HYDRAULIC

SPRAG CLUTCH RETROFIT ADAPTER FOR



Improve Hydraulic Starter Reliability with a TDI Sprag Clutch Adapter



56H Hydraulic Gas Turbine Starter Improves Reliability and Costs Less

TDI Sprag Clutch vs. Other Clutch Designs







With 22 contact points vs. just 3 contact points on pawl and ratchet design, TDI's unique sprag clutch delivers incomparable reliability. By evenly distributing torque to 22 points, instead of three, it reduces wear by over 400%. The many contact points eliminate the requirement for precise ramping speeds for successful clutch engagement. The result is a simpler, much more forgiving clutch system for reducing downtime and assuring starter reliability. While the roller clutch has 13 contact points, its lack of resistance to internal dirt and contaminants poses reliability concerns.

Compact Hydraulic Starter for Marine and Mobile Applications

With a small footprint and weighing 15 to 30 percent less than most other hydraulic starters, 56H is the ideal starting solution for any environment with space limitations.

Save Thousands with Lower Priced 56H

With a superior clutch and comparable performance specifications, 56H delivers exceptional starter reliability while costing thousands of dollars less.

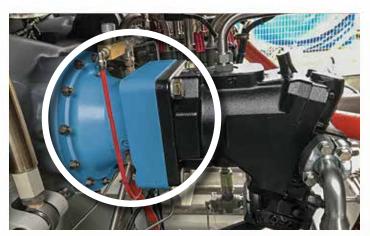
Before (Showing Hilliard Clutch)

Stronger, More Reliable Clutch Assures Less Downtime

Clutch failure due to control malfunctions and long term wear are one of the most common sources for starter/engine failure. 56H's sprag clutch virtually eliminates these problems by evenly dispersing torque to 22 separate points (see visual above).

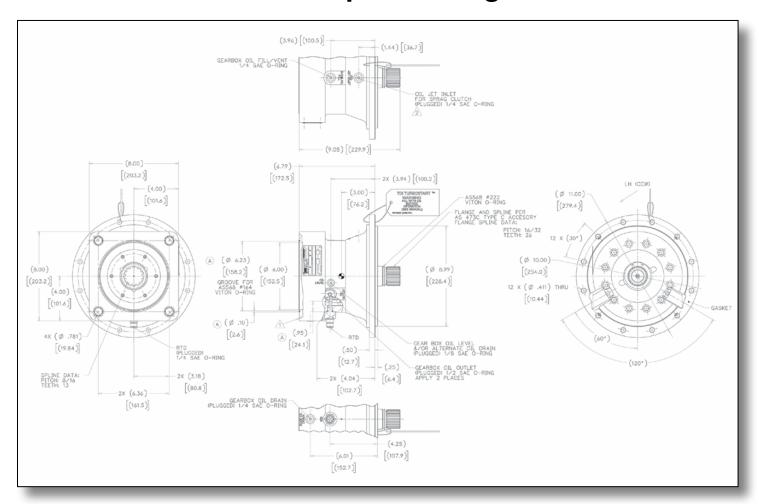
Clean, Green Hydraulics

56H's hydraulic system releases no fugitive emissions. It is a good solution where strict clean air regulations are enforced.



After (TDI Clutch Installed)

56H Sprag Clutch Adapter Envelope Drawing





TDI Sprag Clutch Advantages

- Costs Thousands Less
- More Reliable Sprag Clutch Design
- Simpler, More Reliable Mechanics
- Superior, Turbine-Powered System
- Fewer Moving Parts
- Longer MTBF





TDI Hydraulic Starters: Field Proven Reliability When Air Starting is Not an Option

Having your gas turbine engine available when you need it depends on the reliability of your start system.

This becomes an even bigger challenge in certain marine and mobile applications where traditional air starters are not feasible. In these environments, hydraulic starters are an alternate choice.

As the leader in pneumatic starting for the oil & gas, marine and mining industries, TDI has applied its deep understanding of engine start systems to hydraulic powered starters. Time proven design advantages like the industry's most reliable sprag clutch, simpler mechanics, and fewer moving parts are cornerstones of the 56H hydraulic starter's reliability.

The ability to use a wide array of commercial and military fluids, and TDI's willingness to custom-configure the starter make the 56H a very versatile solution when air units are not an option.

For custom-configured starters from the leader in reliability, anything less than a HydroStart™ is a compromise.





A Plug-and-Play Starter Replacement Clutch for GE Gas Turbine Engines