

TH-100 drill for big, deep water wells



INGERSOLL-RAND
ROTARY DRILLS



The TH-100 is packed with features to help you drill wells profitably.

Profitable water well drilling requires speed and reliability, and the TH-100 is loaded with features that add up to just that; it can drill more wells at lower operating costs.

It's a powerful rig with the mobility to get you over the road and into the work site quickly, set up and begin drilling fast. And it's loaded with the design features that well drillers have asked for—in fact, maybe you helped design it!

Single-engine design

- More highway horsepower, with a bigger diesel that handles steep grades and rough going.
- Without an extra deck engine, the rig's lighter weight cuts fuel consumption.
- Better stability, because there's less weight on the deck and a lower center of gravity.
- Less noise; the engine is up front away from the operator.
- Cleaner engine, because engine and filters are farther from the hole.
- More deck space—less crowding, more room for easier maintenance.

Exclusive power shift.

The TH-100 power transfer case transmits power from the truck engine either to the rear wheels or to the drilling rig with the flip of a lever in the cab. And it's locked in place until you change it.

Top-head drive

The top-head drive features two low rpm hydraulic motors (rather than one large, high rpm motor) which results in simplified gearing, less load on the gears, a more compact design and easier maintenance. The spindle opening is large to give greater air or fluid flow.

A unique retraction system moves the top-head back into the derrick, away from the centerline of the hole—so you can use the drawworks to handle casing or long strings of drill pipe with ease.

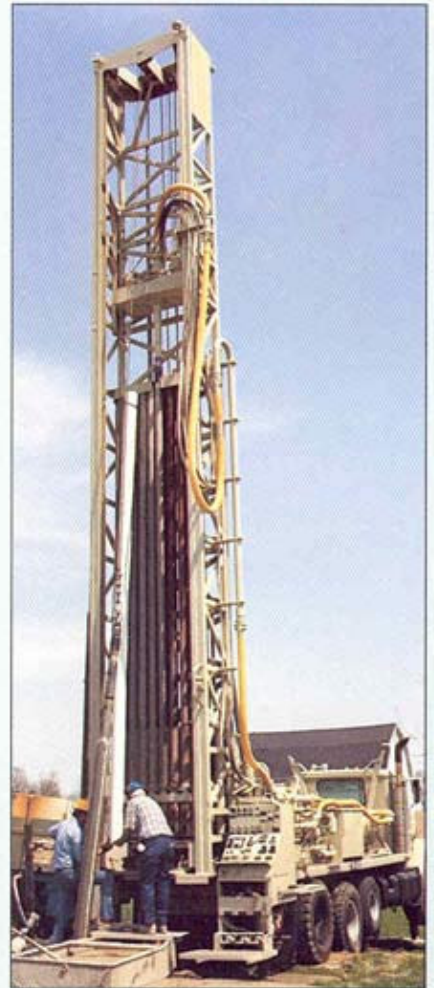
Cable pulldown.

The single-cylinder hydraulic cable pulldown system is designed to give you maximum productivity with minimum maintenance. The cylinder is powered by a tandem hydraulic pump, giving the operator two speeds for drilling functions. The cable absorbs shocks associated with drilling, and can be maintained at a tenth the cost of a conventional system while exceeding the capacity of most chain pulldown systems.

An optional twin-cylinder pulldown is also available. It's a deep-hole package that provides 59,000 lb. (26,760 kg) of static pullback.

Drawworks.

The hydraulic-powered hoist provides 16,000 lb. (7260 kg) bare drum pull. It has an integral hydraulic brake and free-fall, and can also be set up as a 2- or 3-part line.



Derrick.

The standard TH-100 has a 41-foot (12.5-m) tubular steel derrick that is long enough to handle Range 2 casing (up to 33 ft. or 10 m). The derrick is positioned by two hydraulic cylinders.

High-capacity conveyor-type carousel.

The patented conveyor-type carousel has enough capacity to handle most wells using either dual-tube or conventional pipe. It holds and automatically positions 500 feet (152 m) of 3½" (89 mm) or 400 feet (122 m) of 4½" (114 mm) drill pipe. This carousel can be operated easily by one man without a helper, and has an unmatched capacity for pipe.

Control console.

The operator's console is designed with you in mind—all controls and instruments are functionally zoned and conveniently placed. A platform keeps you out of the mud.

Breakout and holding wrenches.

You don't have to move from your position at the controls to engage the top and bottom holding wrenches. They are securely mounted, and a powerful air cylinder engages the wrench on the flat to hold the drill pipe. Drillpipe joints are broken free with a heavy-duty hydraulic breakout wrench.

Retractable centralizer.

The rear half of the centralizer can be moved in or out hydraulically from a control on the panel, and the front half swings out. This centralizer accommodates bushings for various sizes of drill pipe, and opens up to give you more room for handling casing.



Water injection.

Water injection options are available when hole conditions require the use of water or foaming agents. (1) a hydraulic-driven piston pump capable of injecting 0-8 gpm of water or foam mixture into the air stream; (2) for jobs requiring larger quantities and close control of foam, a 0-25 gpm triplex pumping system has an injection device that permits accurate control of foam, independent of water—it eliminates the need to premix foam and water, and prevents waste. Other systems are also available.

Mud pump options.

With any compressor:

- 3x4 centrifugal pump
- 5x6 piston pump
- 5½ x 8 piston pump

Mud only—no air:

- Two 5x6 piston pumps side-by-side
- 7½ x 8 piston pump
- 7½ x 10 piston pump

Hydrostatic drive with built-in over-pressure protection gives you precise control of mud flow while maintaining constant power.

High-ambient cooling.

The cooling systems for engine, compressor and hydraulics are rated for full operation in 125°F (52°C) ambient temperature. This improves efficiency and extends component life at all temperatures.

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TH-100 Cyclone® water well drill

Dimensions

Length (derrick down)	41' (12.5 m)
Height (derrick down)	12'6" (3.8 m)
Height (derrick up)	46' (14 m)
Width	8' (2.4 m)
Hook to centralizer	36'0" (11 m)
Spindle sub to centralizer	26'4" (8 m)

Shipping weight (approx.)

Air rig	57,500 lb. (26,100 kg)
Air/mud rig	64,300 lb. (29,200 kg)

Derrick

Size	29" x 66" x 41'0" (74 cm x 168 cm x 12.5 m)
Rated capacity	65,000 lb. (29,500 kg)

Feed system

Pulldown	30,000 lb. (13,600 kg)
Pullback (std.)	30,000 lb. (13,600 kg)
(opt.)	59,000 lb. (26,760 kg)
Drilling feed rate	27 fpm (8.2 m/min.)
Fast feed rate	232 fpm (70.7 m/min.)

Rotation 107,000 inch-lb. (1233 kg-m) @ 0-130 rpm

Swivel and piping

Swivel ID	3" (76 mm)
Piping ID	2½" (64 mm) std., 3" (76 mm) optional

Carousel capacity

20 pieces of 4½" x 20' (114 mm x 6 m) or
25 pieces of 3½" x 20' (89 mm x 6 m) pipe.

Hoist

Capacity (bare drum)	16,000 lb. (7260 kg)
Speed (bare drum)	94 fpm (23.5 m/min.)

Engine (Truck)

Detroit Diesel 8V92TA, @ 475 hp

Air compressor

I-R HR2 750 cfm @ 350 psi (21 m³/min. @ 24.6 kg/cm²)

Mud pumps & options

3 x 4 centrifugal	300 gpm @ 110 psi (1136 L/min. @ 7.7 kg/cm²)
5 x 6 piston	150 gpm @ 310 psi (568 L/min. @ 21.8 kg/cm²)
Twin 5 x 6 piston	300 gpm @ 310 psi (1136 L/min. @ 21.8 kg/cm²)
5½ x 8 piston	222 gpm @ 338 psi (840 L/min. @ 23.8 kg/cm²)
7½ x 8 piston	420 gpm @ 182 psi (1590 L/min. @ 12.8 kg/cm²)
7½ x 10 piston	487 gpm @ 255 psi (1844 L/min. @ 17.9 kg/cm²)

Water injection options

Hydraulic-driven pump; capacities from zero to 8, 12, 18 or 25 gpm (30, 45, 68 or 94 L/min.). The two larger sizes have pulse pumps for foam.

DHD Lubricator

7 g (26 L) Lubricator for DHD application

There's an Ingersoll-Rand rig for every drilling need



TH-55 Cyclone® is medium-weight rig with features you'd expect on larger machines. Tophead drive; 26,500-lb. (12,020-kg) pullback; I-R 600-cfm (17 m³/min.) air compressor.



TH-60 Cyclone drill has 32,500-lb. (14,742-kg) pullback; retractable hydraulic tophead; pipe carousel inside derrick; exclusive I-R power transfer; air, mud or foam systems.



T4W Drillmaster rig is known around the world for drilling speed and reliability. Rotary or downhole drilling, plenty of on-board air power. Float-mounted deck power pack.

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