

speedstar50K



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WDC Exploration & Wells has used 50+ years of drilling experience to help design the Speedstar 50K CH air/mud rotary combination rigs, which represent the most technologically advanced rigs available to the drilling industry. These drilling rigs are unique in that they possess the capability to safely adapt onsite and perform a wide range of drilling tasks with minimal reconfiguration including air rotary casing hammer, STRATEX/ODEX under-reaming, direct air rotary, mud rotary, dual tube reverse circulation, 94 mm wireline coring, and down-hole hammer.



Simultaneously, the rigs retain a relatively compact size allowing for excellent location accessibility, quick operational setup, rig movement and decontamination. Superior feature of these rigs are the rig mounted air compressors, mud pumps and injection pumps which decrease site footprint and site to site move time by eliminating the need for auxiliary and external air/mud circulation equipment.

WDC owns (25+) Year 2000 model or newer Speedstar drilling rigs which can be offered as additional equipment to accelerate most project schedules. The standardized fleet of new Speedstar drilling equipment drastically reduces downtime and accelerates all necessary maintenance and repair. All equipment and materials utilized by WDC Exploration & Wells will meet or exceed most standards set forth in any scope of work

rigspecs

Mast and Crown Block

Constructed of square steel tubing and structural steel electrically welded. Equipped with cable sheaves and guide tracks for tophead rotary, which allows tophead to retract off centerline of hole. Allows 38-ft. working space above breakout table. **Rated working capacity 80,000 lbs.**

Pulldown/Holdback

The pulldown holdback system powers the tophead rotary in either the pulldown mode or the holdback mode through the use of heavy-duty cables and a 6-1/2-in. hydraulic cylinder. **Pulldown mode provides 25,000 lb. Holdback mode provides 50,000 lb.**

Winch on Mast

Hydrostatically driven winch mounted on the mast for the purposes of tripping and pipe handling through the jib boom. **Rated working capacity is 50,000 lbs.**

Air Compressor

Sullair two-stage twin-screw rotary compressor **1000 CFM and maximum pressure up to 350 PSI.** Unit is driven from power gear transfer through multi-disc air clutch and standard universal joint drive shaft. Equipped with automatic low oil/high temperature shutdown system.

Mud Pump

Mission Magnum 4x3 centrifugal pump with 13 in. impeller is hydrostatically driven and speed is infinitely controlled. Pump is capable of producing **320 GPM.**

Tophead Rotary

Hydrostatically powered tophead rotary with an infinitely controlled rotation speed of 0 to 120 RPM and a **maximum torque of 70,000 in-lbs.** Air/fluid course is 2-1/2 in. dia. The stroke of the pulldown and holdback cylinder

Truck

New Peterbilt Model 357 (6x4) equipped with a **Caterpillar diesel engine rated at 550 horsepower @ 1800 RPM.** 22,000 lb. rated front axle and a tandem rear axle with a 46,000-lb. rating. allows the head to travel 29-ft. up and down the mast.

Casing Hammer Package

Weldco-Beales model 1321 casing driver for 6" to 24" casing, air operated. The driver weighs 4100 pounds and develops up to **7600 energy ft.-lbs.** of driving force. Two individual rails are welded to the mast allowing the rectangular guided casing driver to be independently raised and lowered below the tophead drive unit. A hydraulic cylinder equipped with a control valve in the "float" position enables the driver to follow the casing during the driving phase. 6" flex coupling from casing hammer to cyclone hose installed with safety cables.





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Main Frame

Structural steel construction and electrically welded with mast rest and hinge post being integral part of the structure. The full width driller's and helper's platforms hinge upward during transit, while the center portion is removable. The structure includes hydraulic jack mountings and all necessary items for mounting to truck.

Hydraulic Leveling Jacks

Four (4) leveling jacks are mounted to level the rig. Two (2) 48 in. stroke jacks are mounted in the front just behind the truck cab. Two (2) 36 in. stroke jacks are mounted in the rear. All jacks are individually controlled with lock checks to prevent leak-off. Swivel base plates are also provided for each jack.

Jib Boom

Adjustable jib boom for winch cable is mounted on top of mast and is provided with one (1) hydraulic cylinder for boom extension.

Water Injection Pump with Foam

A hydraulically powered water injection pump, equipped with variable speed control for rated output up to 18 GPM and 700 PSI. A needle control valve on suction side enables foam to be metered into the system.

Sliding Breakout Table w/Power Slide Holding Wrench

Breakout table mounts in rear section of mainframe. Unit retracts hydraulically to allow setting casing up to 16 in. diameter. Equipped with hinged section to allow easy insertion and removal of guide bushings. A sliding wrench is mounted on backside of table for holding drill pipe when breaking out. Bumper stops are integral part of table, which allows various sizes of holding wrenches to be used.

Breakout Wrench

BJ style positive latch breakout tong. Modified pipewrenches have proven unsafe and will not be used.

Controls

All controls and gauges are grouped at the left rear corner of the drill. All controls, valves and gauges are labeled for operator's convenience and safety. Removable and lockable control panel cover is provided.

Lights

Five (5) shockproof 12-volt halogen lights for the convenience of night time drilling. The system is powered by the truck electrical system with the switch located at the operator's station.

Hydraulic Cathead

Cathead with rope spool drum positioned to swing in-line with drive casing.

Auxiliary Winch

Hydraulically driven auxiliary winch for handling purposes. Capacity of 4000-lb. single line-pull on bare drum with 750-ft. of 3/8" wireline. Speed of winch at mid-drum approximately 276 ft./min. Capacity of 2000-lb. Single line pulls on bare drum with 100-ft. of 3/8" wire line.

Cyclone

Outside shell constructed of 3/16" structural steel, 10" wide hardened liner for abrasion, butterfly valve on top of cyclone, connections to be cam-lock type w/ 6" NPT thread connection schedule 80, "D" rings welded to connections for safety cables and Goodyear "blue core" hose 25' long installed.

Torch Box

Box installed in deck of drill frame to accommodate oxygen & acetylene torch bottles with hose rack and fire extinguisher mounted to outside.



Average Dimensions and Weight

Length Mast Down • 41'-6"
Height Mast Down • 13'-6"
Width • 8'-0"
Length Mast Up • 32'-10"
Height Mast Up • 43'-7"
Weight • 65,000 lbs.