

# Robbins 92R

Large-size raise boring machine for holes ranging from 2.4 to 6.0 m (8-20 ft.) in diameter



# Compact and powerful

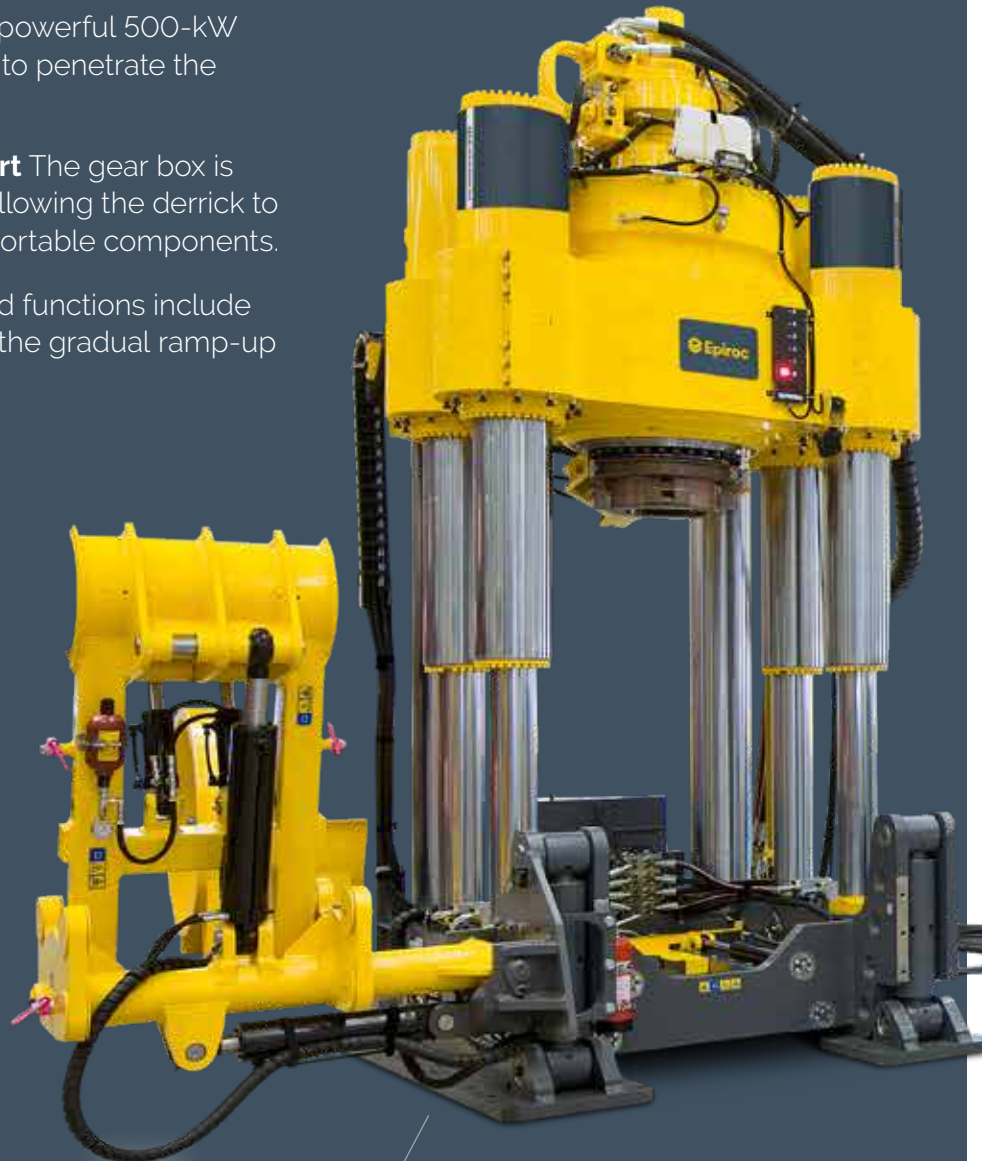
The Robbins 92R rig is a powerful raiseboring rig with a modular design for easy transport when weight or size limitations can be a serious concern. The rig drill holes from 2.4 to 6.0 m (8-20 ft.) in diameter and can be relied on in a variety of applications. At Epiroc, we strive to construct high-quality machines that are easy to set up, operate and maintain - and our Robbins 92R is no exception. This machine is built to serve and built to last.

## + Main benefits

**Power you can depend on** The powerful 500-kW electric motor drives the reamer to penetrate the hardest rock.

**Easy maintenance and transport** The gear box is installed in a removable barrel, allowing the derrick to be split into smaller, more transportable components.

**Steadfast and efficient** Standard functions include anti-jamming, auto makeup and the gradual ramp-up of speed and torque.



Rigid frame for drilling up to 1100 m holes

Hydraulic wrenches for safe make and break

Powerpack designed for harsh environment

500 kW hydraulic drive for up to 6 m diameter raises





# Efficiency and reliability when the going gets rough

Tough rock conditions do not faze the Robbins 92R raiseboring rig. This machine has extraordinary pulling power, and the hydraulic system enables tremendous torque to be maintained at high rotation speeds. Work becomes more efficient, reliable and user friendly while overall energy and maintenance costs are reduced.



## + A tough Robbins for every challenge

The large size Robbins rig is available with different thrust cylinders and drive motors to best suit your needs. Robbins 92R can be equipped with low-profile telescopic cylinders for narrow operation sites or standard cylinders with 33% more thrust force. Hydraulic or variable frequency drive motor allowing efficient raiseboring in deeper underground mines.



## + Reliability through the decades

Raiseboring rigs from Epiroc have been setting the industry standard for more than fifty years. We continue to lead thanks to outstanding equipment design and excellent quality. Our raise bores include only premium components, and all Robbins machines come with a 12-month (2 000-hour) warranty.



## + Easy transport

The gear box on the Robbins 92R is installed in a barrel that can be removed to split the derrick into smaller components for easier transport in constricted work spaces or when weight limitations apply. The compact Robbins 92R has a low minimum back height while its modular design allows it to be disassembled into relatively small components. Robbins components can be reduced to weigh 7 000 kg or less for greater transportability.



## 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

### Gearbox

Planetary-type reduction	
Spherical roller thrust bearing for reaming	
Pre-loading of the bearings	
Smaller thrust bearing for pilot hole drilling	

### Drivehead

Floating drivebox DI22	○
Floating drivebox DI42	○

### Rod handler

Ground loading	
Remote controlled	

### Motor

413 kW 3 phase AC motor	○
Hydraulic radial piston motor	○

### 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	○

### Wrench System

A Semi-automatic Drivehead wrench	●
Worktable, hydraulic horse shoe wrench	●

### Electrical System

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 softstarter	○
Auxiliary outlet 115/230 V (16A)	●
Main breaker with overload and short circuit protection.	●
Electrical standards UL, CSA or AS3000 CE	○
Extended cables to derrick (20 or 30 m)	○

### Drive and thrust system

Electrical filling/ drain pump	●
Off-line filtration system	●
Fire suppression system	○
High pressure filtration	○
Extended hoses to Derrick (15 or 20 m)	○
Built-in heater in oil reservoir	○
Closed loop cooling system	○

### Electrical drive system

Variable frequency drive, water cooled	
External break resistor with chopper control	
Super capacitor battery	
Choke filter 650A	
Temp sensors in motor winding and bearings	
High resolution rpm encoder on motor	

### Hydraulic drive system

Power 500 kW at 50/60Hz	
Rotation pump 500 cm3/rev	
Max pump pressure 330 bar	
Oil reservoir 400 l (105 gal)	
Water cooled	
Oil filtration 10 microns	
Mineral hydraulic oil	

### Thrust system

Power 75 kW at 50/60 Hz	
Oil reservoir 400 l (105 gl)	
Oil filtration 10 microns	
Mineral hydraulic oil	●
Proportional control of fast traverse and pipeloader movements	●
Water cooled	●
Travers pump max pressure 230 bar	●
Thrust pump max pressure 330 bar	●
Auxiliary pump max pressure 250 bar	●

### 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	○
The advanced Radio remote control	●
Sureveillance kit (Length sensor, reamer drop detection, pressurized drill string surveillance, angle indication)	●
Bailing pump control and power outlet	○
Extended cable to operator panel (20 or 30 m)	○
Operators platform	○

Technical specifications

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Delivered equipment not mounted

Operating equipment	
Drilling toolkit (Starter bushing, bit breaker box, Blooie system, floatbox installation tool)	○
Equipment tools	
Makeup and breakout tool (MBT)	○
Drivehead installation/removal tool	○

Closed loop refrigerating system (VF only)

Fully automated temperature control
Quick disconnections
Temperature up to 40° C for ambient temperature
Produce cooling water for the complete system
Cooling media: glycol/water mix

Closed loop air/oil cooling system (hydraulic)

Quick disconnections	○
Temperature up to 40° C for ambient temperature	○
Two radiators	○

Transporters

Diesel crawler	○
Sled assembly	○

Operation data

Raise diameter	92R Hydraulic		92R Variable frequency	
Nominal	5.0 m	16 ft	5.0 m	16 ft
Range	3.1-6.0 m	10-20 ft	3.1-6.0 m	10-20 ft
Raise length				
Nominal	900 m	3 000 ft	900 m	3 000 ft
Maximum	1 100 m	3 600 ft	1 100 m	3 600 ft
Nominal telescopic cylinders	600 m	1 970 ft	600 m	1 970 ft
Maximum telescopic cylinders	1 000 m	3 280 ft	1 000 m	3 280 ft
Maximum torque				
Reaming	540 kNm	398 000 ft-lbs	540 kNm	398 000 ft-lbs
Break out	700 kNm	516 300 ft-lbs	700 kNm	516 300 ft-lbs
Reaming thrust				
Standard cylinders	8 923 kN at 330 Bar	2 000 000 lbs at 4 800 psi	8 923 kN at 330 Bar	2 000 000 lbs at 4 800 psi
Telescopic cylinders	6 700 kN at 330 Bar	1 506 000 lbs at 4 800 psi	6 700 kN at 330 Bar	1 506 000 lbs at 4 800 psi
Stroke				
	2 160 mm	85°	2 160 mm	85°
RPM				
Pilot	0-54 rpm		0-50 rpm	
Ream (reduced torque)	0-7 rpm (7-14 rpm)		0-7 rpm (7-14 rpm)	
Traverse rate				
Fast traverse rate	1.7 m/min	5.6 ft/min	1.7 m/min	5.6 ft/min
Feed rate	0.5 m/min	1.6 ft/min	0.5 m/min	1.6 ft/min
Bailing				
Air	25 m³/min (7 bar)	883 ft³/min (100 psi)	25 m³/min (7 bar)	883 ft³/min (100 psi)
Water	800 L/min	176 gal/min	800 L/min	176 gal/min
Electrical				
Power supply	500/560 kW (50/60Hz)	670/750 hp	490 kW (50/60Hz)	657 hp
Voltage	400-1000 V		460/690 V	
Frequency	50-60 Hz		50-60 Hz	
Power requirement	616/689 kVA (50/60Hz)		580 kVA (50/60Hz)	
Drill pipe				
Diameter	333 mm	13 1/8"	333 mm	13 1/8"
Optional diameter	327 mm	12 7/8"	327 mm	12 7/8"
Length s/s	1 524 mm	60"	1 524 mm	60"
Pilot hole				
Diameter	381 mm	15"	381 mm	15"
Cooling water				
at 25°C inlet temperature	160 L/min	42 gal/min	-	-

Technical specifications

● = Standard   ○ = Option

Derrick

	92R Hydraulic		92R Variable frequency	
Height extended	5 100 mm	201'	5 700 mm	224'
Height retracted	4 100 mm	162'	4 100 mm	162'
Width	2 300 mm	90°	2 300 mm	90°
Width pipeloader included	3 800 mm	150°	3 800 mm	150°
Depth	2 700 mm	107"	2 700 mm	107"
Weight	32 100 kg	70 768 lb	33 300 kg	74 295 lb
Weight pipeloader included	33 700 kg	74 296 lb	35 300 kg	77 823 lb
Drill angle (from horizontal)	90-60°		90-60°	

Drive pack

	92R Hydraulic		92R Variable frequency	
Length	3 800 mm	150°	3 100 mm	122°
Height	2 000 mm	79°	1 800 mm	71°
Width	1 900 mm	75°	1 900 mm	75°
Weight	8 350 kg	18 400 lb	2 500 kg	5 500 lb

Thrust pack

92R Variable frequency only		
Length	2 300 mm	90°
Height	1 540 mm	60°
Width	1 400 mm	55°
Weight	2 200 kg	4 850 lb

Cooling pack




92R Variable frequency only		
Length	2 320 mm	91°
Height	2 450 mm	97°
Width	1 540 mm	60°
Weight	2 040 kg	4 500 lb



Robbins 92R with hydraulic drive and telescopic thrust cylinders



Robbins 92R with VF drive and standard thrust cylinders

	●	●
Drive pack		
		●
Thrust pack		
		●
Cooling pack		

# 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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