



FICEP
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Direct Drive Spindle Technology



The drilling of structural steel traditionally incorporated a drill spindle gearbox to reduce the spindle's RPM's and increase the torque for the specified requirement.

With some hydraulic spindle designs, it was also employed to develop a different RPM range for each spindle of a three-spindle configuration.

The three-spindle configuration is still offered by some manufacturers today to be able to offer up to three different diameters. Unfortunately, the speed range in each spindle is not capable of covering from the minimum to the maximum range.

The end result is that some tools cannot be operated at the desired RPM range as stated by the tooling manufacturer because of this spindle RPM range limitation.

Today's current tooling can require up to 5,000 RPM to achieve the designed performance.



Spindles with a gearbox to achieve high spindle RPM's traditionally require some type of internal cooling system to dissipate the heat generated at this level of rotation.

As the capabilities of spindle drives were expanded, FICEP was able to use a single spindle design, with an automatic tool changer to process different hole sizes.

This spindle design could perform the complete RPM range to accommodate diverse tooling specifications.

In 1998 FICEP introduced in their forging products division a direct drive, fully programmable motor.





In 2009 this same direct drive spindle technology was incorporated into the drilling product lines at FICEP.

This industry first by FICEP translated into many unique advantages for the fabricator.

1. Since the gearbox was eliminated, RPM's of up to 5,000 could be achieved without concern for spindle heat generation and the requirement for a water-cooled spindle.

2. The elimination of multiple gears, bearing and seals virtually eliminates typical maintenance.

3. Greater efficiency. One hundred percent (100%) of the horsepower of the motor is what is delivered to the cutting edges of the tool. It is not like a car where a mechanical transmission greatly reduces the power delivered to the wheels, for example.

Offering to the industry the first "Direct Drive" drill spindle is just another example of FICEP's innovative engineering team's commitment to our clients!

