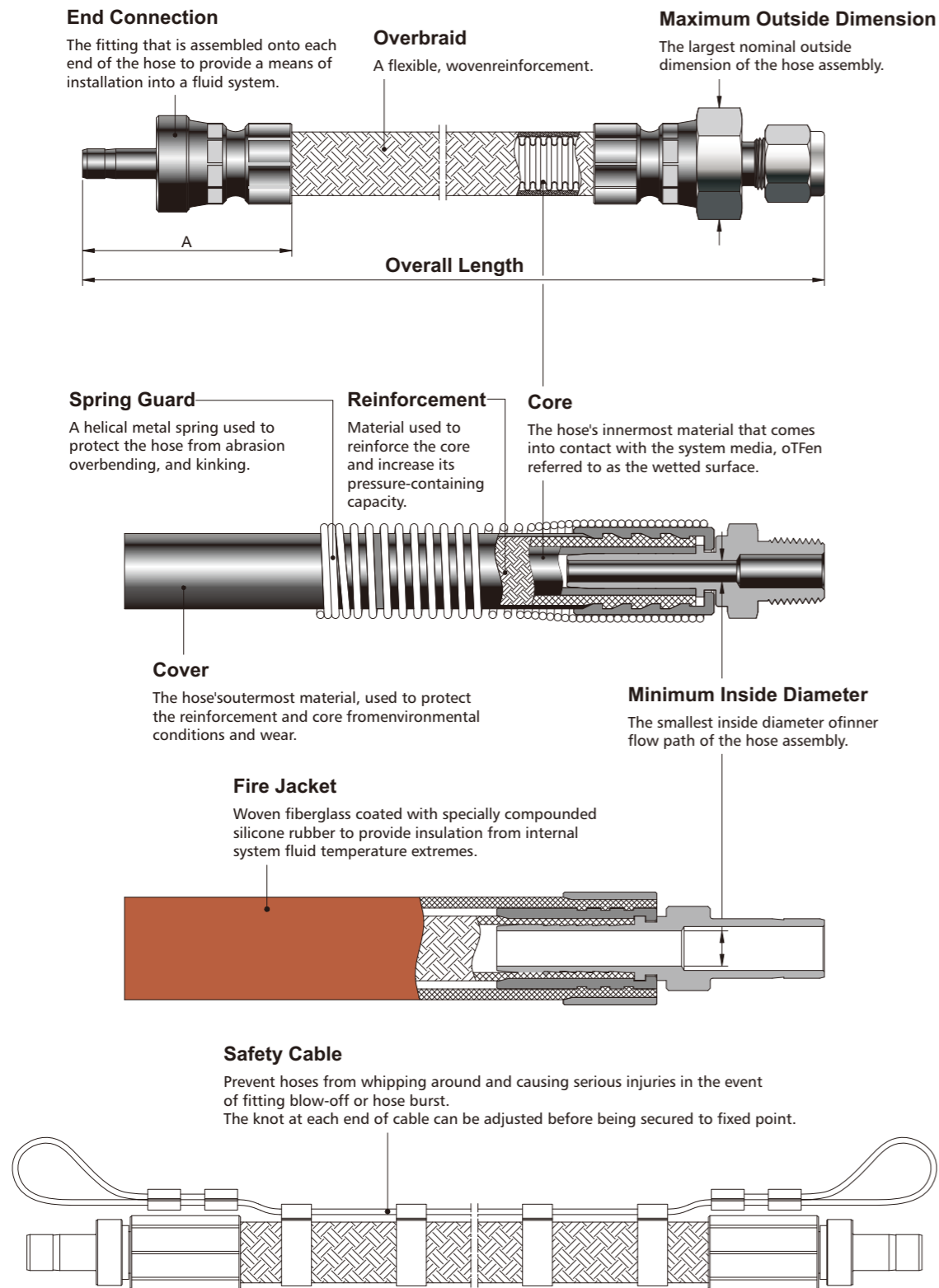
H1, H2 Series



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Huizhou Xinvaltech Co., Ltd.

Terms and Definitions

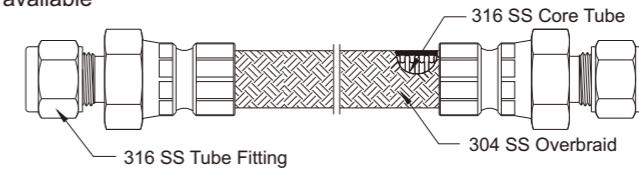


Metal Flexible Hoses

H1, H2 Series

Features

- Core tube and fitting material: 316 stainless steel
- Overbraid material: 304 stainless steel (316 SS available)
- Vacuum and positive pressure applications
- Working pressure up to: 3100 psig (213 bar)
- Nominal hose size: 1/4" to 2"
- Working temperature: -325°F to 800°F (-200°C to 426°C)
- End connections:
1/4 to 2 thread
1/4" to 2" and 6 mm to 50 mm tube fitting
- Welded fitting-to-hose construction to ensure reliable seal
- Standard and custom length available



Hose Technical Data (H2 Series)

| Nominal Hose Size | Inside Diameter in. (mm) | Min. Bend Radius | | Temperature Range °F (°C) | Working Pressure at 70°F (20°C) psig (bar) | Min. Burst Pressure at 70°F (20°C) psig (bar) | Hose Series |
|-------------------|-----------------------------|--------------------|---------------------|------------------------------|---|--|-------------|
| | | Static in. (mm) | Dynamic in. (mm) | | | | |
| 1/4 (6.4) | 0.28 (7.1) | 2.25 (57.2) | 10.0 (254) | -325 to 800 (-200 to 426) | 3100 (213) | 12400 (854) | H2 |
| 3/8 (9.7) | 0.42 (10.6) | 3.00 (76.2) | 12.0 (305) | | 2000 (137) | 8000 (551) | H2 |
| 1/2 (12.7) | 0.53 (13.5) | 4.50 (114) | 16.0 (406) | | 1800 (124) | 7200 (496) | H2 |
| 3/4 (19.0) | 0.80 (20.3) | 6.00 (152) | 17.0 (432) | | 1500 (103) | 6000 (413) | H2 |
| 1 (25.4) | 1.03 (26.0) | 6.75 (171) | 20.0 (508) | | 1200 (82.6) | 4800 (330) | H2 |
| 1 1/4 (31.8) | 1.30 (33.0) | 8.86 (225) | 23.0 (584) | | 950 (65.4) | 3800 (261) | H2 |
| 1 1/2 (38.1) | 1.53 (38.9) | 11.0 (280) | 26.0 (660) | | 900 (62.0) | 3600 (248) | H2 |
| 2 (50.8) | 2.05 (52.1) | 13.8 (350) | 32.0 (813) | | 500 (34.4) | 2000 (137) | H2 |

Hose Technical Data (H1 Series)

| Nominal Hose Size | Inside Diameter in. (mm) | Min. Bend Radius | | | | Temperature Range °F (°C) | Working Pressure at 70°F (20°C) psig (bar) | Min. Burst Pressure at 70°F (20°C) psig (bar) | Hose Series |
|-------------------|-----------------------------|-------------------------|---------------------|-------------------------|---------------------|------------------------------|---|--|-------------|
| | | Helical Convoluted Core | | Annular Convoluted Core | | | | | |
| | | Static in. (mm) | Dynamic in. (mm) | Static in. (mm) | Dynamic in. (mm) | | | | |
| 1/4 (6.4) | 0.25 (6.4) | 1.38 (35) | 8.66 (220) | 0.79 (20) | 4.33 (110) | -325 to 800 (-200 to 426) | 1600 (110) | 6400 (440) | H1 |
| 3/8 (9.7) | 0.38 (9.5) | 2.36 (60) | 10.40 (264) | 0.98 (25) | 5.91 (150) | | 1470 (101) | 6000 (413) | H1 |
| 1/2 (12.7) | 0.50 (12.7) | 2.95 (75) | 11.89 (302) | 1.18 (30) | 4.88 (124) | | 1110 (76.4) | 4500 (310) | H1 |
| 3/4 (19.0) | 0.75 (19.0) | 3.54 (90) | 13.58 (345) | 1.50 (38) | 6.65 (169) | | 860 (59.2) | 3500 (241) | H1 |
| 1 (25.4) | 1.00 (25.4) | 4.13 (105) | 15.00 (381) | 1.77 (45) | 7.68 (195) | | 680 (46.8) | 2680 (184) | H1 |
| 1 1/4 (31.8) | 1.25 (31.8) | 4.72 (120) | 16.22 (412) | | | | 680 (46.8) | 2600 (179) | H1 |
| 1 1/2 (38.1) | 1.50 (38.1) | 5.51 (140) | 16.89 (429) | | | | 520 (35.8) | 2200 (151) | H1 |
| 2 (50.8) | 2.00 (50.8) | 6.30 (160) | 18.43 (468) | | | | 450 (31.0) | 1800 (124) | H1 |

Testing

Every XINVAL metal flexible hose assembly is factory tested with helium to a maximum leak rate of 1×10^{-5} std cm³/s.

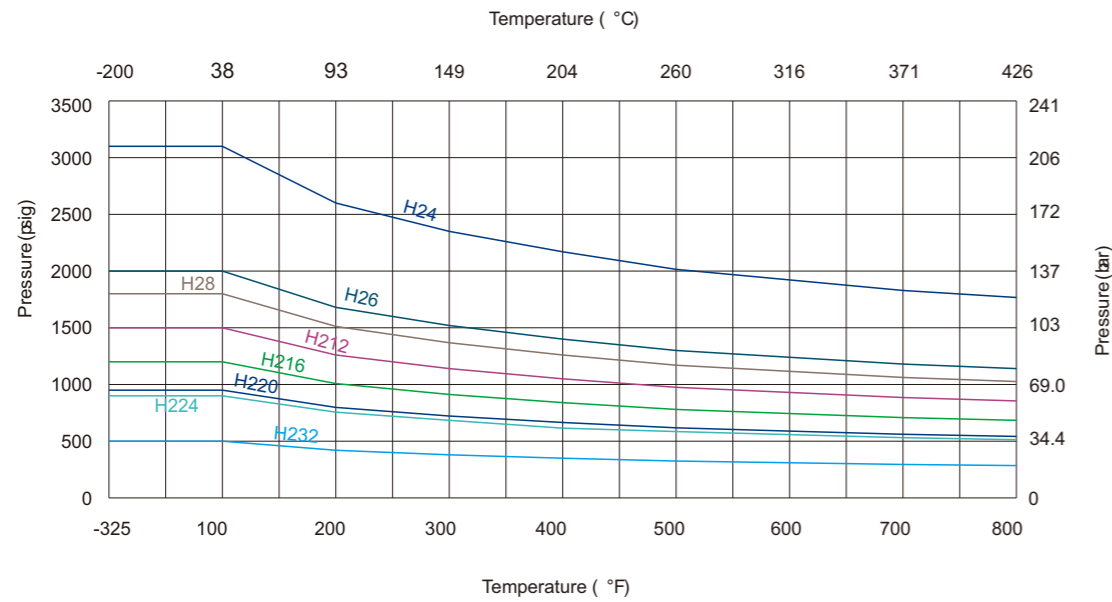
Cleaning and Packaging

XINVAL metal flexible hose components are cleaned in accordance with XINVAL *Standard Cleaning and Packaging Process (FC-01)* for general industrial procedures.

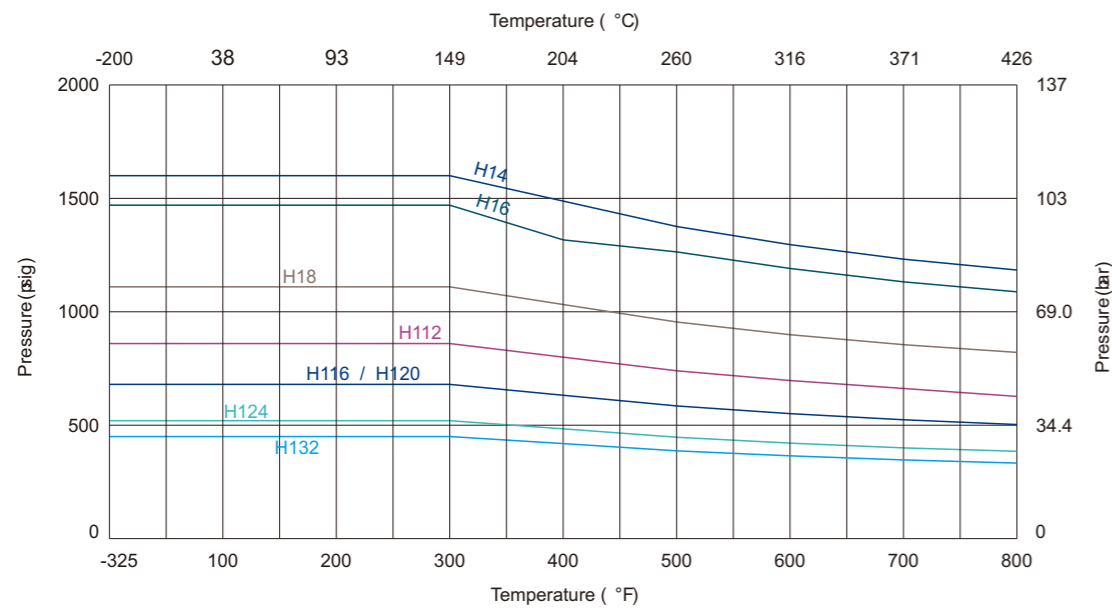
Shorter hoses are packed in cartons with suitable protective material, longer hoses are coiled, bagged and boxed or crated.

Pressure vs. Temperature

H2 series

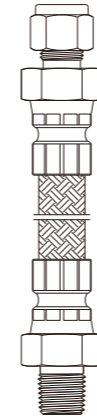


H1 series



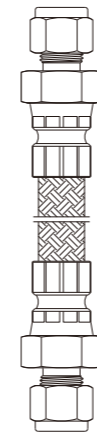
The peak value of pressure surge, shock or pulsations in the system should not exceed 50% of the rated working pressure of the hose.

Standard Assemblies



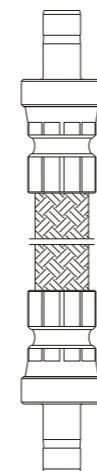
Tube Fitting to Male NPT End

| Nominal Hose Size | Tube Fitting Size | NPT Size | Hose Series | Overall Length | Ordering Number | Minimum Inside Diameter | Maximum Outside Dimension |
|-------------------|-------------------|----------|-------------|----------------|-------------------|-------------------------|---------------------------|
| | | | | in. (mm) | | in. (mm) | in. (mm) |
| 1/4 | 1/4 | 1/4 | H2 | 12 (305) | 316-H2-F4-N4-12 | 0.19 (4.8) | 0.94 (23.8) |
| | | | H1 | 36 (914) | 316-H1-F4-N4-36 | 0.19 (4.8) | 0.87 (22.0) |
| 3/8 | 3/8 | 3/8 | H2 | 18 (457) | 316-H2-F6-N6-18 | 0.28 (7.1) | 1.09 (27.7) |
| | | | H1 | 36 (914) | 316-H1-F6-N6-36 | 0.28 (7.1) | 1.01 (25.7) |
| 1/2 | 1/2 | 1/2 | H2 | 18 (457) | 316-H2-F8-N8-18 | 0.41 (10.4) | 1.23 (31.3) |
| | | | H1 | 48 (1220) | 316-H1-F8-N8-48 | 0.41 (10.4) | 1.23 (31.3) |
| 3/4 | 3/4 | 3/4 | H2 | 18 (457) | 316-H2-F12-N12-18 | 0.66 (16.0) | 1.74 (44.2) |
| | | | H1 | 48 (1220) | 316-H1-F12-N12-48 | 0.66 (16.0) | 1.59 (40.5) |
| 1 | 1 | 1 | H2 | 24 (610) | 316-H2-F16-N16-24 | 0.88 (22.4) | 1.82 (46.3) |



Tube Fitting End

| Nominal Hose Size | Tube Fitting Size | Hose Series | Overall Length | Ordering Number | Minimum Inside Diameter | Maximum Outside Dimension |
|-------------------|-------------------|-------------|----------------|-----------------|-------------------------|---------------------------|
| | | | in. (mm) | | in. (mm) | in. (mm) |
| 1/4 | 1/4 | H2 | 12 (305) | 316-H2-F4-12 | 0.19 (4.8) | 0.94 (23.8) |
| | | H1 | 36 (914) | 316-H1-F4-36 | 0.19 (4.8) | 0.87 (22.0) |
| 3/8 | 3/8 | H2 | 18 (457) | 316-H2-F6-18 | 0.28 (7.1) | 1.09 (27.7) |
| | | H1 | 36 (914) | 316-H1-F6-36 | 0.28 (7.1) | 1.01 (25.7) |
| 1/2 | 1/2 | H2 | 18 (457) | 316-H2-F8-18 | 0.41 (10.4) | 1.23 (31.3) |
| | | H1 | 48 (1220) | 316-H1-F8-48 | 0.41 (10.4) | 1.23 (31.3) |
| 3/4 | 3/4 | H2 | 18 (457) | 316-H2-F12-18 | 0.66 (16.0) | 1.74 (44.2) |
| | | H1 | 48 (1220) | 316-H1-F12-48 | 0.66 (16.0) | 1.59 (40.5) |
| 1 | 1 | H2 | 24 (610) | 316-H2-F16-24 | 0.88 (22.4) | 1.82 (46.3) |



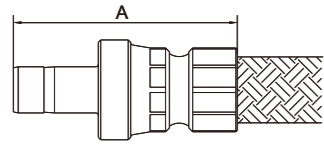
Tube Adapter End

| Nominal Hose Size | Tube Adapter Size | Hose Series | Overall Length | Ordering Number | Minimum Inside Diameter | Maximum Outside Dimension |
|-------------------|-------------------|-------------|----------------|-----------------|-------------------------|---------------------------|
| | | | in. (mm) | | in. (mm) | in. (mm) |
| 1/4 | 1/4 | H2 | 12 (305) | 316-H2-TF4-12 | 0.16 (4.1) | 0.81 (20.6) |
| | | H1 | 36 (914) | 316-H1-TF4-36 | 0.16 (4.1) | 0.76 (19.2) |
| 3/8 | 3/8 | H2 | 12 (305) | 316-H2-TF6-12 | 0.27 (6.9) | 1.01 (25.6) |
| | | H1 | 36 (914) | 316-H1-TF6-36 | 0.27 (6.9) | 0.91 (23.1) |

1. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact XINVAL Group or our authorized distributors.
2. Types listed are standard. Other types are available upon request.

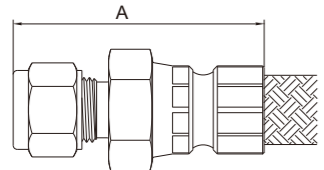
End Connections

Tube Adapters

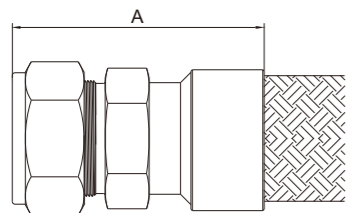


| Tube Adapter Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|-------------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | TF4 | 1.76 (44.7) | 0.16 (4.1) | 0.81 (20.6) |
| 3/8 | 3/8 | TF6 | 1.82 (46.2) | 0.27 (6.9) | 1.01 (25.6) |
| 1/2 | 1/2 | TF8 | 2.22 (56.4) | 0.37 (9.4) | 1.23 (31.3) |
| 3/4 | 3/4 | TF12 | 2.35 (59.7) | 0.58 (14.7) | 1.53 (38.8) |
| 1 | 1 | TF16 | 2.69 (68.3) | 0.80 (20.3) | 1.82 (46.3) |
| H1 | in. | | mm (in.) | | |
| 6 | 1/4 | TF6M | 44.4 (1.75) | 4.1 (0.16) | 20.6 (0.81) |
| 10 | 3/8 | TF10M | 47.0 (1.85) | 7.1 (0.28) | 25.6 (1.01) |
| 12 | 1/2 | TF12M | 57.2 (2.25) | 8.9 (0.35) | 31.3 (1.23) |

Tube Fittings



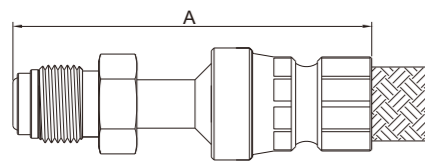
Automatic Weld Style-1 in. and Under



Manual Weld Style-Over 1 in.

| Tube Fitting Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|-------------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | F4 | 1.94 (49.3) | 0.19 (4.8) | 0.94 (23.8) |
| 3/8 | 1/4 | F6 | 2.00 (50.8) | 0.28 (7.1) | 0.94 (23.8) |
| 3/8 | 3/8 | F6 | 2.02 (51.3) | 0.28 (7.1) | 1.09 (27.7) |
| 1/2 | 1/2 | F8 | 2.24 (56.9) | 0.41 (10.4) | 1.23 (31.3) |
| 5/8 | 1/2 | F10 | 2.27 (57.7) | 0.50 (12.7) | 1.23 (31.3) |
| 3/4 | 3/4 | F12 | 2.35 (59.7) | 0.63 (16.0) | 1.74 (44.2) |
| 1 | 1 | F16 | 2.64 (67.1) | 0.88 (22.4) | 1.82 (46.3) |
| 1 1/4 | 1 1/4 | F20 | 4.04 (103) | 1.09 (27.7) | 2.23 (56.9) |
| 1 1/2 | 1 1/2 | F24 | 4.75 (121) | 1.34 (34.0) | 2.61 (66.3) |
| 2 | 2 | F32 | 5.72 (145) | 1.88 (47.8) | 3.48 (88.4) |
| mm | in. | | mm (in.) | | |
| 6 | 1/4 | F6M | 62.2 (2.45) | 4.8 (0.19) | 20.6 (0.81) |
| 8 | 1/4 | F8M | 63.2 (2.49) | 6.4 (0.25) | 20.6 (0.81) |
| 10 | 3/8 | F10M | 51.6 (2.03) | 7.9 (0.31) | 31.3 (1.23) |
| 12 | 1/2 | F12M | 56.9 (2.24) | 9.7 (0.38) | 38.8 (1.53) |

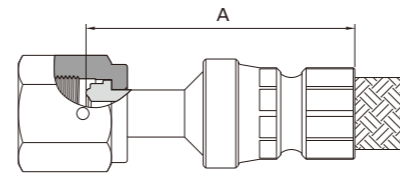
Male MR Metal Gasket Face Seal Fittings Swivel



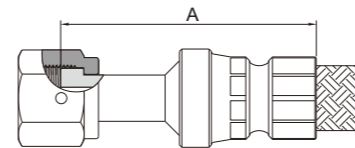
| MR Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | SMR4 | 2.60 (66.0) | 0.18 (4.6) | 0.81 (20.6) |
| 1/2 | 1/2 | SMR8 | 2.83 (71.9) | 0.40 (10.2) | 1.23 (31.3) |
| 3/4 | 3/4 | SMR12 | 4.19 (106) | 0.65 (16.5) | 1.52 (38.7) |
| 1 | 1 | SMR16 | 4.80 (122) | 0.87 (22.1) | 1.53 (38.8) |

End Connections

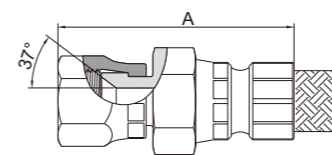
Female FR Metal Gasket Face Seal Fittings Swivel



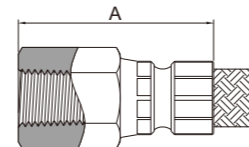
Female FO O-Ring Face Seal Fittings Swivel



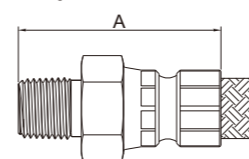
SAE 37°(JIC) Female Swivel



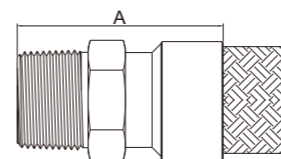
Female Pipe Threads, NPT



Male Pipe Threads, NPT



Automatic Weld Style-1 in. and Under



Manual Weld Style-Over 1 in.

| FR Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | FMR4 | 2.00 (50.8) | 0.18 (4.6) | 0.87 (22.1) |
| 1/2 | 1/2 | FMR8 | 2.16 (54.9) | 0.40 (10.2) | 1.23 (31.3) |
| 3/4 | 3/4 | FMR12 | 4.19 (106) | 0.65 (16.5) | 1.74 (44.2) |
| 1 | 1 | FMR16 | 4.80 (122) | 0.87 (22.1) | 2.03 (51.6) |

| FO Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | SFFO4 | 2.11 (53.6) | 0.18 (4.6) | 0.81 (20.6) |
| 1/2 | 1/2 | SFFO8 | 2.14 (54.4) | 0.40 (10.2) | 1.23 (31.3) |

| Swivel Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|-------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | SAN4 | 1.87 (47.5) | 0.17 (4.3) | 0.81 (20.6) |
| 3/8 | 3/8 | SAN6 | 1.98 (50.3) | 0.28 (7.1) | 1.01 (25.6) |
| 1/2 | 1/2 | SAN8 | 2.25 (57.2) | 0.42 (10.7) | 1.23 (31.3) |

| NPT Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | FN4 | 1.81 (46.0) | 0.28 (7.1) | 0.94 (23.9) |
| 3/8 | 3/8 | FN6 | 1.87 (47.5) | 0.38 (9.7) | 1.09 (27.7) |
| 1/2 | 1/2 | FN8 | 2.18 (55.4) | 0.47 (11.9) | 1.23 (31.3) |
| 3/4 | 3/4 | FN12 | 2.21 (56.1) | 0.72 (18.3) | 1.74 (44.2) |

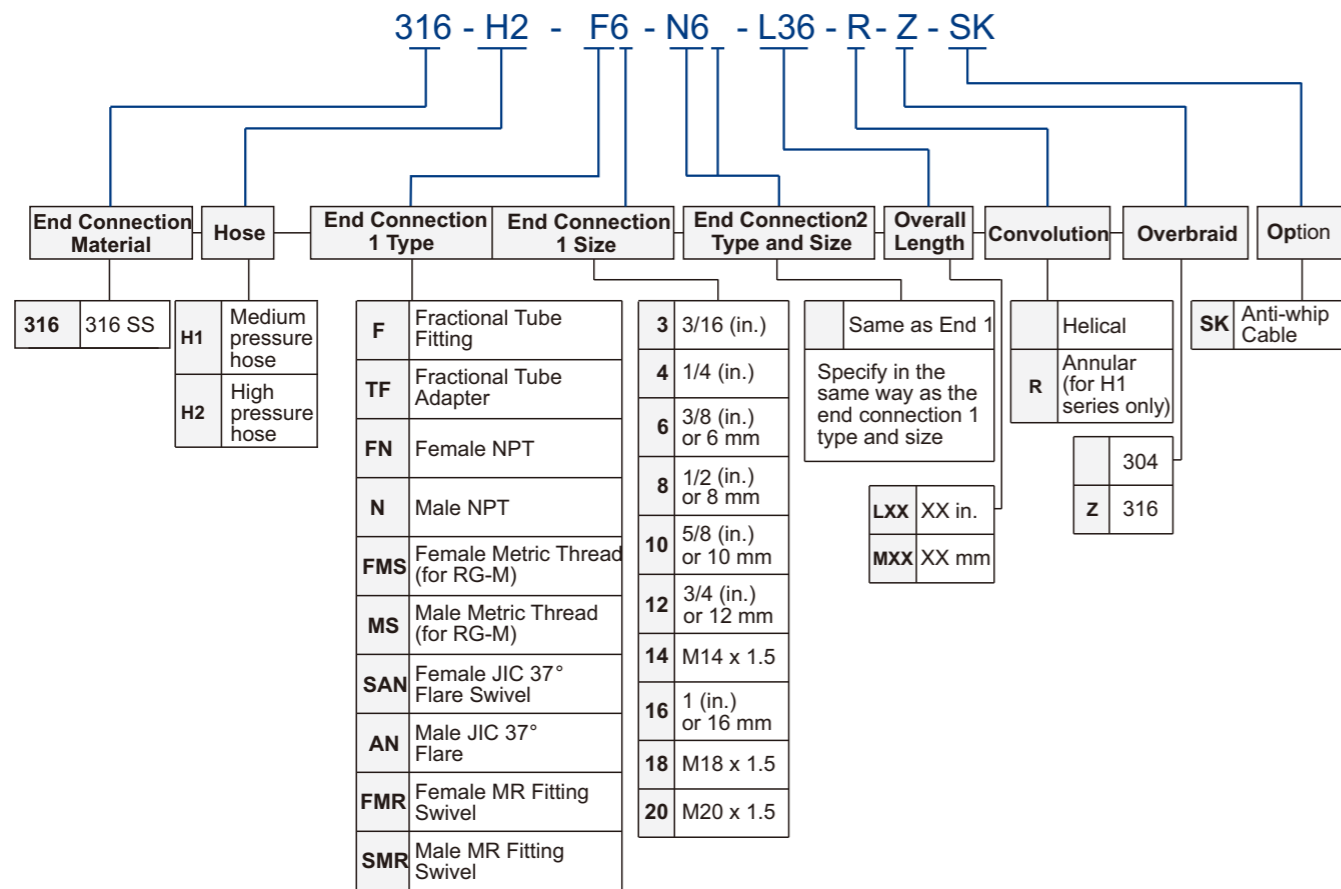
| NPT Size | Nominal Hose Size | End Connection Designator | Dimensions | | |
|------------|-------------------|---------------------------|-----------------|-------------------------|---------------------------|
| | | | A | Minimum Inside Diameter | Maximum Outside Dimension |
| in. | | | in. (mm) | | |
| 1/4 | 1/4 | N4 | 1.80 (45.7) | 0.28 (7.1) | 0.94 (23.9) |
| 1/4 | 3/8 | N4 | 1.81 (46.0) | 0.28 (7.1) | 1.09 (27.7) |
| 3/8 | 3/8 | N6 | 1.81 (46.0) | 0.38 (9.7) | 1.09 (27.7) |
| 1/2 | 1/4 | N8 | 1.99 (50.6) | 0.47 (11.9) | 1.02 (25.8) |
| 1/2 | 1/2 | N8 | 2.15 (54.6) | 0.47 (11.9) | 1.23 (31.3) |
| 3/4 | 3/4 | N12 | 2.22 (56.4) | 0.63 (16.0) | 1.74 (44.2) |
| 1 | 1 | N16 | 2.54 (64.5) | 0.88 (22.4) | 1.82 (46.3) |
| 1 1/4 | 1 1/4 | N20 | 3.06 (77.7) | 1.09 (27.7) | 2.03 (51.6) |
| 1 1/2 | 1 1/2 | N24 | 3.72 (94.5) | 1.34 (34.0) | 2.47 (62.6) |
| 2 | 2 | N32 | 4.19 (106) | 1.81 (46.0) | 3.19 (81.0) |

Options

Anti-whip Cable

- ⦿ 304 stainless steel cable
- ⦿ Available on hoses without changing the technical data of hoses
- ⦿ Prevent hoses from whipping around and causing serious injuries in the event of fitting blow-off or hose burst

Ordering Number Description



Example: 316-H2-TF6-M710

- 316:** End connection material is 316 stainless steel.
- H2:** H2 series, nominal hose size is 1/4 ".
- TF6:** End connection 1 is 3/8" tube adapter.
End connection 2 is 3/8" tube adapter.
- M710:** Overall length is 710 mm.

Note: "Ordering Number Description" is a reference to understand the combination rules of XINVAL product part number. Not all combinations are available.

Connections are described based on the following rules:

1. Metric Tube Fitting - Fractional Tube Fitting - Metric Tube Adapters - Fractional Tube Adapters - NPT Threads - BSPT Threads - BSPP Threads - SAE/MS Parallel Threads - 37° Flare - Others
2. Put the sizes from the biggest down to the smallest if they are of the same type.
3. Put the female before male if they are of the same type and size.