



CP124 Clutch Pump Installation Instructions (For 12 Volt DC Circuit Only)

CLUTCH PUMP:

The clutch comes assembled with either a Pad Mount or a 2 Bolt "A" shaft end cover.

An "L" bracket (Permco part #BR549) is normally used in conjunction with the 2 Bolt "A" shaft end cover for mounting.

The clutch (120 lbs. ft.) options are 1/2 in. AA groove (6 in. diameter), 6 groove serpentine type "K" (6 in. diameter), or 8 groove serpentine type "K" (5.47 in. diameter).

MOUNTING HARDWARE:

Engine hardware mounting kits can be purchased from C. W. Mills (785-284-3454). Some qualifications may apply to purchase.

You will need to know the engine type and size, clutch pulley diameter, clutch rated in lbs. ft. and your clutch pump mounting style (pad mount or bracket mount).

Engine hardware mounting kits come with all the necessary hardware to mount the clutch pump to the engine belt drive system.

CLUTCH PULLEY OPTIONS:

STANDARD ADD-ON-PULLEY

A 2 groove pulley is added on to the crankshaft system (drive pulley) and directly drives the clutch pump pulley (driven pulley) with 2 "A" belts (1/2 in.) For some engines a serpentine add-on-pulley is used.

Engine hardware mounting kits are designed so the clutch is mounted as close to the crankshaft as possible. 180° belt wrap and/or belt tension pulleys are recommended for best efficiency.

SERPENTINE BELT DRIVE

This system uses a 6 or 8 groove serpentine class "K" poly "V" belt (dependent upon the engine type and size).

Engine hardware mounting kits are designed to drive from the OEM belt drive system, with the mounting hardware aligning the clutch pump pulley into the belt system. The kits generally add an idler pulley and a lengthened belt, allowing the use of the OEM tension pulley.

TENSIONING THE BELTS:

Before placing the belt on the clutch pump pulley, spin the clutch by hand to make certain that it spins freely with no binding.

Engine hardware mounting kits come with the proper sized belts to fit your drive system. Serpentine belt drives normally utilize the OEM tension pulley. When using Poly "V" belts a tension pulley is recommended. If you do not use a tension pulley a belt tension tester should be used when setting the belt tension. Normally it will require a force of 3 to 5 pounds to deflect the belt 3/16 inch per foot of span.

Consult engine hardware instructions for belt tension specifications and horsepower draw limitations.

Improper tensioning can cause premature pump failure and void the factory warranty.

RESERVOIR AND OIL SPECIFICATIONS:

Reservoir capacity in gallons should be at least 2 times the pump output in gallons at rated RPM.

Fluid level in the reservoir should not be lower than the pump inlet.

It is recommended that a premium quality hydraulic fluid (anti-wear, rust and oxidation additives) with a viscosity range of 150-300 SUS (32-65 cSt.) at 100°F (38°C) be used to assure optimum performance.

The normal operating viscosity range is between 55-1000 SUS (9-220cSt.) not to exceed start up viscosity of 2000 SUS (440cSt.).

Under normal operating conditions the fluid temperatures should not exceed 180°F (82°C).

Inlet conditions should not exceed 5 in. Hg. at operating speed.

FILTERING THE SYSTEM:

To assure maximum performance and life, a 10 micron nominal return line filter with a Beta rating of 2.2 is required for the system. Filters should be changed at regular hydraulic maintenance intervals. Permco filter part #70134, filter head part #50186 (25 PSI by-pass).

SIZING THE HOSES:

When plumbing your pump it is essential that the hoses be sized for proper flow velocity, rated in feet per second.

The inlet hose flow velocity should not exceed 4 feet per second, the return hose should not exceed 8 feet per second, and the pressure hose should not exceed 15 feet per second.



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BEFORE OPERATING YOUR SYSTEM:

Before operating the hydraulic system the pump clutch must be properly burnished (see burnishing instruction tag affixed to the clutch pump).
Improper burnishing of the clutch will void the factory warranty.

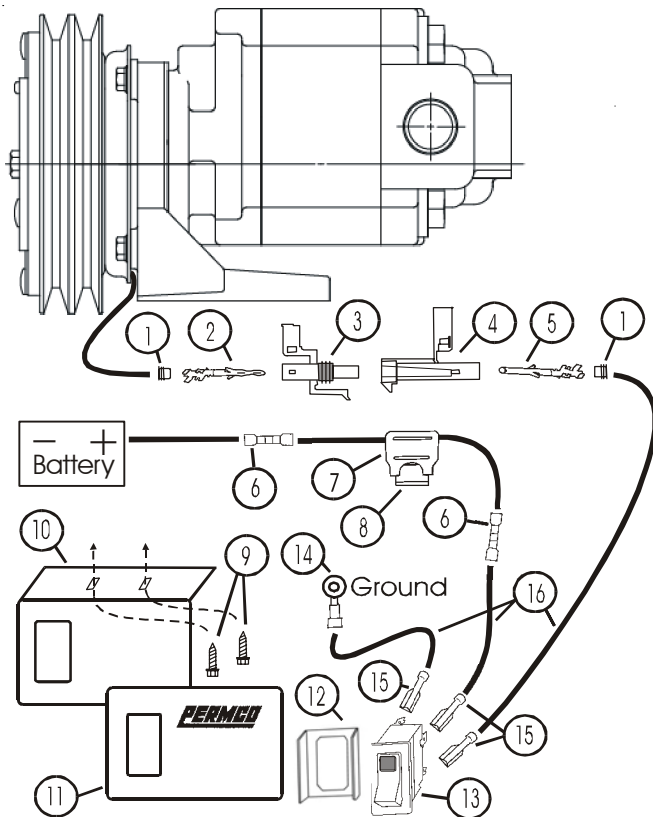
SWITCH KIT INSTALLATION:

The switch can be mounted in the dashboard via a knock out opening or mounted to the base of the dashboard utilizing the dash bracket.

1. Mount the dash bracket utilizing the (2) 10-24 1/2" self-tapping screws with bonded washer and neoprene seals.
2. Peel the backing from the self adhesive nameplate and place it on the dash bracket.
3. Put the switch guard over the switch and place the switch (green light up) inside the opening of the dash bracket, while supporting the back of the dash bracket and push the switch in.

WIRING INSTALLATION: (T-12 Weather Pack crimping tool required)

1. Insert clutch coil wire into the Weather Pack seal, crimp (1) male Weather Pack insert (pin) onto clutch coil wire, place insert inside Weather Pack tower (male), push seal into place and close cover on tower assembly.
2. Determine length of wire from the rocker switch to Weather Pack tower on the clutch assembly, insert wire into Weather Pack seal, crimp (1) female Weather Pack insert (pin) onto the wire and place insert inside the Weather Pack shroud (female), push seal into place and close cover on the shroud assembly, connect tower and shroud together, crimp blade terminal onto opposite end of wire and connect to the bottom left spade terminal on the rocker switch.
3. Determine length of wire from the rocker switch to predetermined ground point, crimp ring terminal to the end of the wire and ground to the frame, (proper grounding is essential for proper clutch function), crimp blade terminal onto opposite end of the wire and connect to the top right spade terminal on the rocker switch.
4. Determine length of wire from the rocker switch to the accessory fuse panel, attach one end of fuse wire to a 12 volt supply terminal in the fuse panel, butt splice in fuse holder, crimp blade terminal onto opposite end and connect to the middle spade terminal on the rocker switch, insert 10 amp fuse in the fuse holder.



Clutch Pump Switch Kit 999-00956 Bill of Materials

Item No.	Part No.	Description	Qty. Req'd
1	999-00937CS	16G Weather Pack Cable Seal	2
2	999-00939	Weather Pack Insert, Male	1
3	999-00943	1 Pin Weather Pack Tower	1
4	999-00942	1 Pin Weather Pack Shroud	1
5	999-00938	Weather Pack Insert, Female	1
6	999-00927	16-14 Gage Butt Splice	2
7	999-00928	16 Gage Fuse Holder	1
8	999-00929	10 Amp Fuse	1
9	900-01270	10-24A1/2 Screw W/Washer	2
10	999-00932	Switch Bracket	1
11	999-00931	Self Adhesive Face Plate	1
12	999-00933	Switch Guard	1
13	999-00934	Switch with Light	1
14	999-00926	18-14 Gage Ring Terminal	1
15	999-00935	Female Blade Terminal	3
16	999-00925-20	20' 16 Gauge Wire	1

Less than 11.5 volts will result in clutch slippage and consequential damage to the clutch may occur.

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