MUNCIE POWER PRODUCTS

Product Bulletin #00055

Subject: Muncie Start Clutch Life

Date: March 15, 2018

URL: www.munciepower.com

Since the launch of the Muncie Start clutch engagement system, there have been several questions as to how clutch pack life might be affected by a modulated engagement. The purpose of this bulletin is to allay any concerns one might have about clutch longevity while using a Muncie Start equipped PTO in their respective application.

In the past, clutch shifted power take-offs were relatively short-lived when thrown into an environment where they were subjected to high-inertia loads. In a traditional wet clutch PTO, activation pressure is controlled by an on/off style solenoid valve - i.e. the PTO clutch undergoes instantaneous engagement. This can be problematic in those applications with high inertia loads, as either the PTO clutch cannot transmit the startup torque required to accelerate the driven equipment and experiences slipping under full engagement pressure as a result, or the entire system is subjected to a violent shock load as the driven equipment accelerates suddenly to match the PTO output speed. Shock loads can cause any number of problems, be it bearing failure, output shaft shearing, gear tooth fracture, etc.

The Muncie Start system works by modulating PTO activation pressure in the clutch pack during engagement, starting at low pressure initially, then gradually building to full pressure. The clutch discs are allowed to slip in a controlled manner, and since the pressure acting upon them is limited at first, the amount of energy that must be dissipated is well below the amount the clutches can tolerate. By the time full activation pressure is reached, the driven equipment has already started to turn, and the clutch no longer slips. The amount of time the clutch discs slip is

WE BUILD TRUST.

MUNCIE POWER PRODUCTS

still relatively short, and there is never slippage under full activation pressure. This actually reduces clutch wear on high inertia applications, and completely eliminates the shock load that would be found using an on/off activation.

These claims have been validated by both lab and field testing. Clutch wear was monitored over the course of tens of thousands of engagements, and was found to be comparable to wear in a clutch pack in a low-inertia load environment. When compared to an on/off engagement, as would be found in a standard PTO, clutch wear was reduced, and start up torque was decreased by approximately 70 percent.

The Muncie Start clutch engagement system is available now on FR6Q power take-offs as a “6” special feature code for stationary applications, or a “7” special feature code for switchable stationary/mobile mode applications. It will also be available on new clutch shifted power take-offs from Muncie Power Products.