



**TSi 150C  
SONIC DRILL RIG**

**TECHNICAL INFORMATION**

# TSi 150C SONIC DRILL RIG

## TECHNICAL INFORMATION

### MODEL DESCRIPTION

The TSi 150C Sonic Drill Rig is a crawler mounted unit with a 278 HP (207.3 kW) diesel engine that powers all driving, drilling and accessory hydraulic functions.

The TSi 150C features our exclusive TSi 150 Sonic oscillator that efficiently utilizes up to 150 HP (111.85 kW) to generate powerful resonant sonic energy in the drill string to a rated drilling depth of up to 800 feet (243.84 m) with 6 inch (152.4 mm) casing. In addition, the unit has full rotational drilling capability.

The TSi 150C mast enables drilling angles anywhere between vertical and 45°, incorporates an integrated hose management system within its tubular frame, and utilizes a drive system that operates the feed frame with half the chain length and rollers of conventional drive methods.

The TSi 150C has an extra large work platform and fold-down walkways to enhance crew operating efficiency and safety. Stairs provide access to the work platform, and safety handrails surround the perimeter of the drill deck.

The following specifications provide a closer look at the TSi 150C.

Deck Specifications	
	US STANDARD (METRIC)
Working Platform	7 ft.-1/4 in. (2140 mm) Long X 11 ft.- 6 in. (3505 mm) Wide, Aluminum Bar Grating, Handrails, Adjustable Jacklegs, Removable Stairs, Safety Chain, Rear Hinge, Winch Cable Operated
Walkway	Fold-Down on both Sides of Deck and Working Platform with Handrails, Aluminum Perforated Safety Grating
Jacklegs	Two 4" X 36" (102 mm X 914 mm) Front, Two 4" X 24" (102 mm X 610 mm) Rear, At Deck Corners with Built-In Lock Valves
On-Board Water Tank Capacity	225 gal (852 L)
Deck Skin	Reinforced Diamond Plate

Engine Specifications	
	US STANDARD (METRIC)
Engine Type (Integral with Crawler)	Isuzu, Model 6HK1DHA, Diesel, Tier 3 / Stage IIIA Emission Certification Standards
Engine Power	278 HP (207.3 kW) (@ 2000 RPM)
Fuel Capacity	53 gal (201 L)
Auxiliary Air Compressor	13.2 CFM @ 120 psi (22.43 m³/hr @ 8.27 bar)

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Rig Performance Specifications	
	US STANDARD (METRIC)
Rated Drilling Depth	Up to 800 ft. (243.84 m) with 6 in. (152.4 mm) Casing
Max Drilling Diameter	12" (304.8 mm) Casing
Drill Feed Rate	0 to 135 fpm (0 to 41.15 m/min)
Pull Back Force	22,000 lbs. (9979 kg)
Down Force	15,000 lbs. (6804 kg)
Max Casing Length	20 ft. (6.1 m)

Hydraulic System Specifications	
	US STANDARD (METRIC)
Hydraulic Oil Capacity	120 gal (454.3 L)
Hydraulic Cooling System	240,000 btu/hr @ 100 gpm (70,337 w @ 378.5 lpm), and 50,000 btu/hr @ 20 gpm (14,654 w @ 75.7 lpm) for Sonic Head
Variable Speed Control	Variable Displacement Pumps
Hydraulic Control	Hydraulic over Hydraulic for Drilling Functions, Electric over Hydraulic for Set-Up / Non-Drilling Functions

Mast Specifications	
	US STANDARD (METRIC)
Head Tilt	87°
Head Travel	24.5 ft. (7.47 m)
Head Travel Speed	0 to 180 fpm (0 to 54.88 m/min)
Overall Length	32 ft. (9.75 m)
Drilling Angle	Vertical to 45° Off Vertical
Upper Jib Hoist	2000 lbs. (907.18 kg) Capacity, 150 fpm (45.72 m/min) Bare Drum Speed
Lower Jib Hoist	2000 lbs. (907.18 kg) Capacity, 150 fpm (45.72 m/min) Bare Drum Speed
Feed System	Hydraulic Cylinder Operated Feed Frame Using Half the Leaf Chain Length and Rollers as Conventional Hydraulic Cylinder/ Chain Method
Mast Lock	Hydraulic Cylinder Tower Lock
Hose Carrier	Mast Integrated Hose Management System with Accessible Bulkheads
Rod Rack	800 ft. (243.84 m) of Vertical Mast Rod Storage


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### Breakout Wrench Specifications

	US STANDARD (METRIC)
Wrench	Dual Cylinders on both Top and Bottom Wrenches
Wrench Clamp Force	Adjustable Pressure Control Preset at 34,500 lbs. (15,649 kg)
Breakout Torque	30,365 ft-lbs (41,169 N-m) with Dual Cylinders
Wrench Size Range	3 in. (76.2 mm) to 12 in. (304.8 mm)
Wrench Travel	19° Swing
Hardened Inserts	Standard

### Sonic Head (Oscillator) Specifications

	US STANDARD (METRIC)
Sonic Head Model	TSi-150
Oscillator Frequency	0 - 150 Hz
Oscillator Force	50,000 lbs. (22,680 kg)
Max Torque (high torque/low speed)	4677 ft-lbs (6341 N-m)
Rotation Speed (low speed/high torque)	0 to 80 rpm

### Options

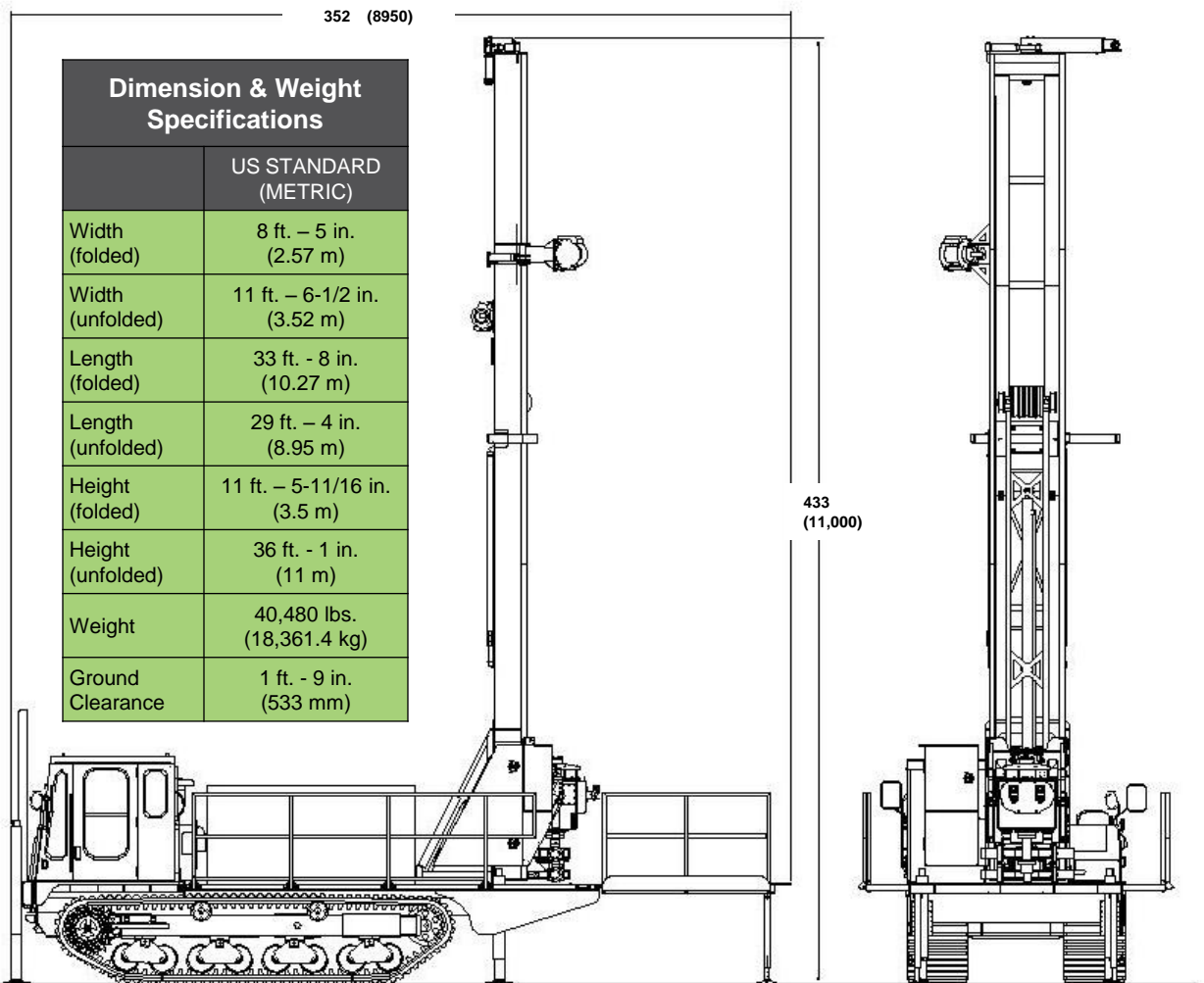
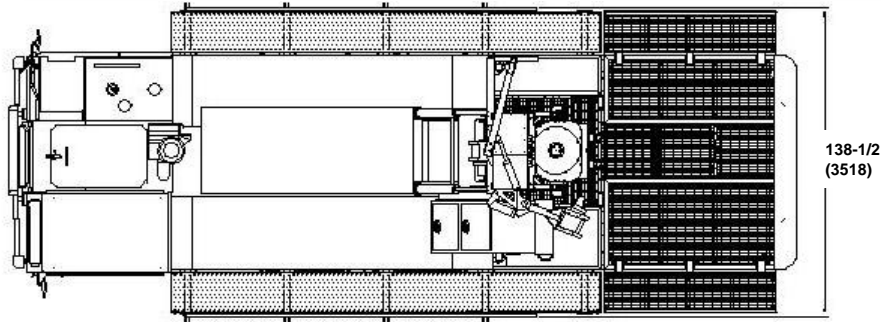
Track-Mounted Rod Carrier with Bridge Crane		High Rotation Speed of 145 rpm with 3,187 ft-lbs (4321 N-m) torque		
Steel Tracks	Triple Breakout Clamps	Pipe Handling System	Casing Clamp	Drill Maintenance Tool Kit
Diamond Coring Adapter with Dual Speed of 0 - 400 rpm with 2,200 ft-lbs (2983 N-m) Continuous Torque, and 0 - 800 rpm with 1,100 ft-lbs (1491 N-m) Continuous Torque				
Grout Mixer / Pump	Drill Tool Sets	Tool Boxes	Lighting	Drill Training Program
Custom Paint and Customer Logo		Larger Air Compressor Capacity of 34 CFM @120 psi (57.77 m <sup>3</sup> /hr @ 8.27 bar)		



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Distributor Information



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