



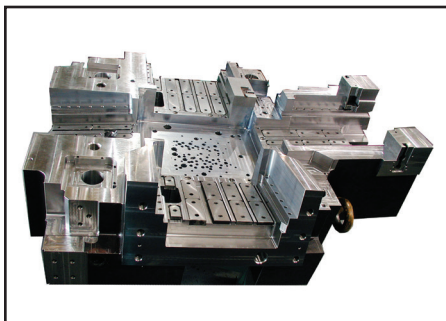
### Automotive Tool & Die

### Die Cast Engine Block Holders

### PT 1800 Plain Table Horizontal Boring Mill

#### The Challenge

With substantial new business coming in from Automotive “New Domestics” in addition to the growth in long-term business from General Motors, Fischer Tool & Die needed additional capacity. One of Fischer’s competitive advantages is the size of the dies they are able to produce, dies which often have long cycle times. The company therefore needed a boring mill to handle the large capacity and one that would run reliably at high speeds.



#### Part Specifications

The primary job for the new boring mill is a V6 engine block holder die. The machining process requires removal of 45 percent of the stock from a 70,000 pound, six-foot square, 4140 steel billet block. The cycle time of 900 hours required a machine with speed. The heavy cuts and precision of the flat surfaces and pockets meant a rigid machining platform and high-torque were necessary.

#### Fives Giddings & Lewis

142 Doty Street  
Fond du Lac, WI 54935  
Tel: 920 921 9400, Fax: 920 906 2522  
fivesmsi-sales@fivesgroup.com  
www.fivesgroup.com

#### The Solution

Fischer decided to add a boring mill to the five they had at their 45,000 square foot Michigan facility. The company did their homework when evaluating machine tools; visiting other manufacturers, requesting test cuts and even reviewing operating manuals. They decided on a Giddings & Lewis PT 1800 plain table boring mill.

“The PT 1800 has been a phenomenal machine - reliable, accurate and fast. It’s everything we want and need in a boring mill.”

Mike Fischer, President  
Fischer Tool & Die



#### PT 1800 Specifications

- 2000 x 3600 mm (71 x 142 in) table
- Four-speed, five-inch spindle headstock with a 45 kW (60 hp) spindle motor, 6190 Nm (4566 ft lb) torque and 3500 rpm. The four-speed headstock has high torque at low speeds for heavy-duty metal removal.
- Heidenhain control. Used extensively in tool and die production, Heidenhain controls offer ease-of-use and precision contouring.
- 25 m/min (984 ipm) rapid traverse

#### The Results

- A 20 percent increase in the metal removal rate was achieved with the PT 1800.
- The Fischer plant runs 7 days a week. In the seven months following the installation of the Giddings & Lewis boring mill, the machine ran 4500 hours, only out of service 15 to 20 hours per week.
- Because of the 4 to 5 week part cycle times, Fischer needed to optimize the speed and rigidity in the machine they selected. The hardened and ground roller guideways of a boring mill achieve rapid traverse rates of 25 m/min. The roller truck system maximizes way contact and rigidity.



- The modular design of Giddings & Lewis machine tools allowed the customer to configure the machine to their requirements. Fischer chose extended Y axis travel to accommodate large dies, a four-speed headstock for added torque and a Heidenhain control to match the controls on the other boring mills in their shop. The control commonality makes it easier to shift operators and reduces training requirements.
- Standard through-the-spindle coolant helped with chip removal in the deep die pockets machined with high-speed mills.

“This was the best machine install we’ve ever had. Everything went smoothly from the notification that the trucks were on their way to the startup which was done a week earlier than promised.”

Bill Koch, General Foreman