

TORQUE CHART FOR HYDRAULIC UNITS

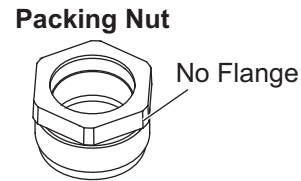
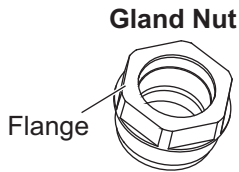
(Straight Blades and V-Plows with 6-valve hydraulic unit only)

HYDRAULIC UNIT COMPONENTS

Straight Blades and V-Plows		
Location	Fastener Size	Torque (in-lb)
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"-18 or 5/16"-24 Nut	50–60
Motor to Manifold Cap Screws	1/4"-20 x 6-1/4" Long	55–65
Reservoir Screws	#10-24 x 5/16" Long	30–35
Valve Cartridges	7/8" Head Hex	120–144
Coil Nuts	3/4" Head Hex Jam Nut	40–60
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

V-Plows Only		
Location	Fastener Size	Torque (in-lb)
Check Valves	11/16" Hex Head	120–144
Secondary to Primary Manifolds	1/4"-20 x 2-1/2" Long	105–115

RAM NUTS



Gland Nut Rams (Hex Flange Head on Nut)

Piston Locknut to Rod (Double-Acting Rams Only)

2" Rams: 100–120 ft-lb
1-1/2" Rams: 35–40 ft-lb

Gland Nut

1" Single-Acting & 1-1/2" Double-Acting Rams:
120–150 ft-lb

All Other Rams: 150–180 ft-lb

Alternate Method: Thread nut into coupling. Insert a feeler gauge (0.015" for 1" single-acting and 1-1/2" double acting rams, 0.012" for all other rams) between the front surface of the cylinder tube face and the hex of the gland nut. Tighten the gland nut until it is snug against the feeler gauge. Remove the feeler gauge, and tighten the gland nut an additional **1/4 turn**. This adjustment procedure will provide the torque listed above. Undertightening may result in nut loosening during snowplow operation.

Packing Nut Rams (Hex Head on Nut)

Lift Ram Packing Nut (Single-Acting Rams Only)

Tighten packing nut not more than 1/4 turn after you feel packing nut contact packing. Overtightening affects ram operation and packing life.

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HYDRAULIC HOSES AND FITTINGS

NOTE: Overtightening JIC hose fitting ends will result in a fractured fitting.

DO NOT use any type of sealant or tape on the fittings or hoses. This could damage product. Always use two wrenches to ensure proper tightening of fittings and hoses.

SAE O-Ring Style

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-lb.

Hydraulic Hoses

1. Screw flare nut onto fitting flare and hand tighten.
2. Align hose so there are no twists or sharp bends.
3. Using two wrenches, hold the hose in position and tighten flare nut 1/8 to 1/4 turn beyond hand tight. Final torque on the flare nut should be approximately 20 ft-lb.

NPTF Pipe Thread Style

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 overtightening 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 & Larger	1.5–2.0

The company reserves the right under its product improvement policy to change construction or design details and furnish equipment when so altered without reference to illustrations or specifications used.

Printed in U.S.A.