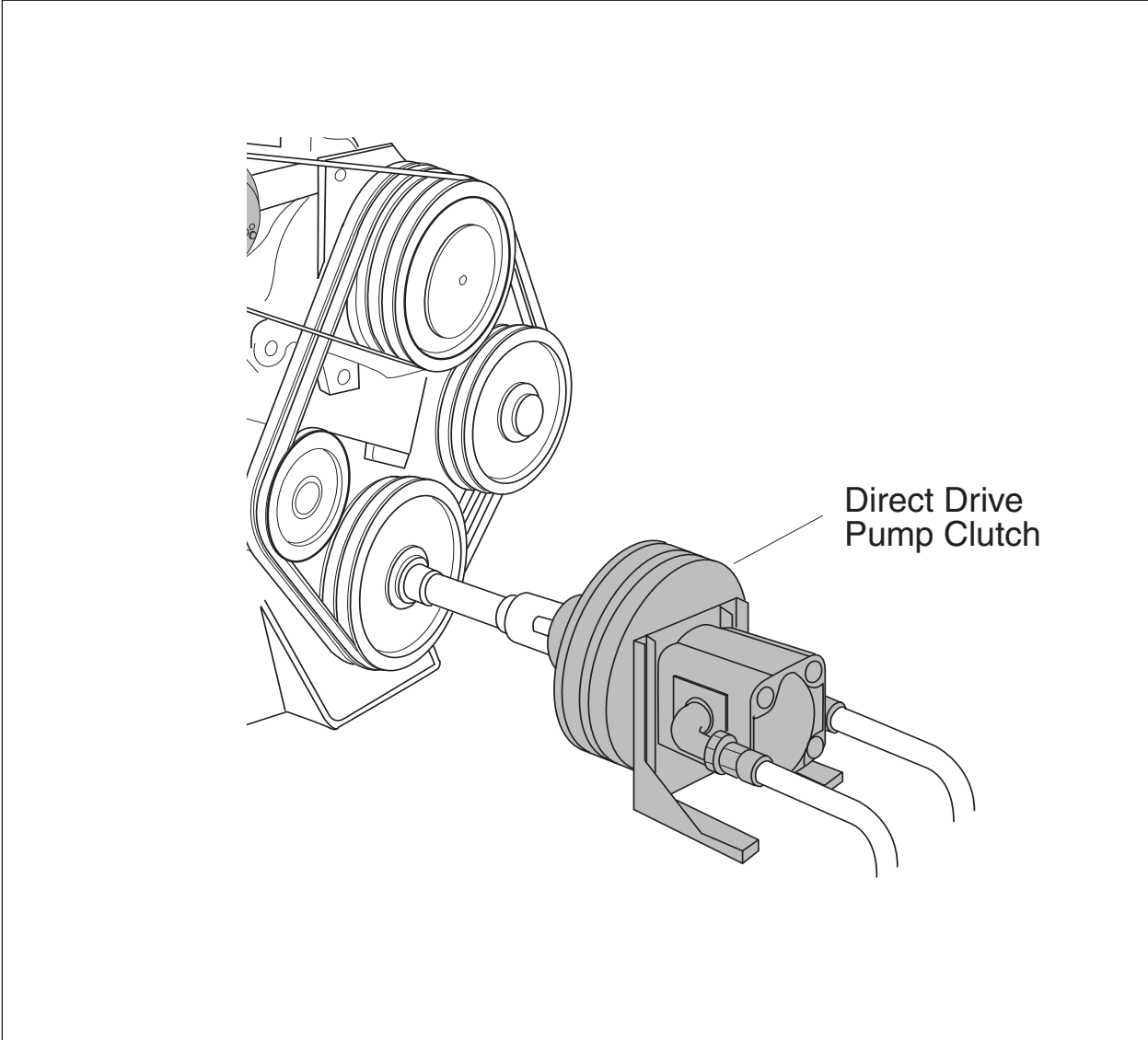


Heavy Duty Pump Clutch

P-227
819-0374

Installation Instructions



Warner Electric pump clutches are electro-magnetically operated and driven through a special flange mount which adapts to a universal joint flange. When current is applied to the clutch coil, the armature is pulled against the rotor, causing the clutch to engage. This clutch employs a sealed bearing and it is maintenance free and never needs lubrication. Installation is to be made in accordance with this service sheet. A connection diagram and troubleshooting information are also included.

⚠ WARNING Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

Installation

1. Pump clutches are furnished with either a 13 tooth spline or a keyed drive. For splined hub versions, match the splines to those on the pump shaft and push the clutch onto the shaft. With the keyed shaft version, insert the key into the shaft keyway, match the hub slot to the key and push the clutch onto the shaft.
2. With the clutch on the shaft, push it firmly against the pump bracket. Complete the installation procedure in the reverse order for removing the old clutch.
3. A drive shaft with a universal joint is attached to the engine crankshaft or transmission PTO. Drive flange bolt pattern and pilot diameter on clutch are dimensioned to correlate with "Spicer" type drive shaft flange connections. The pump clutch is connected to the other end of the shaft. **Drive shaft alignment must be within three degrees of straight.**

Electrical Connection

1. Voltage Requirement

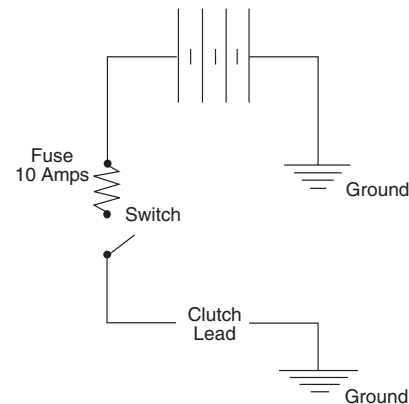
This clutch is 12 or 24 VDC.

2. Current Draw (amps)

The specific current draw for this clutch is listed in the product specification. A minimum of 10 amps current should be available to operate this clutch.

3. Connection

Please refer to the adjacent diagram for proper connection. Note that one wire is to be connected to a DC power source. Either wire may be positive or negative. Select one wire and attach it to a ground connection or a negative battery terminal. Attach the remaining wire to an on/off switch. The switch must be on a (minimum 10 amp) fused circuit to protect the electrical system in case of a short circuit.



Connection Diagram

Burnish or Run-In

A burnish cycle is required to achieve full rated torque. With the power input rotating at normal speed and the pump set at minimum load, cycle the clutch on and off 50 times at the rate of 10 cycles per minute, which is three seconds run time and three seconds off time. A new clutch may emit a short squeal when initially engaged.

Troubleshooting Checklist

A. Symptom: Clutch will not engage

Problem	Possible Causes	Solution
Low voltage or wrong voltage	<ul style="list-style-type: none"> Defective power supply (battery?) Defective or corroded wiring or connectors 	
Rotor/armature airgap too large	<ul style="list-style-type: none"> Worn components 	<ul style="list-style-type: none"> Replace if coil is OK
Zero current	<ul style="list-style-type: none"> Broken lead wire Faulty switch Open clutch coil 	<ul style="list-style-type: none"> Check coil resistance.

B. Symptom: Clutch Slips

Problem	Possible Causes	Solution
Clutch not burnished	<ul style="list-style-type: none"> Burnish clutch per burnishing instructions 	
Clutch attempting to engage against deadhead pressure	<ul style="list-style-type: none"> Load being applied to system Defective valve(s) 	
Low supply voltage	<ul style="list-style-type: none"> Defective power supply or battery Defective or corroded wiring or connectors 	
Overloaded clutch	<ul style="list-style-type: none"> High pressure relief valve stuck or out of adjustment 	
Contaminated friction surfaces	<ul style="list-style-type: none"> Oil on clutch (friction surfaces must be clean) 	
Clutch loose on shaft	<ul style="list-style-type: none"> Loose mounting 	
Clutch not mounted square to drive shafts	<ul style="list-style-type: none"> Dimensional problem at flange or shaft mounting points 	
Broken rivet joints		

C. Symptom: Noisy Clutch*

Problem	Possible Causes	Solution
With clutch disengaged	<ul style="list-style-type: none"> Faulty armature bearing 	
With clutch engaged	<ul style="list-style-type: none"> Faulty field bearing <ul style="list-style-type: none"> Loose mounting Operating temperature above 250° F Bearing preloaded axially 	

*Chirp as clutch engages is normal

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