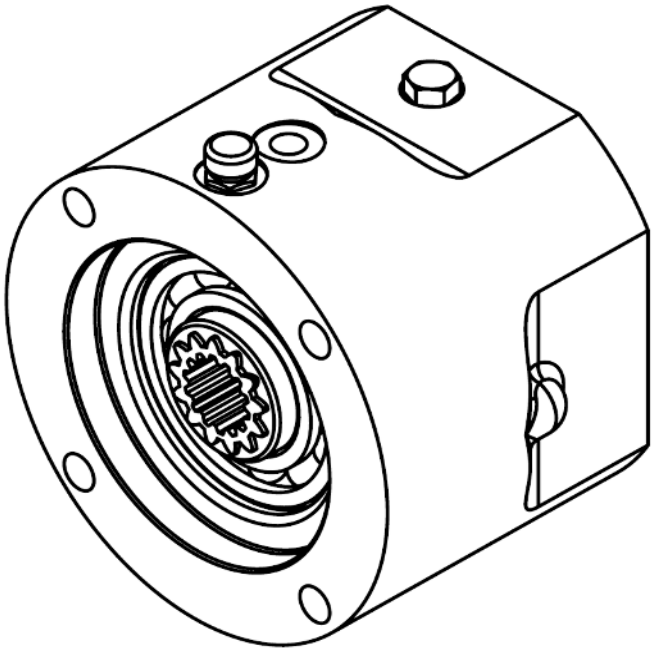
Oil Actuated Head Clutch
Installation and Maintenance Manual



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1.0 Introduction

The WPT Power Oil Actuated Head Clutch is a multiple disc oil lubricated clutch designed to work with the WPT Power Pump Drive unit. This clutch allows an attached hydraulic pump to be disconnected when not needed and still allows power transmission through the main PTO drive.

When ordering parts, use the part number from the Bill of Materials supplied with this unit. Please include the part number and the serial number from the unit when ordering parts. Your WPT Distributor can provide a copy of the Bill of Materials if the one provided should become lost.

When performing installation and maintenance functions, refer to the drawings in this manual. The references on the drawing in this manual DO NOT correspond to the references on the assembly drawing and Bill of Materials. Do not use the item numbers from the drawing in this manual for ordering parts.

Throughout the manual there are several HAZARD WARNINGS that must be read and followed to prevent possible loss of equipment and/or personal injury and/or loss of life. The three warning words are “DANGER”, “WARNING” and “CAUTION”. They are used to indicate the severity of the hazard and are preceded by a safety alert symbol.

⚠ DANGER
Denotes the most serious injury hazard and is used when serious injury or death WILL result from misuse or failure to follow the specific instructions sit forth in this manual.

⚠ WARNING
Denotes when serious injury or death MAY result from misuse or failure to follow the specific instructions set forth in this manual.

⚠ CAUTION
Denotes when injury, product or equipment damage may result from the misuse or failure to follow the specific instructions set forth in this manual.

2.0 General Warnings

Before assembling and operating the product, carefully read all the safety and operating instructions in this manual.

Always follow all the instructions and make sure that all operators standing by the machinery are wearing protective equipment necessary for the job type and application being performed.

It is the responsibility of the personnel involved in the installation, operation and maintenance of this equipment to fully understand the warnings and dangers that are listed in this manual and are aware of the correct procedures to safely install, operate and maintain this equipment.

3.0 Installation

The WPT Power Head Clutch is provided assembled and ready to install on a SAE C type pump pad. The clutch is supplied without oil.

3.1 Installation on WPT Pump Drive Model WPD-00

3.1.1 Install the head clutch on the head of the pump drive and rotate the clutch and align it to the corresponding threaded holes of the head, please refer to Figure 1 and 2 below.

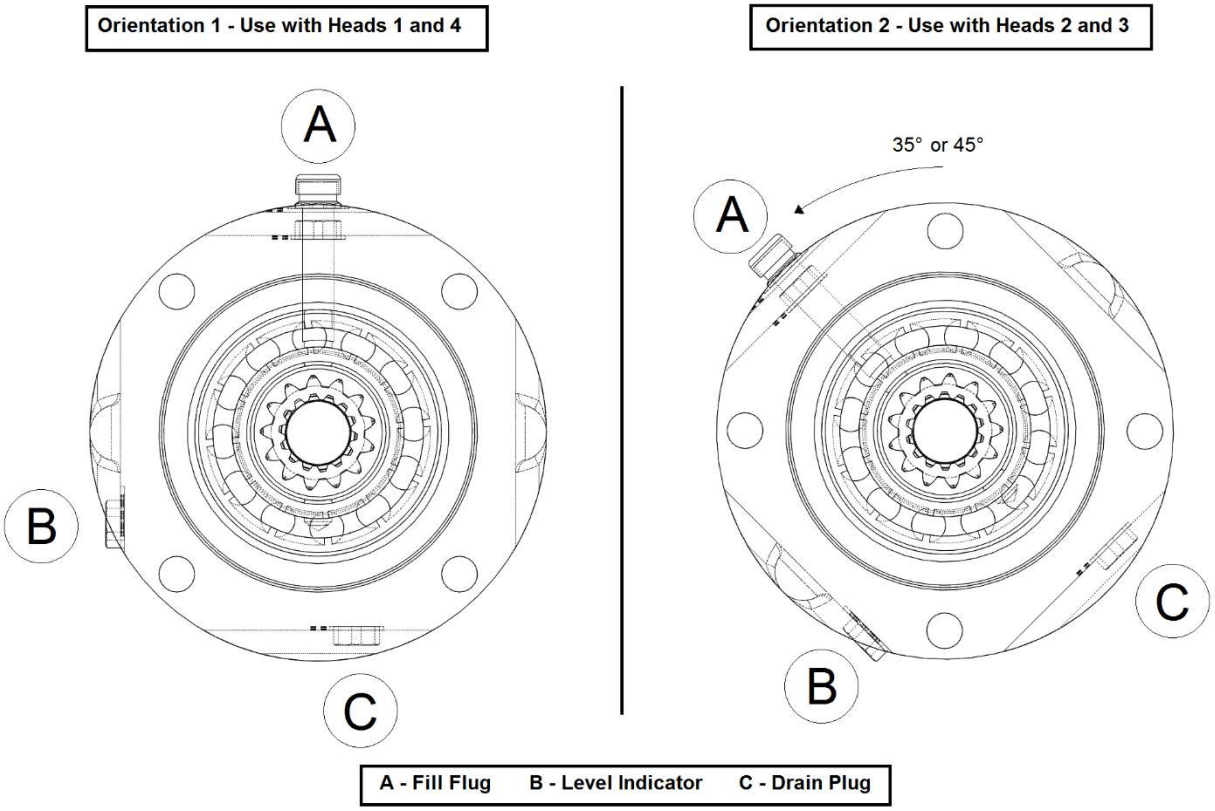


Figure 1: Head clutch orientation for the models WPD-00, 01, and 02. Use Orientation 2 for WPD-00. Use Orientation 1 & 2 for WPD-01 and WPD-02.

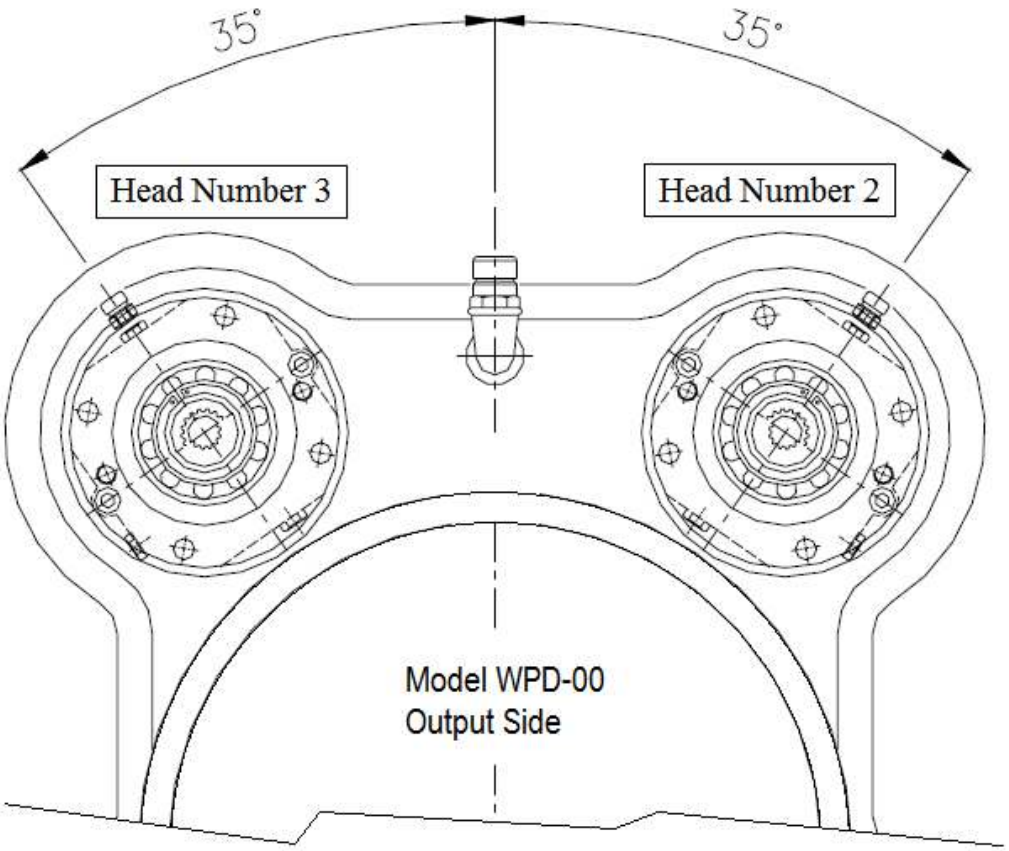


Figure 2: Final orientation of the head clutch on the WPT Pump Drive model WPD-00.

3.1.2 Secure the WPT Head Clutch on the WPD-00 with a SAE C or SAE B pump using fasteners and lock washer in all the through holes. Torque to the specifications in the back of the manual.

3.2 Installation on WPT Pump Drive Models WPD-01 and WPD-02

3.2.1 Orientation of the WPT Head Clutch on the model WPD-01 or WPD-02 depends on the which head the clutch is installed on.

3.2.2 Center the clutch on the head of the Pump Drive model WPD-01 or WPD-02 and refer to Figures 1 and 3 for proper orientation of the clutch on the head.

3.2.3 Secure the WPT Head Clutch on the WPD-01 or WPD-02 with a SAE C or SAE B pump using fasteners and lock washer in all the through holes.

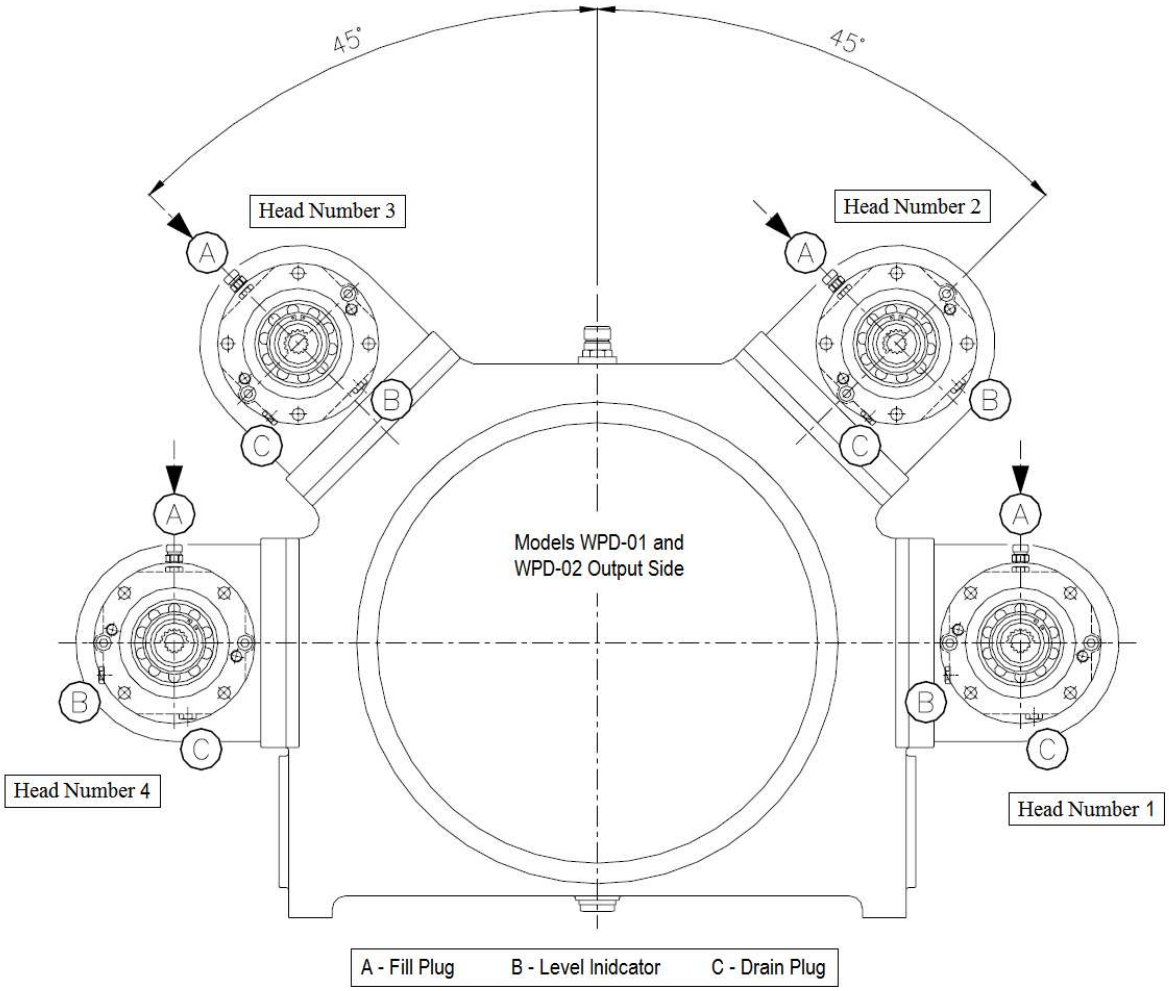


Figure 3: Proper orientation of the WPT Head Clutch on the WPT Pump Drive models WPD-01 and WPD-02.

3.3 Filling the Clutch with Lubrication Oil

The clutch is supplied without oil. Fill the clutch with lubrication oil by removing the Fill Plug (A), see Figure 1 for location of fill port on the clutch. Please refer to Approved Oils section for a list of approved lubricants. The approximate oil capacity for the clutch is 3.4 fluid ounces (100 mL).

⚠ Caution

Do not overfill the clutch. Excess oil level will cause overheating and foaming.

3.4 Breaking-in the Head Clutch

Follow a break-in cycle of 15 minutes with the engine running at idle speed to ensure correct lubrication of internal components. Check clutch to ensure that no oil leaks are present.

3.5 Approved Oils for Lubrication and Actuation

Lubrication and actuation oil for the clutch discs should be chosen from the table below. Using oils not listed in this table may result in premature wear or damage to the clutch. All oils listed are compatible with Viton seals. Please contact WPT Power with any questions regarding oil selection.

Approved Oil for Lubrication and Operation	
Brand	Type
BP	Energol HLP32
Mobil	DTE 24
Shell	Tellus 32

3.6 Hydraulic Actuation Circuit Setup

WPT Power does not provide a hydraulic actuation system for the WPT Power Head Clutch. It is the responsibility of the customer to furnish an adequate engagement system. Please refer to the Figure 4 below for a typical engagement system.

⚠ Caution

Maximum pressure for the clutch is 232 psi. Exceeding maximum pressure will result in premature wear and may result in premature failure of the unit.

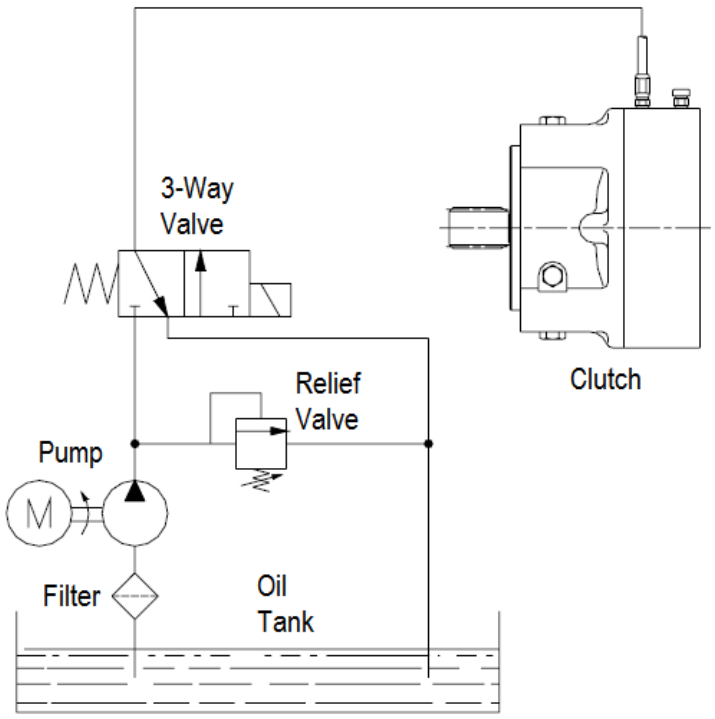


Figure 4: Typical hydraulic or air circuit for actuation of the WPT Power Head Clutch.

3.7 Heavy Duty Use

If the WPT Head Clutch will see sustained speeds of 1800 rpm or greater, or if the temperature of the unit exceeds 194 F, it is recommended to cool and lubricate the clutch with a dedicated system. Refer to Figure 5 for a typical dedicated cooling and lubrication system.

WPT Power can provide a dedicated cooling system for the head clutch. Please contact WPT Power Customer Service department for more information on the cooling kit.

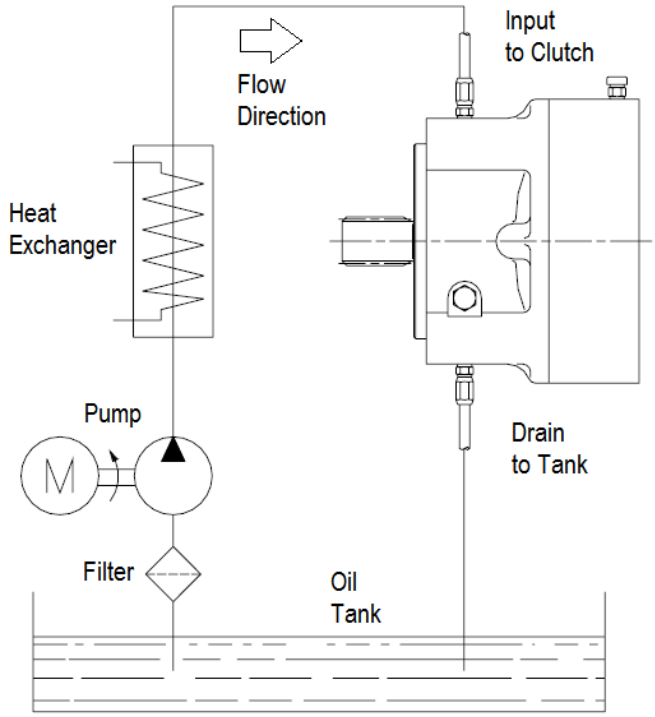


Figure 5: Typical dedicated cooling and lubrication system.

4.0 Maintenance

No adjustment is needed to the WPT Head Clutch. The piston actuated design is self-compensating for wear.

Initial oil replacement is recommended after the first 300 hours of operation. Replace oil every 1000 working hours or six-month period, whichever comes first.

5.0 Specifications

Part Number	WP3-01-002 or WP3-01-004
Weight (without oil)	36 lb
Maximum Clutch Pressure	232 psi
Actuation Medium	Hydraulic or Pneumatic
Maximum Speed (without cooler)	1800 rpm
Maximum Speed (with cooler)	2100 rpm

5.1 Operating Pressure and Life Expectancy

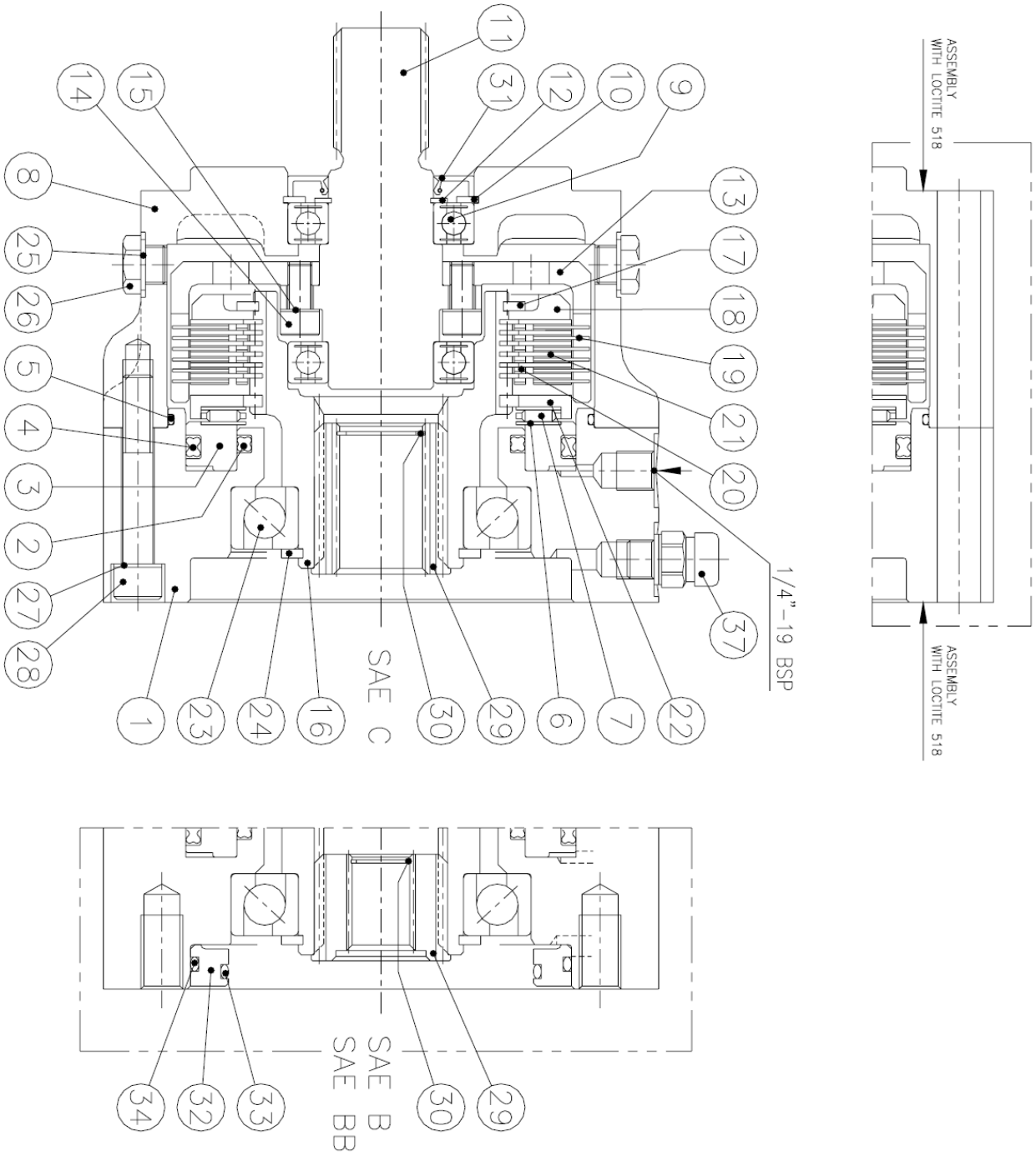
The output torque is linear with clutch supply pressure. Please use the chart below to select the proper torque and pressure for the application. For questions, please contact the WPT Power Applications Department.

Pressure [psi]	115	145	175	200	230
Max Torque [lbf-ft]	196	245	294	343	392
Life (1800 rpm) [hrs]					
Life (1800 rpm) [hrs]					

⚠ Caution

Operating the clutch at higher pressure than is needed for the application will result in unnecessary wear and reduced life expectancy of the clutch. Contact WPT Power with any questions.

6.0 Assembly Drawing & Parts List



Item #	Description	Item #	Description
1	Cylinder	19	External Plate - F.D.
2	Quad-Ring I.D.	20	Plate Spring - Wave
3	Piston	21	Internal Plate – C.P.
4	Quad-Ring O.D.	22	Pressure Plate
5	O-Ring - Housing	23	Bearing
6	Thrust Plate	24	Snap Ring
7	Axial Needle Roller Bearing	25	Gasket
8	Flange - Housing	26	Plug
9	Bearing – Input Shaft	27	Washer
10	Snap Ring O.D.	28	Screw - SHCS
11	Shaft - Input	29	Splined Sleeve
12	Snap Ring I.D.	30	Snap Ring
13	Bell - Housing	31	Seal
14	Screw - SHCS	32	Adapter Ring
15	Washer	33	O-Ring
16	Splined Hub - Output	34	O-Ring
17	Snap Ring – Back Plate	37	Breather
18	Back Plate		

7.0 Bolt Torque Specifications

The following chart applies to ISO metric screws with coarse pitch grades 8.8, 10.9, and 12.9 with clean surfaces.

Bolt Size [mm]	Pitch [mm]	Bolt Torque lbf-ft [Nm]		
		8.8	10.9	12.9
4	0.7	2 [3.1]	3 [4.3]	4 [5.2]
5	0.8	4 [6]	6 [8.5]	7 [10.1]
6	1	8 [10.4]	11 [14.6]	13 [17.5]
7	1	12 [15.7]	16 [22]	19 [26.4]
8	1.25	18 [24.6]	26 [34.7]	31 [41.6]
10	1.5	37 [50.1]	52 [70.5]	62 [84.6]
12	1.75	63 [84.8]	88 [119]	105 [143]
14	2	100 [135]	140 [190]	168 [228]
16	2	151 [205]	212 [288]	255 [346]
18	2.5	209 [283]	294 [398]	353 [478]
20	2.5	295 [400]	415 [562]	497 [674]
22	2.5	392 [532]	552 [748]	662 [897]
24	3	510 [691]	716 [971]	863 [1170]
27	3	745 [1010]	1047 [1420]	1254 [1700]
30	3.5	1010 [1370]	1423 [1930]	1704 [2310]