

This kit contains o-rings and back-up rings for the following hydraulic units:

Insta-Act® System

Straight Blades See Page 2

EZ-V® Blades See Page 4

Solenoid Electric Hydraulic Pak (SEHP)

Straight Blades See Page 6

Use the chart on page 8 to sort o-rings by size. This kit contains more o-rings than needed for any application. The small bag contains -903 and -906 o-rings for the SAE o-ring plugs. See note on chart about these o-rings. Use red -008 o-rings only on EZ-V Insta-Act pilot operated check valve spools. Apply light film of hydraulic fluid to all o-rings before installation.

Torque Chart for Insta-Act® Hydraulic Units (Both straight and EZ-V® Blades)

Location	Fastener Size	Torque (in-lbs)
Pump Cap Screws	5/16"-18 x 2-1/2" with Flat Washer or 5/16"-18 x 2-1/4" without Flat Washer	150-160
Motor Terminals (+ and -)	5/16"-24 Nut	50-60
Motor to Manifold Cap Screws	1/4"-20 x 6-1/4" Long	30-40
Reservoir Screws	#10-24 x 5/16" Long	15-20
Valve Cartridges	7/8" Head Hex	115-125
Coil Nuts	3/4" Head Hex Jam Nut	48-50
Cartridge/Coil Cover Screws	#8-32 x 1/2" Long	15-20
SAE O-Ring Plugs	1/8" or 5/32" Internal Hex	55-65
Lift Frame Cross Member to Manifold Cap Screw (No Washer)	3/8"-16 x 1" Long	180-240
Manifold Mount Bolts	1/4"-20 x 2-3/4" Long	105-115
EZ-V® Blades Only		
Check Valves (EZ-V Blades)	11/16" Hex Head	115-125
Secondary to Primary Manifolds	1/4"-20 x 2-1/2" Long	105-115

Gland Nut Type Rams (Hex Flange Head on Nut)

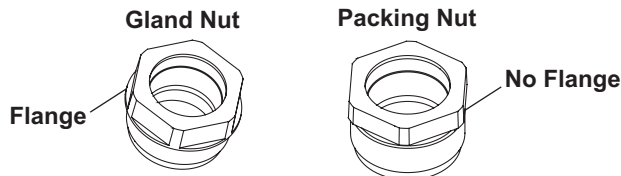
Piston Lock Nut To Rod (EZ-V Only) 100-120 ft-lbs

Gland Nut Torque 150-180 ft-lbs

Alternate Method: Thread nut into coupling. Place .012" feeler gauge between front surface of ram tube face and hex flange of gland nut. Tighten gland nut until snug against feeler gauge. Remove feeler gauge and tighten gland nut an additional 1/4 turn. This will achieve above torque. Under tightening may result in nut loosening during plow operation.

Packing Nut Type Rams (Hex Head on Nut)

Lift Ram Packing Nut Adjustment (Single Acting Rams Only) – Tighten packing nut not more than 1/4 turn after you feel packing nut contact packing. Over tightening affects ram operation and packing life.

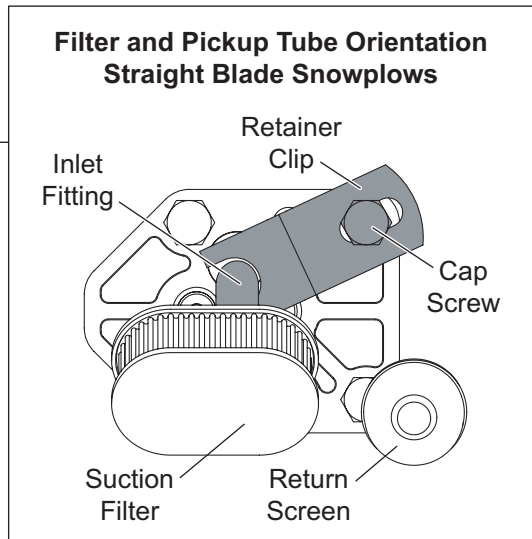
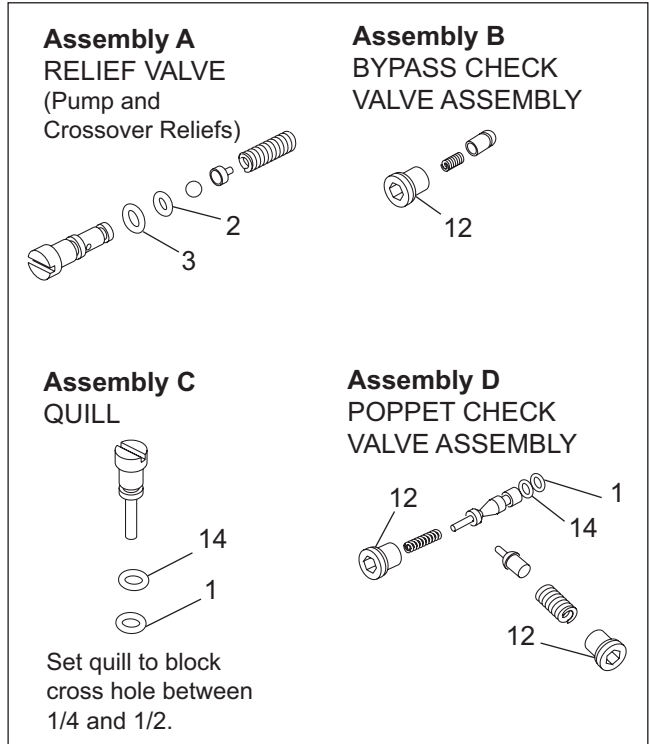
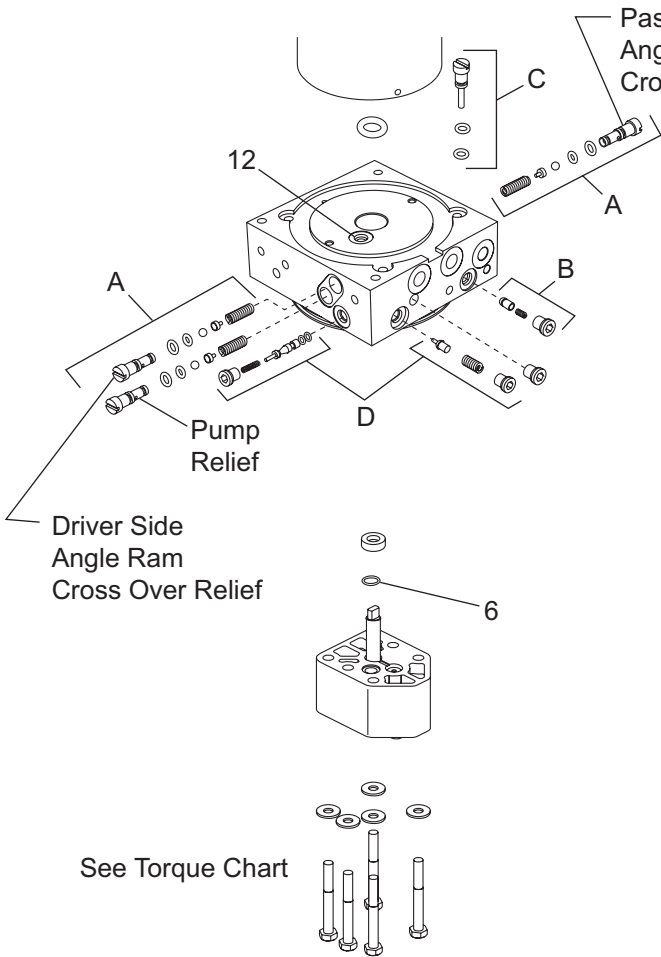


See back of O-Ring Size Chart insert for:

SEHP Torque Chart

Hydraulic Fitting and Hose Installation Instructions

Insta-Act® Hydraulic Unit Parts Diagram



Item	Part	Qty*	Description
1	25622	2	O-Ring -006
2	55371	3	O-Ring -008 (black)
3	25731	3	O-Ring -010
6	56274	1	O-Ring -013
7	56416	1	O-Ring -014
11	66519	1	O-Ring -250
12	26784	4	O-Ring -903
14	56315	2	Back-Up -006

* Qty used for this application. Kit contains extra parts.

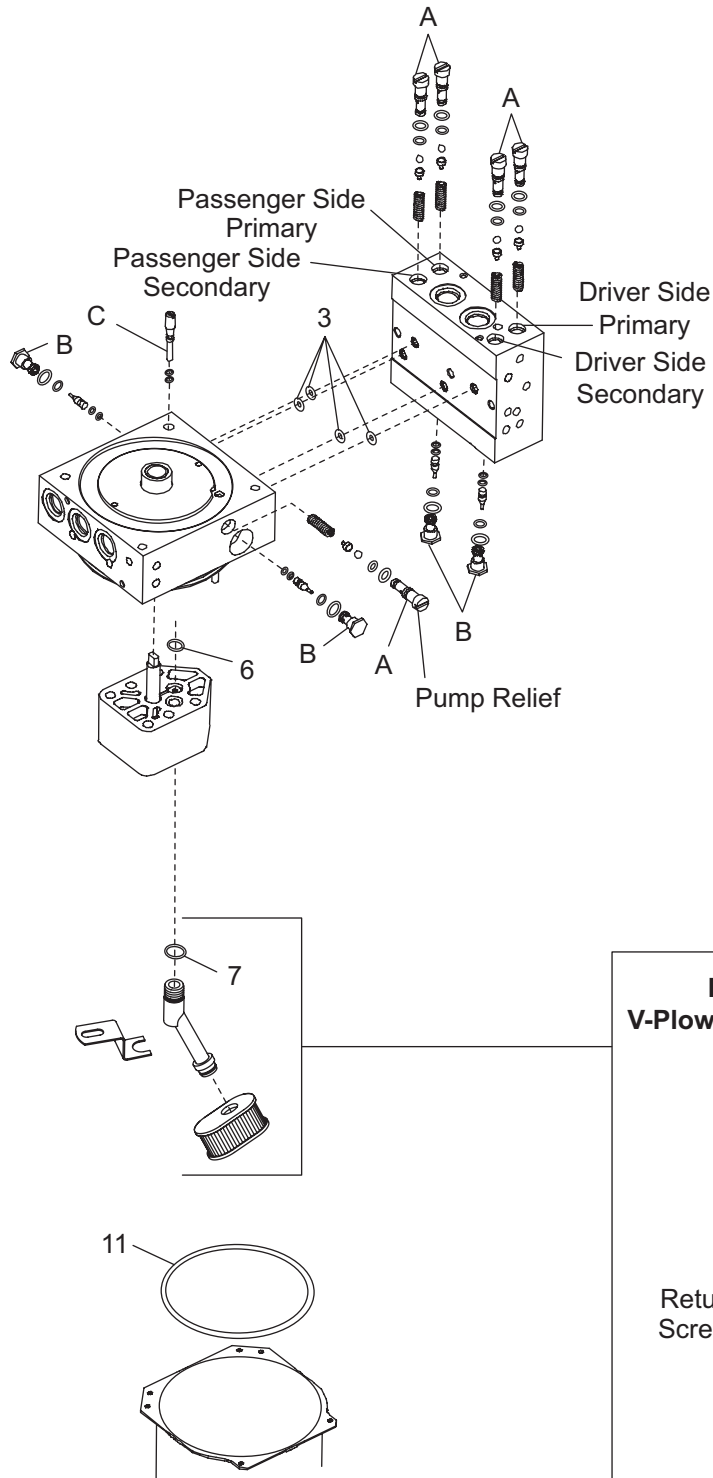
Assemble parts as shown and tighten relief valve stems as much as possible (until spring is fully compressed). Then, back off valve stem (rotate counterclockwise) the number of turns indicated in the chart.

Pump Relief Valve**	No. of Turns Off (CCW) from Fully Seated	Approximate Relief Valve Pressure (PSI)
Pump Relief	2-5/8	1750**

** Install a tee in line with the lift ram hydraulic hose and attach a 3000 psi gauge. Read the pressure at pump relief when holding the raise function button. Adjust pump relief valve to obtain 1750±100 psi.

Cross Over Relief Valve	No. of Turns Off (CCW) from Fully Seated	Approximate Relief Valve Pressure (PSI)
Driver & Passenger Side Angle Ram Crossover Relief	1-1/4	4000

EZ-V® Insta-Act® Hydraulic Unit Parts Diagram



Assembly A
RELIEF VALVE

Assembly B
PILOT-OPERATED CHECK VALVE

*Early production used 55371 O-ring -008 (black). Replace with 56776 O-ring -008, red.

Assembly C
QUILL

Set quill to block cross hole between 1/4 and 1/2.

Filter and Pickup Tube Orientation
V-Plows with Vertically Mounted Hydraulic Unit

Item	Part	Qty*	Description
1	25622	1	O-Ring -006
2	55371	5	O-Ring -008 (black) 90 durometer
3	25731	9	O-Ring -010
4	66627	4	O-Ring -011 (Check Valves Stamped V4 and Lower)
	25730	4	O-Ring -012 (Check Valves Stamped V5 and Higher)
6	56274	1	O-Ring -013
7	56416	1	O-Ring -014
8	56776	4	O-Ring -008, red 70 durometer
11	66519	1	O-Ring -250
13	56569	4	O-Ring -906
14	56315	1	Back-Up -006
15	66628	4	Back-Up -008

* Qty used for this application. Kit contains extra parts.

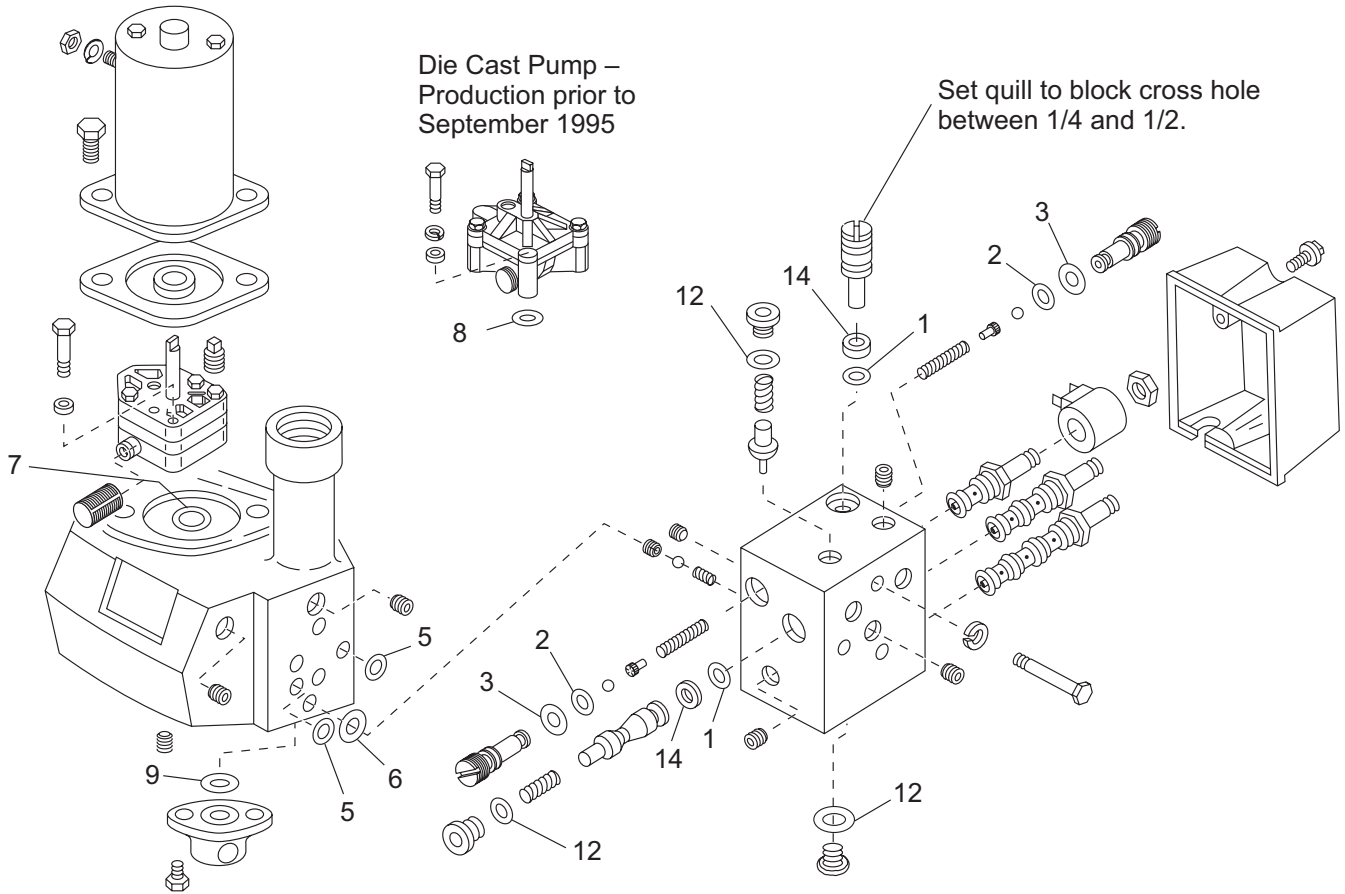
Assemble parts as shown and tighten relief valve stems as much as possible (until spring is fully compressed). Then, back off valve stem (rotate counterclockwise) the number of turns indicated in the chart.

Relief Valve	No. of Turns Off (CCW) from Fully Seated	Approximate Relief Valve Pressure (PSI)
Pump Relief	2-5/8 [†]	1750
Right or Left Ram Primary Relief	1-1/2 ^{††}	3500
Right or Left Ram Secondary Relief	1-1/4 ^{††}	4000

[†] Install a tee in line with the lift ram hydraulic hose and attach a 3000 psi gauge. Read the pressure at pump relief when holding the raise function button. Adjust pump relief valve to obtain 1750±psi.

^{††} Be certain the ram primary relief valve stem is backed out 1/4 turn farther than the secondary relief valve stem.

SEHP Hydraulic Unit Parts Diagram



Item	Part	Qty*	Description
1	25622	2	O-Ring -006
2	55371	2	O-Ring -008 (black)
3	25731	2	O-Ring -010
5	25730	2	O-Ring -012
6	56274	1	O-Ring -013
7	56416	1	O-Ring -014
8	5821	1	O-Ring -115
9	5823	1	O-Ring -216
12	26784	3	O-Ring -903
14	56315	2	Back-Up -006

* Qty used for this application. Kit contains extra parts.

See Torque Chart on Page 7.

Assemble parts as shown and tighten relief (cushion) valve stems as much as possible (until spring is fully compressed). Then, back off valve stem (rotate counterclockwise) the number of turns indicated in the chart.

Angle Ram (Dia. x Stroke)	No. of Turns Off (CCW) from Fully Seated	Approximate Relief (Cushion) Valve Pressure (PSI)
1-1/2" x 6"	1-3/4	2500
1-1/2" x 12"	1-3/8	3500
2" x 16"	1-3/8	3500

Torque Chart for Solenoid Electric Hydraulic Pak (SEHP) – Straight Blades

Location	Fastener Size	Torque (in lbs)
Base Lug	5/16"-18 x 1-1/4" Long	180-215
Pump	5/16"-18 x 2-1/4" Long (Die Cast Pump only) or 5/16"-18 x 2-1/2" Long	175-185
Front or Rear Motor	7/16"-14 x 1/14" Long	180-240
Rear Motor	7/16"-14 x 1-1/2" Long	180-240
Valve Manifold	1/4"-20 x 3-1/4" Long	50-55
Motor Terminals (+ and -)	5/16"-24 Nut	50-60
Cable Ground Bolt to Motor Frame	5/16"-18 x 1/2" Long	175-185
Valve Cartridges	7/8" Head Hex	115-125
Coil Nuts	3/4" Head Hex Jam Nut	48-50
Cartridge/Coil Cover Screws	#8-32 x 1/2" Long	15-20
SAE O-Ring Plugs	1/8" or 5/32" Internal Hex	55-65

Lift Ram Packing Nut Adjustment – Tighten packing nut not more than 1/4 turn after you feel packing nut contact packing. Over-tightening affects ram operation and packing life.

Installing SAE O-Ring Fittings

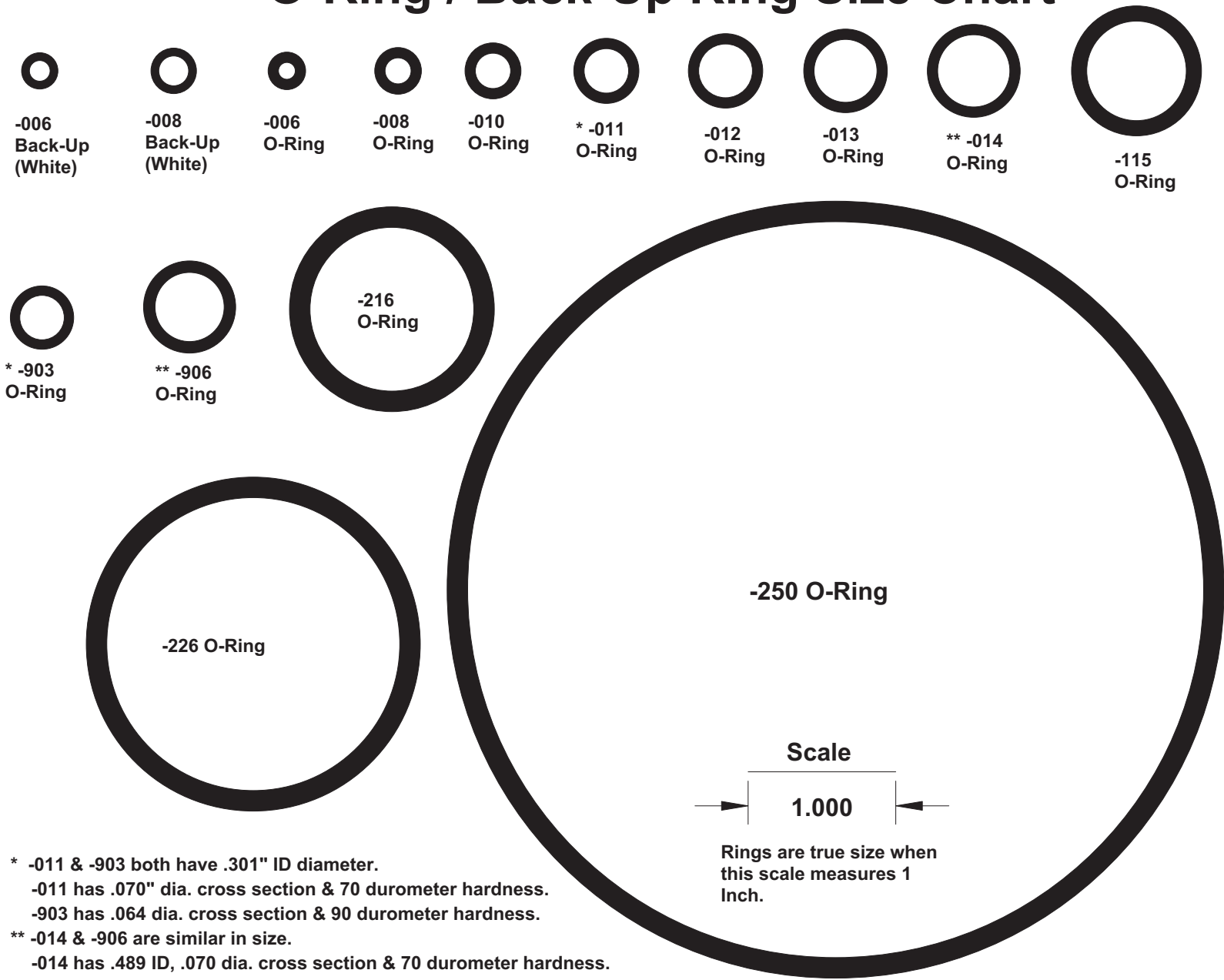
1. Turn jam nut on fitting as far back as possible.
2. Lubricate O-Ring with clean hydraulic fluid.
3. Screw fitting into port by hand until the washer contacts port face and shoulder of the jam nut threads.
4. Unscrew fitting to proper position — no more than one full turn.
5. Using two wrenches, hold fitting body in position and tighten jam nut until the washer again contacts port face, then tighten an additional 1/8 to 1/4 turn to lock fitting in place. Final torque on the jam nut should be approximately 20 ft-lbs.

Installing NPTF Pipe Thread Fittings and Hoses

1. Screw fitting into female pipe port to the finger tight position.
2. Wrench tighten fitting to the appropriate turns from finger tight (TFFT) shown in chart stopping at the position where the joining tube can be attached. Avoid over tightening and then backing out the fitting to make the connection as this will likely result in a leaking or weeping connection.

Pipe Thread Size NPTF	TFFT
1/8-27	2.0-2.5
1/4-18	1.5-2.0
3/8-18	2.0-2.5
1/2-14	2.0-2.5
3/4-14 and Larger	1.5-2.0

O-Ring / Back-Up Ring Size Chart



* -011 & -903 both have .301" ID diameter.
 -011 has .070" dia. cross section & 70 durometer hardness.
 -903 has .064 dia. cross section & 90 durometer hardness.

** -014 & -906 are similar in size.
 -014 has .489 ID, .070 dia. cross section & 70 durometer hardness.
 -906 has .468 ID, .078 dia. cross section & 90 durometer hardness.

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