

New, more transportable drill offers contractor benefits

Many contract drillers say there are two important attributes, among others, that they want in their drills - high productivity and uncomplicated transportability. High productivity is more than just the drilling rate - it also involves drill reliability with a high availability rate. The greater the drill's productivity the greater is the potential for profitability. Most drilling contracts are made up where both parties agree on a set price per unit of measure drilled, i.e., the price per foot.

Efficiently transporting the drill is especially important to the drilling contractor who constantly moves the rig over public roads from job site to job site. It is common for some contractors to move a drill-rig eight to ten times a month, making the mobilisation costs an important factor. Transporting the drill from job site to job site can be inefficient and time consuming, depending on the drill rig's transportability and manoeuvrability. Arguably, the most advanced design drill for superior roadability is Schramm's new model T130XD Rotadrill which features the patented Telemast™ tower. While the T130XD is the latest drill-rig design offered by the company, Schramm has been manufacturing drills since 1955. For example, the company is well-known for its vertical rotary drills used in the quarry/mining, construction and waterwell industries.

T130XD in demand

The new-model drill has been on the market for only one year and already 10 of them have been sold with more orders on the way. There are good reasons for the growing interest in this drill, according to two Pennsylvania drilling contractors, Whipstock Natural Gas Services, Inc. of Clymer and Gene D. Yost & Son, Inc., Mt Morris. Whipstock owns two of the T130XD drills. The company specialises in drilling, excavating and servicing existing wells. It employs 115 people and serves the western half of Pennsylvania, eastern Ohio and West Virginia. All wells drilled are for natural gas.

The company's fleet includes five drills, which are operated around the clock, seven days a week. Business is so good that the two new-model drills were added to the fleet rather than replacing existing drills, according to Dave Wilson, drilling superintendent for the company. This year, as well as last year, the company will drill 200 wells. "This past season, we experienced a severe winter here in the northeast and that helped to drive up gas prices. The prices are still high as are oil prices so the gas companies want to drill as many wells as is feasible. Another cold winter this year will assure even more drilling contracts for us and others," he explains.

Two US contractors specialising in drilling for natural gas are using the new Schramm T130XD

Like other drilling contractors, Whipstock wanted to try the new-model drill figuring it would be an improvement over the drills already in the fleet. All the same, before purchasing the first drill, Wilson and Ronald Tonkin, president, visited Schramm at its factory in West Chester, Pennsylvania, where they saw one of the drills being built. "What impressed me when visiting the factory was the accessibility we had to the top engineers and executives for questioning them and getting answers. Having a high-level dialogue with some of the other drill manufacturers is unlikely," said Wilson. They also visited Gene D Yost & Son, Inc., who already owned one of the new-model drills. There, they had the opportunity to see one in operation.

The most outstanding design attribute of the new-model drill, according to Wilson, is its uniquely designed Telemast tower. It is a two-section mast with section-one being affixed at its base to the rig's chassis. Section-two is a sliding extendable mast that is indexed within section-one much as the extendable mast section is on a forklift. Section-two is powered by two-way hydraulic

cylinders for quickly extending or retracting it. In the retracted, horizontal (transport) position, the drill-rig's overall length is only 42 ft 9-in. With section-two fully extended, the mast clearance is 69 ft 9-in high and has a 50 ft head-travel for handling range III casings, which are 34 to 48 ft long.

When section-two is fully retracted and the mast is in the horizontal (cradled) position for transporting the drill, the mast's overhang at the front of the rig's chassis is less than 6 ft. This modest overhang feature is very important to drillers like Wilson. "Our other drills can handle only range-II casings. Unfortunately, the tower overhang on these drills is 14 feet, which can present a problem when transporting the rig. The same manufacturer does offer the drill with a longer tower but that would present even more transport problems with its even more overhang. When making a turn with a rig with a long overhang it is not possible to make turns in the villages or in other tight areas because the tower would hit stationary objects such as trees, telephone poles or street signs. That means we would have to make time-consuming detours to transport the drill to some projects. As far as I know, there is no other drill on the market that is as compact and manoeuvrable in the transport position as Schramm's, yet accommodate a range III casing," says Wilson.

The drilling penetration rate has been very

Whipstock Natural Gas Services, Inc., drilling site with the Schramm T130XD.



good, according to Wilson. Under typical drilling conditions, the geology encountered on most drilling sites is Devonian, which contains primarily red (iron oxides) sandstones and shales. Most wells are drilled between 3,500 and 6,500 ft deep. Whilst the contractor has drilled holes up to 24-in diameter, the predominant pattern and bore sizes for a well are as follows: the bottom section bore-diameter is 6¹/₄-in for accommodating a 4-in diameter casing; the intermediate section of the hole is 8⁷/₈-in diameter for fitting in a 7-in casing, and the top section has a bore-diameter of 12¹/₄-in for installing a 9⁵/₈-in casing. Using this drilling pattern, Wilson says the average drill rate for completing one well is 160 ft/h.

The new-model drill is heavier than the other Whipstock drills, weighing 92,000 lb as opposed to 83,000 lb for a drill with a long tower. This extra weight is acceptable to Wilson since the drill has a drilling capacity of over 1,000 ft more than the other drills. Regardless of the added weight, there is no problem associated with it, since DOT road-and-highway permits from the respective states' Departments of Transportation are readily available through the internet. West Virginia issues blanket permits for all vehicles that are less than 120,000 lb.

Besides the drill-rig, there are seven truck-loads of ancillary equipment needed at each drilling site. This includes drill pipe, a mid-size bulldozer for building a temporary access road to the site and in some cases, a portable compressor. Some contractors prefer to have Schramm install the compressor as an integral part of the drill-rig, while others such as Whipstock prefer to have the compressor separate, away from the drilling site.

Schramm T130XD Rotadrill

Five-axle truck-mounted
Equipped with Telemast™ tower featuring 50-ft head travel for accommodating range III casing
Head mast (section-two) maximum travel rate: 270 ft/min
130,000 lb hoist capacity
Table opening: 28-in
3-in ID spindle with optional 5.25-in spindle
Table clearance: 95-in
Rig overall transport length: 43 ft with less than a 5-ft overhang
Torque @ 106,600 in lb: infinite 0.0 - 143 rev/min
Mast' working clearance (spindle to table): 52 ft 10-in
Working height below the table (outriggers extended): 95-in

It takes only 30 minutes to take the drill from a drilling position to a road-ready transport position. Retracting section-two and then booming down the mast to its horizontal cradle position is accomplished in several minutes by an operator actuating the appropriate hydraulic controls.

Bigger drilling capacity

Gene D. Yost & Son, Inc. was the first company to purchase the new-model drill. Duane Yost, president, is quite explicit on why he purchased not only the first but since then a second drill. "I wanted a drill with a bigger drilling capacity than the ones in our fleet and one that could handle range III casing, yet have better over-the-road transportability. I got all these qualities in the new drill," he says. Duane and Gene Yost, his father and founder of the company, have had a lot of experience with drill-rigs over the past 19 years. They have owned and operated 24 drills sourced from nine different manufacturers. Eleven of the drills are still in the fleet.

Yost is a drilling contractor specialising in drilling wells for natural gas. The company essentially serves the same region as Whipstock, so the rock encountered in Pennsylvania and most areas in the adjoining states is sandstone and shale with unconfined compressive strengths ranging from 12,000 to 20,000 lb/in². However, in southern West Virginia, the rock strengths range from 35,000 to 55,000 lb/in².

Yost says the new-model drill can drill to 6,500 ft deep, as compared to 5,500 ft for his other make drills. That is important, for the deeper-well projects would have to be turned away if it were not for his higher capacity drills. Another attribute, according to Yost, is the generous workspace at the table for efficiently drilling large-diameter holes and handling the casings. Recently, the drill was used for drilling a 22-in diameter hole, 1,050 ft deep, which was accomplished in seven hours. His crew said it was easier and more efficient to work at the drill than it would have been using one of the other rigs because of their much tighter workspace at the tables.

Before/after sales service

Both companies are pleased with the new drills' performances and, in fact, Wilson plans to purchase a third Schramm drill early next year. The manufacturer's willingness to sit down with customers such as Wilson and Yost played a significant role for both companies who were willing to be some of the first to purchase this new-model drill. Yost says, Schramm not only makes available to him its top-level people but they are willing to customize a rig to fit better his requirements for a drill.

This before-the-sale service coupled with outstanding after-the-sale service are reasons both companies keep coming back to order more drills. However, Yost and Wilson say they are not loyal to Schramm or any other drill manufacturer. They will continue to do business with any manufacturer as long as its equipment and service are the most cost-effective available. To date, the drills have been very reliable but the total operating hours are only 8,000. "Right now, its Schramm's to lose. If the drills continue to be reliable, we will continue to buy them. I understand the company is to come out with a drill with a 200,000-lb hoist capacity. That size drill interests me very much," says Yost.



Gene D. Yost & Son Inc., Mt Morris, Pennsylvania, drill site with the new Schramm drill.