

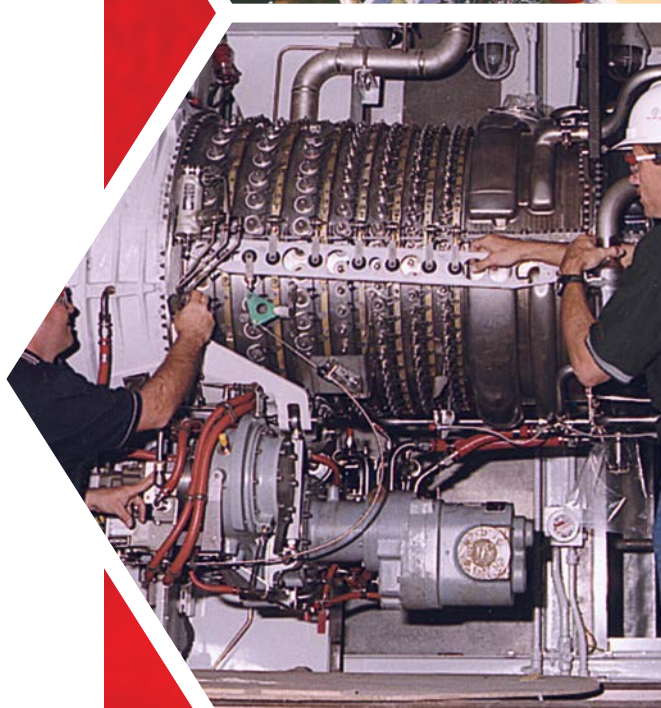
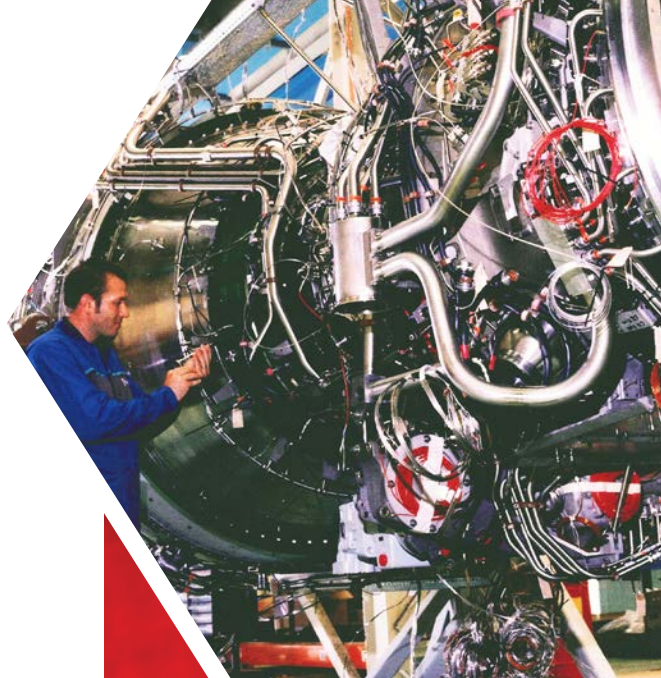


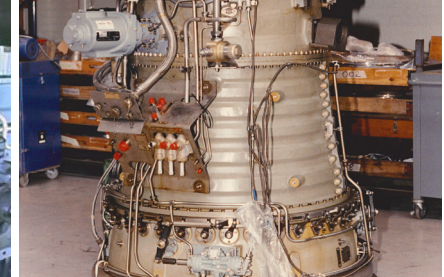
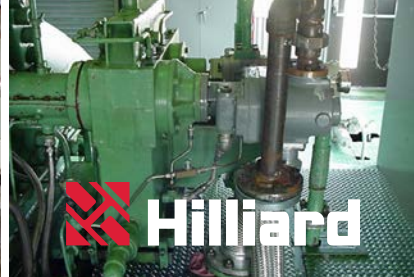
ENGINE STARTERS FOR GAS TURBINES

PROVEN STARTING POWER



HilliardCorp.com





HYDRAULIC / ELECTRIC STARTER DRIVES

- High-speed overrunning clutch contained in housing
- Operating speeds up to 16,000 RPM
- Standard torque size range: 925 ft lb (1255 Nm), 650 ft lb (881 Nm), 275 ft lb (373 Nm), 75 ft lb (101 Nm)
- Lubrication path isolated from hydraulic motor and engine
- Integrated oil supply and drain connections
- Automatic disengagement
- Oil cooled with .25 gpm



FEATURES

- CM Condition Monitoring
- RTD Resistive Temperature Detector
- 1/2" and 3/4" Thermo-well Kit
- SAE Installation Point
- Source Controlled Supply
- Finished Modification

BENEFITS

- Long-term Starter Clutch Health
- Measures Clutch Cooling Oil Temperature
- Equips Clutch for RTD Installation
- Accepted Design Standard
- Certified OEM Genuine Parts
- Extends Clutch Overhaul Interval

GEAR DRIVE / SPEED INCREASER

- Straight or right angle
- Precision-cut gears for high efficiency
- Large and small ratios available
- Output speeds up to 8,500 RPM
- Integrated high-speed overrunning clutch available
- Spur gear and bevel gear designs
- Synthetic or mineral oil cooling lubricant
- Apply to electric and hydraulic motors





PNEUMATIC STARTERS

- Operates on any pressurized gas (0-220 psig)
- Break-away torques up to 3,700 ft lb
- Output speeds up to 12,000 RPM
- For industrial gas turbine or reciprocating engines
- Standard and custom interfaces available
- Helical rotor design
- Positive displacement
- Roller-ramp overrun clutch to pre-engage the starter to the turbine
- Dynamically balanced, gas tight
- Delivers rated torque at 0 RPM



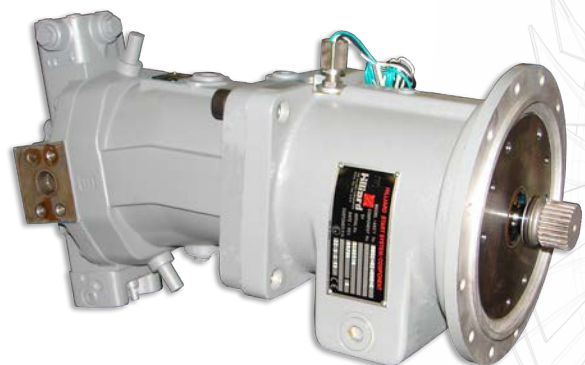
Solidly built, compact HILCO® starters can provide starts within 30 to 40 seconds using pressurized air or natural gas actuation, plus they are capable of extended purge times of five minutes or longer. These starters are field-proven to provide high torque on demand for cranking gas turbine and reciprocating engines.

The key to our starters' reliability is the unique, positive displacement helical rotor design. The rotors are precision-machined from high-grade steel bar stock and precisely mated for low-friction operation. Anti-friction ball bearings at each end provide support for both axial and radial loads.

Engagement begins when air or gas flows through the inlet port, filling the pocket formed between the rotor lobes and the housing. This creates a pressure differential across the lobes and the rotors are forced to turn and develop torque. Most of the torque is produced by the drive rotor, keeping internal friction to a minimum and making the rotor system virtually maintenance free.

HYDRAULIC STARTER ASSEMBLY

- Variable and fixed displacement types
- SAE mounting, spline shafts
- Typical operating pressures up to 5000 psig (350 bar)
- High-speed operation
- High starting torque efficiency
- Different sizes for different applications
- Suitable for open and closed loop circuits
- Supply includes overrun clutch

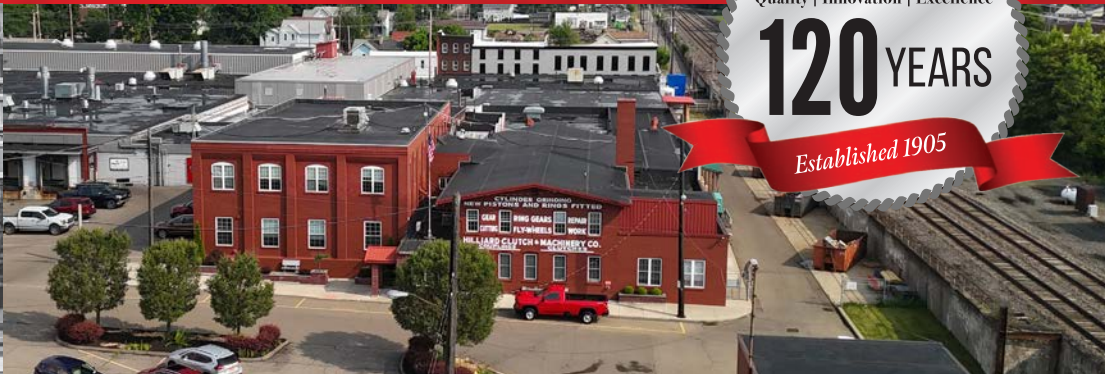
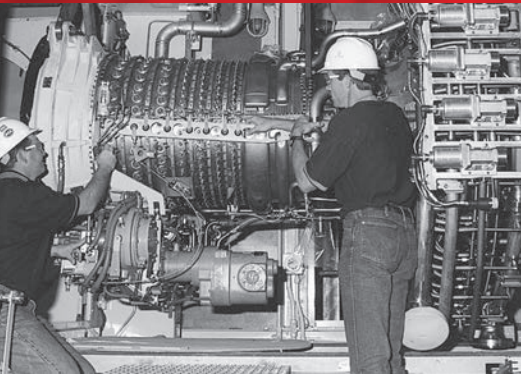


The Hilliard Corporation has earned its 120-year reputation as an industry leader and manufacturer of quality "Made in the USA" products.

Hilliard
Quality | Innovation | Excellence

120 YEARS

Established 1905



We've built our reputation solving customers' application problems. From our full line of motion control products to HILCO® filtration products, everything Hilliard makes is developed and fine-tuned by our knowledgeable engineers.

Our engineering philosophy has driven the development of our engine starters. Every model has been carefully designed to meet a specific application. The expander section has been rigorously tested to meet your high quality performance standards.

We're confident we can provide you with the right engine starter to meet your specifications.

TURBO PRODUCTS DIVISION

Serving these Markets:

- Gas Transmission
- Cogeneration
- Power Generation
- Oil Exploration & Gas Lift
- Marine Propulsion
- Stand-By Generation

With these Products:

- Pneumatic Starters
- High Speed Overrunning Clutches
- Speed Increaser Gear Drives
- Hydraulic Starter Drives
- Electric Starter Drives

FACTORY OEM REPAIR & OVERHAUL



Expert recommendations:

- Upgrade to RTD
- Refer to clutch field inspection instruction (143-a)
- Perform overhaul service for dependable starting
- Discover advantages of clutch spare

Need help? — Let's talk.

- Genuine OEM Parts and Service
- Contact Hilliard for name of approved clutch seller in your area



The Hilliard Corporation

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Hilliard Products are
Made in the USA.

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