

TSI 150CC



COMPACT CRAWLER-MOUNTED SONIC DRILL RIG

Terra Sonic brings big innovation in a small package. A versatile rig with a compact footprint, remote-control tracking and track-mounted design easily accesses tight areas and indoor spaces and traverses tough terrain. This is the most powerful small-platform sonic rig in the world.



FEATURES

- Exclusive TSi 150 Series Sonic Oscillator uses 150 hp to generate resonant sonic energy
- 225 hp Tier 4 diesel engine to power all driving, drilling and accessory hydraulic functions
- Standard 20 ft 1-1/2 in (6.39 m) long mast; available 13 ft 6 in (4.1 m) short mast
- The Rig has 14 ft 2 in (4.32 m) of stroke
- Angle drills between vertical and nearly horizontal
- Rated drilling depth up to 1,000 ft (304.8 m) depending on the lithology and casing design
- Versatile mobility afforded by the crawler-mount





SONIC HEAD SPECIFICATIONS

Sonic Head Model	TSi 150
Oscillator Frequency	0-150 Hz
Oscillator Output Force	50,000 lbf (222 kN)
Max Torque (high torque/low speed)	4,677 ft-lb (6,341 Nm)
Rotation Speed (low speed/high torque)	0 to 62 rpm

TRANSPORT DIMENSIONS AND WEIGHT

Width	7 ft 3 in (2.21 m)
Length	21 ft 4 in (6.50 m)
Height	7 ft 9 in (2.36 m)
Weight	23,995 lb (10,883 kg)
Ground Clearance	10-1/2 in (26.7 cm)

MAST SPECIFICATIONS

Head Travel/Stroke	14 ft 2 in (4.32 m)
Head Travel Speed	0 to 155 ft/min (0 to 47.24 m/min)
Overall Height (bottom of tower to top of jib boom)	20 ft 1-1/2 in (6.39 m)
Drilling Angle	90° to nearly horizontal
Upper Jib Boom and Hoist	2,000 lb (907 kg) Capacity, 150 ft/min (46 m/min) Bare Drum Speed
Mast Lock	Manual Mast Lock in Vertical Position
Tower Dump	30 in (76.2 cm)
Feed System	Hydraulic Operated Feed Frame Using Half Leaf Chain Length and Rollers as Conventional Hydraulic Cylinder/Chain Method



MAST SPECIFICATIONS

Hose Carrier	Mast Integrated Hose Management System with Accessible Bulkheads
Work Lights	LED on Mast and Control Panel
Head Tilt	87° and Hinges Away From Driller 90° to Enable Jib Over Hole

DECK SPECIFICATIONS

Driller Platform	3 ft (914 mm) L × 2 ft 6 in (762 mm) W with Fold-up Hinge
Jack Legs	Four 3-1/2 in (89 mm) × 24 in (610 mm); Located at Deck Corners with Built-in Lock Valves

RIG PERFORMANCE SPECIFICATIONS

Rated Drill Depth	1,000 ft (304.8 m) Depending on Lithology and Casing Design
Max Drilling Diameter	12 in (305 mm) Casing
Drill Feed Rate	0 to 135 ft/min (0 to 41 m/min)
Pull Back Force	16,800 lbf (74.7 kN)
Down Force	11,300 lbf (50.3 kN)
Max Tooling Length	10 ft (3.05 m)



HYDRAULIC SYSTEM SPECIFICATIONS

Hydraulic Oil Tank Capacity	120 gal (454 L)
Hydraulic Cooling System	240,000 Btu/hr @ 100 gpm (70.3 kW @ 379 L/min) and 50,000 Btu/hr @ 20 gpm (14.7 kW @ 76 L/min) for Sonic Head Lubrication
Sonic Head Lube Tank	40 gal (151.4 L)
Variable Displacement Pump	Load Sense Piston Pumps with Pilot Controlled Valves
Pilot Hydraulic Drilling Controls	
Hydraulic Setup Functions	

ENGINE SPECIFICATIONS

Engine	John Deere, Model 6068, Diesel, Tier 4 Final
Engine Power	225 hp (168 kW) @ 2,000 rpm
Fuel Capacity	42 gal (159 L)
Auxiliary Air Compressor	34 cfm @ 120 psi (57.8 m ³ /hr @ 8.27 bar)
Engine Monitor	Mounted in Rig Control Panel, Used to Track Engine Parameters

BREAKOUT WRENCH SPECIFICATIONS

Top and Bottom Wrenches	Dual Clamping Cylinders
Bottom Wrench Clamping Cylinders	Lock Valves Incorporated in Hydraulic Circuit
Wrench Clamp Force	Adjustable Pressure Control Preset at 34,500 lbf (153.4 kN)
Breakout Torque	30,365 ft-lb (41,169 N-m) with Dual Cylinders
Wrench Size Range	3 in (76 mm) to 8 in (203.2 mm) Jaw; 9 in (228.6 mm) to 12 in (305 mm) Jaw
Wrench Travel/Swing	19°
Hardened Teeth Inserts	Replaceable



WATER/MUD PUMP SYSTEM

Pump Type	Deck Mounted FMC W1122 Bean Pump
Output Pressure	1,000 psi (69 bar) with Relief Valve Set at 500 psi (34.5 bar)
Max Flow Rate	53 gpm (200 L/min)

RIG OPTIONS

Low Clearance (short) Mast—13 ft 6 in (4.1 m)
325 gal (1,230.2 L) Detachable Water Tank
SPT with Mounting Options (permanent or removable hinged cup)
Safety Cage (limit switch and rotation button)
Wireline Winch with 1250 ft of Ø 1/4 in Steel Cable (mounted on jib boom)
Full Toolbox
Progressive Cavity Grout Pump (3LL6, 3LL8)
Bredel Hose Pump
Casing Clamp Wrench (3rd jaw)
Diamond Coring Option (DCO) Coring Head with Frame



