Raisebore
Australia

RAISEBORE AUSTRALIA - CELEBRATING 20 YEARS

RAISEBORE AUSTRALIA IS TRULY AN INTERNATIONAL COMPANY, AND HAS REAMED IN EXCESS OF 120 KILOMETRES OF SHAFTS, COMPRISED OF WORK IN ALL STATES OF AUSTRALIA, NEW ZEALAND, VIETNAM, PORTUGAL, HONG KONG AND WEST AFRICA.

OUR HISTORY

Raisebore Australia is a private, international raiseboring company; formed in 1994 and wholly owned by its founder and Managing Director, Mr Rod Bertram. Raisebore Australia has since grown to become one of the world's largest, privately owned raiseboring companies.

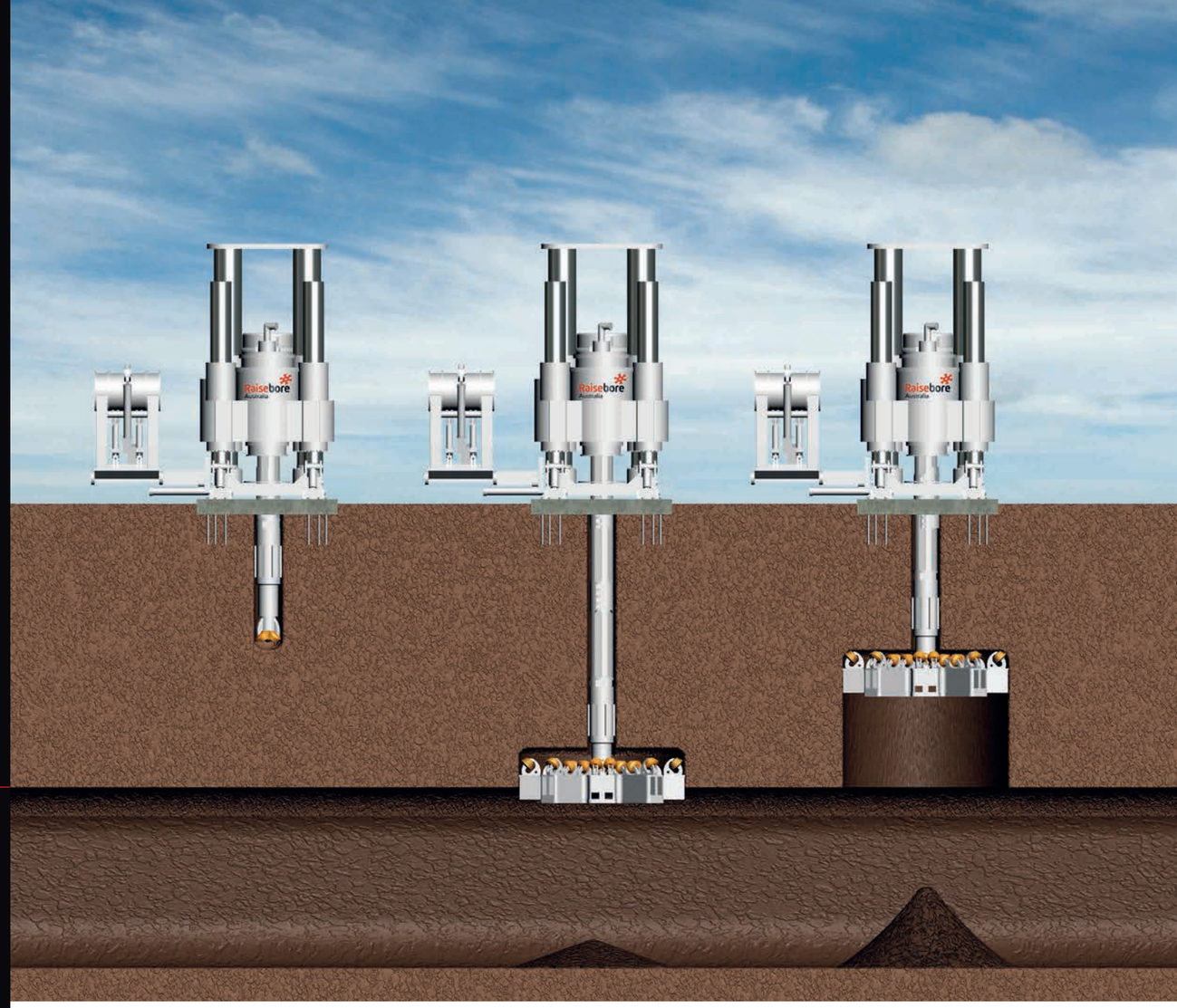
Raisebore Australia hasn't expanded to gain and maintain this market position by chance; rather this has been achieved through client – contractor loyalty, concerted focus, specialisation, integrity and above all, industry leading safety practices.

Our large fleet of raiseboring machines, combined with extensive inventories of consumables, provides Raisebore Australia with the dynamic ability to ream raises from 0.6 metres up to 6.0 metres in diameter.

OUR INNOVATIONS

- Introduced the concept of down-reaming to the Australian market place
- Developed uphole raiseboring in the Australian market
- Developed the only 'intrinsically safe' raiseborer for operation underground in coal mines
- Developed a methane monitoring system to measures the methane content in the air directly at the reamer head
- Developed low-angle slot raises at 35 degrees to suit shanty backs
- Developed a technique to minimise 'dropping of reamers' by installing a certified steel rope between the drill stem and lower stabiliser, now known as a 'catch rope'
- Developed an alarm system to identify a crack propagating in the drill string.
- Drilled the horizontal shaft to enable the Beaconsfield Mine Rescue.

RAISEBORING - THE PROCESS



PILOT DRILLING

SPUDDING-IN

CONVENTIONAL RAISEBORING

PILOT DRILLING

The pilot drilling process allows for both the directional integrity and attachment of the reamer. It is also used for the egress of broken rock in down-reaming. The cuttings from the pilot hole are evacuated by the use of either water or compressed air up through the annulus of the drilled hole.

SPUDDING-IN

After the pilot hole has been completed, the pilot bit is removed from the drill string, and a reamer head is attached and torqued up to the Original Equipment Manufacturer's Specification. The reamer is then raised and commences the process of slowly 'spudding' into the ceiling or 'backs'. This process will create a level surface from the uneven backs so that eventually, all cutters can be in constant contact and tension.

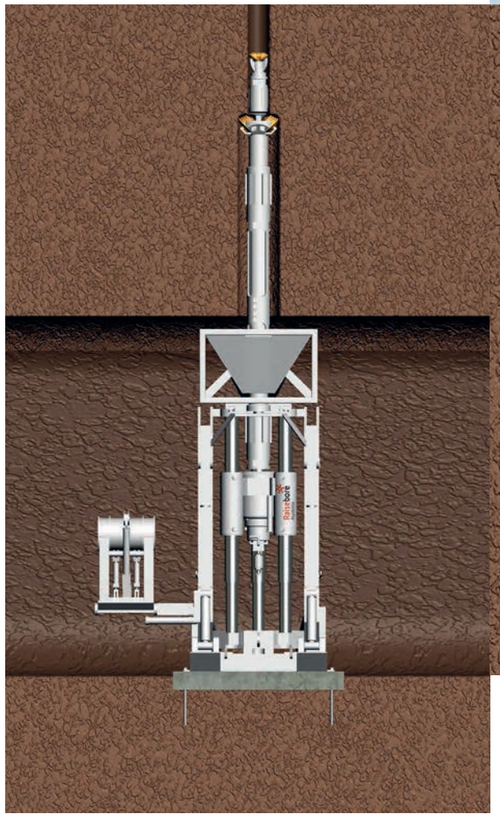
CONVENTIONAL RAISEBORING

In the conventional raiseboring process, the pilot hole is drilled down to a lower level in the mine or civil project. Following the spudding in process, the conventional raiseboring process will commence and broken rock or 'cuttings' will fall to the lower level by gravity, and the drill string will remain in constant tension whilst being rotated in order for it to drill at optimum stability and safety.

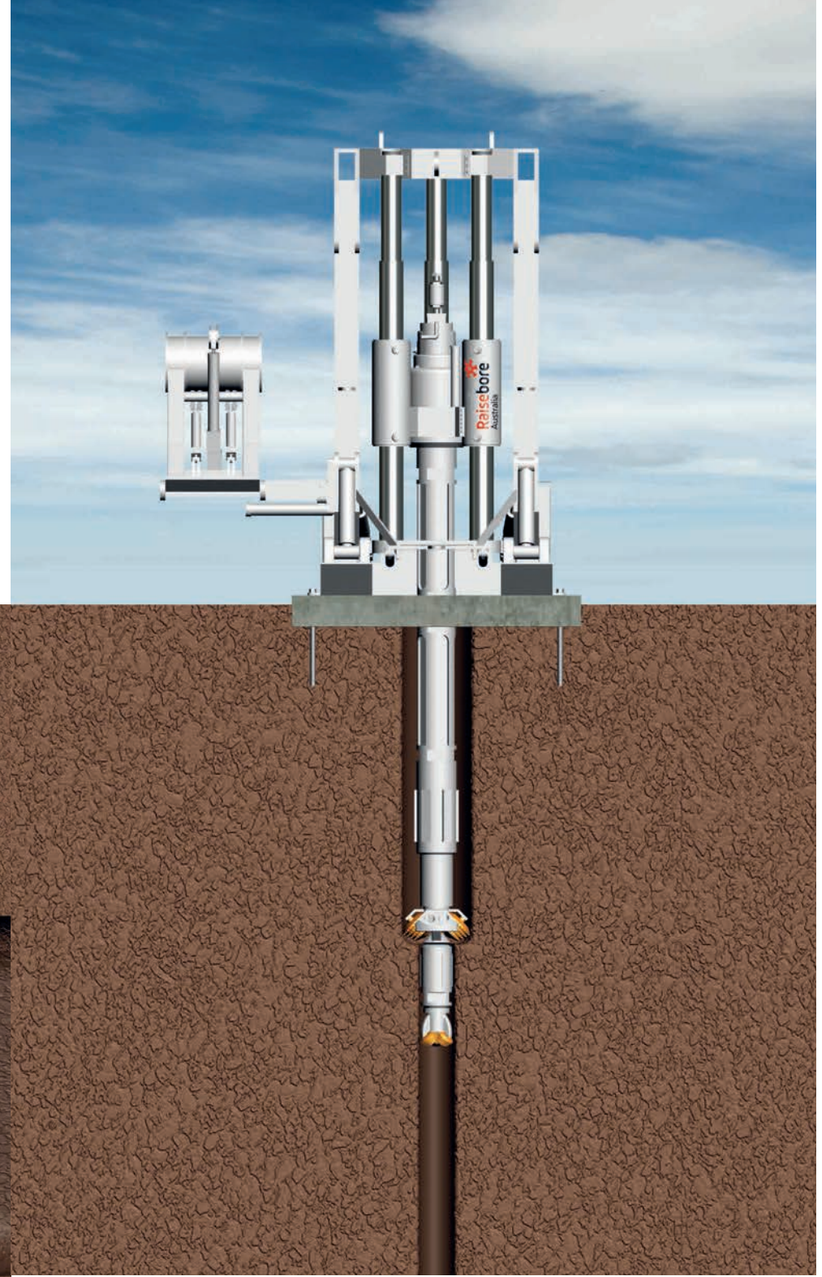
BOX-HOLING OR UP-REAMING

In this method of raiseboring, the pilot hole is drilled upwards to a higher level of elevation in the mine or civil project. Once the desired length has been achieved by the pilot drilling process, the drill string is retrieved, reamer attached and then pushed upwards into the ‘backs’.

The cuttings will fall to the lower level by gravity, and are collected in a special collection chute which is attached to the top of the raiseboring machine.



BOX-HOLING OR UP-REAMING



DOWN-REAMING

DOWN-REAMING

In this system, the pilot hole is drilled down to a lower level of elevation in the mine or civil project. The drill string is then retrieved; reamer is attached, and then is pushed down towards the lower level of elevation below. The cuttings will fall down the pilot hole to the lower horizon.

NATIONALLY; RAISEBORE AUSTRALIA HAS SUPPLIED SERVICES AND HAS BEEN AN INTEGRAL PART OF SOME OF AUSTRALIA'S LARGEST MINE DEVELOPMENT PROJECTS. RAISEBORE AUSTRALIA DEVELOPED THE OLYMPIC DAM EXPANSION PROJECT AND HAS WORKED CONTINUOUSLY AT CSA MINE AND ROSEBERY MINE FOR VARIOUS OWNERS OVER THE PAST 14 YEARS AND IS CURRENTLY THE RAISEBORING CONTRACTOR FOR THE EXPANSION AT PROMINENT HILL IN SOUTH AUSTRALIA.

AREAS OF EXPERTISE

METALLIFEROUS HARD-ROCK

METALLIFEROUS HARD-ROCK

Our large fleet of raiseboring machines, combined with extensive inventories of consumables, provides Raisebore Australia with the dynamic ability to ream raises in metalliferous hard-rock from 0.6 metres up to 6.0 metres in diameter.

Raisebore Australia has reamed in excess of 120 kilometres of shafts, the majority of which is comprised of work in metalliferous hard-rock mines in all states of Australia, New Zealand, Vietnam, Portugal, Hong Kong and West Africa.

Nationally; Raisebore Australia has supplied services and has been an integral part of some of Australia's largest expansion projects such as the Olympic Dam Expansion Project, the Cannington Mine Growth Project, and the CSA Shaft and Ventilation Upgrade. Raisebore Australia raisebored the now world-famous horizontal shaft to facilitate the Beaconsfield Mine Rescue.

Despite this expansion, Raisebore Australia maintain key client relationships, some which have been forged over two decades. Clearly, for Australia's largest privately owned raiseboring company, "Loyalty Matters."

COAL

COAL

Raisebore Australia has considerable experience in coal with work completed in the New South Wales and Queensland coalfields. Raisebore Australia is the only specialist raiseboring contractor in Australia that operates and maintains flame-proof equipment for use in underground seam to seam drilling.

Our extensive raiseboring fleet ensures that we offer a complete range of equipment to ream shafts in coal. Currently our equipment level allows Raisebore Australia to have at least four machines with the capacity to ream raises from 4.0 metres to 6.0 metres in diameter which ensures an emergency back up is available.

The intermediate capacity raiseborers of our fleet are utilised to ream raises from 0.6 metres up to 3.8 metres in diameter to depths in excess of 600 metres.

Additionally, Raisebore Australia retains a fleet of 6 specialist “Slot” raiseboreres which are used to ream raises and escapeways from 0.6 metres to 1.5 metres in diameter.

Some of these machines have the capacity to up-ream and down-ream as well as ream conventional shafts.

Raisebore Australia can also supply a real time vacuum sampling and monitoring system to ensure the atmosphere at the reamer head is within specified levels. A Trigger Action Response Plan (TARP) has been developed for the reaming application to remove the potential for frictional ignition in the shaft from rotary cutting. We maintain vacuum pumping equipment for surface use and the equipment can be easily converted to monitor samples taken utilising a venturi system supplied by our clients.

Raisebore Australia has extensive experience in coal with work completed at Wyee Colliery, Cordeaux Colliery, Tower Colliery, Austar Colliery, Newpac Colliery, Nardell Colliery and Abel Colliery in New South Wales. We have also completed shafts in the Bowen Basin at Southern Colliery, Central German Creek Colliery, and Grasstree Colliery in Queensland, Australia.

Raisebore Australia has shown a consistent history of continuously innovating and rising to meet and surpass the highest requirements and standards in the coal mining industry.

RAISEBORE AUSTRALIA IS ABLE TO VALUE ADD TO YOUR CIVIL CONSTRUCTION PROJECT BY ADAPTING OUR STRICT, WELL DEFINED SAFETY, ENVIRONMENTAL AND PROCEDURE PROTOCOLS TO THE CIVIL CONSTRUCTION INDUSTRY.

CIVIL CONSTRUCTION

CIVIL CONSTRUCTION

Raisebore Australia has had a great deal of involvement in civil projects in Australia, Hong Kong, Portugal and Vietnam.

Our large fleet of raiseboring machines, combined with extensive inventories of consumables, provides Raisebore with the dynamic ability to ream raises for civil works from 0.6 metres up to 6.0 metres in diameter.

The raiseboring technique may be utilised for a variety of applications such as shafts for hydro-electric projects, underground gas storage facilities, egress and underground elevator shafts, exhausts for subway or motorway tunnels, plus many more. In fact, the raiseboring technique has a myriad of applications and they are best considered with liaison with the experienced members of our team.

Raisebore Australia is able to value add to your civil construction project by adapting our strict, well defined safety, environmental and procedure protocols to the civil construction industry. We are able to readily identify potential problems and provide procedures for risk mitigation based on our considerable experience and expertise.

RAISEBORE AUSTRALIA HAS SHOWN A CONSISTENT HISTORY OF CONTINUOUS INNOVATION AND RISEN TO MEET AND SURPASS THE HIGHEST SAFETY AND TECHNICAL STANDARDS IN THE MINING INDUSTRY.

RAISEBORE AUSTRALIA IN OPERATION AT PROMINENT HILL, SOUTH AUSTRALIA

RAISEBORING EQUIPMENT

OUR EQUIPMENT

LARGE DIAMETER RIGS

ATLAS COPCO ROBBINS 91RH - 1000V

ATLAS COPCO ROBBINS 91RH - 415V

ATLAS COPCO ROBBINS 97RL

ATLAS COPCO ROBBINS 211M

INTERMEDIATE DIAMETER RIGS

ATLAS COPCO ROBBINS 73R

ATLAS COPCO ROBBINS 7SP

ATLAS COPCO ROBBINS 63R

“SLOT”- SMALL DIAMETER RIGS

ATLAS COPCO ROBBINS 32R - 1000V

ATLAS COPCO ROBBINS 32R - 415V

RB 23 - 1,000V

RB 08 - 415V

RB 1,000

ATLAS COPCO ROBBINS 43R

LARGE DIAMETER RIGS

ATLAS COPCO ROBBINS 91RH - 1000V

Hydraulic type machine

Connected power

- Mains supply 1000 Volts, 50 Hertz, 750 KVA
- Diesel Genset supply 1000 KVA

Compact design
5.1m extended height
(plus 500mm beams if required)

Pilot thrust
446 KN (100,000 lbs)

Reaming thrust
6,700 KN (1,500,000 lbs)

Reaming torque
450 KNm (332,000 ft lbs)
operating up to 7.5 rpm

Pilot Drilling speed
0 – 54 rpm variable

Reaming speed
0 – 8.5 rpm variable

Transporter
Diesel crawler with inbuilt erection device

Spreader beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Water consumption for cooling
approximately 200 litres/min
which is recirculated via sumps

Water consumption for pilot drilling
approximately 900 litres/min
which is recirculated via sumps

Raiseborer weight
Derrick without Pipeloader – 34 tonnes
including crawler 42.5 tonnes

ATLAS COPCO ROBBINS 91RH - 415V

Hydraulic type machine

Connected power

- Mains supply 400 / 415 Volts, 50 Hertz, 750 KVA
- Diesel Genset supply 1000 KVA

Compact design
5.1m extended height
(plus 500mm beams if required)

Pilot thrust
446 KN (100,000 lbs)

Reaming thrust
6,700 KN (1,500,000 lbs)

Reaming torque
450 KNm (332,000 ft lbs)
operating up to 7.5 rpm.

Pilot Drilling speed
0 – 54 rpm variable

Reaming speed
0 – 8.5 rpm variable

Transporter
Diesel crawler with inbuilt erection device

Spreader beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Water consumption for cooling
approximately 200 litres/min
which is recirculated via sumps

Water consumption for pilot drilling
approximately 900 litres/min
which is recirculated via sumps

Raiseborer weight
Derrick without Pipeloader – 34 tonnes
including crawler 42.5 tonnes

LARGE DIAMETER RIGS

ATLAS COPCO ROBBINS 97RL

D.C. Drive 300 KW (400 HP)

Connected power

- Mains supply 415 Volts, 50 Hertz, 650 KVA
- Diesel Genset supply 750 KVA unit with appropriate Load Bank

Compact design
4.4m extended height
(plus 400mm if beams required)

Pilot thrust
500 KN (115,000 lbs)

Reaming thrust
6,700 KN (1,500,000 lbs)

Reaming torque
450 KNm (332,000 ft lbs)

Pilot Drilling speed
0 – 68 rpm variable

Reaming speed
0 – 16 rpm variable

Transporter
sled with inbuilt erection device

Spreader beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Cooling system
closed circuit glycol

Water consumption for pilot drilling
approximately 900 litres/min
which is recirculated via sumps

Raiseborer weight
32 tonnes

ATLAS COPCO ROBBINS 211M

D.C. Drive 224 KW (300 HP)

Connected power

- Mains supply 415 Volts, 50 Hertz, 500 KVA
- Diesel Genset supply 650 KVA unit with appropriate Load Bank

Compact design
5.7m extended height
(plus 400mm beams if required)

Pilot thrust
490 KN (110,000 lbs)

Reaming thrust
5,350 KN (1,200,000 lbs)

Reaming torque
286 KNm (211,000 ft lbs)

Pilot Drilling speed
0 – 90 rpm variable

Reaming speed
0 – 10 rpm variable

Transporter
sled with inbuilt erection device

Spreader beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Water consumption for cooling
approximately 100 litres/min

Water consumption for pilot drilling
approximately 900 litres/min
which is recirculated via sumps

Raiseborer weight
21 tonnes, including sled 26 tonnes

ATLAS COPCO ROBBINS 7SP RAISEBORER
PROMINENT HILL, SOUTH AUSTRALIA

INTERMEDIATE RIGS

ATLAS COPCO ROBBINS 73R

D.C. Drive 224KW (300 HP)

Connected power

- Mains supply 415 Volts, 50 Hertz, 500 KVA
- Diesel Genset supply 650 KVA unit with appropriate Load Bank

Compact design
5.8m extended height
(plus 400mm beams if required)

Pilot thrust
470 KN (106,000 lbs)

Reaming thrust
4,450 KN (1,000,000 lbs)

Reaming torque
225 KNm (166,000 ft lbs)

Pilot Drilling speed
0 – 70 rpm variable

Reaming speed
0 – 19 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Water consumption for cooling
approximately 75 litres/min

Water consumption for pilot drilling
approximately 700 litres/min
which is recirculated via sumps

Raiseborer weight
11.5 tonnes, including sled 19 tonnes

ATLAS COPCO ROBBINS 7SP

D.C. Drive 186 KW (250 HP)

Connected power

- Mains supply 415 Volts, 50 Hertz, 500 KVA
- Diesel Genset supply 650 KVA unit appropriate loadbank

Compact design
5.3m extended height
(plus 400mm beams if required)

Pilot thrust
470 KN (106,000 lbs)

Reaming thrust
4,450 KN (1,000,000 lbs)

Reaming torque
230 KNm (170,000 ft lbs)

Pilot Drilling speed
0 – 90 rpm variable

Reaming speed
0 – 10 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
23m3/min @ 7 bar

Water consumption for cooling
approximately 120 litres/min

Water consumption for pilot drilling
approximately 700 litres/min
which is recirculated via sumps

Raiseborer weight
18 tonnes, including sled

INTERMEDIATE RIGS

ATLAS COPCO ROBBINS 63R

Hydraulic type machine

Connected power

- Mains supply 415 Volts, 50 Hertz, 400 KVA
- Diesel Genset supply 500 KVA unit

Compact design
5.1m extended height
(plus 400mm beams if required)

Pilot thrust
470 KN (106,000 lbs)

Reaming thrust
2025 KN (455,000 lbs)

Reaming torque
160 KNm (115,000 ft lbs)

Pilot Drilling speed
0 – 94 rpm variable

Reaming speed
0 – 16 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
17 m3/min @ 7 bar
(600 cfm @ approximately 100 psi)

Water consumption for cooling
approximately 75 litres/min

Water consumption for pilot drilling
approximately 500 litres/min
which is recirculated via sumps

Raiseborer weight
7.5 tonnes, including beams 19.5 tonnes

DYNAMIC ABILITY

“SLOT” SMALL DIAMETER RIGS

ATLAS COPCO ROBBINS 32R - 1000V

Hydraulic type machine

Connected power

- Mains supply 1000 Volts, 50 Hertz, 100 KVA
- Diesel Genset Supply 250 KVA unit

Compact design
3.0m extended height
(plus 500mm high support beams)

Pilot thrust
912 KN @ 241 bar (205,000 lbs)

Reaming thrust
912 KN @ 241 bar (205,000 lbs)

Reaming torque
50 KNm (36,600 ft lbs)

Pilot Drilling speed
0 – 80 rpm variable

Reaming speed
0 – 20 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 500 litres/min
which is recirculated via sumps

Raiseborer weight
9 tonnes, including support beams

ATLAS COPCO ROBBINS 32R - 415V

Hydraulic type machine

Connected power

- Mains supply 415 Volts, 50 Hertz, 150 KVA
- Diesel Genset Supply 250 KVA unit

Compact design
3.0m extended height
(plus 500mm high support beams)

Pilot thrust
912 KN @ 241 bar (205,000 lbs)

Reaming thrust
912 KN @ 241 bar (205,000 lbs)

Reaming torque
50 KNm (36,600 ft lbs)

Pilot Drilling speed
0 – 80 rpm variable

Reaming speed
0 – 20 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 500 litres/min
which is recirculated via sumps

Raiseborer weight
9 tonnes, including support beams

“SLOT” SMALL DIAMETER RIGS

RB 23 - 1000V

Hydraulic type machine

Connected power

- Mains supply 1,000 Volts, 50 Hertz, 100 KVA
- Diesel Genset supply 250 KVA unit

Compact design
3.5m extended height

Pilot thrust
220 KN

Reaming thrust
1,025 KN (230,000 lbs)

Reaming torque
46 KNm (33,750 ft lbs)

Pilot Drilling speed
0 – 80 rpm variable

Reaming speed
0 – 12 rpm variable

Transporter
sled

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 300 litres/min
which is recirculated via sumps

Raiseborer weight
6 tonnes, including beams 9 tonnes

RB 08 - 415V

Hydraulic type machine

Connected power

- Mains supply 415 Volts, 50 Hertz, 150 KVA
- Diesel Genset supply 250 KVA unit

Compact design
3.5m extended height

Pilot thrust
220 KN

Reaming thrust
1,025 KN (230,000 lbs)

Reaming torque
46 KNm (33,750 ft lbs)

Pilot Drilling speed
0 – 80 rpm variable

Reaming speed
0 – 12 rpm variable

Transporter
sled

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 300 litres/min
which is recirculated via sumps

Raiseborer weight
6 tonnes, including beams 9 tonnes

“SLOT” SMALL DIAMETER RIGS

RB 1000

Hydraulic type machine

Connected power

- Mains supply 415 Volts, 50 Hertz, 150 KVA
- Diesel Genset supply 250 KVA unit

Compact design
3.2m extended height

Pilot thrust
828 KN (186,000 lbs)

Reaming thrust
828 KN (186,000 lbs)

Reaming torque
41 KNm (30,000 ft lbs)

Pilot Drilling speed
0 – 44 rpm variable

Reaming speed
0 – 12 rpm variable

Transporter
sled mounted with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 300 litres/min
which is recirculated via sumps

Raiseborer weight
9 tonnes including sled

ATLAS COPCO ROBBINS 43R

Hydraulic type machine

Connected power

- Mains supply 1000 Volts, 50 Hertz, 125 KVA
- Diesel Genset supply 250 KVA unit

Compact design
4.3m extended height

Pilot thrust
220KN (49,000lbs)

Reaming thrust
1,335 KN @ 240 bar (300,000 lbs)

Reaming torque
60 KNm (44,000 ft lbs)

Pilot Drilling speed
0 – 59 rpm variable

Reaming speed
0 – 15 rpm variable

Transporter
sled with inbuilt erection device

Beams to allow hole break through
(if required)

Air consumption
12m3/min @ 7 bar

Water consumption for cooling
approximately 60 litres/min

Water consumption for pilot drilling
approximately 500 litres/min
which is recirculated via sumps

Raiseborer weight
6 tonnes, including sled 9 tonnes

CONTACT US

THE TEAM AT RAISEBORE AUSTRALIA HAS A WEALTH OF KNOWLEDGE AND EXPERTISE AND CAN ADVISE THE MOST EFFECTIVE, COST EFFICIENT TECHNIQUES FOR ALL OF YOUR RAISEBORING REQUIREMENTS; ALL WHILST PROMOTING A ZERO-HARM WORKING ENVIRONMENT.

For further information on the raiseboring process or to make an enquiry for future works, please contact:

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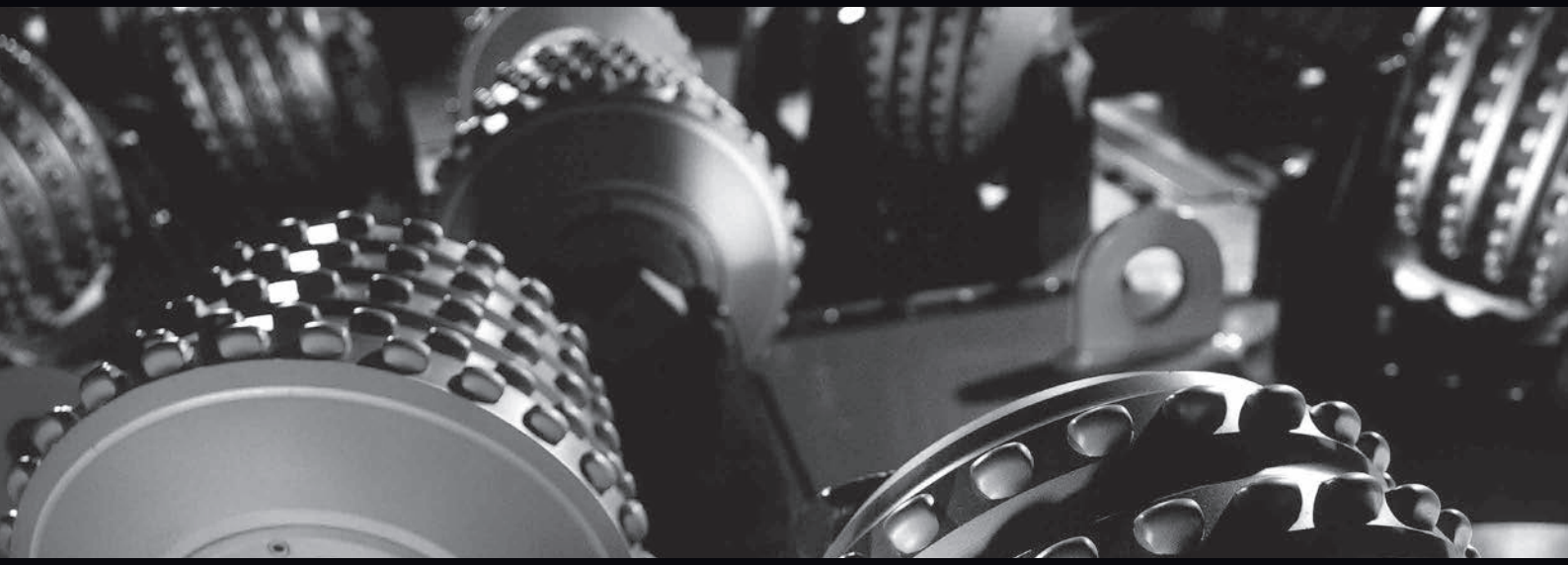

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