

Mammoth 850 Critical Torque Chart

	Bolts size/grade	Torque	Tolerance	Notes
Engine Crankshaft - PTO clutch	7/16-20 X 2" Gr8	70 ft-lbs	-10/+15%	
Engine Mounting Bolts	3/8-16 x 1.25" GR5	24-26 ft-lbs	see range	Start by hand for first 3-4 threads
Pump Pulley Bolt	5/16-24 x 1.25" GR5	18 ft-lbs	-10/+15%	
Pump Mounting Bolts	1/2-13 x 1.50" GR 5	70 ft-lbs	-10/+15%	
Wheel mounting nuts	1/2-13	75 ft-lbs	-10/+15%	
Wheel motor bolts	1/2-13 x 2.50" GR 8	65 ft-lbs	-10/+15%	
ORFS fittings @ pump (hose end)	-8 ORFS 13/16-16	40 ft-lbs	+10%/-0	Parker spec
ORFS fittings @ wheel motors (hose end)	-8 ORFS 13/16-16	40 ft-lbs	+10%/-0	Parker spec
Straight Thread Port - Adaptor fittings(wheel motor)	7/8-14	100 ft-lbs	+10%/-0	Parker spec
Straight Thread Port - Adaptor fittings(pump)	3/4-16	60 ft-lbs	+10%/-0	Parker spec
Straight Thread Port - Swivel Elbow (5/16" hose barb-pump)	7/16-20	180 in-lbs	+10%/-0	Parker spec
Muffler mounting nuts	M8-1.25	17 ft-lbs	-10/+15%	
Muffler bracket bolts	M8-1.25 x 25	17 ft-lbs	-10/+15%	
Gearbox brackets	1/2-13 x 1.25	52 ft-lbs	-10/+15%	75% of GR 5 value
Set screws - PTO shaft coupling	3/8-16	317 in-lbs	-10/+15%	
Set screws - PTO shaft flange bearing	1/4 - 28	65-85 in-lbs	see range	

Standard Torque Chart

This chart is for zinc plated non lubricated
and non locking fasteners only.

C o r s e T h r e a d	Release Date	6/7/16	Grade 2			Grade 5			Grade 8		
	Size	Thread per inch	Tightening Torque (ft-lbs) k=.2	Low end of Torque Tolerance	High end of Torque Tolerance	Tightening Torque (ft-lbs) k=.2	Low end of Torque Tolerance	High end of Torque Tolerance	Tightening Torque (ft-lbs) k=.2	Low end of Torque Tolerance	High end of Torque Tolerance
r e a d	1/4	20	5.1	4.4	6.2	7.9	6.8	9.6	11.1	9.5	13.5
	5/16	18	10.5	9.0	12.8	16.2	13.9	19.7	22.9	19.7	27.8
	3/8	16	18.6	16.0	22.6	28.8	24.7	35.0	40.7	34.9	49.4
	7/16	14	29.8	25.6	36.2	46.1	39.5	56.0	65.1	55.8	79.1
	1/2	13	45.5	39.0	55.3	70.4	60.3	85.4	99.3	85.1	120.6
	9/16	12	65.7	56.3	79.8	101.5	87.0	123.3	143.3	122.9	174.0
	5/8	11	90.6	77.7	110.1	140.1	120.1	170.1	197.8	169.5	240.1
	3/4	10	160.7	137.8	195.2	248.4	212.9	319.4	350.7	300.6	450.9
	7/8	9	155.6	133.4	189.0	400.9	343.6	515.4	566.0	485.1	727.7
1	8	233.3	200.0	283.3	601.0	515.1	772.7	848.4	727.2	1090.8	
F i n e T h r e a d	1/4	28	5.8	5.0	7.1	9.0	7.7	11.0	12.7	10.9	15.5
	5/16	24	11.6	10.0	14.1	18.0	15.4	21.8	25.4	21.8	30.8
	3/8	24	21.1	18.1	25.7	32.7	28.0	39.6	46.1	39.5	56.0
	7/16	20	33.3	28.6	40.5	51.5	44.1	62.5	72.7	62.3	88.3
	1/2	20	51.3	44.0	62.3	79.3	68.0	96.3	111.9	95.9	135.9
	9/16	18	73.3	62.8	89.0	113.2	97.1	137.5	159.9	137.0	194.1
	5/8	18	102.7	88.0	124.7	158.7	136.0	192.7	224.0	192.0	272.0
	3/4	16	179.5	153.9	218.0	277.4	237.8	356.7	391.7	335.7	503.6
	7/8	14	171.5	147.0	208.2	441.7	378.6	567.9	623.5	534.5	801.7
1	14	255.3	218.8	310.0	657.5	563.6	845.3	928.2	795.6	1193.4	

Parker HP2 Pump Tool and Torque List

Housing Bolts (8)

282-342 lb-in (23.5-28.5 lb-ft), 31.9-38.6 N-m

Tool Needed: 13mm Socket Wrench

Check Valve Plug / Shock Valve Cap (4)

252-288 lb-in (21-24 lb-ft), 28.4-32.5 N-m

Tool Needed: 5/16" Allen Wrench or Allen Socket

Filter

110-140 lb-in (9.2-11.7 lb-ft), 12.4-15.8 N-m

Tool Needed: 5/8" Socket Wrench

Expansion Tank Adapter Assembly

100-120 lb-in (8.3-10 lb-ft), 11.3-13.6 N-m

Tool Needed: 41mm Combination Wrench or Crows Foot Socket

Charge Pump Cover Bolts (2)

155-190 lb-in (12.9-15.8 lb-ft), 17.5-21.5 N-m

Tool Needed: 13mm Socket Wrench

RTN Housing Bolt (5/16"-24 Socket Head Cap Screw) (2)

264-288 lb-in (22-24 lb ft), 29.8-32.5 N-m

Tool Needed: 1/4" Allen Wrench or Allen Socket

RTN Trunnion Arm Bolt (1/4"-20) (2)

150-180 lb-in (12.5-15 lb-ft), 16.9-20.3 N-m

Tool Needed: 3/16" Allen Wrench or Allen Socket

Drain Plug

360-480 lb-in (30-40 lb-ft), 40.7-54.2 N-m

Tool Needed: 5/16" Allen Wrench or Allen Socket

Bypass Valve (2)

80-100 lb-in (6.7-8.3 lb-ft), 9-11.3 n-m

Tool Needed: 5/8" Socket Wrench

Fan Nut

90-110 lb-in (7.5-9 lb-ft), 10.2-12.4 N-m

Tool Needed: 9/16" Socket Wrench

Other Tools Needed

- Snap Ring Pliers (Input Shaft Snap Ring)
- Dead Blow Hammer or Rubber Mallet
- Craftsman 42973 Cold Chisel or Equivalent
- 9/16" Combination Wrench (For Holding/Turning Input Shaft and Removing Fan Spacer)
- Fixture For Holding Tandem Pump Vertically (SAE-B Flange)
- Small Flat Blade Screwdriver (For Removing Trunnion Arm Seal Retaining Ring)
- Hook Type Spring Removal Tool