

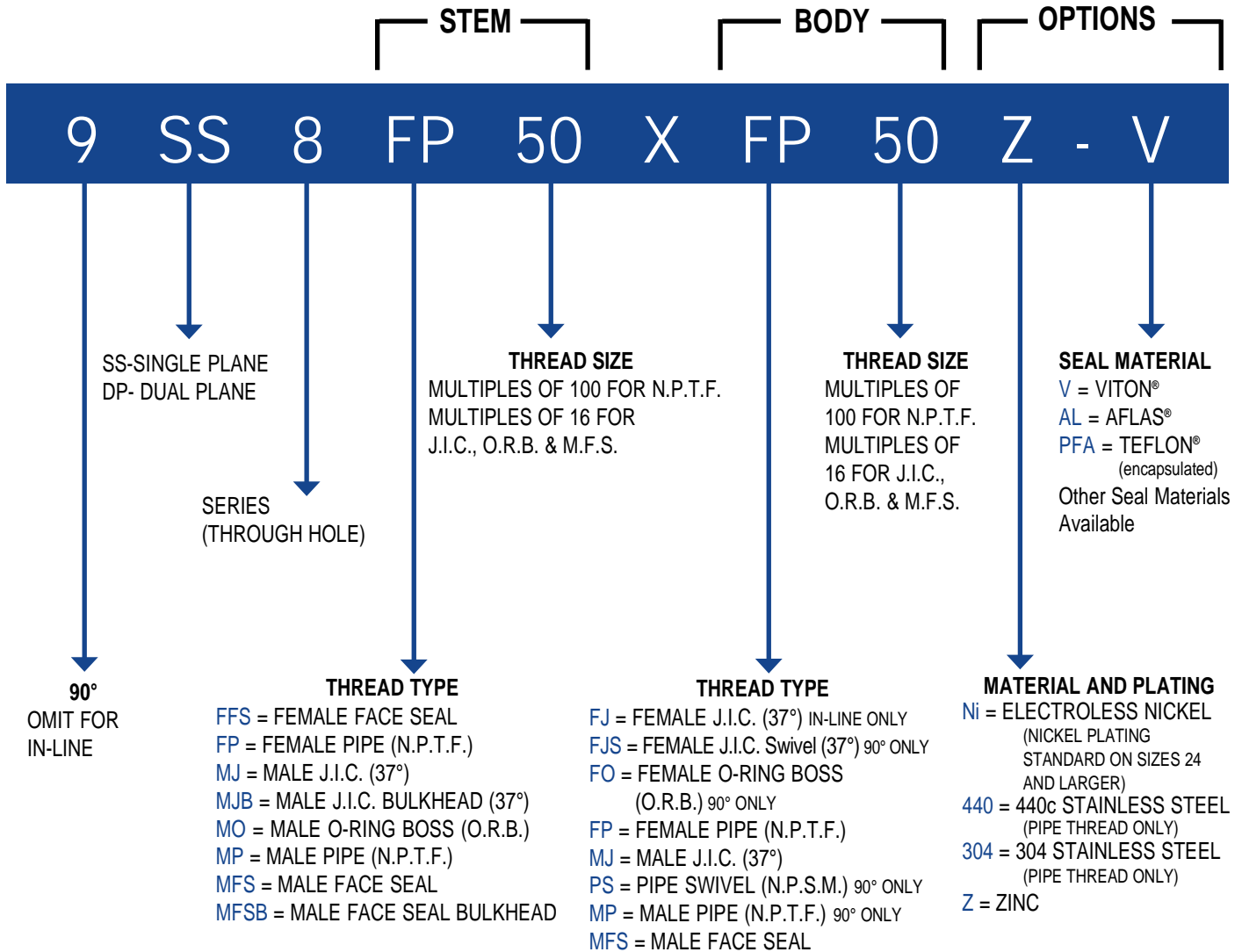
BSPP

Inline & 90° Swivels



Switch Your Swivel![®]

HOW TO ORDER



REBUILDING KITS ARE AVAILABLE FOR ALL SWIVELS.

WHEN ORDERING PLEASE SPECIFY PRESSURE, TYPE OF MEDIA OR OXYGEN USE.

SUPER SWIVELS® ARE NOT RECOMMENDED FOR BREATHING AIR OR STEAM.

ALL SWIVELS HAVE 4 TO 1 PROOF PRESSURE, EXCEPT 10,000 P.S.I. 3 TO 1 PROOF PRESSURE

SUPER SWIVELS® MAY ALSO BE ORDERED BY ITEM NUMBER.

ANY SERIES STEM WILL FIT WITH THE SAME SERIES BODY. THEREFORE THERE ARE MANY COMBINATIONS THAT DO NOT APPEAR IN THIS CATALOG.

Options

Base Material and Plating

Super Swivels are manufactured from Carbon Steel or 304 and 440c Stainless Steel.

Carbon Steel Zinc (Z) Plating is recommended for non-corrosive applications, i.e. hydraulic, pneumatic, etc.

Carbon Steel Nickel (NI) Plating is recommended for mildly corrosive environments, i.e. water, mild chemicals, solvents, etc.

304 Stainless Steel (304) is recommended for low pressure corrosive environments.

440c Stainless Steel (440) is a martensitic, high carbon, magnetic stainless steel, heat-treated to maintain a high-pressure rating. Not as corrosion resistant as 300 Series Stainless Steel.

Seal Material

(V) Viton® (Fluorocarbon) – For most petroleum based applications. (-15°F to 250°F)

(AL) Aflas® (Tetrafluoroethylene-propylene copolymer) – Better resistance to many individual chemicals. For service in high temperature environments. (Low temperature limitations.) (+32°F to 400°F)

(PFA) PFA Teflon® – High resistance to many individual chemicals where Teflon seals are required. (1,500 max psi) (-15°F to 400°F)

Other seals available upon request include:

Buna, EPR, Neoprene and Kalrez®.

Please specify oxygen use when ordering. Super Swivels are not recommended for breathing air or steam.

• Viton and Kalrez are registered trademarks of DuPont Dow® Elastomers. • Teflon, Freon, and Hytrel are registered trademarks of the DuPont® Company.
• Aflas is a registered trademark of Asahi® Glass Co LTD. • Skydrol and Pydraul are registered trademarks of Monsanto® Chemical Co. All other ® and ™s are the property of their respective owners.

Seal Compatibility Chart

FLUIDS	VITON® (HYTREL® back-up) 25 in/Hg-5000 P.S.I. MAX* -15°F TO 250°F	AFLAS® (TEFLON® back-up) 25 in/Hg-5000 P.S.I. MAX* +32°F TO 400°F	PFA TEFLON(TEFLONback-up) 25 in/Hg-1500 MAX -15°F TO 400°F
automatic transmission fluids	A	A	A
acetone	C	C	C
air	A	A	A
asphalt	B	A	B
benzene	A	B	B
brake fluid (glycol)	C	A	B
brake fluid (mineral)	C	A	B
brake fluid (silicone)	C	A	B
carbon tetrachloride	A	C	A
engine oil (sf, sf cd)	A	A	A
ethylene glycol	A	A	A
FREON®	C	C	C
hydraulic fluids (petroleum)	A	A	A
hydrochloric acid	B	A	A
methyl ethyl ketone	C	C	C
naphtha	A	A	A
oxygen (gaseous)	A	A	A
power steering fluid	C	A	A
salt water	B	A	A
SKYDROL 500 B4®	C	B	C
soap solutions	C	A	A
sulfuric acid	A	A	A
toluene	A	C	B
trichlorethylene	A	C	A
urethane	C	A	C
water	C	A	A

A=Satisfactory
B=Fair
C=Unsatisfactory

*2500 P.S.I. MAX PNEUMATIC

This chart is only a guide, several factors should be considered when selecting a sealing compound,

Note 1. Please specify oxygen use when ordering. Super Swivels® are not recommended for breathing air.

Not recommended for steam.

Super Swivels' Advantages

Simplified Connections:

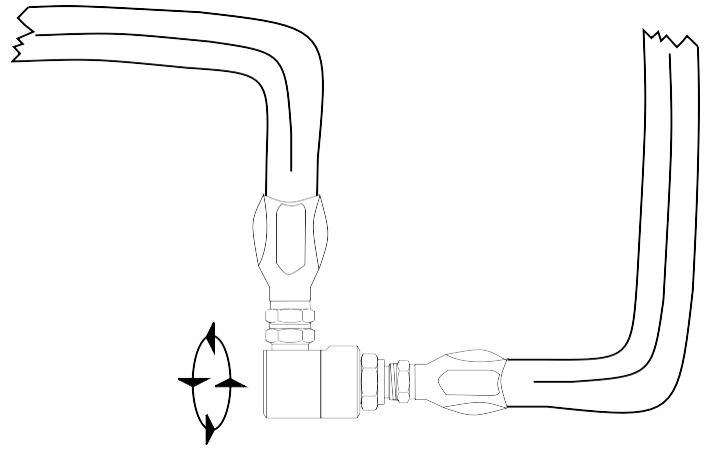
- Super Swivels can connect directly to hose lines which would do away with adapters.
- Super Swivels reduce the complexity of hose lines for 90° connections.
- Less hose is required with Super Swivels live swivels reducing space needs.

Reduced Hose Twisting:

- Super Swivels live swivel action reduces risk of hose twisting and kinking even in 90° angle connections.

Less System Shock:

- The increased hose movement allowed by Super Swivels superior design reduces system rigidity and helps absorb some system impulses.



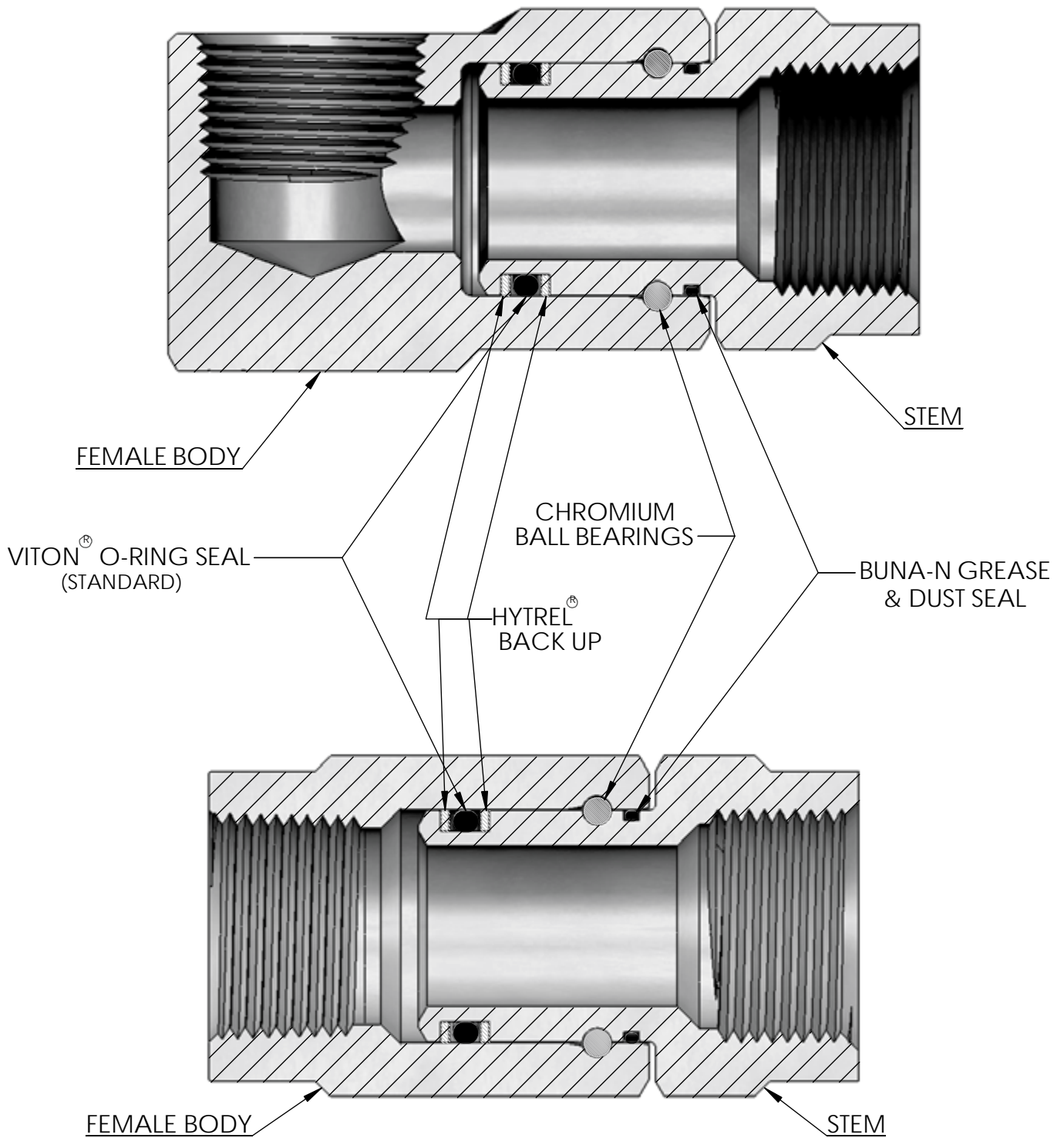
Reduce Maintenance and Downtime:

- Less hydraulic line congestion, hose kinking, shock damage and twisting means lower maintenance costs and less downtime.

Reduced Cost:

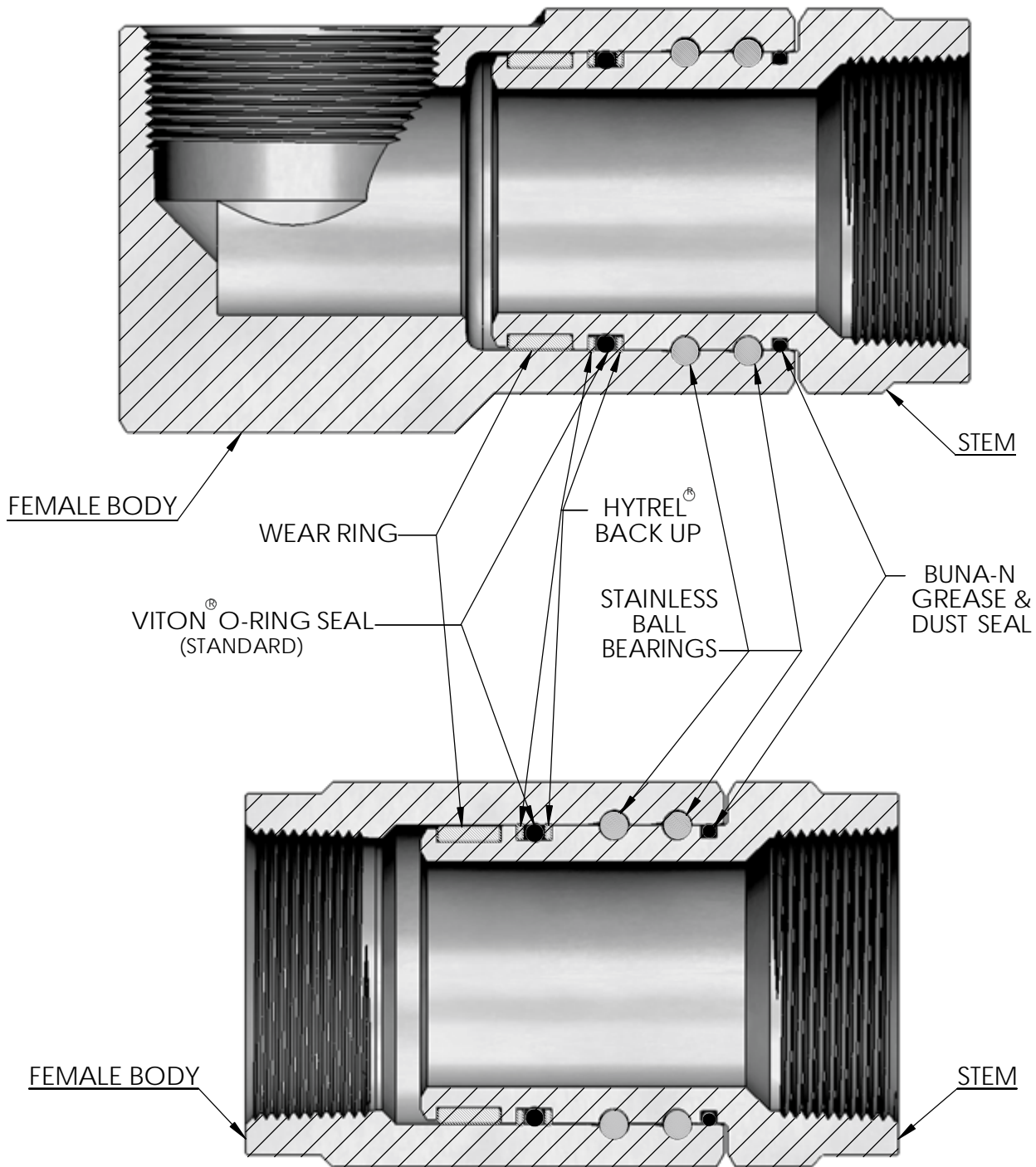
- Simplified hose configuration, less hose and adapters when combined with reduced repairs and downtime reduce the overall cost of hydraulics.

Cross Sectional Drawings



Zinc Plated for Hydraulic Oil Applications
Sizes 4 through 16

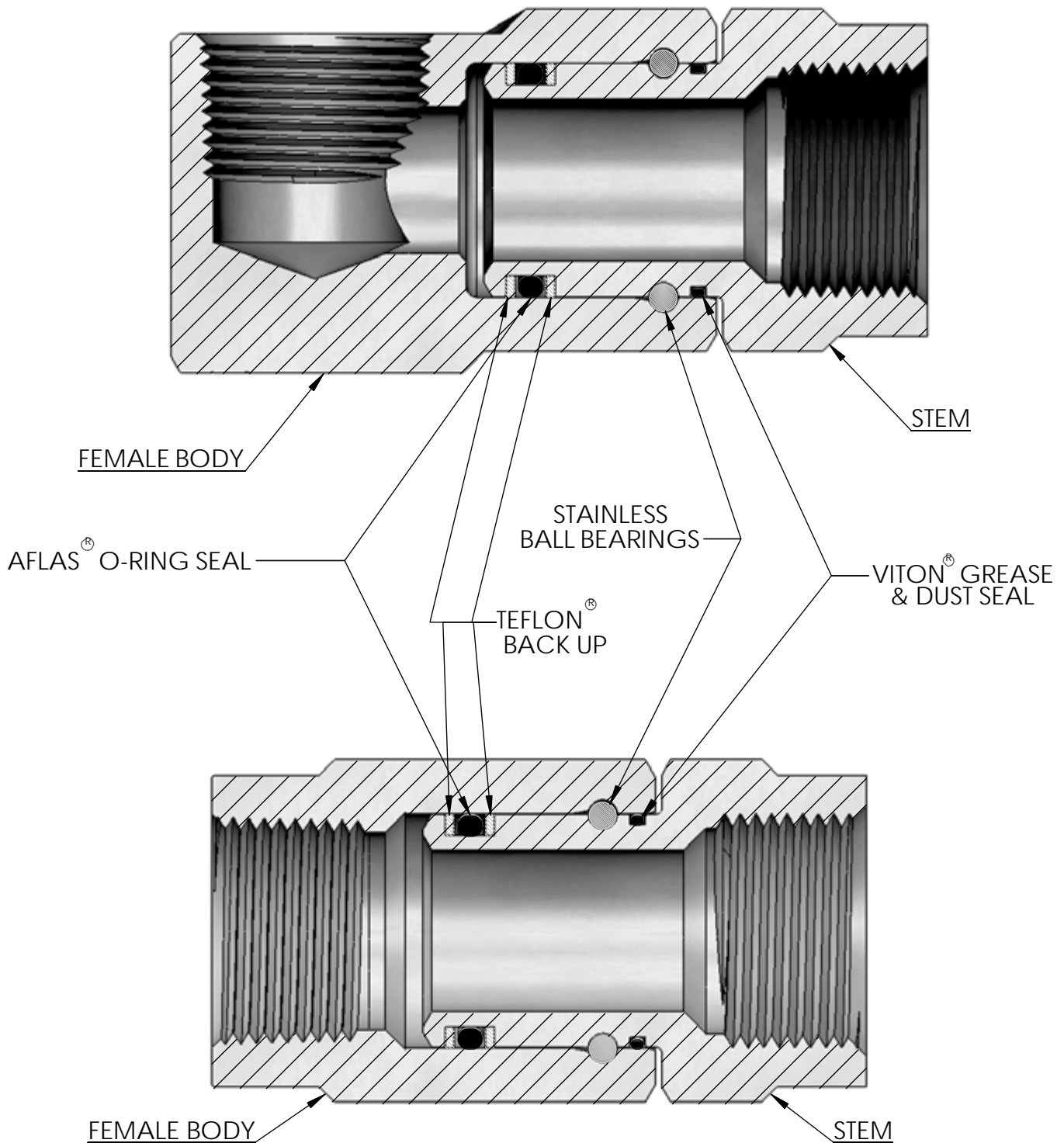
Cross Sectional Drawings



Nickel Plated for Hydraulic Oil Applications Sizes 20 through 40

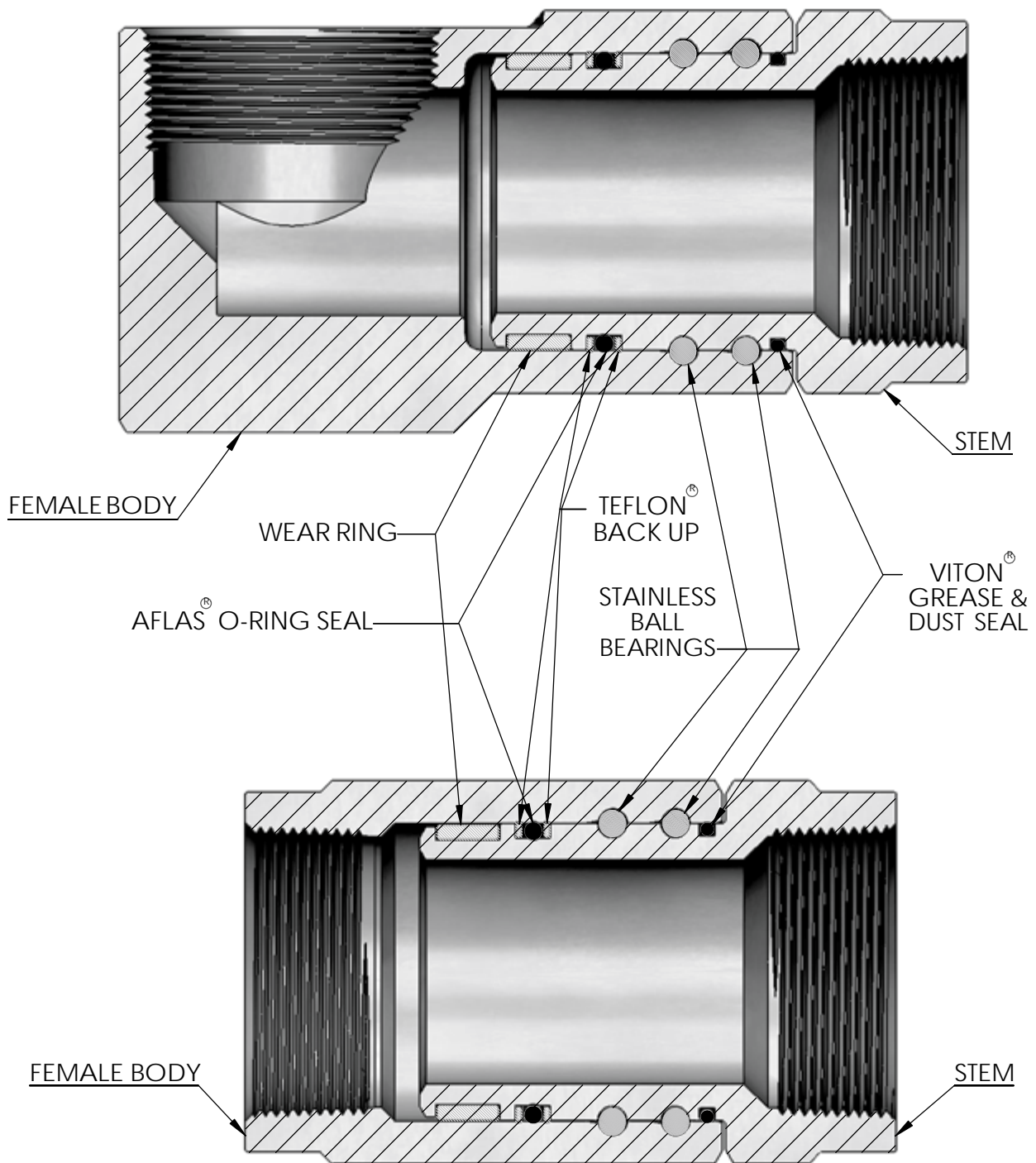
(Size 20 No Wear Ring)
Nickel Plating Standard on Size 24 and Larger

Cross Sectional Drawings



**Nickel Plated for Corrosive Media Applications
Sizes 4 through 16**

Cross Sectional Drawings



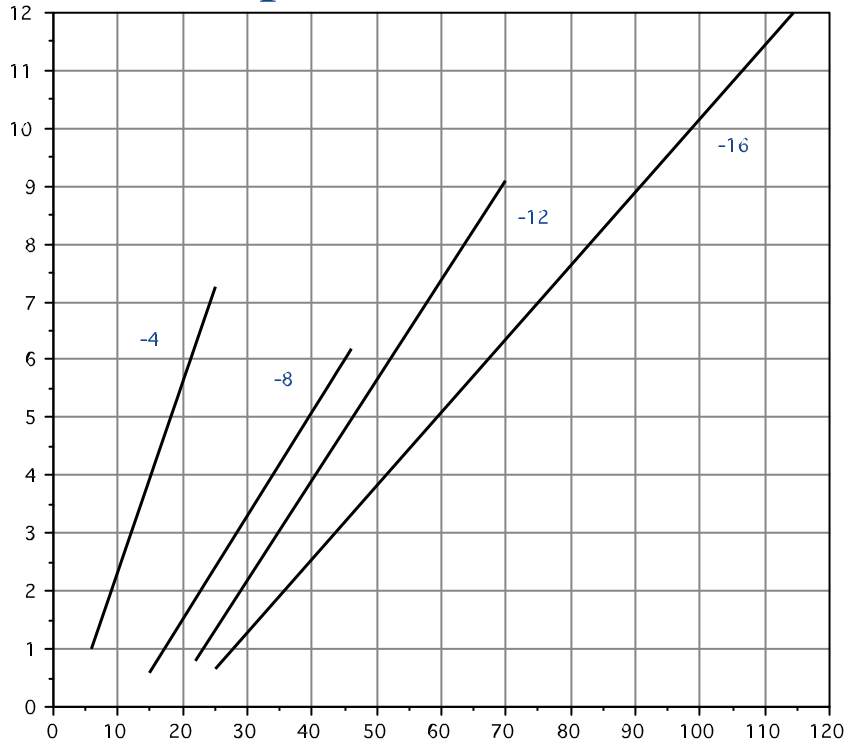
Nickel Plated for Corrosive Media Applications Sizes 20 through 40

(Size 20 No Wear Ring)

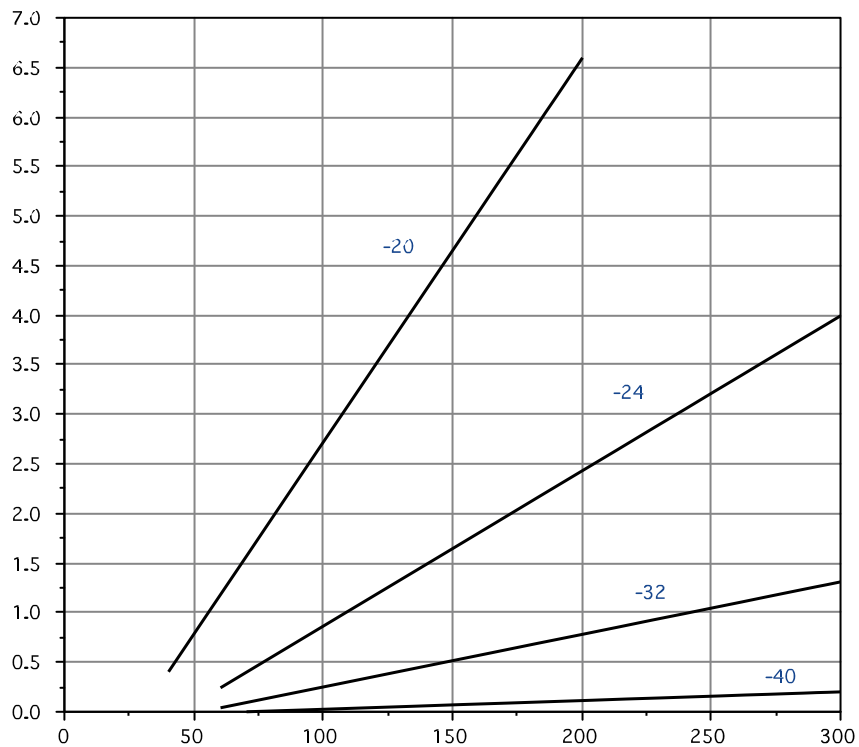
Nickel Plating Standard on Size 24 and Larger



Pressure Drop "SS" Inline #4 - #16

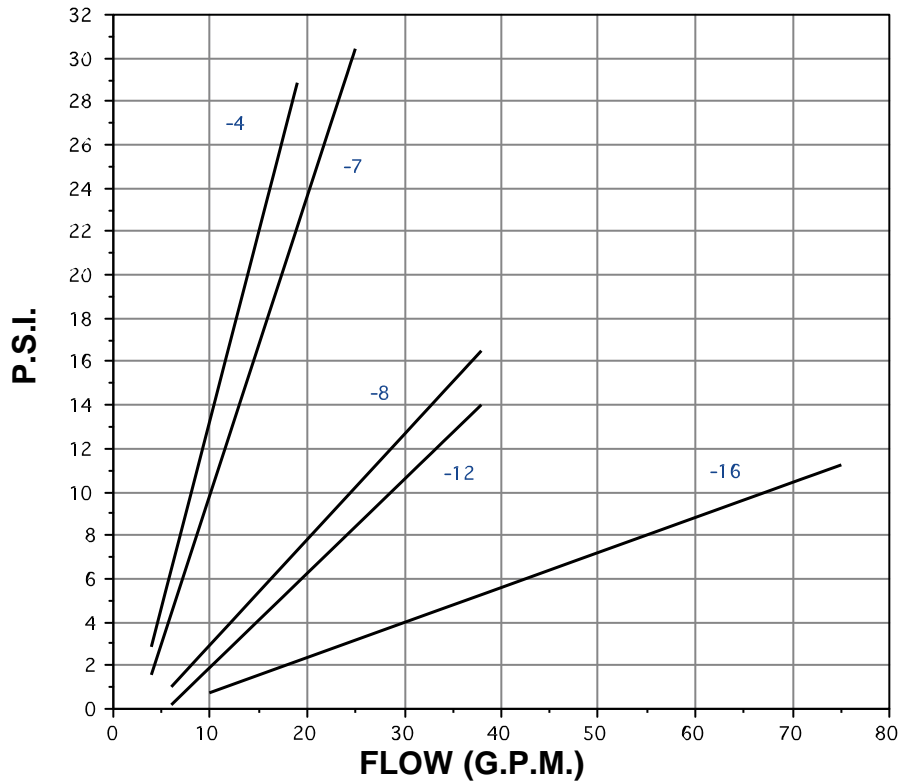


Pressure Drop "SS" Inline #20 - #40

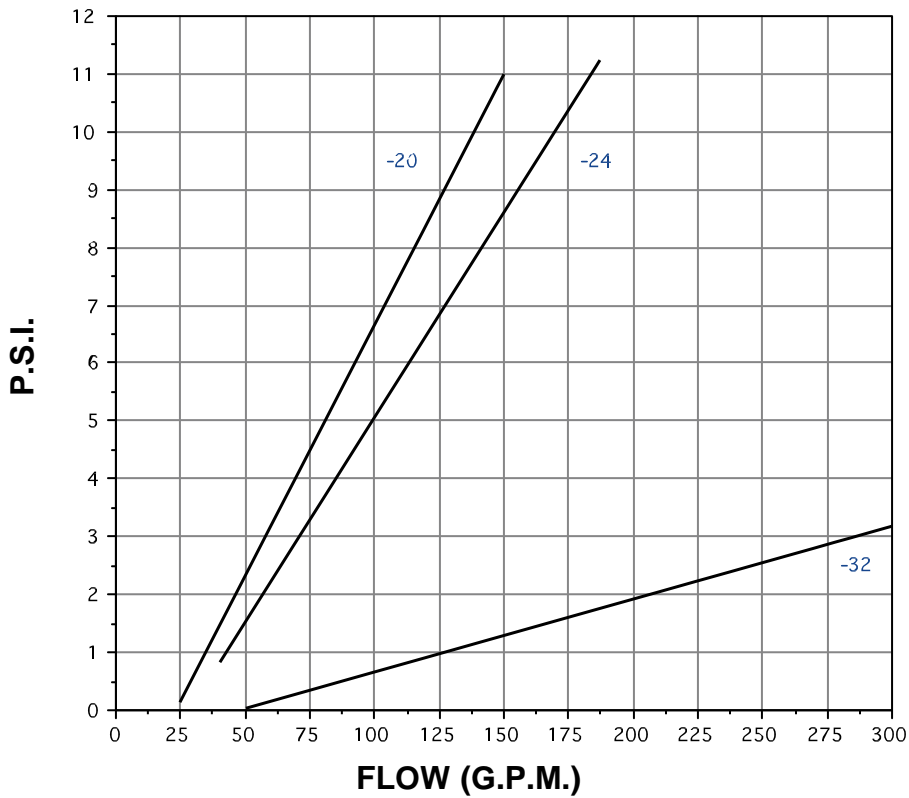




Pressure Drop "9SS" 90° #4 - #16

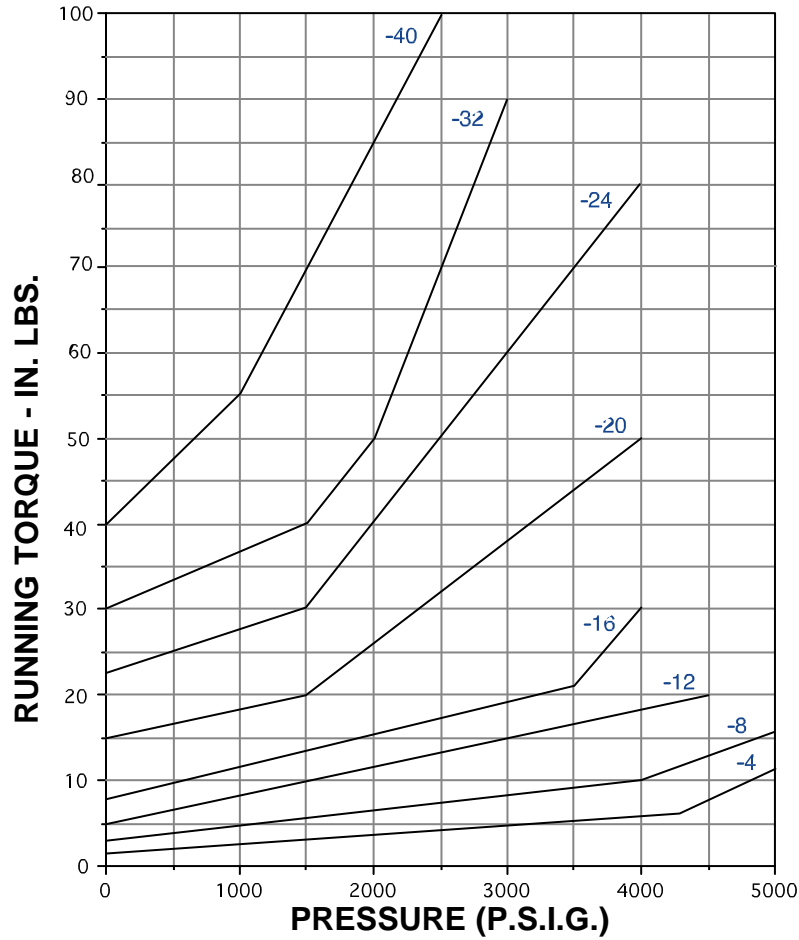


Pressure Drop "9SS" 90° #20 - #32

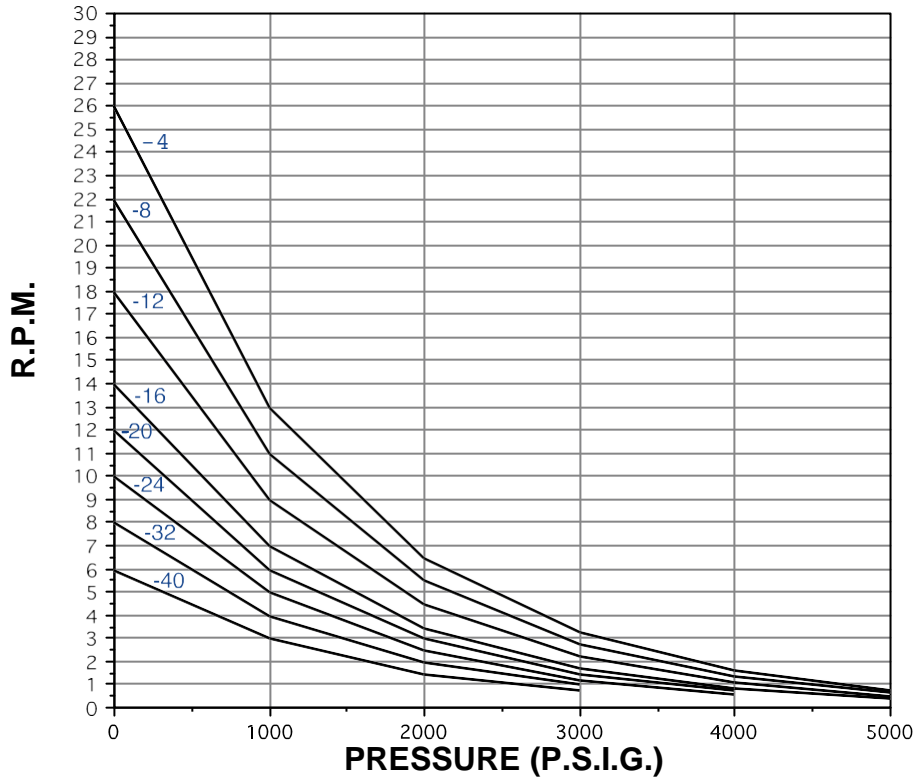




Rotating Torque vs. Pressure

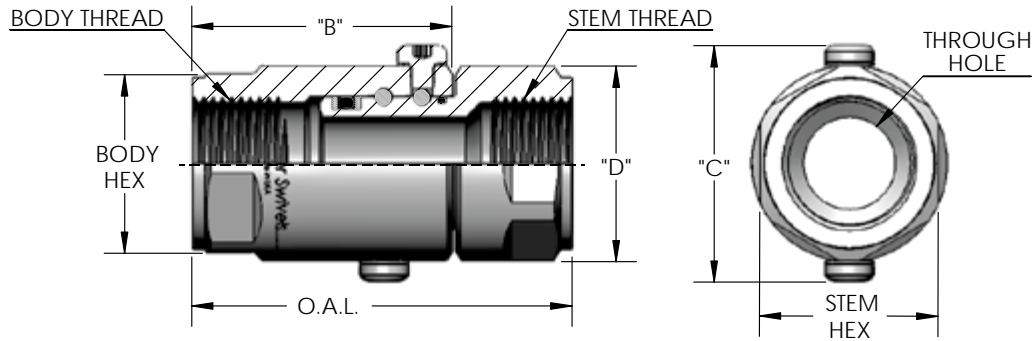


R.P.M. vs. P.S.I.



Note: For specific pressure see charts with diagrams.

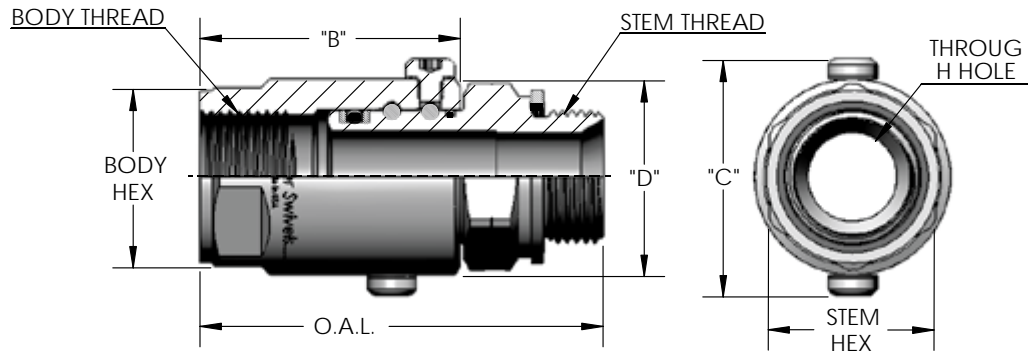
Female BSPP X Female BSPP



Not Available
In Stainless Steel!

PART NUMBER	O.A.L.	DIM. B	DIM. D Ø	DIM. C	WRENCH HEX.	BODY THREAD	STEM THREAD	MAX. PRES.	THROUGH HOLE
SS 4 FBSPP 4 X FBSPP 4	2.570 65.3 mm	1.720 43.7 mm	0.992 25.2 mm	1.122 28.5 mm	0.875 22.2 mm	G 1/4-19 BSPP	G 1/4-19 BSPP	345 5,000	0.250 6.3 mm
SS 6 FBSPP 6 X FBSPP 6	2.663 67.6 mm	1.780 45.2 mm	1.302 33.1 mm	1.702 43.2 mm	1.187 30.1 mm	G 3/8-19 BSPP	G 3/8-19 BSPP	345 5,000	0.312 7.9 mm
SS 8 DB FBSPP 8 X FBSPP 8	3.007 76.4 mm	2.080 52.8 mm	1.480 37.6 mm	1.880 47.8 mm	1.312 33.3 mm	G 1/2-14 BSPP	G 1/2-14 BSPP	345 5,000	0.406 10.3 mm
SS 12 DB FBSPP 12 X FBSPP 12	3.102 78.8 mm	2.100 53.3 mm	1.675 42.5 mm	2.070 52.6 mm	1.500 38.1 mm	G 3/4-14 BSPP	G 3/4-14 BSPP	345 5,000	0.630 16.0 mm
SS 16 DB FBSPP 16 X FBSPP 16	3.725 94.6 mm	2.550 64.8 mm	1.917 48.7 mm	2.320 58.9 mm	1.750 44.4 mm	G 1-11 BSPP	G 1-11 BSPP	310 4,500	0.787 20.0 mm
SS 20 FBSPP 20 X FBSPP 20	4.040 102.6 mm	2.650 67.3 mm	2.358 59.9 mm	2.760 70.1 mm	2.125 54.0 mm	G 1 1/4-11 BSPP	G 1 1/4-11 BSPP	275 4,000	0.984 25.0 mm
SS 24 FBSPP 24 X FBSPP 24	4.640 117.9 mm	3.250 82.5 mm	2.548 64.7 mm	2.950 74.9 mm	2.375 60.3 mm	G 1 1/2-11 BSPP	G 1 1/2-11 BSPP	275 4,000	1.260 32.0 mm

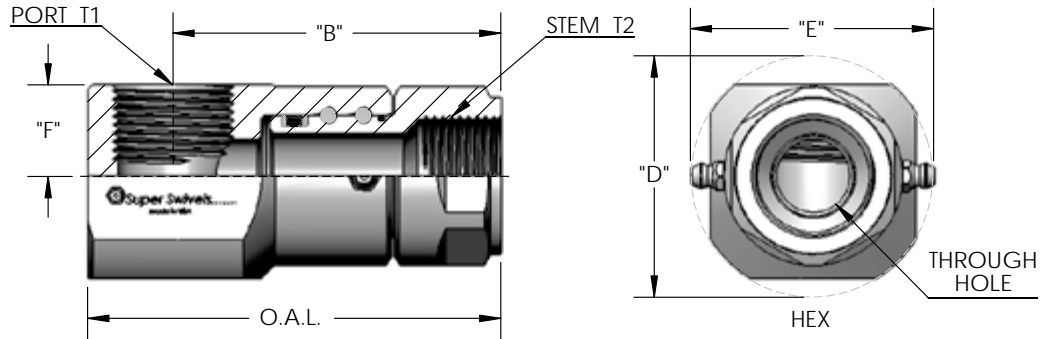
Male BSPP X Female BSPP



Not Available
In Stainless Steel!

PART NUMBER (Inches)	O.A.L.	DIM. B	DIM. D Ø	DIM. C	WRENCH HEX.	BODY THREAD	STEM THREAD	MAX. PRES.	THROUGH HOLE
SS 4 MBSPP 4 X FBSPP 4	2.665 67.7 mm	1.720 43.7 mm	0.992 25.2 mm	1.122 28.4 mm	0.812 20.6 mm	G 1/4-19 BSPP	G 1/4-19 BSPP	345 5,000	0.250 6.3 mm
SS 6 MBSPP 6 X FBSPP 6	2.728 69.3 mm	1.780 45.2 mm	1.302 33.1 mm	1.702 43.2 mm	0.937 23.8 mm	G 3/8-19 BSPP	G 3/8-19 BSPP	345 5,000	0.312 7.9 mm
SS 8 DB MBSPP 8 X FBSPP 8	3.102 78.8 mm	2.080 52.8 mm	1.480 37.6 mm	1.880 47.7 mm	1.125 28.6 mm	G 1/2-14 BSPP	G 1/2-14 BSPP	345 5,000	0.406 10.3 mm
SS 12 DB MBSPP 12 X FBSPP 12	3.302 83.9 mm	2.100 53.3 mm	1.675 42.5 mm	2.070 52.5 mm	1.312 33.3 mm	G 3/4-14 BSPP	G 3/4-14 BSPP	345 5,000	0.630 16.0 mm
SS 16 DB MBSPP 16 X FBSPP 16	3.947 100.3 mm	2.550 64.8 mm	1.917 48.7 mm	2.320 58.9 mm	1.625 41.3 mm	G 1-11 BSPP	G 1-11 BSPP	310 4,500	0.787 20.0 mm
SS 20 MBSPP 20 X FBSPP 20	4.265 108.3 mm	2.650 67.3 mm	2.358 59.9 mm	2.760 70.1 mm	2.000 50.8 mm	G 1 1/4-11 BSPP	G 1 1/4-11 BSPP	275 4,000	0.984 25.0 mm
SS 24 MBSPP 24 X FBSPP 24	5.085 129.2 mm	3.250 82.5 mm	2.548 64.7 mm	2.950 74.9 mm	2.250 57.1 mm	G 1 1/2-11 BSPP	G 1 1/2-11 BSPP	275 4,000	1.260 32.0 mm

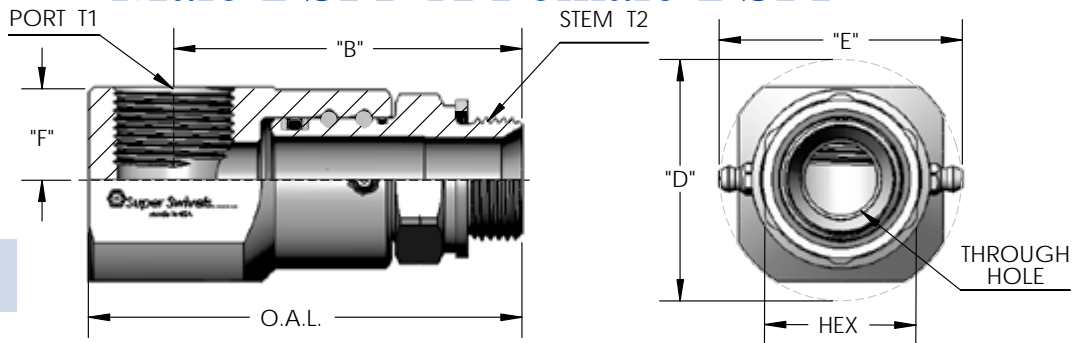
Female BSPP X Female BSPP



Not Available
In Stainless Steel!

PART NUMBER	O.A.L.	DIM. B	DIM. D Ø	DIM. E	WRENCH HEX.	PORT T1	STEM T2	DIM. F	MAX. PRES.	THROUGH HOLE
9 SS 4 FBSPP 4 X FBSPP 4	2.715 69.0 mm	2.255 57.3 mm	1.318 33.5 mm	1.858 47.2 mm	0.875 22.2 mm	G 1/4-19 BSPP	G 1/4-19 BSPP	0.519 13.2 mm	345 5,000	0.250 6.3 mm
9 SS 6 FBSPP 6 X FBSPP 6	2.883 73.2 mm	2.313 58.8 mm	1.450 36.8 mm	1.992 50.6 mm	1.187 30.1 mm	G 3/8-19 BSPP	G 3/8-19 BSPP	0.552 14.0 mm	345 5,000	0.312 7.9 mm
9 SS 8 DB FBSPP 8 X FBSPP 8	3.317 84.3 mm	2.686 68.2 mm	1.724 43.8 mm	2.170 55.1 mm	1.312 33.3 mm	G 1/2-14 BSPP	G 1/2-14 BSPP	0.653 16.6 mm	345 5,000	0.406 10.3 mm
9 SS 12 DB FBSPP 12 X FBSPP 12	3.722 94.5 mm	2.942 74.7 mm	2.184 55.5 mm	2.370 60.2 mm	1.500 38.1 mm	G 3/4-14 BSPP	G 3/4-14 BSPP	0.849 21.6 mm	345 5,000	0.630 16.0 mm
9 SS 16 DB FBSPP 16 X FBSPP 16	4.428 112.5 mm	3.513 89.2 mm	2.588 65.7 mm	2.610 66.3 mm	1.750 44.4 mm	G 1-11 BSPP	G 1-11 BSPP	0.982 24.9 mm	310 4,500	0.787 20.0 mm
9 SS 20 FBSPP 20 X FBSPP 20	4.890 124.2 mm	3.790 96.3 mm	3.088 78.4 mm	3.050 77.5 mm	2.125 54.0 mm	G 1 1/4-11 BSPP	G 1 1/4-11 BSPP	1.149 29.2 mm	275 4,000	0.984 25.0 mm
9 SS 24 FBSPP 24 X FBSPP 24	5.940 150.9 mm	4.670 118.6 mm	3.576 90.8 mm	3.240 82.3 mm	2.375 60.3 mm	G 1 1/2-11 BSPP	G 1 1/2-11 BSPP	1.366 34.7 mm	275 4,000	1.260 32.0 mm

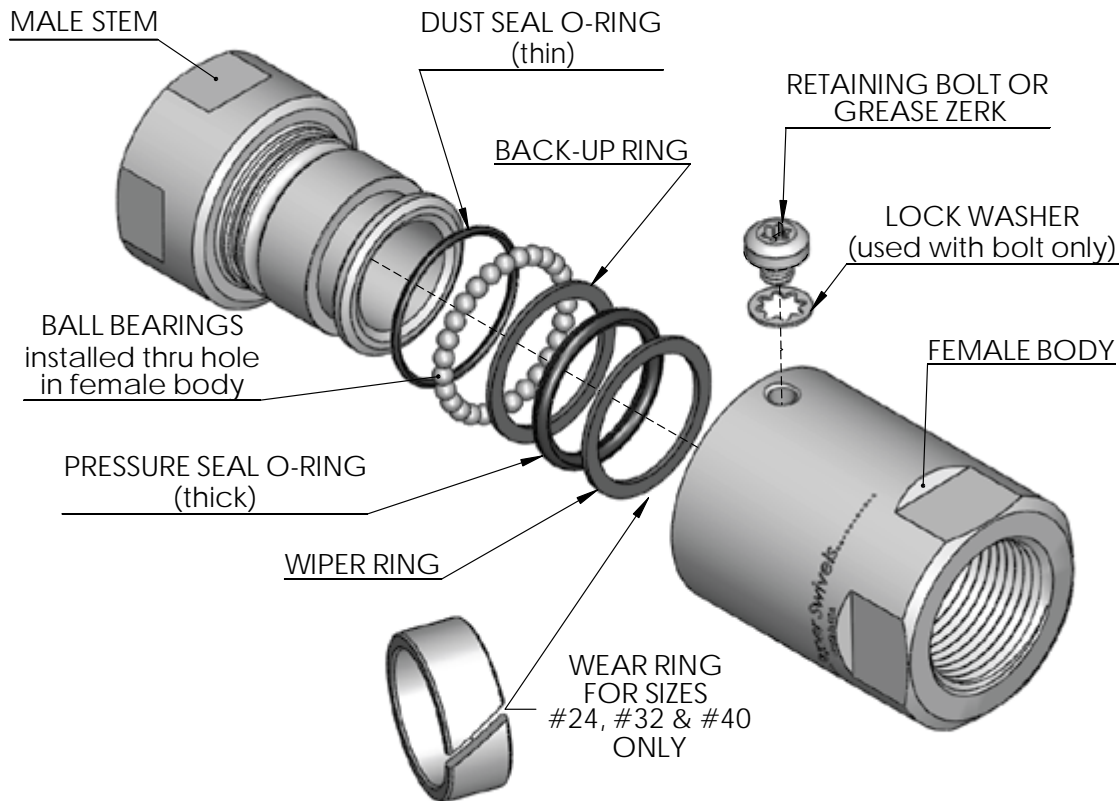
Male BSPP X Female BSPP



Not Available
In Stainless Steel!

PART NUMBER	O.A.L.	DIM. B	DIM. D Ø	DIM. E	WRENCH HEX.	PORT T1	STEM T2	DIM. F	MAX. PRES.	THROUGH HOLE
9 SS 4 MBSPP 4 X FBSPP 4	2.810 71.4 mm	2.350 59.7 mm	1.318 33.5 mm	1.858 47.2 mm	0.812 20.6 mm	G 1/4-19 BSPP	G 1/4-19 BSPP	0.519 13.2 mm	345 5,000	0.250 6.3 mm
9 SS 6 MBSPP 6 X FBSPP 6	2.947 74.9 mm	2.367 60.1 mm	1.450 36.8 mm	1.992 50.6 mm	0.937 23.8 mm	G 3/8-19 BSPP	G 3/8-19 BSPP	0.552 14.0 mm	345 5,000	0.312 7.9 mm
9 SS 8 DB MBSPP 8 X FBSPP 8	3.412 86.7 mm	2.781 70.6 mm	1.724 43.8 mm	2.170 55.1 mm	1.125 28.6 mm	G 1/2-14 BSPP	G 1/2-14 BSPP	0.653 16.6 mm	345 5,000	0.406 10.3 mm
9 SS 12 DB MBSPP 12 X FBSPP 12	3.922 99.6 mm	3.142 79.8 mm	2.184 55.5 mm	2.370 60.2 mm	1.312 33.3 mm	G 3/4-14 BSPP	G 3/4-14 BSPP	0.849 21.6 mm	345 5,000	0.630 16.0 mm
9 SS 16 DB MBSPP 16 X FBSPP 16	4.648 118.1 mm	3.733 94.8 mm	2.588 65.7 mm	2.610 66.3 mm	1.625 41.3 mm	G 1-11 BSPP	G 1-11 BSPP	0.982 24.9 mm	310 4,500	0.787 20.0 mm
9 SS 20 MBSPP 20 X FBSPP 20	5.115 129.9 mm	4.015 102.0 mm	3.088 78.4 mm	3.050 77.5 mm	2.000 50.8 mm	G 1 1/4-11 BSPP	G 1 1/4-11 BSPP	1.149 29.2 mm	275 4,000	0.984 25.0 mm
9 SS 24 MBSPP 24 X FBSPP 24	6.385 162.2 mm	5.115 129.9 mm	3.576 90.8 mm	3.240 82.3 mm	2.250 57.1 mm	G 1 1/2-11 BSPP	G 1 1/2-11 BSPP	1.366 34.7 mm	275 4,000	1.260 32.0 mm

Hydraulic Inline and 90° Live Swivels Seal Rebuilding Kit Instructions



1. Remove retaining bolt or grease zerk (some models have a permanent grease zerk).
2. Wash swivel in solvent and rotate while immersed to remove grease from the ball bearing groove.
3. Remove ball bearings by rotating swivel with ball loading hole pointed downward. If remaining grease in ball groove prevents balls from falling free when centered over loading hole, tap swivel on work bench with loading hole facing down on bench.
4. With all ball bearings removed (check by rotating while looking into ball loading hole), pull the two halves apart and discard old rings, ball bearings and seals.
5. Clean and dry swivel thoroughly, install new seal and wear rings when required, and lubricate the female bore and male outside diameter before assembly. Load retainer ball bearings and install grease zerk (a temporary zerk is provided for models with a retaining bolt). Use lithium based grease with moly (do not over grease).

Note: The temporary grease zerk must be removed and replaced with the original retaining bolt and new lock washer on swivels which didn't originally have a permanent grease zerk.

Switch Your Swivel![®]