

TECHNICAL DATA

PORTADRILL MODEL 524-2 ROTARY DRILLING MACHINE

DATA SHEET NO.: 524-05069

The 524-2 is a combination mud/air drill including 5-1/2" x 8" mud pump and Atlas Copco DT2, 125 psi air compressor.

ROTARY TABLE DRIVE

- Powered through a mechanical 5-speed transmission with reverse. Engaged by 2-disc friction clutch with ball-bearing throw-out collar. Table speed range of 20 to 220 RPM.
- Spiral bevel ring gear and pinion with tapered roller bearing supports. Totally enclosed in oil bath lubricated case.
- 7-1/2" (190 mm) hexagonal opening passes 7-3/8" (187 mm) diameter tools.
- Hydraulically retractable 16 inches (406 mm) to pass 12" (305 mm) O.D. tools or casing.
- 14,600 ft. lbs. (2018 kg-m) maximum torque.

DRAWWORKS

- Powered through 10-inch (254 mm), 2-plate clutch and spiral bevel ring gear and pinion.
- Double drum hoist for kelly and hoisting lines. Drums are grooved for cable spooling.
- 15,000 lbs. (6800 kg) bare drum single line pull.
- 18" x 4" (457 mm x 102 mm) cam actuated wrap-around mechanical brakes.
- Hook speed range from 0 to 120 feet (36 m) per minute using 3-part line.
- Three-part 5/8" (16 mm) 19 x 7 non-rotating wire rope for both kelly and hoist, each with 8-inch (203 mm) traveling blocks.
- High speed bailing drum is chain driven from main drawworks shaft by a double roller chain. Spools 1100 ft. (335 m) of 3/8" (9.5 mm) wire rope at up to 400 ft. (122 m) per minute. (Wire rope not included as standard equipment.)

POWER TRAIN

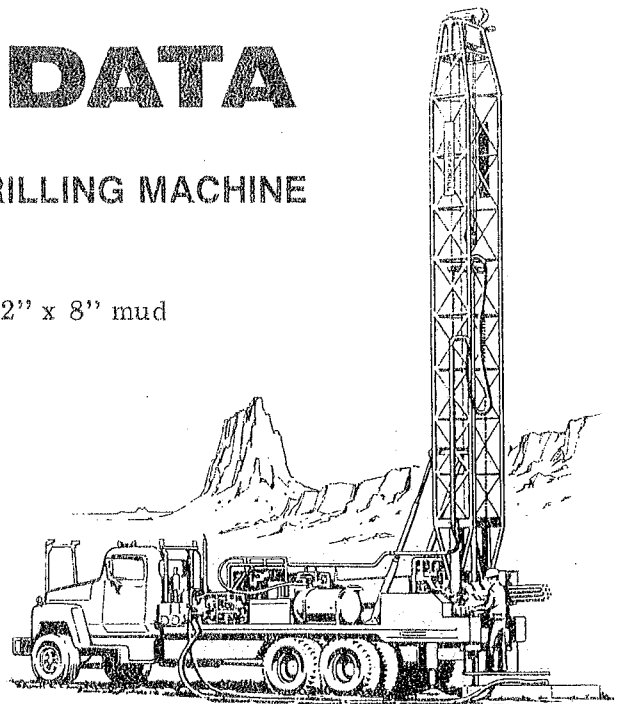
- Power transmitted from truck engine and transmission through automotive type auxiliary transmission (8341 Spicer) full-torque top mount PTO to rig power divider.
- Power divider with high speed triple roller chain running on ball-bearing mounted heat treated sprockets and shafts in totally enclosed oil bath lubricated aluminum case.
- Power output transferred through end mount clutches with ball bearing throwout collars and universal joint torque tube drive lines to rig components.

AIR SUPPLY

- Atlas Copco DT2, two stage, two-cylinder, air cooled, double-acting compressor with a capacity of 470 CFM at 55 psi and 1160 RPM (13.3 cu. m/min. at 3.9 kg/sq. cm); 320 CFM at 125 psi and 825 RPM 9.1 cu. m/min. at 8.8 kg/sq. cm).
- Driven direct from power transfer case through 10" (254 mm) 2-plate disc clutch.
- Air receiver tank.

WATER INJECTION SYSTEM

- Duplex piston pump connected to air line. Includes flow indicator.



- Hydraulically powered with infinitely variable speed control provides 0 to 8 gpm at 250 psi (30 l. per min. at 17.6 kg/sq. cm).
- Suction inlet with hammer union for connection to external water supply.

MUD PUMP

- Gardner-Denver 5-1/2" x 8" (140 mm x 203 mm) FD-FXX duplex power pump. 222 GPM (840 l.) at 70 spm. V-belt driven from power divider case through mechanical clutch to large diameter pump flywheel. 4" x 33 ft. (102 mm x 10 m) suction hose with strainer and hammer union. 2-1/2" (63.5 mm) discharge line and hoses. Shear relief valve. Surge chambers. Oil field type 0-1000 psi (70.3 kg/sq. cm) pressure gauge. Rod oilers included.

MAST ASSEMBLY & KELLY

- Electric welded high tensile strength seamless tubular steel construction with two 19" (483 mm) diameter ball bearing mounted crown block sheaves for hoisting and kelly lines.
- Deep box section design: 40,000 lb. (18140 kg) rated capacity.
- 38 ft. (11.6 m) clearance above rotary table to centerline of crown block sheaves.
- 24 ft. (7.3 m) long, 4-1/2" (114 mm) diameter round slotted kelly with saver sub and bushing. Rathole drain.
- Two chrome-plated, double-acting, telescoping hydraulic cylinders raise and lower mast.

SWIVEL

- 2" (51 mm) dia. full opening.
- Single neoprene packing ring with adjustable packing gland.
- Three angular contact ball bearings support pulldown thrust and tool loads. 40,000 lbs. (18140 kg) rated capacity.
- Heavy cast steel swivel brackets transmit pulldown through coil spring chain connectors.
- 2-1/2" (63.5 mm) high pressure double wire braid hose with swivel joint connects swivel to mast standpipe. Cadmium plated safety chains.



Diamond SPEC™

Model Profile

2003 Diamond SPEC™ 3674 6x4 (8F267)

APPLICATION: Water Well Drill

MISSION: Requested GVWR: 64000. Calc. GVWR: 64000

Calc. Stan./Grade Ability: 25.4% / 2.11% @ 55 MPH.

Calc. Geared Speed: 88.3 MPH.

FUEL ECONOMY: 8.24 MPG @ 55 MPH

DIMENSION: Wheelbase: 244, CA: 160, Usable CA: 100, Axle to Frame: 80

ENGINE, DIESEL: (Caterpillar C-13) 50-Stroke 395 HP @ 2100 RPM, 1450 lb-ft Torque @ 1200 RPM, 2100 RPM Governed Speed, 410 Peak HP (Max) and With Electronic Controls

TRANSMISSION, MANUAL: (Fuller RTO(F)-1460LL) 10-Speed Manual, Double Lo With Overdrive and With Air Shift

CLUTCH: (Easton Fuller EF-1552) Easy-Pedal Plus, Two-Plate, Cast Angle Spring, Ceramic, 16 5" Diameter, 9-1/2" Clutch 7-Spring Dampers, Mechanical Pull-Type Control With Kick-Adjust (Manual) Feature, 1700 lb-ft Torque Capacity

AXLE, FRONT, I-BEAM TYPE: (Mentac FL-841) 18,000-lb Capacity

AXLE, REAR, TANDEM: (Mentac RT-48-160) Single-Reduction, 48,000-lb Capacity, With Driver Controlled Main Locking Differential in Rear-Rear Axle and 200 Wheel Ends
Gear Ratio: 3.51

CAB: Conventional, Steel

TIRE, FRONT: (2) 385/85R22.5 UNSTEEL G288 (GOODYEAR) 400 rev/mile, load range J, 18 ply

TIRE, REAR: (8) 11R22.5 UNSTEEL G177 (GOODYEAR) 400 rev/mile, load range H, 18 ply

SUSPENSION, REAR, TANDEM: (Mandrickson RT-483) Working Beam Type 54" Axle Spacing, 48,000-lb Capacity With Bronze Center Bushings

FRAME REINFORCEMENT: Outer "C" Channel, Heat Treated Alloy Steel (110,000 PSI Yield), 10.813" x 1.812" x 0.312", 240" thru 276" W8 with 80" Maximum AF