



Patent Pending

Logan Power Take-Off Direct Drive Clutches

Hydraulic / Pneumatic

- Industrial
- Marine
- On-Highway
- Construction
- Agriculture
- Mining
- Rail
- Oil & Gas
- Lawn & Turf Equipment



 **Logan Clutch Corporation**[®]
manufacturers of clutches and brake products

Family owned and operated since 1975, Logan offers a complete line of fluid / air actuated multiple disc clutches, brakes, PTO Clutches and clutch discs for a variety of wet and dry clutch and brake applications.

Markets include: Machine Tool, Industrial, Marine, Irrigation, Rail, Oil Field, and Off-Highway industries.

Applications include: Pump Drives, Trenchers, Tunnel Boring and Snow Removal Equipment, Single and Multi-Speed Transmissions, Marine Transmissions, Work Boats, Escort Vessels, Marine Z-drives, Machine Tools, Screw Machines, Conventional and High Performance friction and steel clutch discs.

Logan Sales, Engineering and Customer service personnel are available to answer questions regarding catalog specs, parts and service details, and inquiries regarding your specific design requirements. We certainly thank you for your interest, and look forward to being of further service.




Simple, Efficient, High-Torque Design

Logan PTO's are used in a variety of Industrial, On-Highway, Marine, Construction, Agriculture, Mining, Oil Field, and Rail applications – and are designed to mount between the power take-off of the engine and auxiliary attachment, i.e. single or multi-station pump drive.

PTO Clutch Applications

- Single and Multi-Station Pumps
- Mobile or Stationary Auxiliary Drives
- Connect / Disconnect Direct Drives
- Winches, Reels, Hoists and more

Features

- Heavy-duty, self-contained corrosion resistant design requires no external lubrication
- Air or Hydraulically actuated; self-adjusting, multiple disc pack design
- Smooth engagement / disengagement
- Simplified, compact, high torque design
- Remote activation from a control panel or operator's station
- Optional manual engagement screws in case power flow is disrupted
- Optional shaft adapters for Dana style flanges
- American Bureau of Shipping (ABS) type approval 
- Oil bath or flow through cooling

Advantages

- Reduces fuel consumption and CO2 Emissions by engaging drives and pumps only when required
- Quicker Starts: Lowers horsepower draw and cranking power required during machine start-up by disconnecting the hydraulic system from the engine
- Reduced ambient noise through intermittent use of pumps and equipment
- Cooler running hydraulic systems: Heat is generated whenever oil dumps from high to low pressure without producing work. Disconnecting the PTO Clutch reduces the destructive effects of heat – lowering maintenance costs and hydraulic oil requirements
- Extends the life of drive systems and components



Standard units available in B, B-B, C, C-C, D, F and bore with key



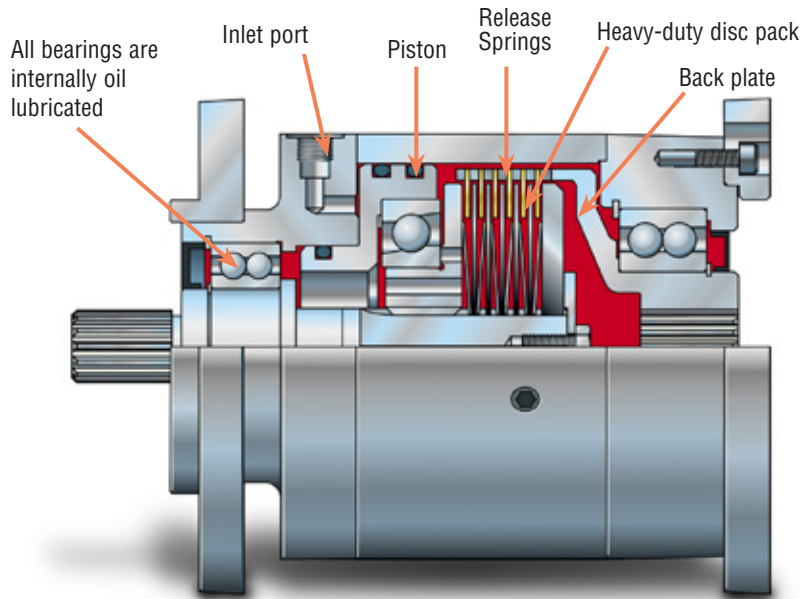
Custom spline, bore and keyways available



Modified standards available for specific design requirements

Logan Power Take-Off (PTO) Clutches - How They Work

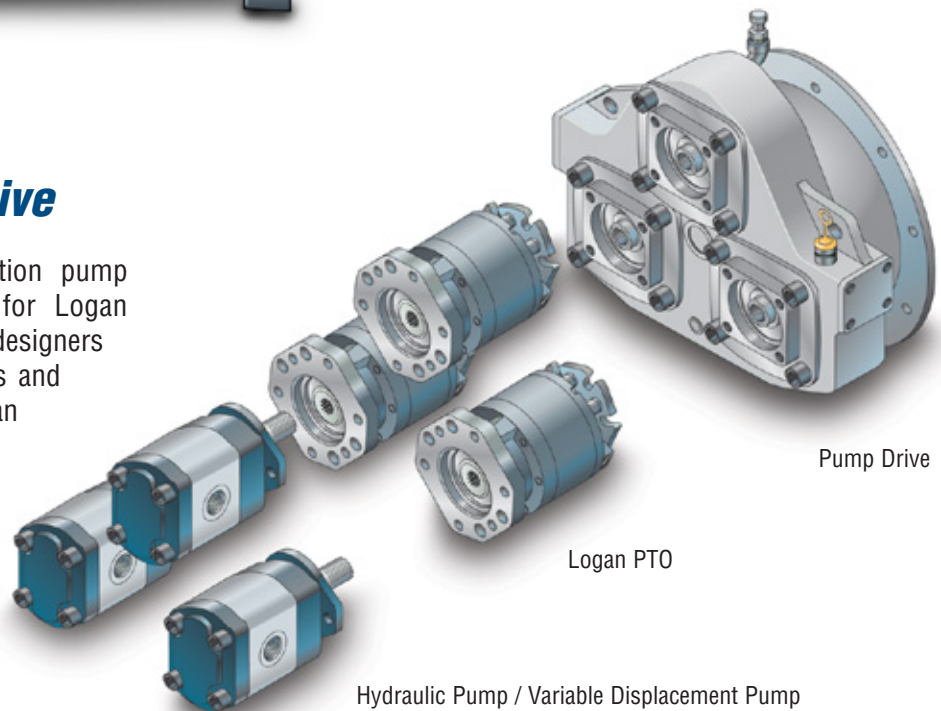
Logan PTO clutches are Hydraulically or Pneumatically actuated. Pressurizing the cylinder, forces the piston to clamp and lock the friction and separator discs. When pressure is removed, release springs separate the separator discs and maintain a running clearance between separator and friction discs.



- Heavy duty, self-adjusting, disc pack
- Rugged, lightweight corrosion-resistant enclosure does not require external shielding
- High-alloy shafts for maximum strength
- Modified standards available for specific design requirements
- Optional manual engagement screws in case power flow is disrupted

Typical Application: Multi-Station Pump Drive

Applications such as this multi-station pump drive with bell housing are ideal for Logan PTO Clutches. OEM and aftermarket designers can take advantage of energy savings and component longevity by utilizing Logan PTOs to drive auxiliary attachments only when required.



A fixed orifice pressure regulating valve should be specified in the system to prevent over-pressurization of any Logan Clutch PTO. The Logan warranty does not cover clutch failure due to over-pressurization. The highest pressure values in the torque tables are maximum ratings for Logan Clutches.

Torsional Damping Devices for Logan Products: Torsional compatibility tests rest solely with the assembler and user. Logan accepts no liability for noise, vibration, and premature failure of Logan PTO's or damage to clutch hubs and splines caused by incorrectly specified torsional damping devices, or engine vibration. It is the buyer's responsibility to specify this option, which can result in additional cost and a possible increase in installation length. Logan can accept no liability for personal injury, loss of life, or damage or loss of property due to the failure of the buyer to improperly apply Logan Products.

All rotating components present a potentially hazardous condition and should be guarded in accordance with OSHA requirements and other applicable laws, regulations and industrial standards.

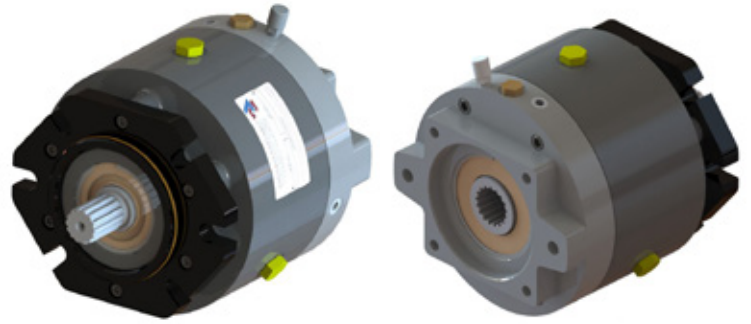
Logan Clutch Corporation reserves the right to modify product specifications and designs without notice and without incurring obligations. Torque values are based upon wet disc packs having full contact between surfaces.



SAE Series PTO – Direct Drive PTO Clutch for in-line shaft or pump pad mounted applications

Features:

- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- Ideal for In-line shaft or pump pad applications
- SAE or ISO Mounting Flanges
- Available in B, C, D, D/E, E and F splines, plus bore and key configurations
- Shaft adapters available for common Dana style flanges



PTO Clutch for in-line shaft or SAE/ISO pad mounted applications

SPF Series PTO – Direct Drive with Flexible Coupling PTO Clutch with integral flexible coupling for torsionally active, In-line applications

Features:

- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- Integral torsional coupling for in-line applications
- Available in B, C, D/E and F spline, plus bore and key configurations



PTO Clutch with integral flexible coupling

FPTO Series PTO – Direct Drive Short Axial Length PTO Clutch with through bolt design for low profile compact applications

Features:

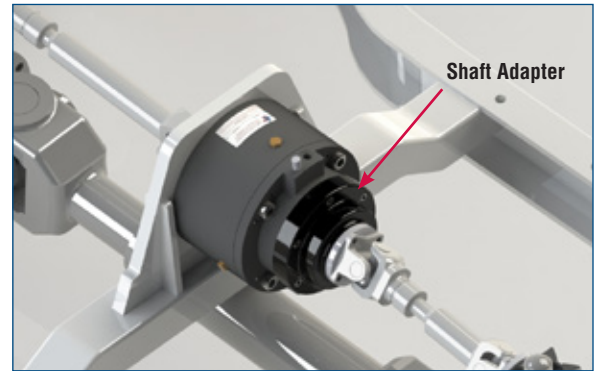
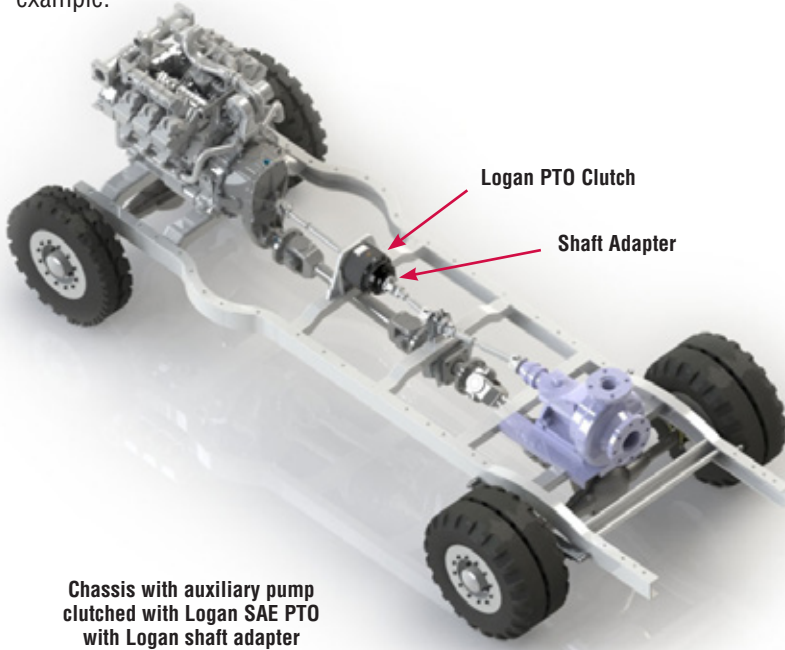
- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- SAE 2-Bolt or 4-bolt B Mount
- SAE 4-bolt C Mount
- 12 & 24 Volt DC Control valve system integrates with existing transmission pressure
- 30 psi./2 bar sealed input housing



PTO Clutch with 2-bolt or 4-bolt mount for low profile, compact applications

Logan PTO Clutches When Used With Shaft Adapter Option

Logan PTO's provide live engine power for auxiliary pump drives - through a separate PTO drive shaft. The Logan direct drive PTO clutch bolts directly to the OEM's Cardan Shaft (using a Logan shaft adapter), providing on-off engagement of auxiliary drives or pumps in this example.



Logan 600 Series with shaft adapter



Shaft adapter options available for 200, 600, 1000 and 1500 Series PTO's



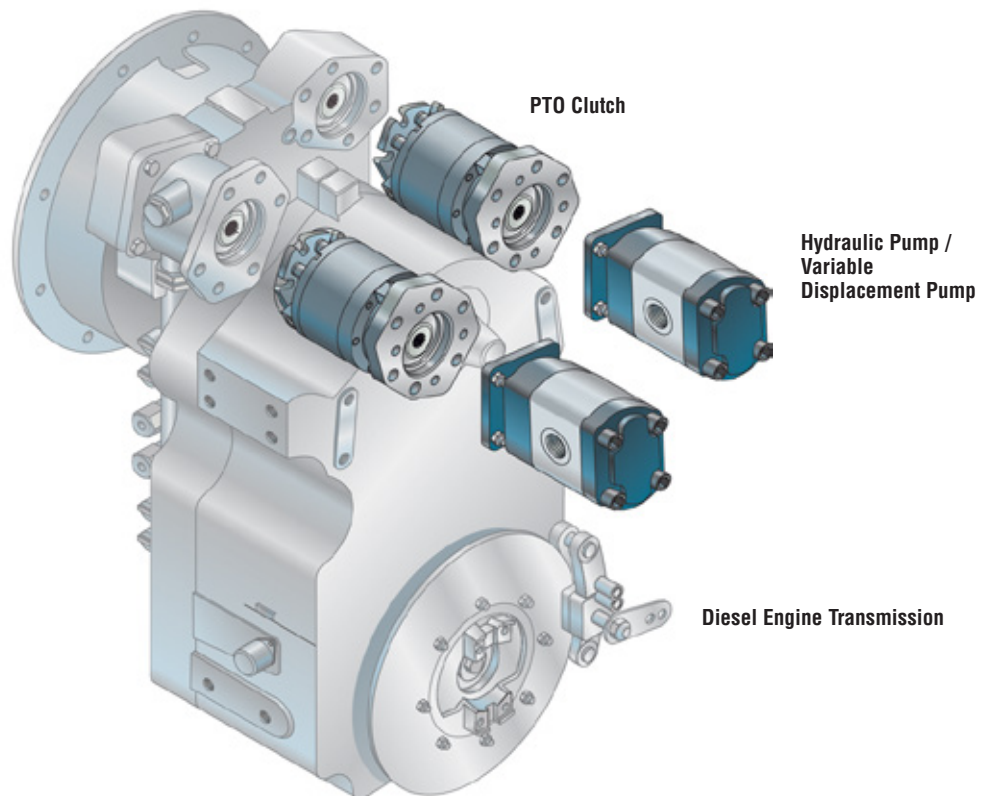
Shaft adapter option (shown left)

Mobile Equipment

Logan PTO's are designed to mount between the power take-off pad of the engine and attachment or pump drive

Logan Advantages:

- PTO is powered directly from the crankshaft, behind the engine's flywheel.
- Does not require extended front frames, modified bumpers, brackets, radiators and drive couplings associated with front PTO's.
- Eliminates exposure of the PTO and pump to front-end collision damage.



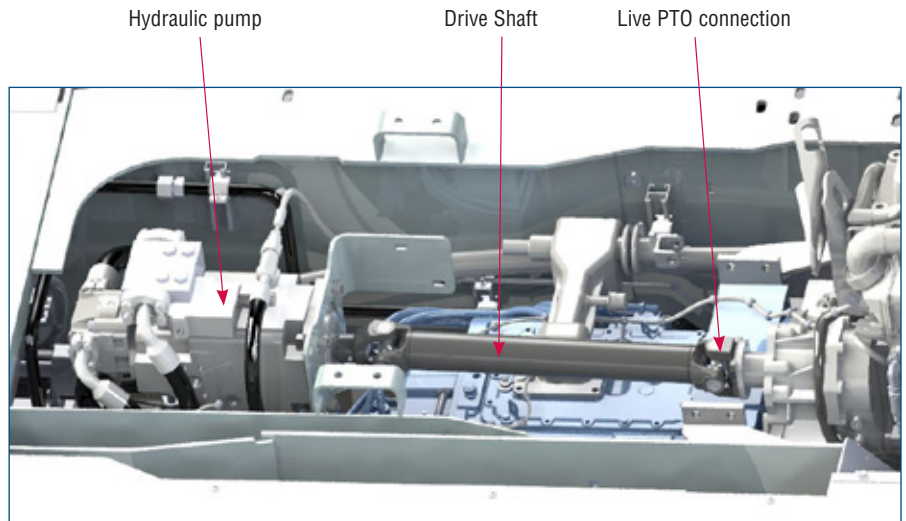


OEM Manufacturer of Construction Equipment Works Together with Logan Application Team

THE CHALLENGE:

OEM contacts Logan to solve system issues which are causing hydraulic pump failure

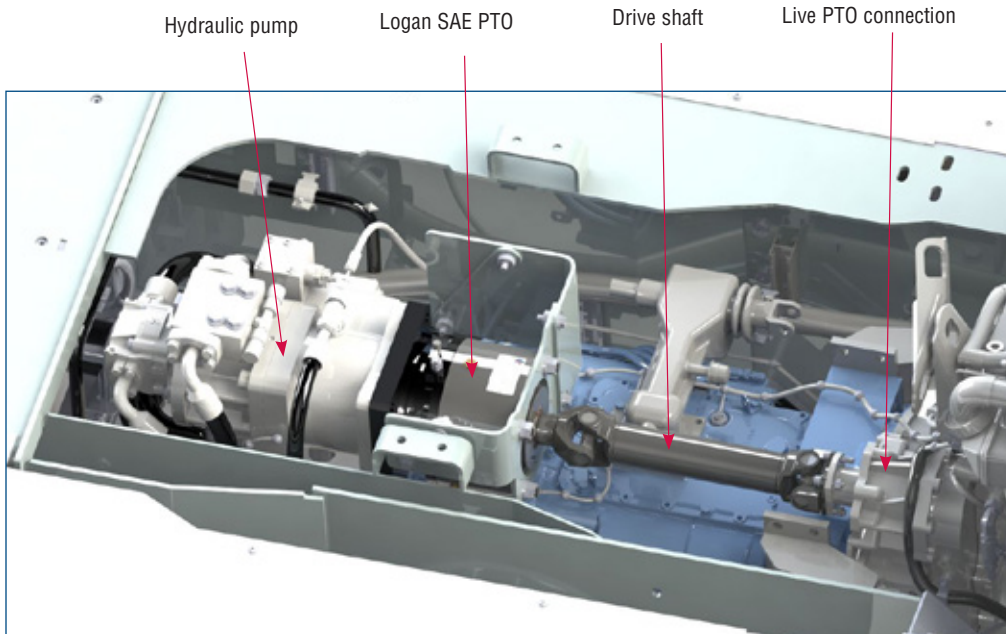
Most OEM manufacturers of mobile equipment use hydraulic piston pumps to control machine movements and attachments. In many cases these hydraulic piston pumps are driven remotely from the engine's auxiliary PTO drive via a slip yoke shaft. Machine Operators must be able to turn these pumps on and off when the vehicle is driven from job site to job site - in order to prevent over speeding the pump when the engine is running faster than the pumps normal hydraulic work speed. There is also the potential for all the pumps to engage at once, which would cause the input torque rating to be above the engine specifications causing hydraulic system and pump failure. In this situation, customers were going beyond the limits of the machine and pump specs – the OEM had to do something quickly -they contacted Logan.



Before: Customer experienced pump over-speeding between job sites, causing system failure, warranty claims and downtime

THE SOLUTION:

Logan adapts off the shelf SAE PTO Clutch to meet specific OEM customer need



After: Logan SAE PTO installed between the hydraulic pump and drive-shaft, enabling connect-disconnect, on demand power to the OEM's piston pump

In most cases the pumps are already defined by the customer, which requires Logan to fit with small envelopes, sandwiching the Logan Clutch in between the pump and engine. After considering all of the options with Logan application engineers, the OEM selected an SAE PTO 1200 Series Clutch. In less than a week, extensive lab and field tests were conducted. Results were positive. The OEM quickly created space to sandwich the Logan Clutch between the driveline and the piston pump – thereby eliminating the possibility of over speeding the pumps. This solution enabled the OEM to keep its customer base happy by eliminating unnecessary machine downtime.

Logan FPTO - PTO for low profile, compact applications

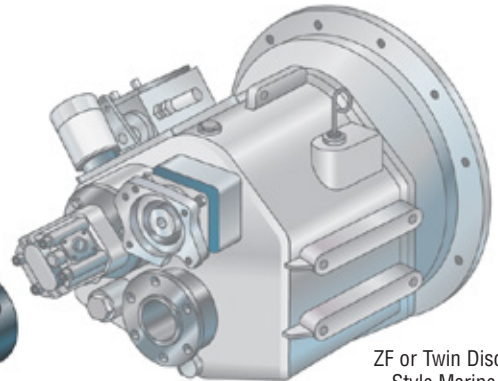
The low profile, compact, Logan PTO design is suitable for workboats fishing boats and pleasure craft.

Features:

- SAE 2 or 4-bolt B mount
- SAE 4-bolt C mount
- 12 or 24 Volt DC control valve system integrates with existing transmission pressure

Advantages:

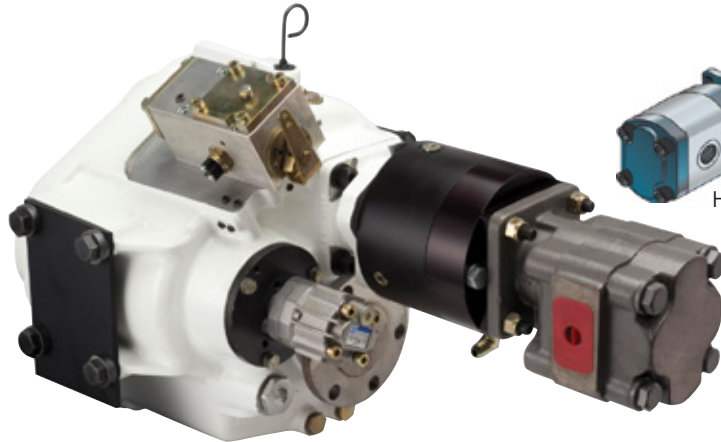
- During Maneuvering – which requires reduction of main engine speed, the Logan PTO is used as a separate power source for bow and stern thrusters.
- Directly connects to a pump drive, which powers winches, reels, hoists, deck pressure washers and alternators.



ZF or Twin Disc®
Style Marine
Transmission

Logan PTO

Hydraulic Pump



View of ZF 280 transmission equipped with a Logan SBB-2000 clutch mounted between the live PTO and 30 gallon per minute pump.



Commercial fishing boat on San Francisco Bay

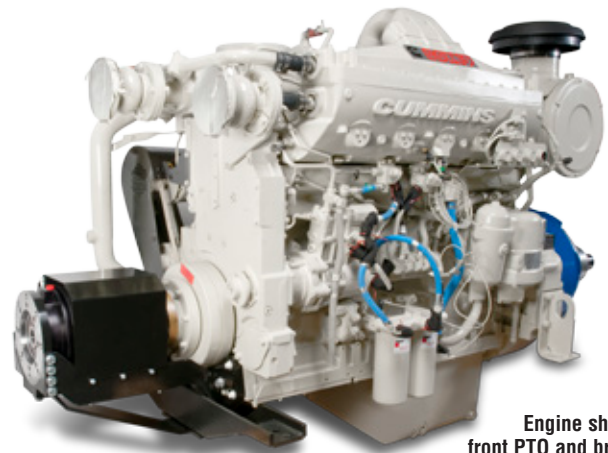
Logan Front Mount PTO's for Marine Diesel Engines and Generator Sets

Features:

- Air or fluid actuated
- Integrated torsional isolation coupling
- Engineered mounting bracket for precise alignment
- Maximum torque, small envelope, higher engagement speeds (up to 1800 RPM with soft start feature)
- Low profile, compact, design is suitable for workboats, fishing boats and pleasure craft
- The Logan PTO aids in the reduction of emissions, fuel costs and wear and tear on auxiliary attachments

Advantages:

- Up to 100% power off the front of your engine, may eliminate the need for additional auxiliary power
- During maneuvering – which requires reduction of main engine speed, the Logan PTO is used as a separate power source for bow and stern thrusters
- The PTO directly connects to a pump drive, which powers winches, reels, hoists, and deck pressure washers
- The PTO can be coupled to an alternator to supply electric power to other power consumers on the vessel



Engine shown with Logan front PTO and bracket assembly



Modern tug boat equipped with twin gensets.



Up to maximum available power off the front of your engine.

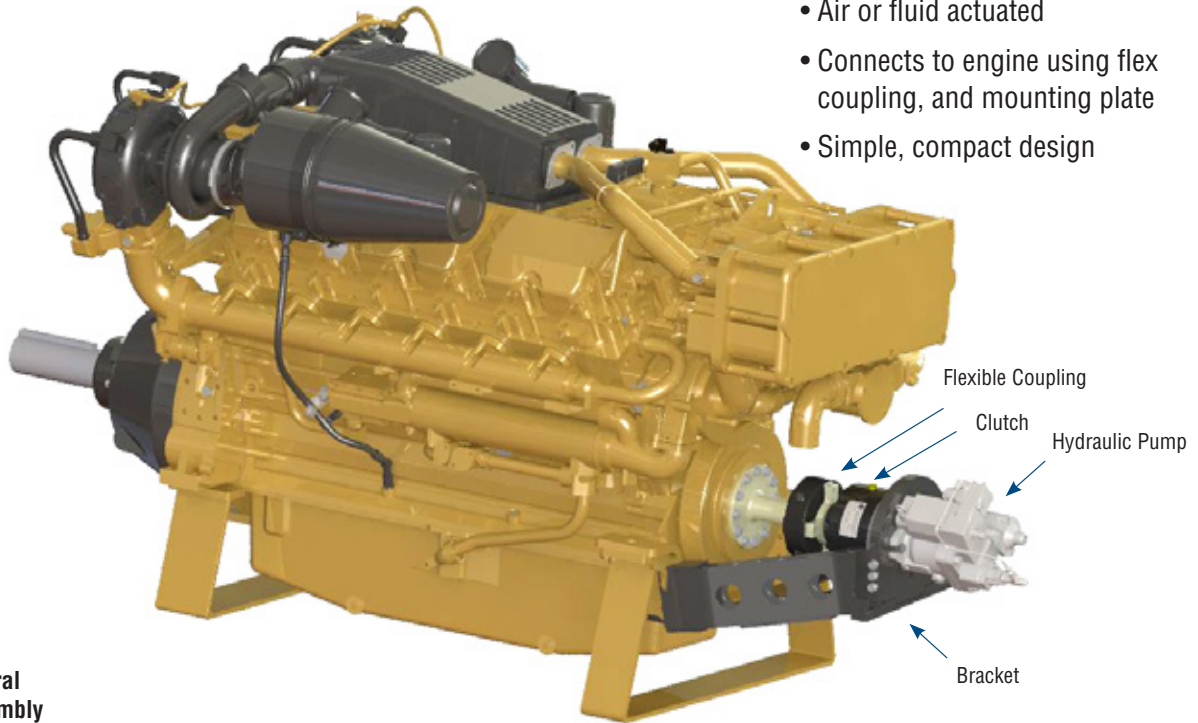
Power Take-Off Mounting Options - Marine Engines



Logan SAE PTO Clutches can be directly mounted to a diesel / gasoline / combustion engine flywheel, using a flexible coupling and mounting plate configuration.



Logan Front Mount PTO with integral flexible coupling and bracket assembly



- Air or fluid actuated
- Connects to engine using flex coupling, and mounting plate
- Simple, compact design

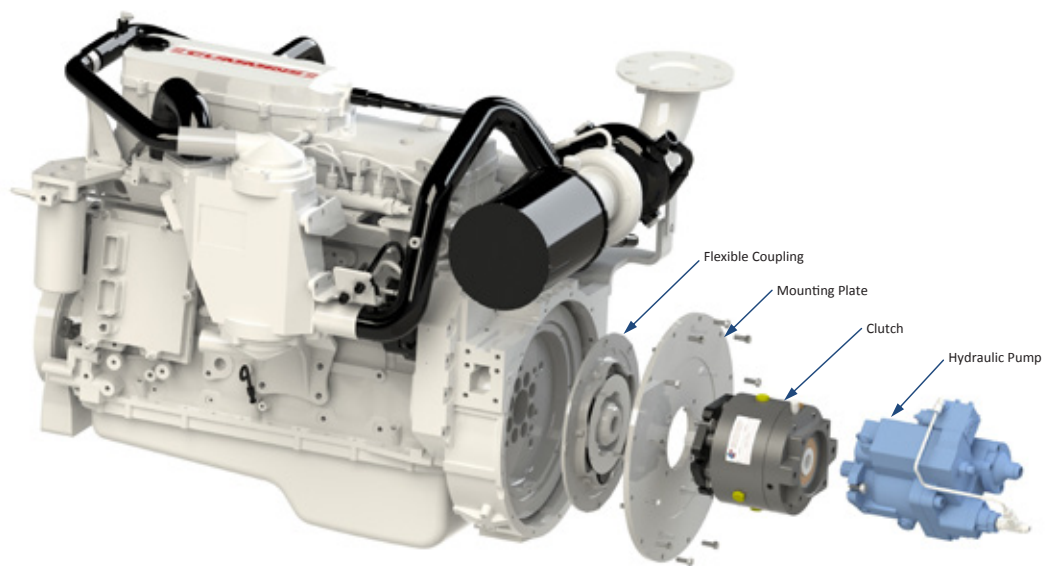
Power Take-Off Mounting Options - Industrial/Mobile Equipment

Logan SAE PTO Clutches can be directly mounted to a diesel / gasoline / combustion engine flywheel, using a flexible coupling and mounting plate configuration. Standard sizes include

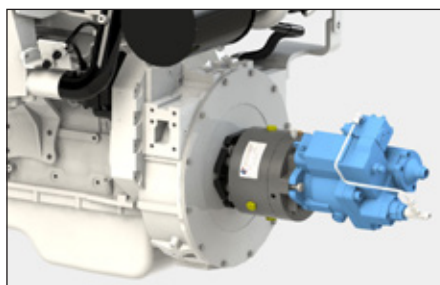
SAE No. 3 to No. 7 SAE Bells with input torque ratings from 159 lb. ft. (216 Nm) to 3000 lb. ft. (4068 Nm). Clutch actuation pressures range from 100 psi. (6,9 bar) to 320 psi. (22,1 bar) for standard models. Applications include: Main and Auxiliary drives and gensets, hydraulic drive systems, blowers, vacuums, fans, winches, reels, and hoists.

Standard Specifications: SAE PTO's can be adapted to No. 3 to No. 7 Size SAE Bells with input torque ratings from 159 lb. ft. (216 Nm) to 3000 lb. ft. (4068 Nm).

Air / Fluid operating pressures range from 100 psi. (6,9 bar) to 320 psi. (22,1 bar) for standard models.



Cummins QSB7 6.7 liter Diesel Engine (up to 282 HP)



Logan SAE PTO with flexible coupling and mounting plate bolts directly to engines flywheel

Simplified Selection Procedure

Determine pump face and shaft requirements. If mounting pad is identical, determine method of actuation, and select clutch from page 11. Specifications.

Clutch Selection Procedures

- I Calculate the torque requirement for the application using one of the following formula

$$\text{Torque (Lb./FT.)} = \frac{\text{HP} \times 5250}{\text{RPM}} \quad \text{or} \quad \text{Tc (Nm.)} = \frac{\text{kW} \times 9550}{\text{RPM}}$$

- II Identify the service factor which best identifies your application from the suggested service factor table.

- III Adjust the torque requirement using the selected service factor.

$$\text{Clutch/Brake Torque Capacity (Tc or Tb)} =$$

$$\frac{\text{Gross Torque Capacity (T)}}{\text{Safety Factor (SF)}}$$

$$T = \text{Tc} \times \text{SF} \quad \text{or} \quad T = \text{Tb} \times \text{SF}$$

- IV. Decide which series best fits your drive.
- V. Using the appropriate series torque pressure to determine the model size.
- VI. Determine if the Series and models will:
- 1) Accommodate the shaft key, or spline
 - 2) Operate at the required speed
 - 3) Fit within the available space
- VII. Determine the Support/Mounting
- VIII. Call, e-mail or fax Logan Clutch Corporation to review your selection and place your order.

HP = Horsepower
 RPM = Clutch or Brake shaft speed
 WR2 = Total inertia to be stopped (lb.ft.²)
 T = Required Torque (Lb./ Ft., Nm, Lb./in)
 Tc = Clutch Torque (Lb./ Ft., Nm, Lb./in)
 Tb = Brake Torque (Lb./ Ft., Nm, Lb./in)
 t = Time to stop (seconds)
 SF = Safety Factor

Torque & Horsepower Formulas

$$\text{HP} = \frac{\text{T(Lb./Ft.)} \times \text{RPM}}{5250}$$

$$\text{Torque (Lb./Ft.)} = \frac{\text{HP} \times 5250}{\text{RPM}}$$

$$\text{HP} = \frac{\text{T(Lb./In.)} \times \text{RPM}}{63025}$$

$$\text{Torque (Lb./In.)} = \frac{\text{HP} \times 63025}{\text{RPM}}$$

$$\text{kW} = \frac{\text{T(Nm.)} \times \text{RPM}}{9550}$$

$$\text{Torque (Nm.)} = \frac{\text{kW} \times 9550}{\text{RPM}}$$

Torque Conversion Calculators

	Multiplier
Newton meters (Nm.) to Pound inches (lb.in.)	8.851
Pound inches (lb. in.) to Newton meters (Nm.)	0.113
Newton meters (Nm.) to Pounds feet (lb. ft.)	0.738
Pounds feet (lb.ft.) to Newton meters (Nm)	1.356

Horsepower Conversion Calculators

	Multiplier
Horsepower (HP) to kW (Kilowatt)	0.7457
Kilowatt (kW) to Horsepower (HP)	1.341

Pressure Conversion Calculators

	Multiplier
Bar to pounds per square inch (psi)	14.5
Pounds per square inch (psi) to Bar	0.068

Measurement Conversion Table

	Multiplier
Millimeters (mm) to Inches (in)	0.03937
Inches (in) to Millimeters (mm)	25.4

Weight Conversion Table

	Multiplier
Pounds (Lbs.) to Kilograms (Kg.)	0.0453
Kilograms (Kg.) to Pounds (Lbs.)	2.205

Volume Conversion Table

	Multiplier
Gallons (Gal.) to Liters (Ltr.)	3.785
Liters (Ltr.) to Gallons (Gal.)	0.2642

Suggested Safety Factor Table

Duty	SF
Small Inertia Low Cycle Rate Non-pulsating Load	1.3 to 1.7
Large Inertia Low Cycle Rate Non-pulsating Load	1.7 to 2.2
Small Inertia High Cycle Rate Pulsating Load	2.2 to 3.2

Power Train Efficiency Service Factor Table

Gear Belt	0.98
V Belt	0.97
Gearbox	0.96



S C C - 6 1 0 0 - 0 1

↑ 1 ↑ 2 ↑ 3 ↑ 4 ↑ 5 ↑ 6 ↑ 7

1

STYLE
S SAE PTO

2

*

INPUT FLANGE SIZE
B
C
D
E
F

3

*

OUTPUT FLANGE SIZE
B
C
D
E
F

4

RATED TORQUE (FT-LB/Nm)	
2	200/271
3	300/407
4	400/542
6	600/814
10	1000/1356
12	1200/1627
15	1500/2034

5

ACTUATION PRESSURE (PSI/bar)	
1	120/8.3
2	200/13.8
3	320/22.1

6

CLUTCH SIZE • STANDARD—INPUT SIZE MALE

	200	300	305	400	600	1000	1200	1500
00		DRY 'B' SPLINE	DRY 'B' SPLINE		DRY 'C' SPLINE	DRY 'D' SPLINE	DRY 'F' SPLINE	DRY 'F' SPLINE
01	WET 'B' SPLINE	WET 'B' SPLINE	WET 'B' SPLINE	WET 'C' SPLINE	WET 'C' SPLINE	WET 'D' SPLINE	WET 'F' SPLINE	WET 'F' SPLINE
02		DRY 'B-B' SPLINE	DRY 'B-B' SPLINE		DRY 'C-C' SPLINE	DRY 'D' SHAFT		DRY 'F' SHAFT
03	WET 'B-B' SPLINE	WET 'B-B' SPLINE	WET 'B-B' SPLINE	WET 'C-C' SPLINE	WET 'C-C' SPLINE	WET 'D' SHAFT		WET 'F' SHAFT
04		DRY 'B' SHAFT						DRY 2 7/16 w/ 5/8 Key
05		WET 'B' SHAFT						
06		DRY 'B-B' SHAFT			DRY 'C-C' SHAFT			
07		WET 'B-B' SHAFT			WET 'C-C' SHAFT			

7

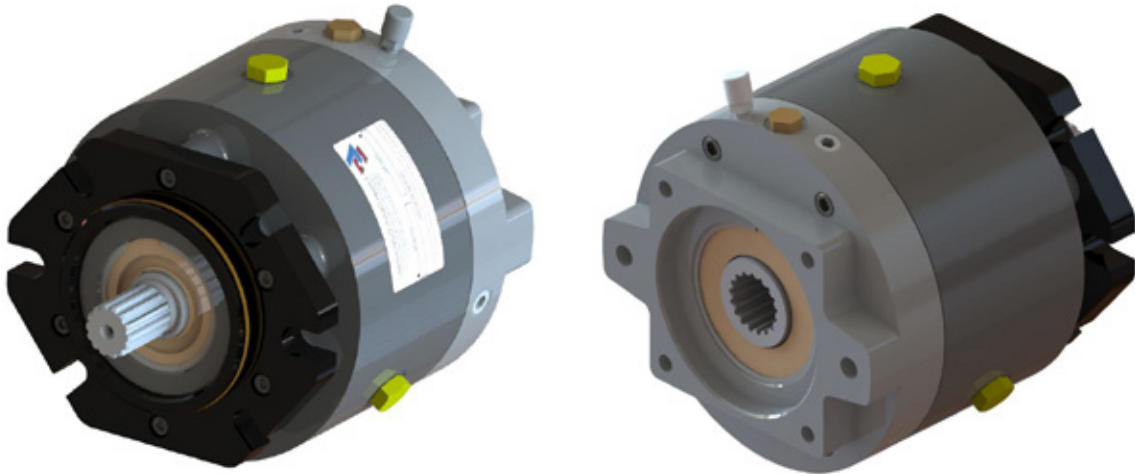
CLUTCH SIZE • STANDARD—OUTPUT SIZE FEMALE

	200	300	305	400	600	1000	1200	1500
01	'B' SPLINE	'B' SPLINE	'B' SPLINE	'C' SPLINE	'C' SPLINE	'D' SPLINE	'F' SPLINE	'F' SPLINE
02	'B-B' SPLINE	'B-B' SPLINE	'B-B' SPLINE	'C-C' SPLINE	'C-C' SPLINE	'D' BORE/KEY	'D' SPLINE	'D' SPLINE
03	'B' BORE/KEY	'B' BORE/KEY	'B' BORE/KEY	'C' BORE/KEY	'C' BORE/KEY			
04	'B-B' BORE/KEY	'B-B' BORE/KEY	'B-B' BORE/KEY		'D' SPLINE			

* Clutches with mixed input and output flange sizes are possible. Consult Logan Engineering/Sales for availability.



SAE Series Power Take-Off (PTO) Specifications

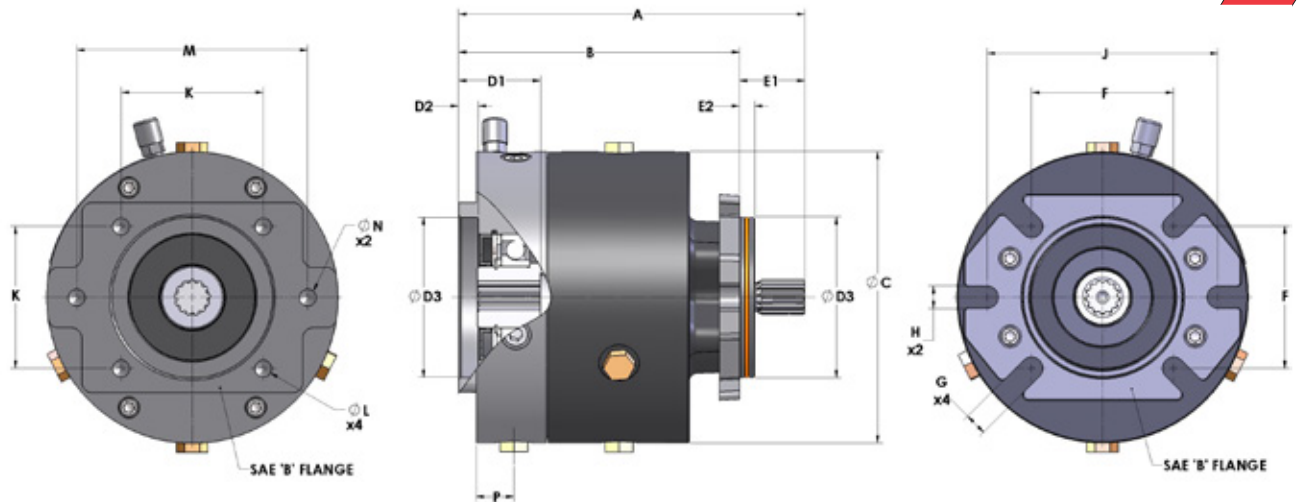


PTO Clutch for in-line shaft or SAE/ISO pad mounted applications

SAE Series PTO – Direct Drive PTO Clutch for in-line shaft or pump pad mounted applications

Features:

- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- Ideal for In-line shaft or pump pad applications
- SAE or ISO Mounting Flanges
- Available in B, C, D, E and F splines, plus bore and key configurations
- Shaft adapters available for common Dana style flanges



Dimensional Data *

Dimensions in inches

8.61	6.99	7.25	2.04	0.49	4.002	1.62	0.37	3.998	3.534	0.56	0.56	5.75	3.534	1/2-13 UNC	5.75	1/2-13 UNC	0.94
A	B	C	D1	D2	D3	E1	E2	E3	F	G	H	J	K	L	M	N	P
218.7	177.5	184.2	51.8	12.4	101.7	41.1	9.4	101.5	89.8	14.2	14.2	146.1	89.8	1/2-13 UNC	146.1	1/2-13 UNC	23.9

Dimensions in millimeters

PTO 300 Actual Static Torque****		3100 Series	3200 Series	3300 Series
Standard Units	Lbs.-Ft.	510	510	510
	PSI (MAX.)	120	200	320
Metric Units	Bar (MAX.)	8.3	13.8	22.1
	Nm	692	692	692

PTO 300 Specifications		
	U.S.	S.I.
* Rated Static Torque (Maximum)	300 ft.lbs.	407 Nm
Maximum HP/kW	170 HP	255 kW
Maximum RPM Under Load	3000 RPM	3000 RPM
* Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120, 200 or 320 PSI	8.3, 13.8 or 22.1bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Min. Flow Rate Required (Actuation)	1.5 GPM	5.6 liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Max. Back Pressure to Tank	7 PSI	0.5 bar
Maximum Fluid Temperature	180° F	82° C
Displacement: 3100 Series (New/Worn)	2.66/4.88 in ³	43.6/80.0 cm ³
3200 Series (New/Worn)	1.71/3.14 in ³	28.0/51.5 cm ³
3300 Series (New/Worn)	1.00/1.84 in ³	16.4/30.2 cm ³
Weight (Approx.)	26 lbs.	11.8 kg

PTO 300 Series Output (Pump) Shaft Option***	
SAE 'B' Spline 13T 16/32 DP	SAE 'B' Ø .875 x 1/4 Sq. Key
SAE 'B-B' Spline 15T 16/32 DP	SAE 'B-B' Ø 1.000 x 1/4 Sq. Key

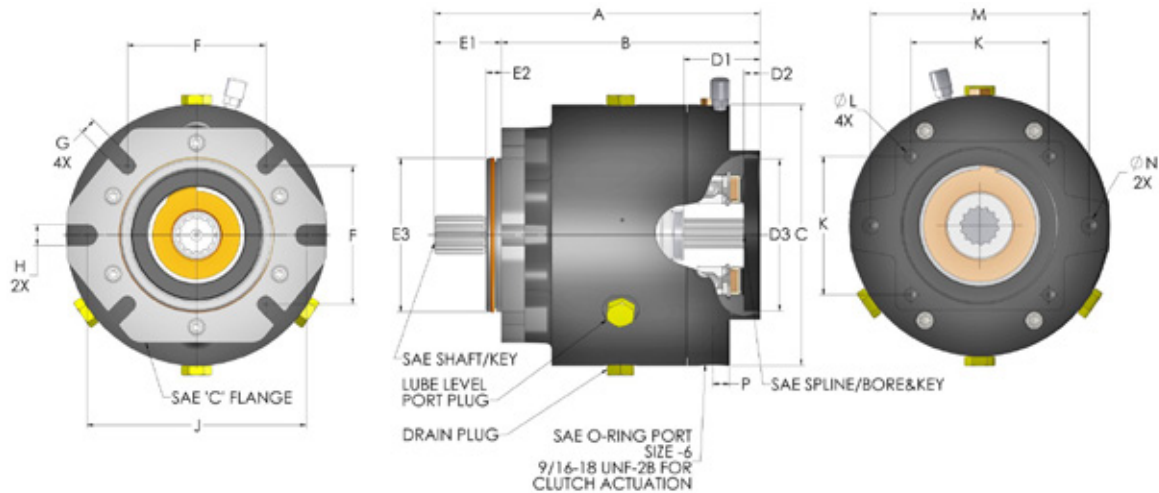
PTO 300 Series Input Shaft Option***	
SAE 'B' Spline 13T 16/32 DP	SAE 'B' Ø .875 x 1/4 Sq. Key
SAE 'B-B' Spline 15T 16/32 DP	SAE 'B-B' Ø 1.000 x 1/4 Sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SAE PTO 300 Series clutches are available in three (3) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



SAE PTO 600 Specifications



Dimensional Data *

Dimensions in inches

10.62	8.44	8.50	2.50	0.53	5.002	2.18	0.50	4.998	4.511	0.54	0.69	7.15	4.508	1/2-13UNC	7.125	5/8-11UNC	0.55
A	B	C	D1	D2	D3	E1	E2	E3	F	G	H	J	K	L	M	N	P
269.8	214.4	215.9	63.5	13.5	127.1	55.4	12.7	126.9	114.6	13.7	17.5	181.6	114.5	1/2-13UNC	181	5/8-11UNC	14.0

Dimensions in millimeters

PTO 600 Actual Static Torque****		6100 Series	6200 Series	6300 Series
Standard Units	Lbs.-Ft.	912	985	985
	PSI (MAX.)	120	200	320
Metric Units	Bar (MAX.)	8.3	13.8	22.1
	Nm	1237	1336	1336

PTO 600 Specifications

	U.S.	S.I.
* Rated Static Torque (Maximum)	600 ft.lbs.	813 Nm
Maximum HP/kW	342 HP	255 kW
*Maximum RPM Under Load	3000 RPM	3000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120, 200 or 320 PSI	8.3, 13.8 or 22.1bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Min. Flow Rate Required (Actuation)	1.5 GPM	5.7 liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Max. Back Pressure to Tank	7 PSI	0.5 bar
Maximum Fluid Temperature	180° F	82° C
Displacement: 6100 Series (New/Worn)	3.3/5.1 in ³	54/83.5 cm ³
6200 Series (New/Worn)	2.4/3.6 in ³	39.3/59 cm ³
6300 Series (New/Worn)	1.5/2.3 in ³	24.5/37.7 cm ³
Weight (Approx.)	47 lbs.	21 kg

PTO 600 Series Output (Pump) Shaft Option***

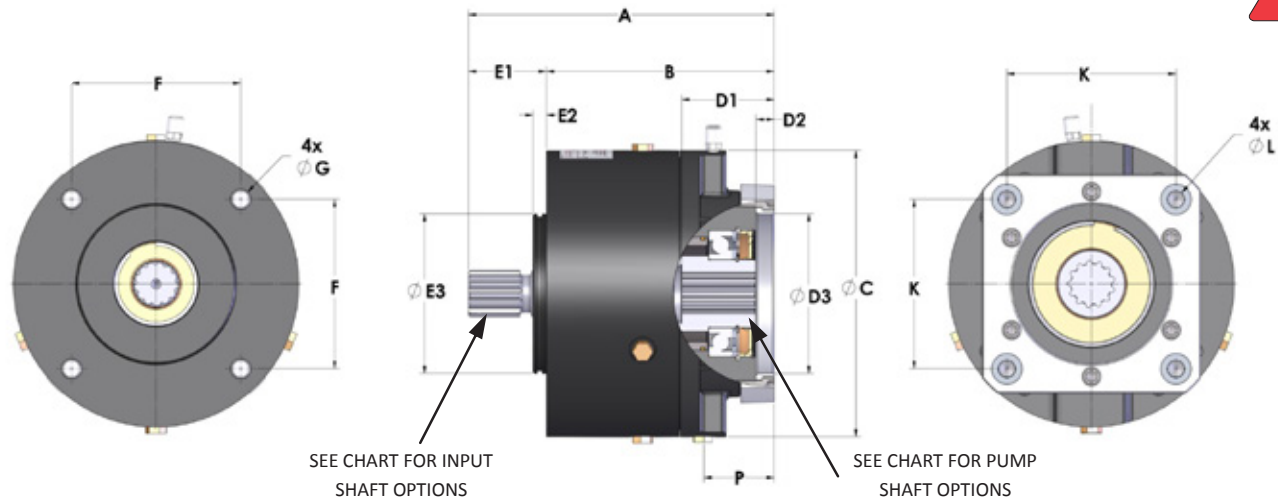
SAE 'C' Spline 14T 12/24 DP	SAE 'C' Ø 1.250 x 5/16 Sq. Key
SAE 'C-C' Spline 17T 12/24 DP	SAE 'D' 13T 8/16 DP

PTO 600 Series Input Shaft Option***

SAE 'C' Spline 14T 12/24 DP	SAE 'C' Ø 1.250 x 5/16 Sq. Key
SAE 'C-C' Spline 17T 12/24 DP	SAE 'C-C' Ø 1.500 x 3/8 Sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SAE PTO 600 Series clutches are available in three (3) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



Dimensional Data *													
Dimensions in inches													
12.11	9.19	10.75	3.48	0.69	6.002	2.93	0.50	5.998	6.364	0.78	6.364	3/4-10 UNC	2.69
A	B	C	D1	D2	D3	E1	E2	E3	F	G	K	L	P
307.6	233.4	273.1	88.4	17.5	152.5	74.4	12.7	152.3	161.6	19.8	161.6	3/4-10 UNC	68.3
Dimensions in millimeters													

PTO 1000 Actual Static Torque****		10100 Series	10200 Series	10300 Series
Standard Units	Lbs.-Ft.	1595	1595	1595
	PSI (MAX.)	120	200	320
Metric Units	Bar (MAX.)	8.3	13.8	22.1
	Nm	2163	2163	2163

PTO 1000 Specifications		
	U.S.	S.I.
* Rated Static Torque (Maximum)	1000 ft.lbs.	1356 Nm
Maximum HP/kW	570 HP	512 kW
*Maximum RPM Under Load	3000 RPM	3000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120, 200 or 320 PSI	8.3, 13.8, 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	4 PSI	0.3 Bar
Maximum Fluid Temperature	180° F	82° C
Displacement:		
10100 Series (New/Worn)	5.7/8.0 in ³	93.4/131.1 cm ³
10200 Series (New/Worn)	3.1/4.5 in ³	50.8/73.8 cm ³
10300 Series (New/Worn)	2.0/3.0 in ³	32.8/49.2 cm ³
Weight (Approx.)	69 Lbs.	31 Kg

PTO 1000 Series Output (Pump) Shaft Option***	
SAE 'C' Spline 14T 12/24 DP	SAE 'D' & 'E' Spline 13T 8/16 DP
SAE 'C' Ø 1.25 x 5/16 Sq. Key	SAE 'D' Ø 1.750 x 7/16 Sq. Key
SAE 'C-C' Spline 17T 12/24 DP	SAE 'F' Spline 15T 8/16 DP
SAE 'C' Ø 1.50 x 3/8 Sq. Key	

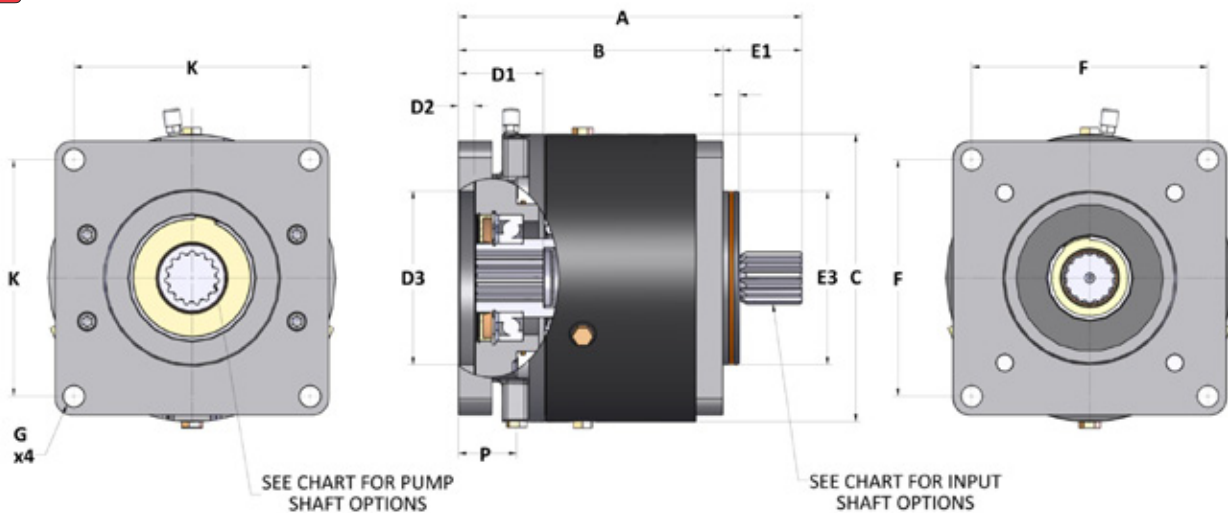
PTO 1000 Series Input Shaft Option***	
SAE 'C' Spline 14T 12/24 DP	SAE 'D' & 'E' Spline 13T 8/16 DP
SAE 'C' Ø 1.25 x 5/16 Sq. Key	SAE 'D' Ø 1.750 x 7/16 Sq. Key
SAE 'C-C' Spline 17T 12/24 DP	SAE 'C' Ø 1.50 x 3/8 Sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SAE PTO 1000 Series clutches are available in three (3) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



SAE PTO 1200 Specifications



Dimensional Data *

Dimensions in inches

12.86	9.89	10.75	3.18	0.64	6.50	2.97	0.62	6.498	8.84	0.81	8.84	2.18
A	B	C	D1	D2	D3	E1	E2	E3	F	G	K	P
326.6	251.2	273.1	80.8	16.3	165.1	75.4	15.7	162.7	224.5	20.7	224.5	55.4

Dimensions in millimeters

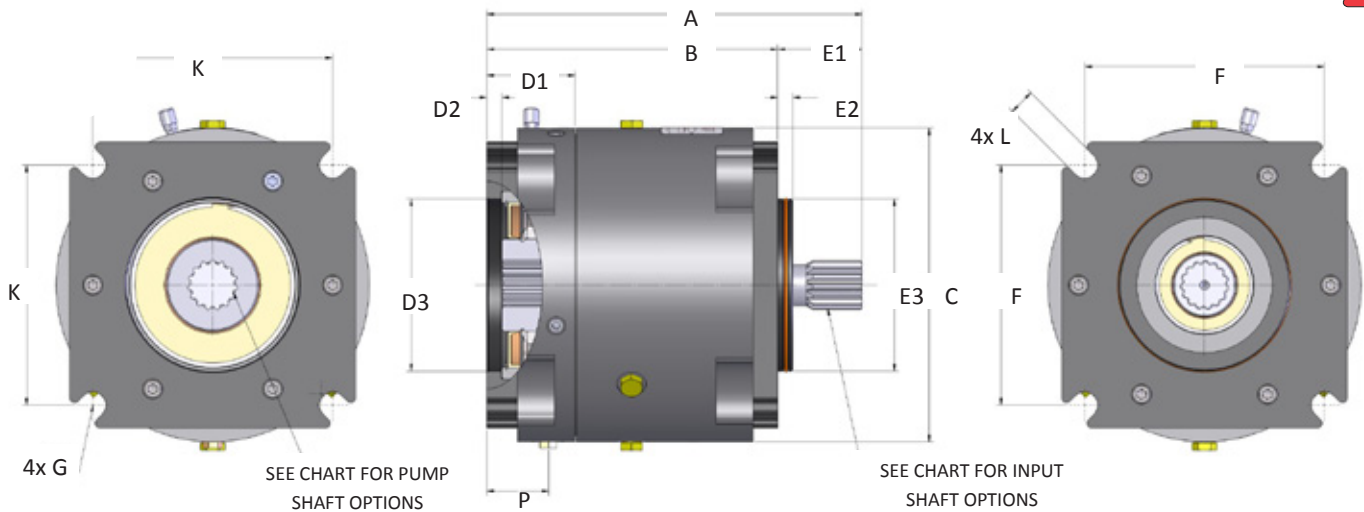
PTO 1200 Actual Static Torque****		12100 Series	12200 Series	12300 Series
Standard Units	Lbs.-Ft.	1920	1920	1920
	PSI (MAX.)	120	200	320
Metric Units	Bar (MAX.)	8.3	13.8	22.1
	Nm	2604	2604	2604

PTO 1200 Specifications		
	U.S.	S.I.
* Rated Torque (Maximum)	1200 ft.lbs.	1627 Nm
Maximum HP	686 HP	512 kW
*Maximum RPM Under Load	3000 RPM	3000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120, 200 or 320 PSI	8.3, 13.8, 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	0.5 Bar
Maximum Fluid Temperature	180° F	82° C
Displacement : 12100 Series (New/Worn)	6.6/9.5 in ³	108.1/155.7 cm ³
12200 Series (New/Worn)	3.4/5.0 in ³	55.7/82.0 cm ³
12300 Series (New/Worn)	2.2/3.2 in ³	36.0/52.4 cm ³
Weight (Approx.)	82 Lbs.	37 Kg

PTO 1200 Series Output (Pump) Shaft Option***
SAE 'D' & 'E' Spline 13T 8/16 DP
SAE 'F' Spline 15T 8/16 DP
PTO 1200 Series Input Shaft Option***
SAE 'D' & 'E' Spline 13T 8/16 DP
SAE 'F' Spline 15T 8/16 DP

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SAE PTO 1200 Series clutches are available in three (3) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



Dimensional Data *

Dimensions in inches

15.27	11.83	12.75	3.50	0.63	7.002	3.44	0.63	6.998	9.745	1.06	9.745	1.06	2.50
A	B	C	D1	D2	D3	E1	E2	E3	F	G	K	L	P
387.9	300.5	323.9	88.9	16	177.9	87.4	16	177.7	247.5	26.9	247.5	26.9	63.5

Dimensions in millimeters

PTO 1500 Actual Static Torque****		15200 Series	1550D Series	
Standard Units	Lbs.-Ft.	2564	2600	3000
	PSI (MAX.)	200	120	320
Metric Units	Bar (MAX.)	13.8	8.3	22.1
	Nm	3477	3525	4068

PTO 1500 Specifications

	U.S.	S.I.
* Rated Static Torque (Maximum)	1500 ft.lbs.	2034 Nm
Maximum HP/kW	570 HP	425 kW
*Maximum RPM Under Load	2000 RPM	2000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120, 200 or 320 PSI	8.3, 13.8, 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	0.5 Bar
Maximum Fluid Temperature	210° F	99° C
Displacement		
15200 Series 200 PSI (New/Worn)	4.9/6.5 in ³	80/106 cm ³
1550D Series 120 PSI (New/Worn)	8.5/11.4 in ³	139/187 cm ³
1550D Series 320 PSI (New/Worn)	3.6/4.8 in ³	59/79 cm ³
Weight (Approx.)	158 Lbs.	72 Kg

PTO 1500 Series Output (Pump) Shaft Option***

SAE 'D' & 'E' Spline 13T 8/16 DP
SAE 'F' Spline 15T 8/16 DP

PTO 1500 Series Input Shaft Option***

SAE 'F' Spline 15T 8/16 DP
Ø 2.437x 5/8 Sq. Key

Notes:

* Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.

** Logan SAE PTO 1500 Series clutches are available in three (3) different actuation pressures. Refer to part number to determine model configuration.

*** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.

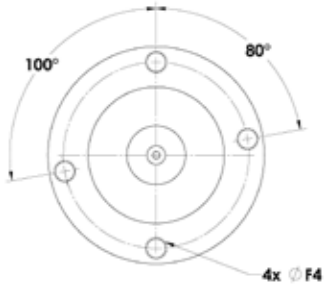
**** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



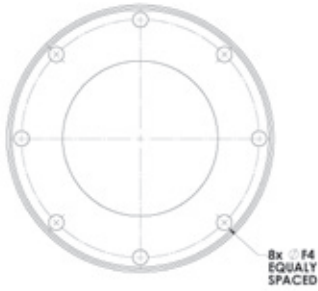
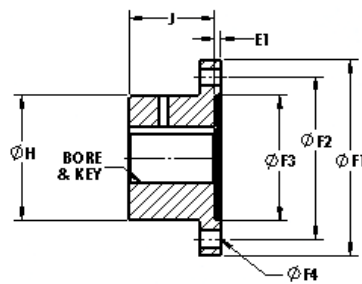
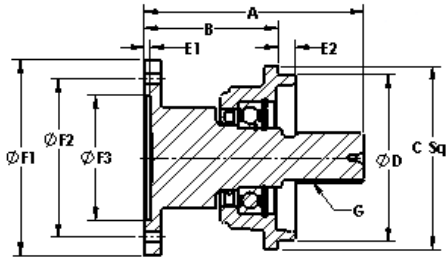
Logan SAE Direct Drive PTO Clutch Drive-Shaft Adapters

402 SERIES

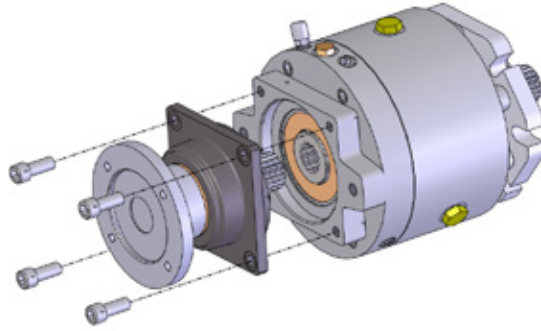
405 SERIES



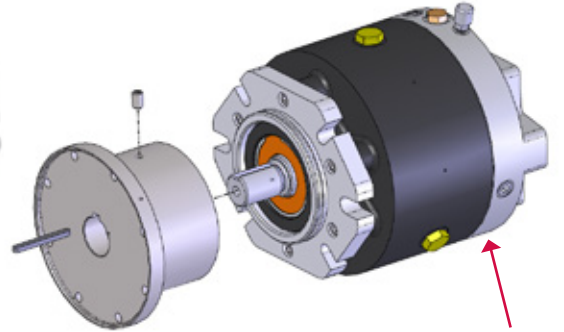
1350, 1410 & 1480 SERIES BOLT PATTERN



1610 & 1710 SERIES BOLT PATTERN



402 Series Adapter



405 Series Adapter

PTO CLUTCH

* STANDARD CONFIGURATION SHOWN, OTHERS AVAILABLE

DIMENSIONAL DATA

ENGLISH	DIMENSIONS IN INCHES											402 SERIES			405 SERIES		
	A	B	C Sq.	ØD	E1	E2	ØF1	ØF2	ØF3	ØF4	G	ØH	J	BORE & KEY ³			
1350/1410 ¹	4.05	2.43	4.75	4.00	0.188	0.38	4.88	3.750	2.750	M10x1.5	2 Bolt SAE B-B, 15t	2.88	2.00	1.00 X 1/4			
1410 ⁴	4.92	2.43	5.50	5.00	0.188	0.50	4.38	3.750	2.750	M10x1.5	SAE C-C, 17t	N/A	N/A	N/A			
1410 ¹ /1480	5.50	3.00	5.50	5.00	0.188	0.50	5.88	4.750	3.750	0.53	SAE C-C, 17t	3.75	2.50	1.50 X 3/8			
1610	5.50	3.00	5.50	5.00	0.188	0.50	6.88	6.125	6.625	0.38	SAE C-C, 17t	5.25	3.50	1.50 X 3/8			
1610	6.68	3.73	7.96	6.00	0.250	0.50	6.88	6.125	6.625	0.38	SAE D, 13t	5.25	3.50	1.75 X 7/16			
1710	8.00	4.00	6.50	6.00	0.250	0.56	8.00	7.250	7.750	0.38	SAE F, 15t	6.38	4.00	2.438 X 5/8			
1810																	
SIZE	A	B	C Sq.	ØD	E1	E2	ØF1	ØF2	ØF3	ØF4	G	ØH	J	BORE & KEY ³			
1350/1410 ¹	102.9	61.7	120.7	101.6	4.78	9.7	127.0	95.25	69.85	7/16-20UNF ²	SAE B-B, 15t	73.2	50.8	1.00 X 1/4			
1410 ⁴	125.0	61.7	139.7	127.0	4.78	12.7	111.1	95.25	69.85	M10x1.5	SAE C-C, 17t	N/A	N/A	N/A			
1410 ¹ /1480	139.7	76.2	139.7	127.0	4.78	12.7	149.2	120.65	95.25	12.70	SAE C-C, 17t	95.3	63.5	1.50 X 3/8			
1610	139.7	76.2	139.7	127.0	4.78	12.7	174.6	155.58	168.28	9.53	SAE C-C, 17t	133.4	88.9	1.50 X 3/8			
1610	169.7	94.7	202.2	152.4	6.35	12.7	174.6	155.58	168.28	9.53	SAE D, 13t	133.4	88.9	1.75 X 7/16			
1710	203.2	101.6	165.1	152.4	6.35	14.2	203.2	184.15	196.85	9.65	SAE F, 15t	162.1	101.6	2.438 X 5/8			
1810																	

METRIC DIMENSIONS IN MILLIMETERS

* Consult Logan sales for 1810 specifications.

** METRIC FASTENERS AVAILABLE UPON REQUEST

1 1410 SERIES FLANGE PILOT BORES (ØF3) COME WITH EITHER Ø2.75" OR Ø3.75"

2 405 SERIES COMPANION FLANGE COMES WITH DRILLED THROUGH HOLES

3 405 SERIES COMPANION FLANGE COME WITH LOCATIONAL (LC5) CLASS FIT

4 1410 IS A NON-STANDARD WITH METRIC TAPPED HOLES

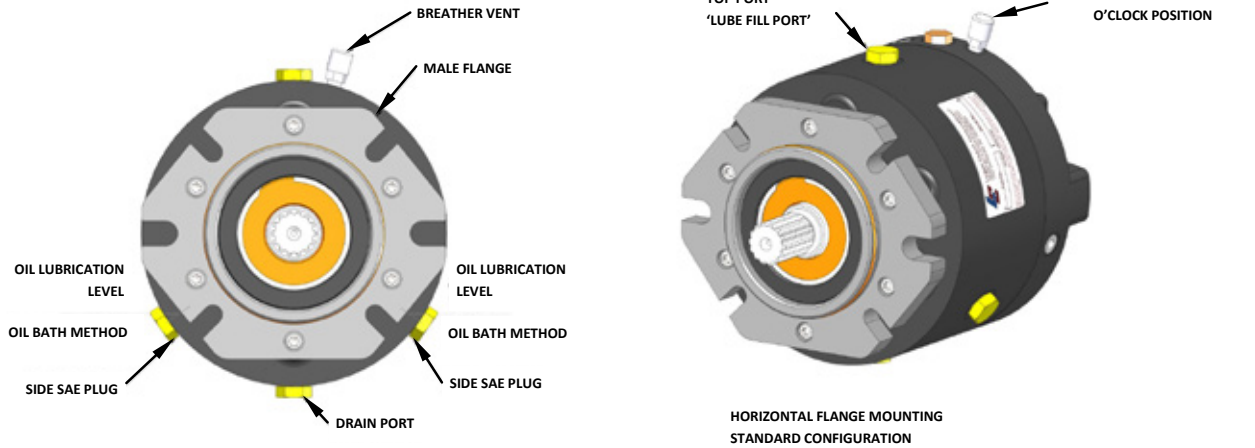


Figure 1.

OPTIONAL FLANGE ORIENTATION

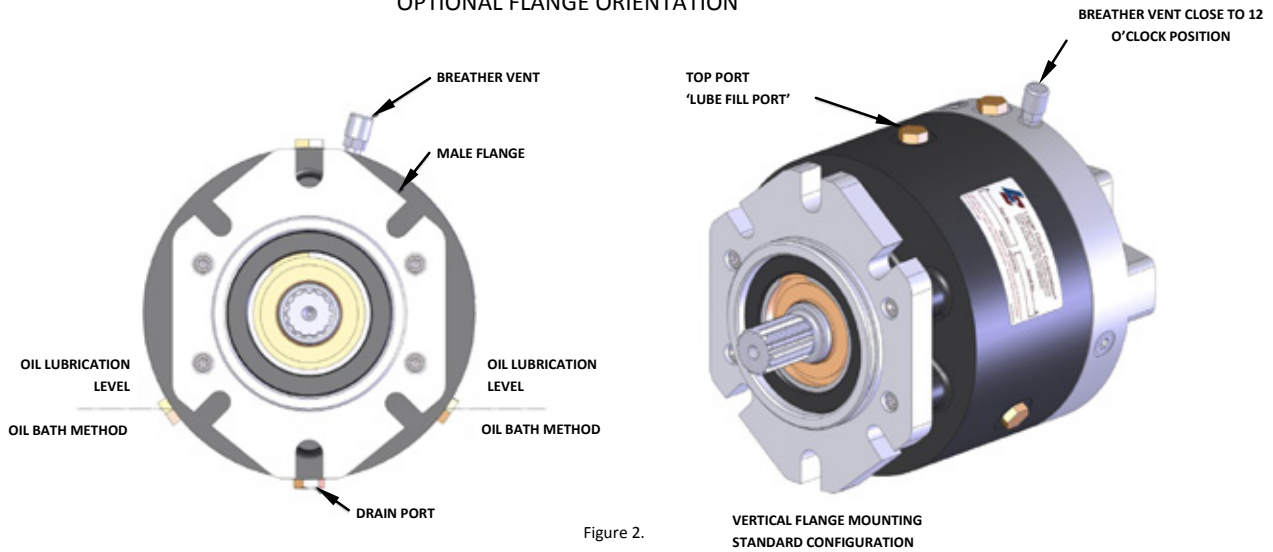


Figure 2.

NOTE:

Mounting pitch not to exceed 6° on standard SAE PTO Clutch. Modified standards available for applications exceeding 6° pitch.

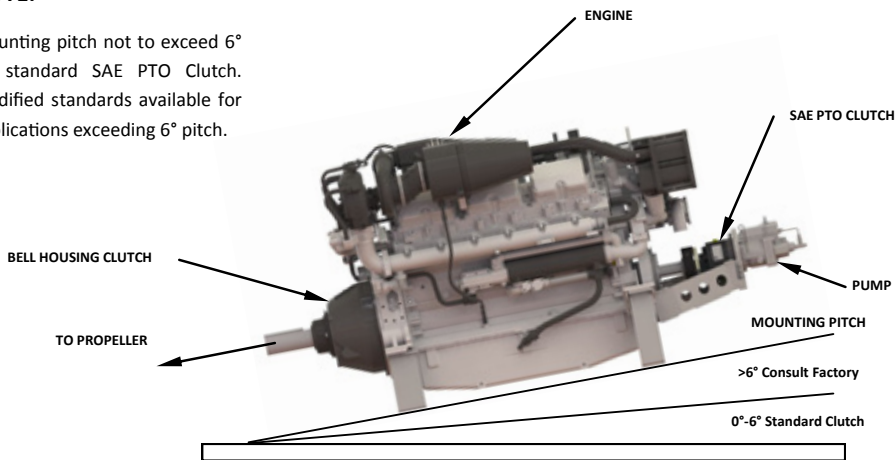


Figure 3.



Figure 4.

IMPORTANT!

LOGAN SAE PTO CLUTCHES CANNOT BE MOUNTED VERTICALLY AS SHOWN IN FIGURE 4, UNLESS FLOW THRU LUBRICATION METHOD IS USED (SEE PAGE 10)CONSULT LOGAN CLUTCH ENGINEERING.

Hydraulic Actuation:

Operation: Logan Direct Drive SAE PTO's require a 2 position, 3-way hydraulic valve with a system flow rate of 2 GPM (7.5 liters) to ensure proper response time during clutch actuation; (if the solenoid is not activated, fluid will not pass through the valve).

A pressure switch must be installed in the inlet line to ensure that a minimum pressure (see chart) is available prior to clutch engagement. Pressures exceeding the maximum clutch pressure will cause back plate deflection and premature clutch failure.

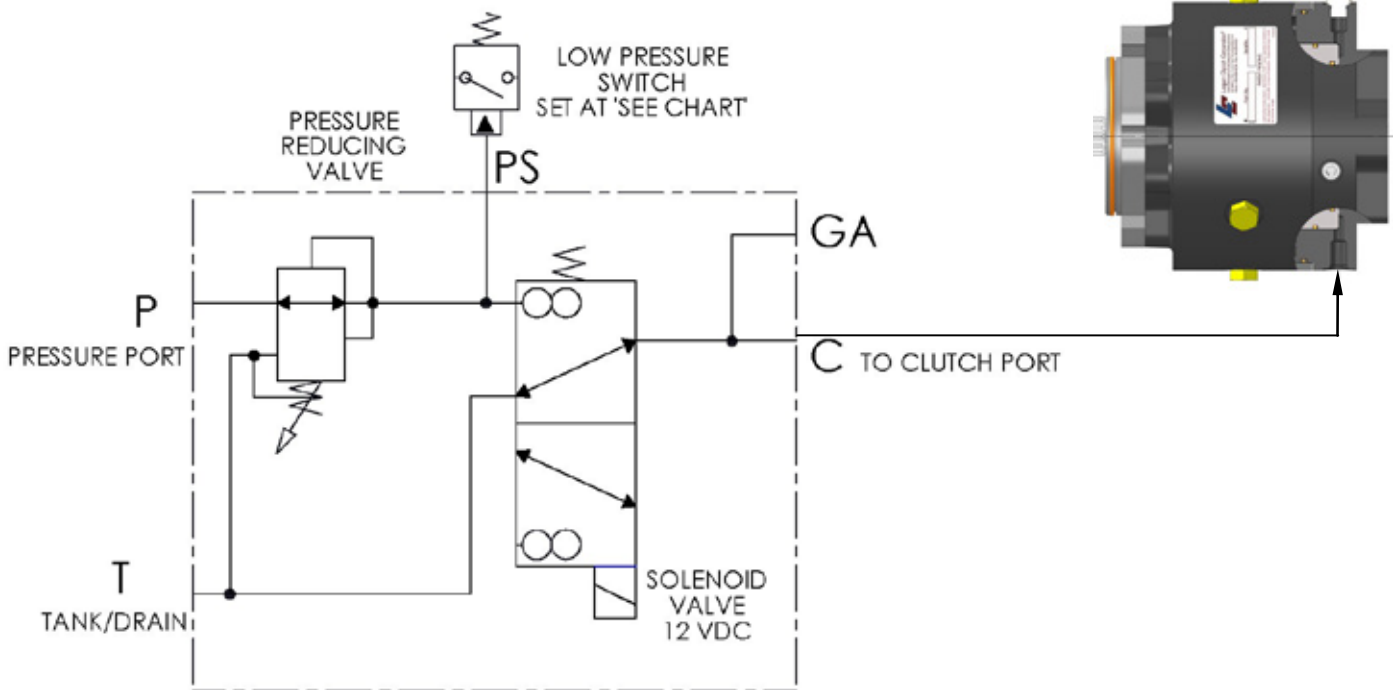
Logan Direct Drive SAE PTO's require an unrestricted port back to tank. It is not recommended to install a filter element on this return line, as any back-pressure exceeding 5 PSI (0.3 bar) will result in poor disengagement and excessive heat and wear.

A 10-micron filter element must also be installed in the supply line before the valve, to minimize excessive dirt, oil and moisture.

If a hydraulic source is not readily available on your equipment, Logan suggests using an hydraulic pump capable of producing 2 GPM .

Maximum Clutch Actuation Option PSI (bar)	Recommended Low Pressure Switch Setting PSI (bar)	Minimum Input Pressure PSI (bar)
200 (13.8)	150 (10.3)	300 (20.5)
320 (22)	250 (17.2)	500 (38.0)

*Hydraulic Schematic



* Schematic depicts typical actuation option.



Pneumatic Actuation

Operation: Logan Direct Drive SAE PTO's require a 2 position valve to function properly, (if the solenoid is not activated, air will not pass through the valve).

A pressure switch must be installed in the inlet line to ensure that a minimum of 90 psi (6.2 bar) is available prior to clutch engagement.

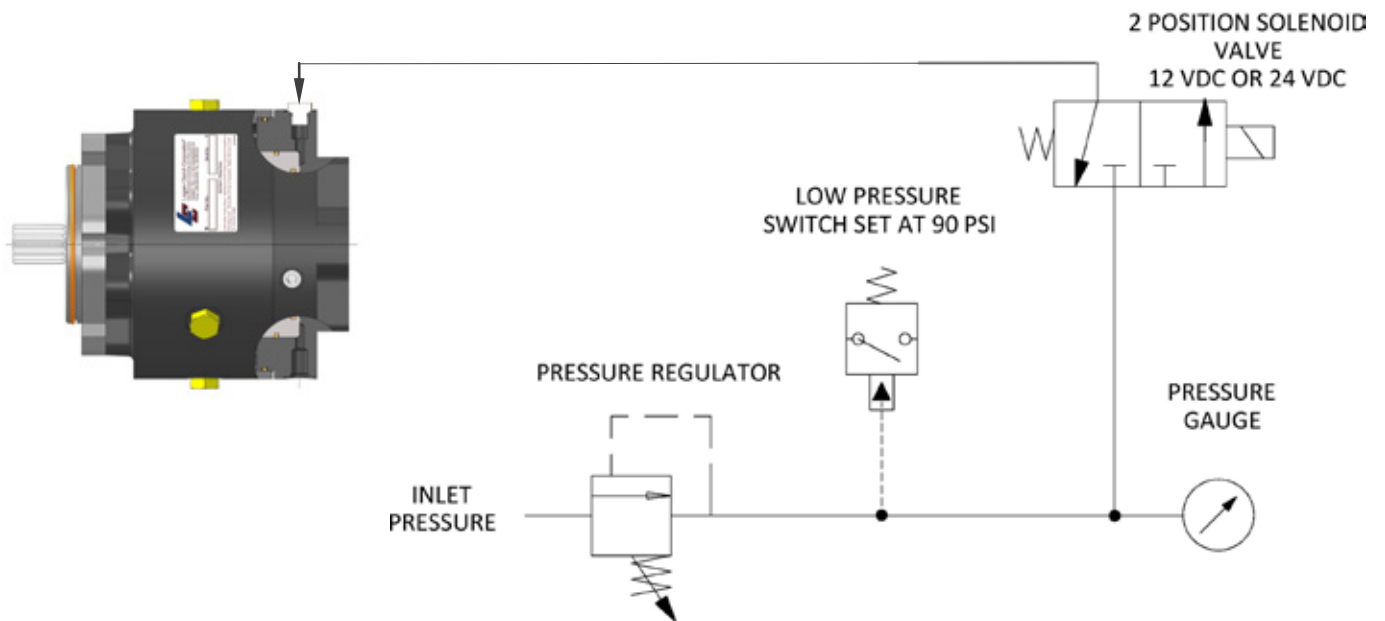
Pressures exceeding 120 psi (8 bar) will cause back plate deflection and premature clutch failure.

SOFT START FEATURE : Autopilot soft start valve is preset to 2 to 3 sec. ramp-up using required air pressure.

A 20-micron filter element must also be installed before the switch to minimize excessive dirt, oil and moisture. If an air source is not readily available on your equipment, Logan suggests using an air compressor capable of producing 0.14 SCFM at 120 psi (8 bar), with an air dryer with operating range between -4° F to 125°F (-20°C to 52° C).

Maximum Clutch Actuation Option PSI (bar)	Recommended Low Pressure Switch Setting PSI (bar)
120 (8.3)	90 (6.2)

Pneumatic Schematic





Logan Hydraulic and Pneumatic Actuation and Start-Up Kits for SAE Series PTO / SPF Series PTO

The Logan Hydraulic or Pneumatic Start-Up Kits are designed to simplify Logan clutch installation and to ensure reliable and accurate engagement of the Logan PTO. The auto pilot soft start valve is factory preset to 2 to 3 sec. ramp-up at 100 PSI for pneumatic option and 4 to 5 sec. for the hydraulic option.

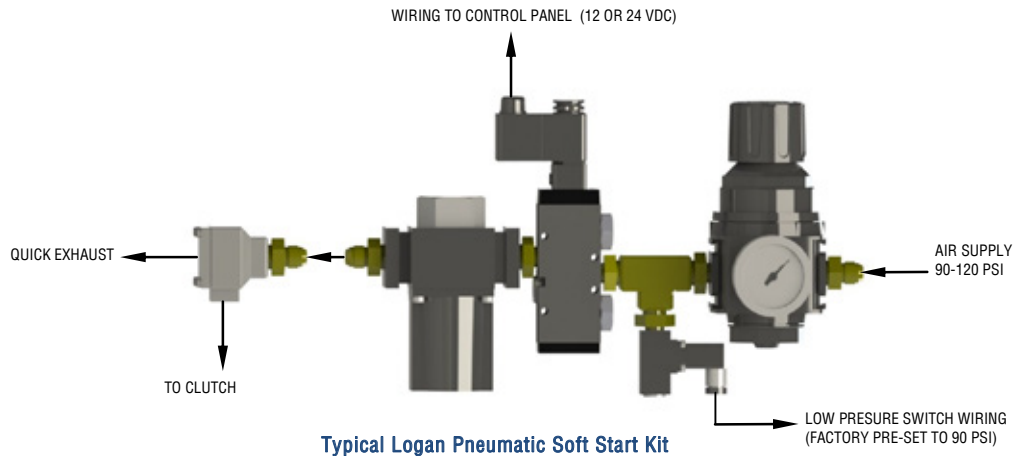


Important! Test ramp-up time at final installation prior to operation. Different ramp-up time may result in clutch failure. Adjust ramp-up time if necessary.

Manifolds: Logan offers a solenoid activated, normally closed, 3-way directional control valve. Valves are available in 12 or 24 volt DC.



Hydraulic Manifold Assembly

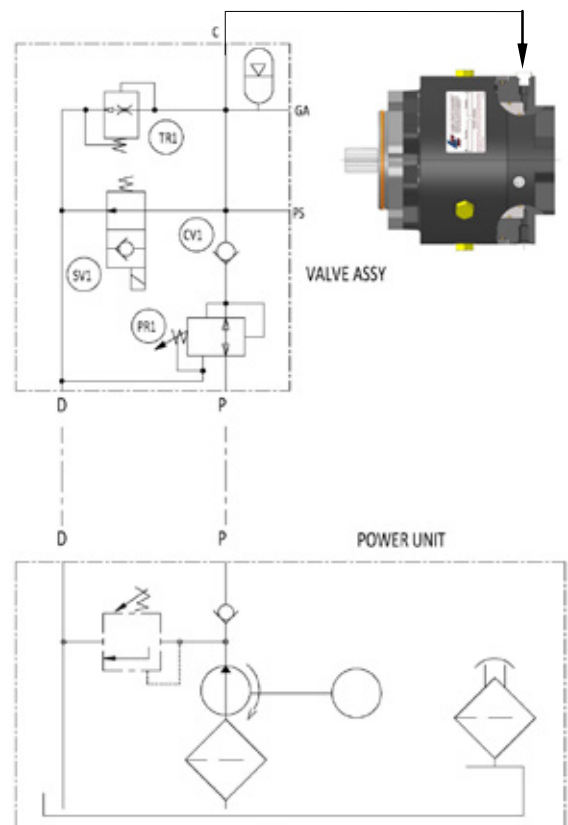


Hydraulic Power-Pack Unit

For vehicles that are not equipped with an air or fluid source, Logan offer a hydraulic D.C. motor power pack. Units are preset to re-energize when fluid pressure falls to a minimum pressure and relieve (through a pressure relief valve) when pressure exceeds a maximum clutch pressure. Operated by a 12 VDC or 24 VDC power supply, the power pack should be mounted away from the engine manifold, dirt and heat.

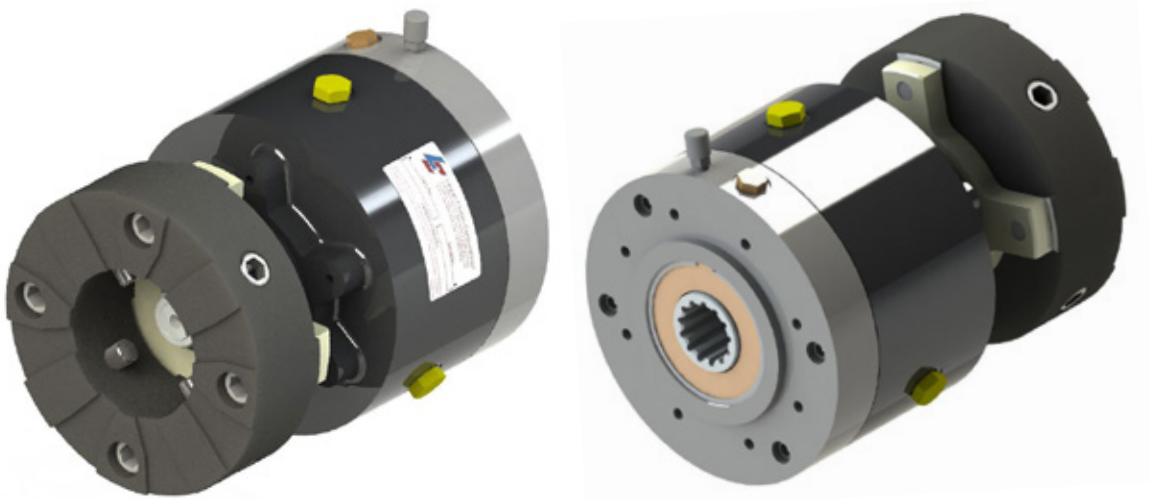


Always refer to Logan Clutch Hydraulic D.C. Motor Power Pack Installation, Operation and Maintenance Manual for operating specifications, installation, maintenance and troubleshooting.



* Power pack models may vary slightly depending upon actual model ordered and updates.

SPF Series Power Take-Off (PTO) Specifications



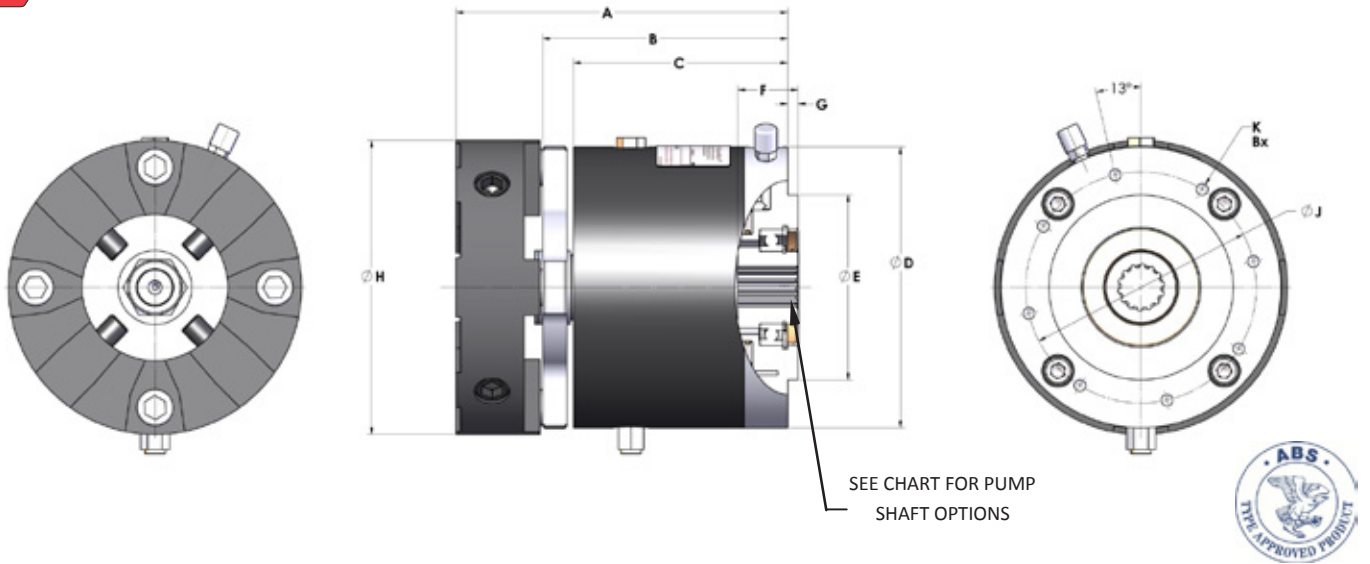
PTO Clutch with integral flexible coupling

SPF Series PTO – Direct Drive with Flexible Coupling

PTO Clutch with integral flexible coupling for torsionally active, In-line applications

Features:

- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- Integral torsional coupling for in-line applications
- Available in B, C, D, E and F spline, plus bore and key configurations



Dimensional Data *

Dimensions in inches

8.99	6.65	5.81	7.59	5.00	1.63	0.28	7.95	6.25	3/8-16 UNC
A	B	C	D	E	F	G	H	J	K (x8)
228.3	168.9	147.6	192.8	127.0	41.4	7.1	201.9	158.8	3/8-16 UNC

Dimensions in millimeters

SPF 400 Actual Static Torque ***

Standard Units	Lbs.-Ft.	400	456	514
	PSI	80	90	100
Metric Units	Bar	5.5	6.2	6.9
	Nm	542	618	697

SPF 400 Specifications

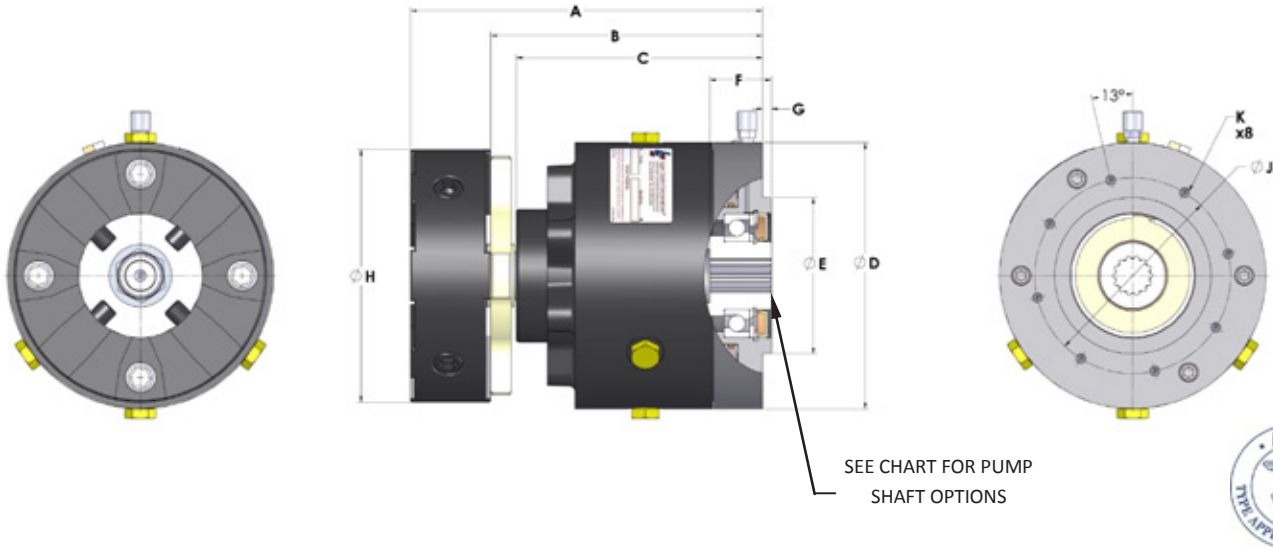
	U.S.	S.I.
* Rated Static Torque (Maximum)	400 ft.lbs.	542 Nm
Maximum HP/kW	180 HP	134 Kw
*Maximum RPM Under Load	2400 RPM	2400 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
Maximum Actuation Pressure	100 PSI	6.9 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	.50 Bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	29 Lbs.	13 Kg

SPF 400 Series Output (Pump) Shaft Option**

SAE 'C' 14t Spline 12/24 DP
ø1.250 x 5/16" sq. Key
SAE 'B' 13t Spline 16/32 DP
SAE 'B-B' 15t Spline 16/32 DP
ø1.000 x 1/4" sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- *** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 30% more torque than required for factor of safety.



Dimensional Data *

Dimensions in inches

11.31	8.69	7.87	8.50	5.00	1.97	0.28	8.07	6.25	3/8-16 UNC
A	B	C	D	E	F	G	H	J	K (x8)
287.3	220.7	199.9	215.9	127.0	50.0	7.1	205.0	158.8	3/8-16 UNC

Dimensions in millimeters

SPF 600 Actual Static Torque****

Standard Units	Lbs.-Ft.	912	912	985	9
	PSI	120	120	200	2
Metric Units	Bar	8.3	8.3	13.8	13
	Nm	1237	1237	1336	13

SPF 600 Specifications

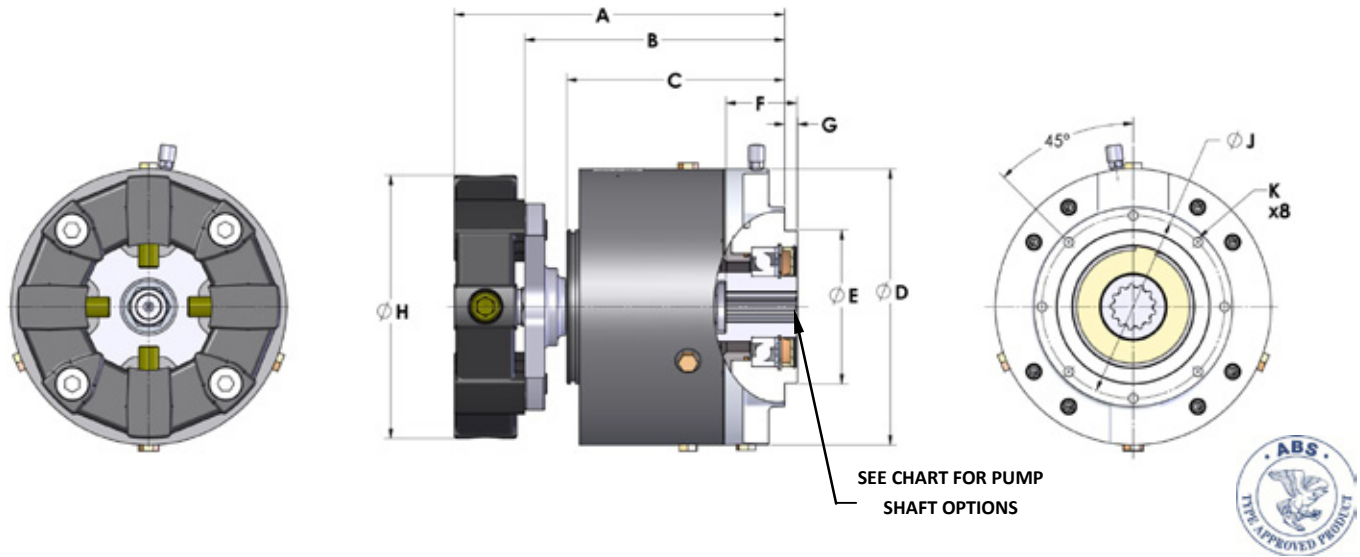
	U.S.	S.I.
* Rated Static Torque (Maximum)	600 ft.lbs.	813 Nm
Maximum HP/kW	342 HP	255 Kw
*Maximum RPM Under Load	3000 RPM	3000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
**Maximum Actuation Pressure	120 or 200 PSI	8.3 or 13.8 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	.50 Bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	47 Lbs.	13 Kg

SPF 600 Series Output (Pump) Shaft Option ***

SAE 'C' 14t Spline 12/24 DP
SAE 'C-C' 17t Spline 12/24 DP
ø1.500 x 3/8" sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SPF 600 Series clutches are available in two (2) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 30% more torque than required for factor of safety.



Dimensional Data *									
Dimensions in inches									
12.90	10.14	8.50	10.75	6.00	2.78	0.50	10.25	7.13	3/8-16 UNC
A	B	C	D	E	F	G	H	J	K (x8)
327.7	257.6	215.9	273.1	152.4	70.6	12.7	260.1	181.0	3/8-16 UNC
Dimensions in millimeters									

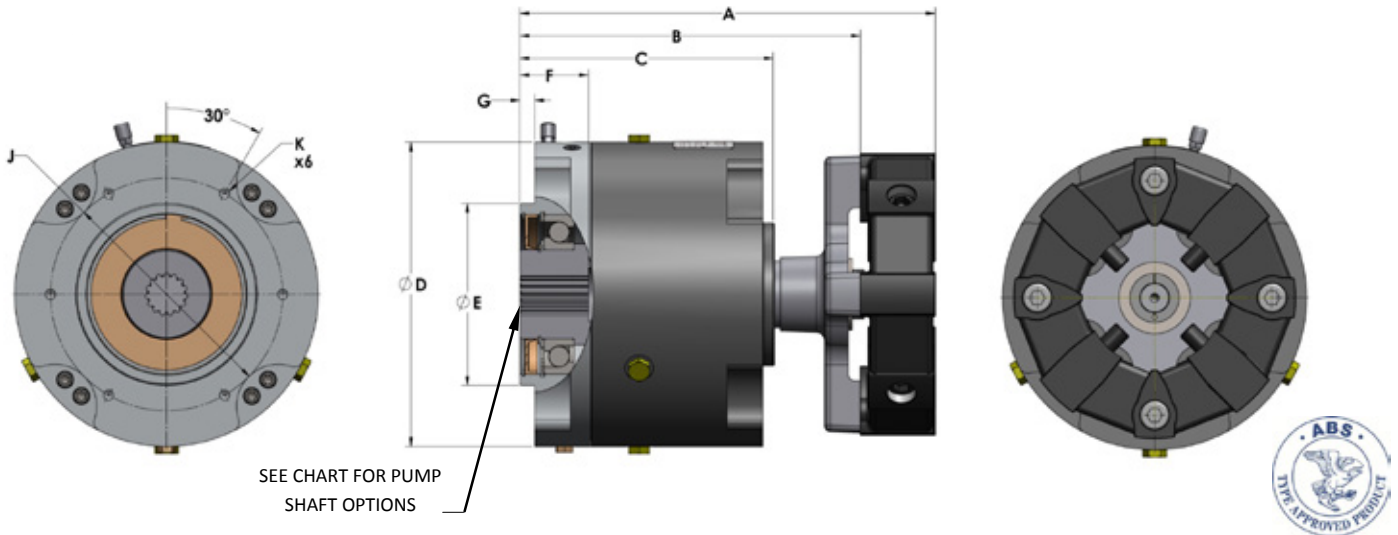
SPF 1000 Actual Static Torque****			
Standard Units	Lbs.-Ft.	1600	1600
	PSI	120	320
Metric Units	Bar	8.6	22.1
	Nm	2170	2170

SPF 1000 Specifications		
	U.S.	S.I.
* Rated Static Torque (Maximum)	1000 ft.lbs.	1356 Nm
Maximum HP/kW	570 HP	425 Kw
*Maximum RPM Under Load	3000 RPM	3000 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120 or 320 PSI	8.6 or 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	.50 Bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	69 Lbs.	32 Kg

SPF 1000 Series Output (Pump) Shaft Option***
SAE 'D' 13t Spline 8/16 DP
ø1.750 x 7/16" sq. Key

Notes:

- * Standard configuration. Modified standards available. Soft start feature may be required for engagement above machine idle RPM.
- ** Logan SPF 1000 Series clutches are available in two different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 30% more torque than required for factor of safety.



Dimensional Data *								
Dimensions in inches								
17.53	14.296	10.694	11.81	7.625	2.880	.625	9.750	1/2-13 UNC
A	B	C	D	E	F	G	J	K
445.3	363.13	271.63	300	193.68	73.19	15.88	247.65	1/2-13 UNC
Dimensions in millimeters								

SPF 1550D Actual Static Torque****			
Standard Units	Lbs.-Ft.	2695	2695
	PSI	120	320
Metric Units	Bar	8.6	22.1
	Nm	3654	3654

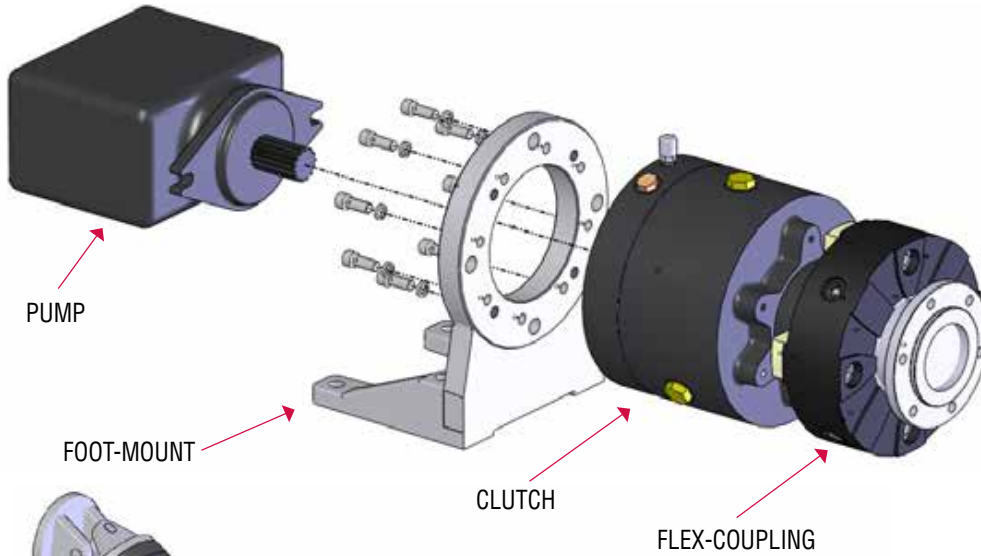
SPF 1550D Specifications		
	U.S.	S.I.
* Rated Static Torque (Maximum)	1500 ft.lbs.	2034 Nm
Maximum HP/kW	800 HP	596 kW
*Maximum RPM Under Load	2800 RPM	2800 RPM
*Recommended Engagement Speed	Idle	Idle
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120 or 320 PSI	8.6 or 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Minimum Flow Rate Required	1.5 GPM	5.6 Liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Maximum Back Pressure to Tank	7 PSI	.50 Bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	152 Lbs.	69 Kg

SPF 1550D Series Output (Pump) Shaft Option***
SAE 'D' 13t Spline 8/16 DP
SAE 'D' Bore & Key , ø1.750 x 7/16 sq. Key
SAE 'F' 15t Spline 8/16 DP

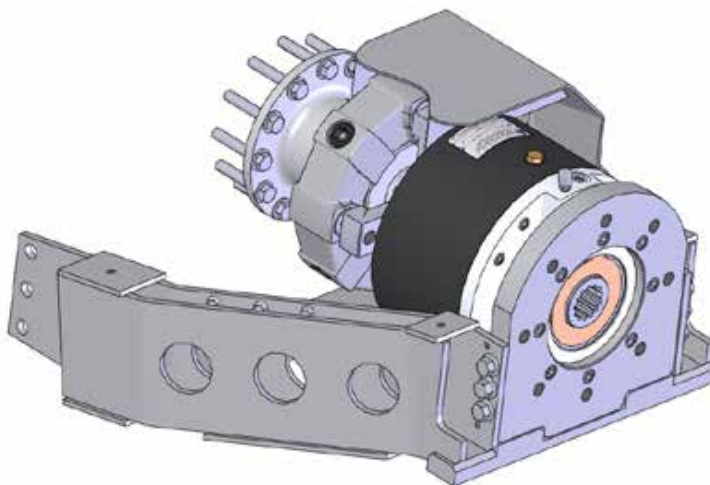
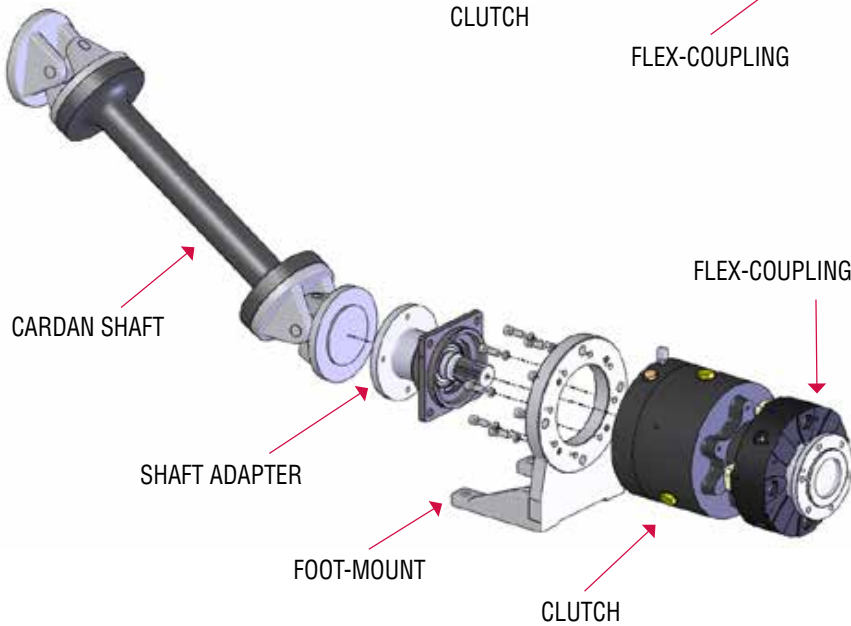
Notes:

- * Standard configuration. Modified standards available.
- ** Logan SPF 1500 Series clutches are available in two different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 30% more torque than required for factor of safety.

Pump Mount



Cardon Shaft Output

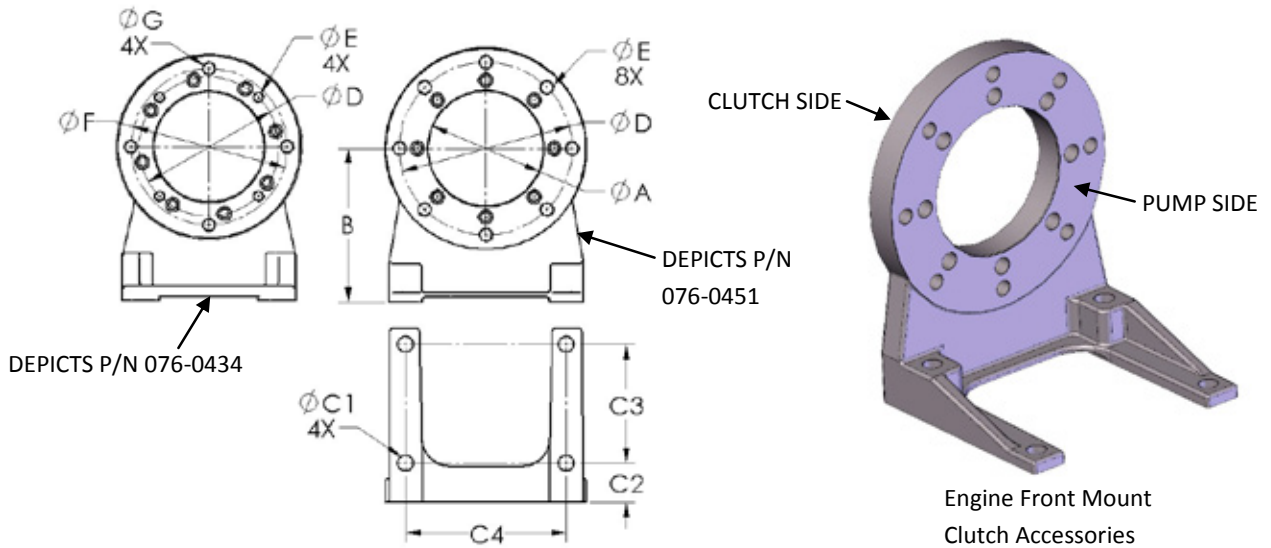


Engineered Solutions for OEM Applications

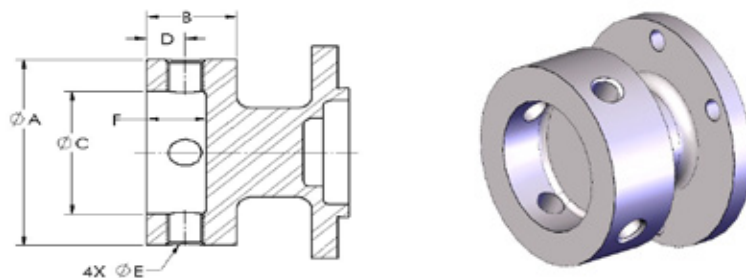
Engineered Front Mount PTO Systems	
AVAILABLE ENGINES	
CAT	C4.4 C6.6 C7.1 C9 C32 3512 3516
JOHN DEERE	4045 6068 6090 6135
CUMMINS	QSB6.7 QSK19 QSB7
SCANIA	12L 12L w/Re-enforce Joint 13 L 16L
VOLVO	D11, D13, D16

Consult Logan for more options.

SAE Series PTO / SPF Series PTO Foot Support Bracket Technical Specifications



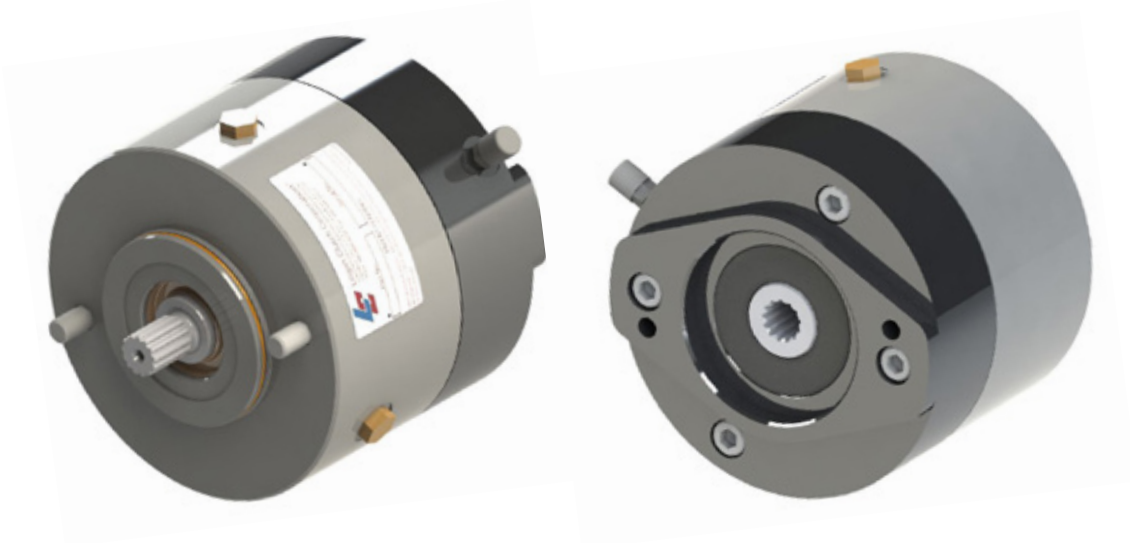
Dimensional Data											
English	Dimensions in Inches										
SPF400	5.00	7.00	0.56	1.56	4.75	6.38	6.375	1/2-13 UNC	7.125	5/8-11 UNC	076-0434
SPF600	5.00	7.00	0.56	1.56	4.75	6.38	6.375	1/2-13 UNC	7.125	5/8-11 UNC	076-0434
SPF1000	6.00	8.00	0.813	2.12	6.187	8.375	9	3/4-10 UNC			076-0451
SPF1500	Consult Factory for Data										
SIZE	ØA	B	ØC1	C2	C3	C4	ØD	ØE	ØF	ØG	Part No.
SPF400	127.0	177.8	14.3	39.7	120.7	161.9	161.9	1/2-13 UNC	181.0	5/8-11 UNC	076-0434
SPF600	127.0	177.8	14.3	39.7	120.7	161.9	161.9	1/2-13 UNC	181.0	5/8-11 UNC	076-0434
SPF1000	152.4	203.2	20.7	53.8	157.1	212.7	228.6	3/4-10 UNC			076-0451
SPF1500	Consult Factory for Data										
Metric	Dimensions in Millimeters										



Dimensional Data							
English	Dimensions in Inches						
SPF400	3.937	1.62	2.60	0.64	M16x2.0-6H	1.10	50
SPF600	3.937	2.09	2.60	0.87	M16x2.0-6H	1.50	80
SPF1000	4.921	2.00	2.50	1.00	M20x2.5-6H	1.50	140
SPF1500	5.709	2.80	3.35	1.42	M20x2.5-6H	2.00	200
SIZE	ØA	B	ØC	D	ØE	F	Flexible Coupling Size
SPF400	100	41.1	66.0	16.3	M16x2.0-6H	27.9	50
SPF600	100	53.1	66.0	22.1	M16x2.0-6H	38.1	80
SPF1000	125	50.8	63.5	25.4	M20x2.5-6H	38.1	140
SPF1500	145	71.1	85.1	36.0	M20x2.5-6H	50.8	200
Metric	Dimensions in Millimeters						



FPTO Series Power Take-Off (PTO) Specifications



PTO Clutch with 2-bolt or 4-bolt mount
for low profile, compact applications

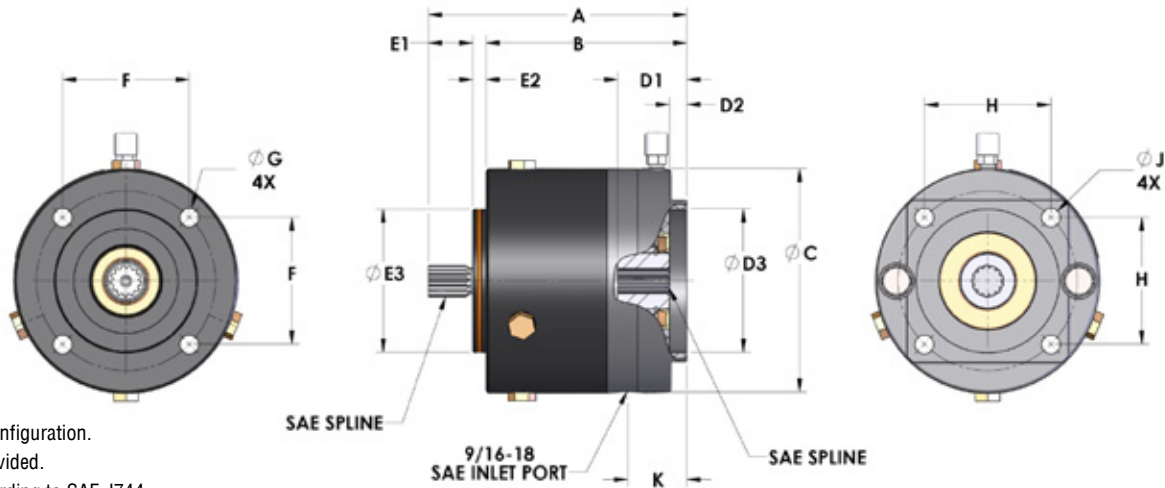
FPTO Series PTO – Direct Drive Short Axial Length

**PTO Clutch with through bolt design for low
profile compact applications**

Features:

- Air or Fluid Actuated
- Self-Adjusting Disc Pack
- Smooth Engagement-Disengagement
- SAE 2-Bolt or 4-bolt B Mount
- SAE 4-bolt C Mount
- 12 & 24 Volt DC Control valve system
integrates with existing transmission pressure
- 30 psi./2 bar sealed input housing

SAE PTO 200 Series SAE 'B' Mount 4-Bolt Specifications



4-Bolt Mounting Configuration.
 Mounting bolts provided.
 Specifications According to SAE J744.
 Complete dimensions may be
 obtained from ANSI B93, 6-1972.

Dimensional Data *

Dimensions in inches

7.22	5.61	6.25	1.93	0.49	4.002	1.25	0.37	3.998	3.534	0.53	3.534	0.53	1.66
A	B	ØC	D1	D2	ØD3	E1	E2	ØE3	F	ØG	H	ØJ	K
183.4	142.5	158.8	49	12.3	101.65	31.8	9.4	101.5	89.8	13.5	89.8	13.5	42.1

Dimensions in millimeters

PTO 200 Actual Static Torque****		2000 Series	2010 Series
Standard Units	Lbs.-Ft.	350	471
	PSI (MAX.)	350	300
Metric Units	Bar (MAX.)	24	20
	Nm	475	638

PTO 200 Specifications

	U.S.	S.I.
* Rated Static Torque (Maximum)	200 ft.lbs.	271 Nm
Maximum HP	100 HP	75 kW
*Maximum RPM Under Load 2000 Series	2800 RPM	2800 RPM
*Maximum RPM Under Load 2010 Series	2300 RPM	2300 RPM
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	300 or 350 PSI	20 or 24 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Min. Flow Rate Required (Actuation)	1.5 GPM	5.6 liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Max. Back Pressure to Tank (Actuation)	5 PSI	0.35 bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	16 lbs.	7.3 kg

PTO 200 Series Output (Pump) Shaft Option***

SAE 'B' Spline 13T 16/32 DP	SAE 'B' Ø .875 x 1/4 Sq. Key
SAE 'B-B Spline 15T 16/32 DP	SAE 'B-B' Ø 1.000 x 1/4 Sq. Key

PTO 200 Series Input Shaft Option***

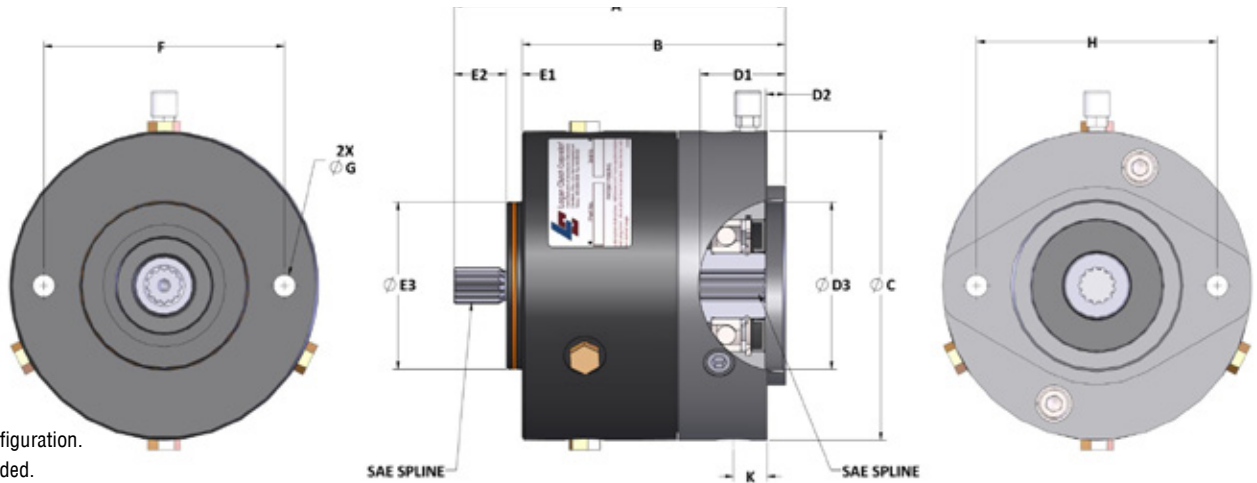
SAE 'B' Spline 13T 16/32 DP	SAE 'B-B Spline 15T 16/32 DP
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Notes:

- * Standard configuration. Modified standards available.
- ** Logan SAE PTO 200 Series clutches are available in two (2) different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



SAE PTO 305 Series SAE 'B' 2-Bolt Specifications



2-Bolt Mounting Configuration.
 Mounting bolts provided.
 Specifications According to SAE J744.
 Complete dimensions may be
 obtained from ANSI B93, 6-1972.

Dimensional Data *

Dimensions in inches

7.92	6.30	7.38	2.03	0.47	4.002	0.37	1.25	3.998	5.750	0.53	5.750	0.81
A	B	ØC	D1	D2	ØD3	E1	E2	ØE3	F	ØG	H	K
201.2	160	187.45	51.5	11.9	101.65	9.4	31.8	101.5	146.05	13.5	146.05	20.6

Dimensions in millimeters

PTO 305 Actual Static Torque***

3050 Series

Standard Units	Lbs.-Ft.	593
	PSI (MAX.)	300
Metric Units	Bar (MAX.)	20
	Nm	804

PTO 300 Specifications

	U.S.	S.I.
* Rated Static Torque (Maximum)	300 ft.lbs.	407 Nm
Maximum HP	170 HP	255 kW
*Maximum RPM Under Load	3000 RPM	3000 RPM
Rotation	Bi-rotation	Bi-rotation
Maximum Actuation Pressure	300 PSI	20 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Min. Flow Rate Required (Actuation)	1.5 GPM	5.6 liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Max. Back Pressure to Tank (Actuation)	7 PSI	0.5 bar
Maximum Fluid Temperature	180° F	82° C
Displacement: 3050 Series (New/Worn)	1.27/2.0 in ³	20.8/32.8 cm ³
Weight (Approx.)	25 lbs.	11.3 kg

PTO 305 Series Output (Pump) Shaft Option**

SAE 'B' Spline 13T 16/32 DP	SAE 'B' Ø .875 x 1/4 Sq. Key
SAE 'B-B Spline 15T 16/32 DP	SAE 'B-B' Ø 1.000 x 1/4 Sq. Key

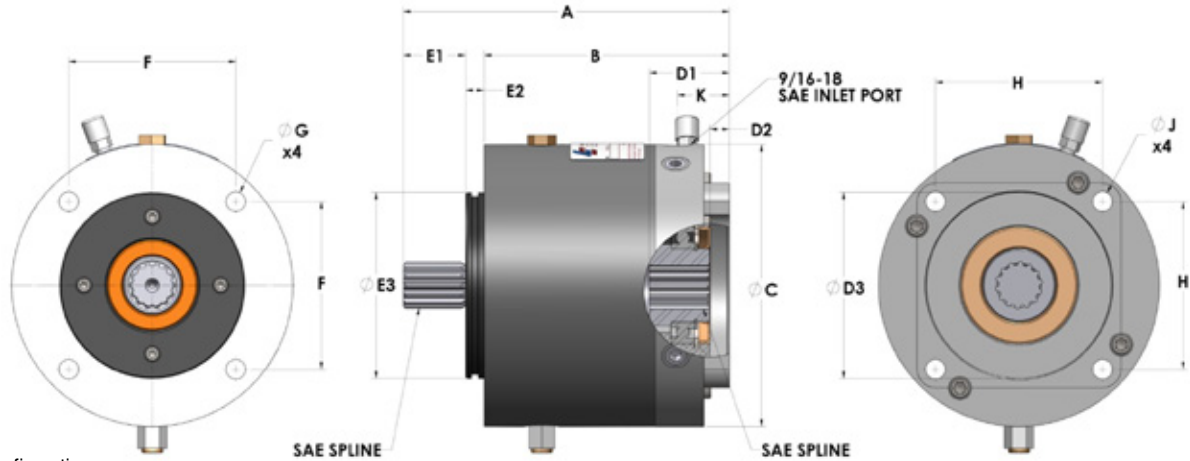
PTO 305 Series Input Shaft Option**

SAE 'B' Spline 13T 16/32 DP	SAE 'B-B Spline 15T 16/32 DP
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Notes:

- * Standard configuration. Modified standards available.
- ** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- *** Torque ratings based on using 15W-40 oil as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.

SAE PTO 400 Series SAE 'C' 4-Bolt Specifications



4-Bolt Mounting Configuration.
 Mounting bolts provided.
 Specifications According to SAE J744.
 Complete dimensions may be
 obtained from ANSI B93, 6-1972.

Dimensional Data *

Dimensions in inches

8.80	6.62	7.60	2.16	0.53	5.002	1.68	0.50	4.998	4.51	0.53	4.51	0.53	1.40
A	B	ØC	D1	D2	ØD3	E1	E2	ØE3	F	ØG	H	ØJ	K
223.5	168.1	193	54.8	13.5	127.05	42.6	12.7	126.9	114.6	13.5	114.6	13.5	35.5

Dimensions in millimeters

PTO 400 Actual Static Torque****		4100 Series	4300 Series
Standard Units	Lbs.-Ft.	514	514
	PSI (MAX.)	120	320
Metric Units	Bar (MAX.)	8.3	22.1
	Nm	697	697

PTO 400 Specifications		
	U.S.	S.I.
* Rated Static Torque (Maximum)	400 ft.lbs.	542 Nm
Maximum HP	180 HP	134 kW
*Maximum RPM Under Load	2400 RPM	2400 RPM
Rotation	Bi-rotation	Bi-rotation
** Maximum Actuation Pressure	120 or 320 PSI	8.3 or 22.1 bar
Min/Max Case Pressure w/Optional High Pressure Seals	7/30 PSI	0.5/2.0 bar
Min. Flow Rate Required (Actuation)	1.5 GPM	5.6 liters/min.
Operating Media at Clutch (Oil or Air)	Standard	Standard
Max. Back Pressure to Tank (Actuation)	7 PSI	0.5 bar
Maximum Fluid Temperature	180° F	82° C
Weight (Approx.)	29 lbs.	13 kg

PTO 400 Series Input Option***	
SAE 'C' SPLINE 14T 12/124 DP	SAE 'C-C' SPLINE 17T 12/24 DP

PTO 400 Series Output (Pump) Shaft Option***	
SAE 'C' SPLINE 14T 12/124 DP	SAE 'C' Ø1.25"x5/16 SQ. KEY
SAE 'C-C' SPLINE 17T 12/24 DP	

Notes:

- * Standard configuration. Modified standards available.
- ** Logan SAE PTO 400 Series clutches are available in two different actuation pressures. Refer to part number to determine model configuration.
- *** Contact Logan Clutch for alternative pump shaft options. The output end of the clutch (female spline/bore) is not capable of supporting any side load. Use overhung load adapters.
- **** Torque ratings based on using ATF fluid as a lubricant. When selecting clutch size, it is recommended to select a clutch with at least 50% more torque than required for factor of safety.



SAE 200, 305 and 400 Series PTO Mounting Options

SAE PTO 200 and 305 SERIES

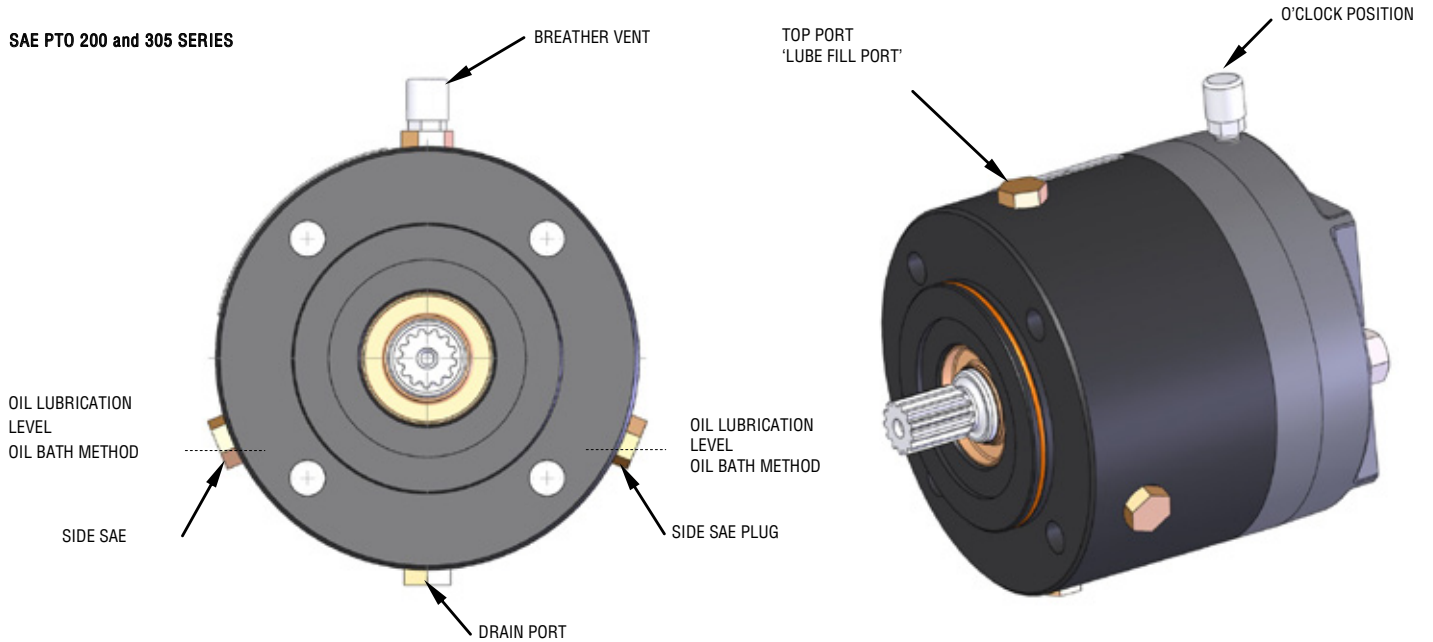


Figure 1.

SAE PTO 400

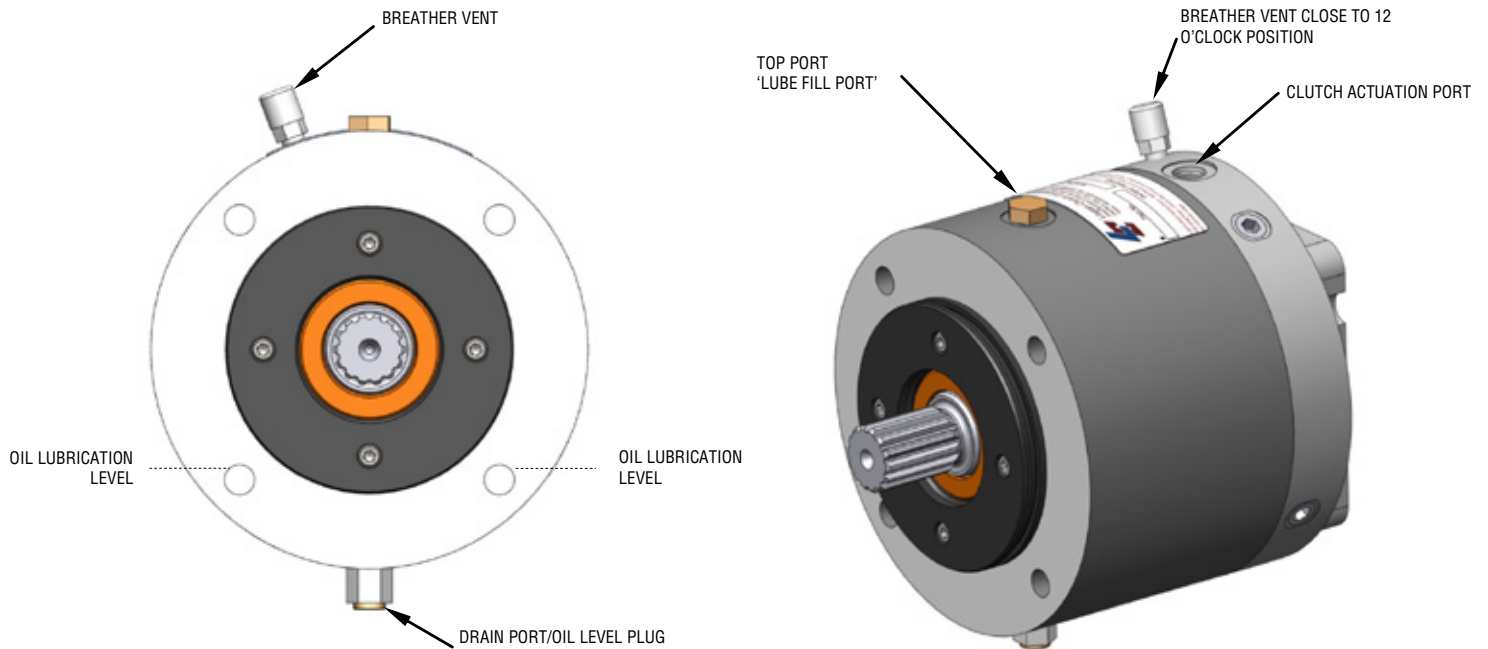
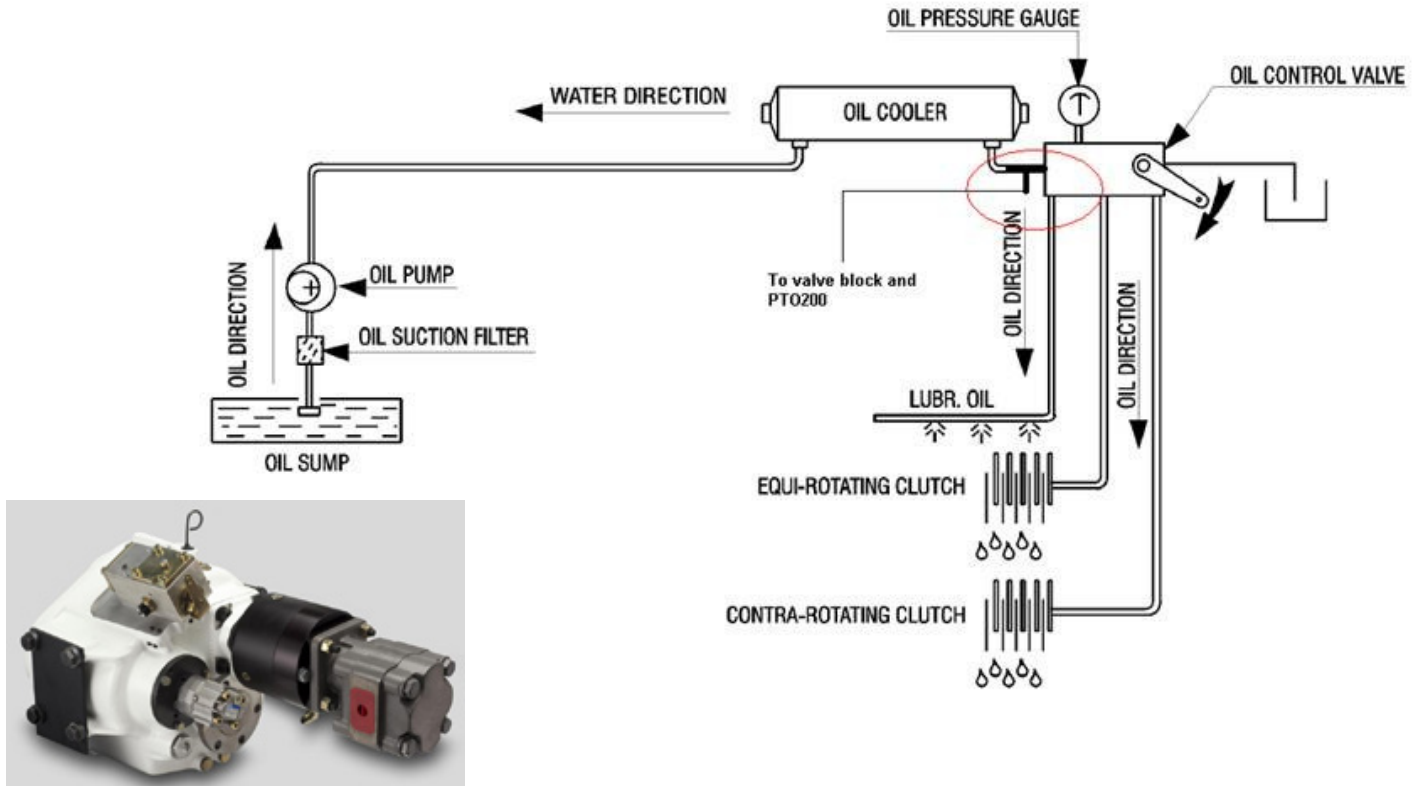


Figure 2.

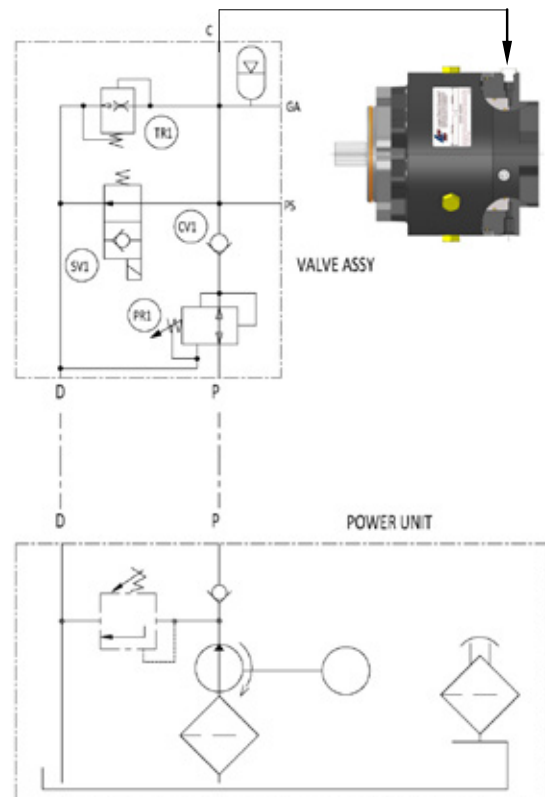


Hydraulic Power-Pack Unit

For vehicles that are not equipped with an air or fluid source, Logan offer a hydraulic D.C. motor power pack. Units are preset to re-energize when fluid pressure falls to a minimum pressure and relieve (through a pressure relief valve) when pressure exceeds a maximum clutch pressure. Operated by a 12 VDC or 24 VDC power supply, the power pack should be mounted away from the engine manifold, dirt and heat.

Important!

Always refer to Logan Clutch Hydraulic D.C. Motor Power Pack Installation, Operation and Maintenance Manual for operating specifications, installation, maintenance and troubleshooting.



* Power pack models may vary slightly depending upon actual model ordered and updates.

Logan CH Series Air / Fluid Clutches and Brakes

Features:

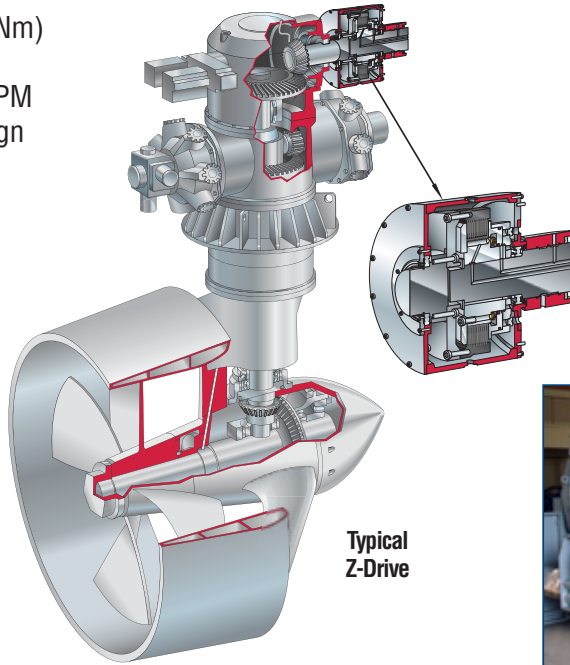
- Torque Ratings from 49,000 lb-in. (5532 Nm) to 1,280,000 lb-in (144,000 Nm)
- Standard operating speeds up to 2,200 RPM
- Modified Standards to Meet Specific Design Requirements

Advantages:

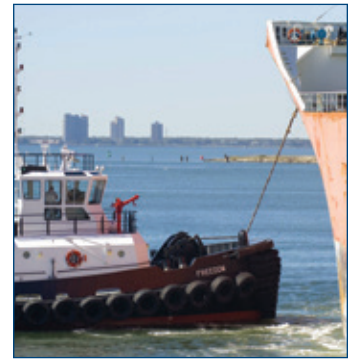
- High Torque, Small Envelope
- Fluid or Air Actuated
- Wet or Dry Operation
- Smooth Engagement – Quick Release



Logan CH Clutches



Typical Z-Drive



Render-Recover, Ship Assist Winches



Deck and Hawser Winches

Logan Multiple Disc Clutch and Brake Applications

Logan also manufactures and stocks a wide variety of both friction-faced and high-carbon steel discs for wet or dry clutch and brake applications. Logan incorporates the latest technology in sintered bronze facing material.

- Reduce tooling costs with existing Logan tooling.
- Improve the quality of your existing friction or steel separator discs with improved friction material coefficients, heat treat specifications and mating disc surface finishes.
- Improved delivery - order small lots from existing Logan disc inventory.

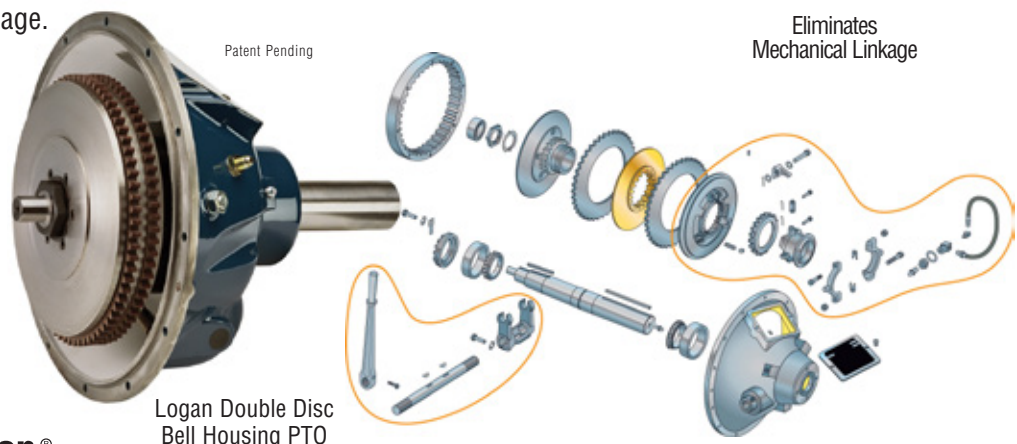
Consider Logan when designing or improving upon your single or multiple-disc clutch or brake application.



Friction-faced and high-carbon steel separator discs

New! Logan Bell Housing PTO Clutches

- Self Adjusting Disc Pack – minimizes Slippage.
- Available with or without pilot boearing.
- Eliminates Mechanical Linkages, Hand Levers, and Yokes.
- Air or Fluid Actuated - (air is ideal for cold start applications).
- Fast Engagement - Quick Release.
- Remote Activation.
- Modified Standards Available.



Logan Double Disc Bell Housing PTO

Eliminates Mechanical Linkage



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manufacturers of clutches and brake products

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www.loganclutch.com • sales@loganclutch.com

