

MULTIPLE DRILLING TOOL TEST SKID COST ANALYSIS AND SIZING

SwRI Project: 08-13096

Client: Commercial Confidential

Project Brief

This project involved the development of a specification for a family of oil drilling tools ranging in size from 3-9". The range of tools necessitated testing across a wide range of conditions as follows:

Torque	250-7500 ft-lb
Speed	800-5500 rpm
Power	40- 50 hp
Thrust	2000-50,000 lb
Radial	500-20,000 lb
Radial	0-0.250 inches
Bent Angle	0-1.5°
Length	30-50 feet
Weight	500-9500 lb
Flow	50-1000 gpm
Flow	500-2000 psi
Backpressure	0-500 psi

For this family of drilling tool, SwRI developed a test stand that provided the following functions, along with sizing all equipment, providing competitive costs for all equipment and labor estimates for all tasks related to fabrication of the stand:

- 750 hp Air Actuated Water Cooled Disk Brake dynamometer
- Speed Reducing Gearbox
- Reactive Thrust Module
- Axial Positioning and Thrust Application
- Radial Load and Drill Positioning
- Pumping Circuit
- Total Flow and Backpressure Control
- Instrumentation/Control/Data Acquisition

