

Hydraulic pumps on mobile equipment can be direct driven by an engine into a pump drive gear box through a power takeoff, or through the engine's accessory belt drive. Without a clutch, in all of these cases, the pump runs whenever the engine does. Although the pump is run through a bypass valve it is still turning when the engine does. This causes unnecessary wear in the pump since it is rotating when it does not need to be, and causes unnecessary fuel consumption due to the parasitic loads of the pumps rotation.

To eliminate this strain on fuel consumption and to increase pump life a clutch can be installed between the pump and the input drive mechanism. When there is no hydraulic power needed the clutch pulley is free to rotate. When hydraulic power is needed a simple switch or relay allows 12 volts to go to the clutch coil engaging the pump within .2 to .5 seconds, giving a very fast response. Electromagnetic clutches from Ogura Industrial Corporation in Somerset, N.J., provide a quick and easy engagement and disengagement for hydraulic pumps and other attachments driven by gas or diesel engines.

For cold weather environments the clutches allow the engines to properly warm up before the engine is required to engage the hydraulic system. Besides preventing engine stalling this also allows engines to operate more efficiently. Maximum torque ratings are 100 to 1500 lb-ft. Large bearings and a one-piece bi-directional spring help the clutch withstand heavy vibration. Multiple disk units are also available for mounting inside gearboxes in an oil bath environment and can generate torque in excess of 12,000 lb-ft.

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