Robbins 73-series

Mid-size raiseboring machines for holes ranging from 1.5 to 3.1 m in diameter

Epiroc

Raiseboring specialist

Widely used globally, Robbins 73 rigs are our most popular models thanks to their sturdy design. These medium-sized machines drill holes from 1.5 to 3.1 m 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 73 rigs are no exception.

Main benefits

Minimal vibrations and wear thanks to the in-line drive system that provides balanced thrust loads and improves cutting

Fast and easy setup since these rigs require a smaller drilling pad and fewer tie-down bolts

Steadfast and efficient with standard functions like anti-jamming, auto make-up and the gradual ramp-up of speed and torque

Strong 290 kW AC motor perfectly matched against 11-1/4" high strength steel drill pipes

Rigid frame for drilling up to 700 m holes

Built in break resistors to eliminate backspin

Smaller drilling pad and fewer tie down bolts for a reduced footprint

Raiseboring rigs make work easy

Robbins 73-series feature the tried and true Rig Control System (RCS) from Epiroc. Automated RCS functions save time and money. Work becomes more efficient, reliable and user friendly while overall energy and maintenance costs are reduced. Robbins 73 rigs are also easy to set up and service thanks to quick connections on all hydraulic hoses.

+ A tough Robbins for every challenge

Robbins 73 raiseborers are available with two different rotation units. There are one hydraulic version for use with either 10" or 12.25" drill string and an electric version for use with 11.25" drillstring. The cost-efficient, electrical Robbins 73RVF has a variable frequency drive for excellent torque control at any rpm.

+ Reliability through the decades

Epiroc's raiseboring rigs have been setting the industry standard since 1964. We continue to lead thanks to outstanding equipment design and excellent quality. Our raise bores include only premium components manufactured by companies with top-notch quality, and all Robins 73 machines come with a 12-month (2 000-hour) warranty.

+ Energy efficiency and environment in focus

The 73RVF is the most energy-efficient machine in the Robbins product range. In idle mode, power consumption is only 6 kW (compared to 93 kW in hydraulic machines). Rigs include a built-in system to control hydraulic oil leakage, and spillage traps in power packs prevent environmental contamination. Power packs are fully enclosed to keep noise levels below 84 db. The ergonomically designed control system works on low voltage away from hydraulic hoses for the operator's safety and comfort.

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
A = 73RH High torque **B** = 73RVF

Gearbox
Planetary-type reduction
Spherical roller thrust bearing for reaming
Smaller thrust bearing for pilot hole drilling
A radial roller bearing for radial loads
Spring pre-loaded bearing

Drive head
Swivelling floating drive box with DI-22 thread

Pipe loader
Ground loading
Remote controlled

Motor	A	B
Two hydraulic motors connected in series CA50/210	●	
290 kW 3 phase AC motor		●

Lubrication	A	B
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	B
A Wrap-Around Wrench manually inserted into the drive head	●	●
Worktable, hydraulic horse shoe wrench	●	●
Worktable, manual wrap around wrench	○	○

Electrical system	A	B
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 (16 A)	●	●
Main breaker with overload and short circuit protection.	●	●
Electrical standards UL, CSA or AS 3 000	○	○
20 m Cables to derrick	○	○
30 m Cables to derrick	○	

Drive and thrust system	A	B
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	○	●
Hydraulic drive		
Power 290kW at 50/60 Hz		
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		
VF Drive		
Variable frequency drive, water cooled		
External break resistor with chopper control		
Super capacitor battery		
Choke filter 650 A		
Temp sensors in motor winding and bearings		
High resolution rpm encoder on motor		
VF Thrust		
Power 55/63 kW at 50/60 Hz		
Oil reservoir 400 l (105 gal)		
Oil filtration 10 microns		
Mineral hydraulic oil		
Proportional control of fast traverse and pipe loader movements		
Water cooled		
Travers/thrust pump max pressure 330 bar variable displacement piston pump		

Control system	A	B
Epiroc Rig Control System (RCS)		
Net force control		
Bailing pressure supervision		
Auto make up log		
Radio remote control for pipe loader		
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	○	○
Surveillance kit (Length sensor, reamer drop detection, pressurized drill string surveillance, angle indication)	○	○
Bailing pump control and power outlet	○	○
Extended cable to Derrick (20 or 30 m)	○	○
Extended cable to operator panel (20 or 30 m)	○	○
Operators platform	○	○

Technical specifications

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Delivered equipment not mounted	A	B
Operating equipment		
Drilling toolkit (Starter bushing, bit breaker box, Blooie system)	○	○
Equipment tools		
Makeup and breakout tool (MBT)	○	○
Drive head installation/removal tool	○	○

Transporters	A	B
Diesel crawler	○	○
Sled assembly	○	○
Rail sled	○	○

Closed loop refrigerating system (VF)
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 (Hyd)
Quick disconnections
Temperature up to 40° C for ambient temperature
Two radiators
Cooling media: glycol/water mix

Operation data	A	B
Raise diameter		
Nominal 2.4 m/8 ft	●	●
Range 1.5-3.1 m/5-10 ft	●	●
Raise length		
Nominal 550 m/1 800 ft	●	●
Range 700 m/2 300 ft	●	●
Maximum torque		
Reaming 250 kNm/184 000 ft-lbs	●	●
Break out 350 kNm/258 100 ft-lbs	●	●
Reaming thrust		
4 159 kN/935 000 lbs	●	●
Stroke		
2 057 mm/81"	●	●
RPM		
Pilot 0-40 rpm, 68 kNm Torque		●
Pilot 0-52 rpm	●	
Reaming 0-11 rpm, 250 kNm Torque Reduced torque 11-17 rpm, 150 kNm		●
Reaming 0-11.5 rpm	●	
Traverse rate		
Fast traverse rate 1.7 m/min, 5.6 ft/min	●	●
Feed rate 0.5 m/min, 1.6 ft/min	●	●
Bailing		
Air 18 m3 min (7 bar), 635 ft3/min (100 psi)	●	●
Water 600 l/min, 159 gal/min	●	●
Electrical		
Power supply 250/290 kW (50/60 Hz)	●	
Power supply 365/377 kW (50/60 Hz)		●
Voltage 400-1 000 V	●	
Voltage 380-420/440-480 V (50/60 Hz)		●
Frequency 50-60 Hz	●	●
Power requirement 300/340 kVA (50/60 Hz)	●	
Power requirement 492/507 kVA (50/60 Hz)		●
Drill pipe		
Diameter 286 mm, 11 ¼" high strength	●	●
Diameter 286 mm, 11 ¼" std. strength	○	
Length s/s 1 524 mm, 60"		
Pilot hole		
Diameter 311 mm, 12 ¼"	●	●
Cooling water		
100 l/min, 26 gal/min at 25°C inlet temperature	●	

Technical specifications

Measurements and weights Derrick (Hyd)
Height extended 5 190 mm (205")
Height retracted 3 800 mm (150")
Width 1 740 mm (69")
Width pipe loader included 3 010 mm (119")
Depth 1 900 mm (75")
Weight 12 650 kg (27 900)
Weight pipe loader included 13 150 kg (29 000")
Drill angle (from horizontal) 90-45°

Measurements and weights Derrick (VF)
Height extended 6 000 mm (236")
Height retracted 3 900 mm (154")
Width 1 980 mm (78")
Width pipe loader included 2 100/3 010 mm (83"/119")
Depth 1 900 mm (75")
Weight 14 000 kg (30 864 lb)
Weight pipe loader included 14 960 kg (32 981")
Drill angle (from horizontal) 90-45°

Robbins 73 Derrick

Measurements Power Pack (Hyd)
Length 3 200 mm (126")
Height 1 700 mm (67")
Width 1 700 mm (67")
Weight 5 500 kg (12 126 lb)

Power pack

Measurements drive pack (VF)
Length 3 600 mm (141")
Height 1 840 mm (72")
Width 1 520 mm (60")
Weight 2 540 kg (5 600 lbs)

Measurements thrust pack (VF)
Length 2 300 mm (90")
Height 1 540 mm (60")
Width 1 400 mm (55")
Weight 2 200 kg (4 850 lbs)

Measurements cooling unit (VF)
Length 2 310 mm (91")
Height 2 230 mm (88")
Width 1 520 mm (60")
Weight 2 000 kg (4 410 lbs)

Drive pack

Thrust pack

Cooling unit

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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