Robbins 53RH

Low profile raiseboring machine for holes ranging from 1.2 to 2.4 m in diameter

Epiroc

Smart in the ups and downs of drilling

The Robbins 53RH is a unique multipurpose raise drill, able to perform upwards boxhole boring as well as conventional raise boring with no need to modify the drive assembly. This rig is cleverly compact yet powerful, granting it greater flexibility to tackle a variety of tough applications where workspace is restricted.

Main benefits

Adaptable and efficient thanks to the hydraulic-drive engine which features variable speed and torque-limiting controls

Durable and dependable with built-in interlocks, anti-jamming, auto makeup and gradual power ramp-up during pilot drilling and reaming

Mighty and multipurpose The main gearbox features two float boxes to easily switch from raise to boxhole mode. Two double-acting telescopic cylinders can exert equal thrust in both directions.

Built-in smarts

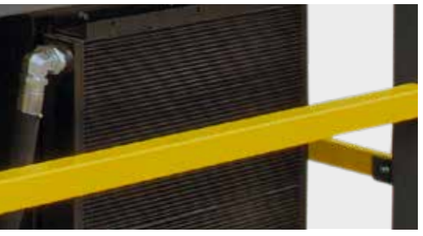
Robbins raise drills feature the widely acclaimed Rig Control System (RCS) from Epiroc for smart, user-friendly operation. Advanced computer technology is utilized to improve drilling accuracy, while integrated diagnostics and an event logging system assist in equipment maintenance.

+ Safe, sturdy and efficient

The sturdy, ground-loading pipe loader allows for safe and easy pipe handling throughout the whole operational range (inclination) of the machine. The hydraulic drive features controls to precisely adjust speed and torque for optimal efficiency.

+ No mucking around

To enable the reamer and stabilizers to pass, the muck chute is designed in two halves that can be opened by remote-controlled hydraulic cylinders. The rubber seal effectively helps to contain muck and dust.



+ Cool runnings

The optional closed-loop cooling system is a stand-alone unit that can be easily fitted to all Robbins machines, new and old. Straight from the factory, the cooler can easily be attached to a machine's existing hydraulic unit with quick-fit connecting hoses.

A comprehensive service offering

Even the best equipment needs to be serviced regularly to make sure it sustains peak performance. An Epiroc service solution offers peace of mind, maximizing availability and performance throughout the lifetime of your equipment. We focus on safety, productivity and reliability.

By combining genuine parts and an Epiroc service from our certified technicians, we safeguard your productivity – wherever you are.

Technical specifications

● = Standard ○ = Option

Motor

Two hydraulic motors connected in parallel CA100-CA100	

Gearbox

Planetary-type reduction	
Spherical roller thrust bearing for reaming	
Spring pre-loaded bearing	

Drive head

Swivelling floating drive box with DI-22 thread	

Pipe loader

Ground loading	
Remote controlled	

Wrench system

Drive head, semi-automatic	
Worktable, hydraulic horse shoe wrench	

Electrical system

Separate cabinet inside the drive pack	●
Standard protection ground fault, over/under voltage	●
Phase fault and emergency stop	●
Thermal overload protection for electrical motors	●
Anti-condensation heaters in electrical cabinet	●
Built in heaters in the electrical motor	●
Drive motor started by soft starter	●
Direct start of thrust motor	●
Auxiliary outlet 115/230 V (16A)	●
Main breaker with overload and short circuit protection.	●
Electrical standards UL, CSA or AS3000	○
20 m or 30 m Cables to derrick	○
Electrical cabinet cooler	○

Lubrication

Filtration 25 µ	●
Water cooled	●
Electric driven submersed gear pump, built-in to the gear box 19 l/min (5 gal/min)	●
Hydraulic driven lubrication pump motor on Derrick	○

Operating equipment

Drilling tool kit incl. starter bushing, Bit breaker box, Blooie assembly	○
Makeup and Breakout tool (MBT)	○

Muck chute

Separate muck chute for diameters up to 1.5 m	○

Transporters

Diesel crawler	○
Sled assembly	○
Rail sled	○

Control system

Epiroc Rig Control System (RCS)	●
Net force control	●
Bailing pressure supervision	●
Auto make up log	●
Radio remote control for pipeloader	●
Power management	●
Underground Manager MWD (PC software) for analysis of drill data	○
Rig Remote Access (RRA), LAN or WLAN connection	○
Advanced Radio remote control	○
Surveillance kit (Length sensor, reamer drop detection, pressurized drill string surveillance, angle indication)	○
Bailing pump control and power outlet	○
Operators platform	○
Extended cable to operator panel 20 m or 30 m	○

Hydraulic system

Electrical filling/drain pump	●
Off-line filtration system with water separator	○
Fire suppression system	○
High pressure filtration	○
Extended hoses to Derrick (15 or 20 m)	○
Built-in heater in oil reservoir	○
Closed loop cooling system	○
Power 200/230 kW at 50/60Hz	
Rotation pump 500 cm^3/rev	
Max pump pressure 330 bar	
Oil reservoir 400 l (105 gal)	
Water cooled	
Oil filtration 10 microns	
Mineral hydraulic oil	
Proportional control of fast traverse and pipeloader movements	
Pressure compensated variable displacement piston pump	
Thrust circuit max pressure 330 bar	
Travers circuit max pressure 230 bar	

Closed loop air/oil cooling system

Quick disconnections	
Temperature up to 40° C for ambient temperature	
Two radiators	
Cooling media: glycol/water mix	

Technical specifications

Operation data

Raise diameter		
Nominal	1.8 m	6 ft
Range	1.2-2.4 m	4-8 ft
Raise length		
Nominal	490 m	1 600 ft
Maximum	650 m	2 100 ft
Maximum torque		
Reaming	156 kNm	115 000 ft-lbs
Break out	190 kNm	141 000 ft-lbs
Reaming thrust		
	3 350 kN	753 100 lbs
Stroke		
	1 143 mm	45"
RPM		
Pilot	0-35 rpm	
Reaming (Reduced torque)	0-9 rpm (9-15 rpm)	
Traverse rate		
Fast traverse rate	1.8 m/min	5.9 ft/min
Feed rate	0.6 m/min	2 ft/min
Bailing		
Air	18 m^3/min (7 bar)	635 ft^3/min (100 psi)
Water	600 l/min	159 gallon/min
Electrical		
Power supply	260/298 kW (50/60 Hz) 300/400 hp	
Voltage	400-1 000 V	
Frequency	50-60 Hz	
Power requirement	317/363 kVA (50/60 Hz)	
Drill pipe		
Diameter	286 mm	11 ¼" std. strength
Optional	254 mm	10"
Length s/s	750 mm	30"
Pilot hole		
Diameter	311 mm	12 ¼"
Optional diameter	279 mm	11"
Cooling water		
at 25°C inlet temperature	80 l/min	21 gal/min

Technical specifications

Derrick

Power Pack

Derrick

Conventional Raise boring		
Height extended	2 900 mm	113"
Height retracted	2 900 mm	113"
Width	2 200 mm	86"
Width pipeloader included	3 140 mm	124"
Depth	1 820 mm	72"
Weight	15 000 kg	33 070 lbs
Weight pipeloader included	15 720 kg	34 656 lbs
Drill angle (from horizontal)	90-45°	

Power pack

Length	3 200 mm	126"
Height	1 700 mm	67"
Width	1 700 mm	67"
Weight	5500 kg	12 126 lbs

United in performance. Inspired by innovation.

Performance unites us, innovation inspires us, and commitment drives us to keep moving forward. Count on Epiroc to deliver the solutions you need to succeed today and the technology to lead tomorrow.

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