

# TSI 150C



## CRAWLER-MOUNTED SONIC DRILL RIG

The 150C Series features the proprietary TSi Sonic Head Oscillator, the world's most powerful sonic drill rig, setting the standard in sonic drilling. This rig boasts a full-size chassis on versatile crawler tracks that can trek long distances over troublesome terrain. No other sonic drill rig gets the job done faster, safer or more efficiently.



## FEATURES

- PTO Cummins diesel, Tier 4, powers all driving, drilling and accessory hydraulic functions
- Angle drills between vertical and 55°
- Mast accommodates 20 ft (6 m) sections of tooling
- Rated drilling depth up to 1,000 ft (300 m) depending on lithology and casing design
- Elevated work platform and support crawler maximize safety
- Provides 24 ft 5 in (7.5 m) of stroke





## 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	8 ft 6 in (2.59 m)
Length	33 ft 11 in (10.3 m)
Height	11 ft 5 in (3.5 m)
Weight	45,440 lb (20,611 kg)
Ground Clearance	21 in (53.3 cm)

## MAST SPECIFICATIONS

Head Travel/Stroke	24 ft 5 in (7.5 m)
Head Travel Speed	0 to 155 ft/min (0 to 47.3 m/min)
Overall Length	36 ft 1 in (11.0 m)
Drilling Angle	90° to 55°
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
Rod Rack	800 ft (244 m) of Vertical Mast Rod Storage
Feed System	Hydraulic Operated Feed Frame Using Half Leaf Chain Length and Rollers as Conventional Hydraulic Cylinder/Chain Method
Hose Carrier	Mast Integrated Hose Management System with Accessible Bulkheads



### MAST SPECIFICATIONS

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	7 ft 1-1/4 in (2.2 m) L × 11 ft 9-5/8 in (3.6 m) W with Aluminum Bar Grating, Steel Hinged Grating in Center, Handrails, Adjustable Jack Legs, Removable Stairs, Safety Chain, Rear Hinge; Winch Cable Operated
Walkway	Aluminum Perforated Safety Grating with Aluminum Handrail, Folds Down on Both Sides of Deck
Deck Skin	Reinforced Diamond Plate
Jack Legs	4 in (122 cm) × 24 in (732 mm) Located at Rear Deck Corners with Built-in Lock Valves; 4 in (122 cm) × 36 in (914 mm) Located on Front Bumper 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	22,000 lbf (97.9 kN)
Down Force	15,000 lbf (68.0 kN)
Max Tooling Length	20 ft (6.2 m)



## HYDRAULIC SYSTEM SPECIFICATIONS

Hydraulic Oil Tank Capacity	110 gal (416 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	25 gal (94.6 L)
Variable Displacement Pump	Load Sense Piston Pumps with Pilot Controlled Valves
Pilot Hydraulic Drilling Controls	
Hydraulic Setup Functions	

## ENGINE SPECIFICATIONS

Engine	PTO Cummins, Diesel, Tier 4 Final
Engine Power	260 hp (194 kW) @ 2200 rpm
Fuel Capacity	42 gal (159 L)
Auxiliary Air Compressor	34 cfm @ 120 psi (57.8 m <sup>3</sup> /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°
Standard Hardened Teeth Inserts	Replaceable



## WATER/MUD PUMP SYSTEM

Pump Type	Deck-Mounted FMC W1122 Triplex 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)
Water Tank Capacity	325 gal (1,230.2 L)

## RIG OPTIONS

Permanently Mounted SPT
Safety Cage (limit switch and rotation button)
Under Head Jib Boom (swing-in) with Wireline or Standard Winch
Full Toolbox
Progressive Cavity Grout Pump (3LL6, 3LL8)
Casing Clamp Wrench (3rd jaw)
Diamond Coring Option (DCO) Coring Head with Frame









