

# RD 20 Oil and Gas Drill Rig



## Oil and Gas drilling

Up to 120,000 lbf (533 kN) hook load  
Range III casing capability

*Atlas Copco*

# The RD20. The standard by which all others are measured.



## A Focus on Your Profitability

Enhancing your profitability is the focus of Atlas Copco Drilling Solutions. Continuous innovation coupled with proven technology help you improve drilling and non-drilling performance, reduce manual labor content and enhance safety.

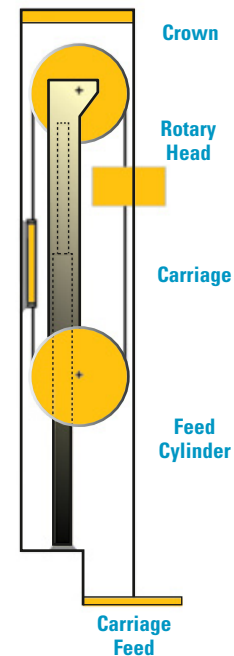
Atlas Copco has been drilling gas & CBM wells since 1972. The RD20 and its predecessors were developed to meet the requirements of small, independent contractors who survived and prospered by increasing

productivity and reducing cost. Today's Atlas Copco rigs are self-contained, powerful and mobile. Drill functions are hydraulically driven to provide a combination of quick response and precise control. All rigs are designed to provide maximum productivity while operating as efficiently as possible, even in the most extreme drilling conditions.

## Powerful Feed System

The patented carriage feed system is the heart of the RD20. It delivers a full 110,000 lbf. (489 kN) of pullback to the RD20II and 120,000 lbf. (533 kN) to the RD20III.

This system delivers rapid feed speeds as well as precise weight and speed control. You'll benefit from optimal mechanical efficiency not available with competitive machines. The derrick eliminates compressive loads on the upper derrick, even at full pullback.



## Superior Pipe Handling

One of the primary advantages of the RD20 is its simplicity and effectiveness handling drill pipe. The whole process of changing or adding drill pipe with the RD20 normally takes between 45 and 60 seconds. This is much quicker than handling drill pipe on a conventional drill rig.

The RD20 uses either a standard 2-pod loader or an optional 7-pipe carousel. During the drill-in process, either the carousel or loader can be

loaded continuously from the pipe tubs or trailers behind the drill rig using the dedicated pipe handling hoist and jib boom. To change drill pipe, the RD20 uses a square chuck, which is set into a recessed opening in the master bushing. This not only holds the drill string in the table, but acts as a back-up tong to prevent the drill string from turning during makeup and breakout.

## Tough Mobile Carrier

Mobility is another key advantage of the RD20, a completely self-contained drilling rig mounted on a 10 X 6 tridem carrier. The separate 380-hp engine and drive train move the rig down the road at standard highway speeds

while providing ample power for off-the-road maneuverability. A Jake brake and no-spin rear axles further enhance off-road control and mobility. This ability to get to the job ready to work reduces set up time and costs.

## Equipped to Drill

A variety of standard and optional components equip the RD20 to handle a wide range of drilling applications including three-inch/1500psi circulation piping. Connections for

an auxiliary compressor and booster are standard equipment. Optional water-injection systems, as well as oil injection for DHD operation are available.

## Heavy-duty Derrick and Tophead Drive

The derrick and table on the RD20 are designed to handle Range II or Range III casing with ease. A 41 ft.-7 in. (12.67 m) clearance between the spindle and the table on the RD20II provides plenty of room for 30 ft. (9 m) drill pipe.

The RD20III boasts a full 51 ft. 7 in. (15.72 m) clearance for Range III casing. The 8,000 lbf-ft. (10.8 kNm) spur gear tophead drive maintains full torque regardless of changes in speed.

*Continuous innovation coupled with proven technology help you improve drilling and non-drilling performance, reduce manual labor content and enhance safety.*

## Floating Power Pack

A Cummins QSK-19C, 755-hp deck engine powers the RD20. An optional CAT C27, 800-hp engine is also available. Coupled with an Ingersoll-Rand HR2.5 over/under air compressor that supplies 1,250 cfm at 350 psi, the RD20 provides plenty of power to get the job done.

An in/out box enables the operator to disconnect the compressor from the engine, allowing for easier start-up in cold weather and saving fuel during tripping or mud drilling.

The engine, compressor and hydraulic pumps are mounted on a floating power-pack base rather than directly onto the chassis mainframe. This arrangement assures proper alignment of power components and decreases wear. A high ambient cooling system for engine coolant, compressor oil and hydraulic oil is rated for 125° F (52° C) to assure long, trouble-free component life.



## Specifications

RD20II		RD20III	
<b>CARRIER</b>			
Custom tandem chassis built to Atlas Copco specifications, 226 in. (5.7 m) wheelbase, 86,000 lb. (39,010 kg) GVWR		Custom tridem chassis built to Atlas Copco specifications, 281 in. ( 7.1 m) wheelbase, 113,000 lb. (51,364 kg) GVWR	
<b>POWERPACK</b>			
Cummins QSK-19C engine, 755 HP / 522KW @ 1800 RPM, IR HR2.5 over/under screw air end 1250 / 350 @ 1800 RPM, engine silencer		Cummins QSK-19C engine, 755 HP / 522KW @ 1800 RPM IR, HR2.5 over/under screw air end 1250 / 350 @ 1800 RPM, engine silencer	
<b>DERRICK DIMENSIONS</b>			
51 ft. 1-1/2 in. x 48-1/2 in. x 41 in. (L x W x D) (15.6 m x 1.2 m x 1.0 m)		61 ft. 11-1/2 in. x 48-1/2 in. x 41 in. (L x W x D) (18.9 m x 1.2 m x 1.0 m)	
<b>FEED SYSTEM</b>			
Pullback:	110,000 lbf / 489 kN	Pullback:	120,000 lbf / 533 kN
Pulldown:	30,000 lbf / 60.5 kN	Pulldown:	30,000 lbf / 60.5 kN
Drill Feed Rate:	22 ft/min / 6.7 m/min	Drill Feed Rate:	29 ft/min / 8.8 m/min
Fast Feed Up (regen on):	141 ft/min / 42.9 m/min	Fast Feed Up (regen on):	106 ft/min / 32.3 m/min
Fast Feed Down:	176 ft/min / 53.6 m/min	Fast Feed Down:	180 ft/min / 54.9 m/min
<b>ROTARY HEAD</b>			
4SF-2-12 spur gear head, 0-120 RPM, 8,000 lbf-ft torque, Piping: 3 in. (76 mm) circulation rated at 1,500 psi working pressure		4SF-2-12 spur gear head, 0-120 RPM, 8,000 lbf-ft torque, Piping: 3 in. (76 mm) circulation rated at 1,500 psi working pressure	
<b>JIB BOOM &amp; HOIST</b>			
Lifting Capacity: 4,000 lb. (1,814 kg) bare drum Line Speed: 100 ft/min (30.5 m/min) bare drum		Lifting Capacity: 4,000 lb. (1,814 kg) bare drum Line Speed: 225 ft/min (68.5 m/min) bare drum	
<b>CASING HOIST</b>			
Lifting Capacity: 7,500 lb. (3,402 kg) maximum Line Speed: 60 ft/min (18.3 m/min) maximum		Lifting Capacity: 7,500 lb. (3,402 kg) maximum Line Speed: 106 ft/min (32.3 m/min) maximum	
<b>OPTIONS</b>			
Collar-Handling Package Compressor Disconnect	Drill-Pipe Carousel Mud Manifold	Water Injection DHD Lube	Hydraulic Table Levelling Jacks CAT C27 800 HP Deck Engine