BoomerHD BOOM SYSTEMS

HEAVY-DUTY HYDRAULIC PEDESTAL MOUNTED BOOM SYSTEMS

TRANSMiN | BOOMER HD

AUSTRALIAN ENGINEERING WORLDWIDE

Transmin is a world-class provider of innovative engineered equipment, supplies and services to the resources and bulk materials handling industries.

Established in Perth, Western Australia in 1987, Transmin sets the standard for mechanical equipment design and application, led by our specialist Engineering division, and backed by our dedicated Aftermarket division. Transmin's Control and Automation division delivers award-winning software solutions specialising in remote equipment operation and systems integrations.

The Transmin equipment range covers most bulk materials-handling applications, including; feeders and conveyors, bulk loading and unloading hoppers, rock-breakers, hydraulic boom systems, bin isolation gates, reagent preparation and processing facilities, lime preparation facilities, ball charging systems and silos.

Transmin Head Office

Transmin Office/Agencies

Countries in which Transmin equipment is deployed

STRONGER & INCREASED DURABILITY

BOOMER HD

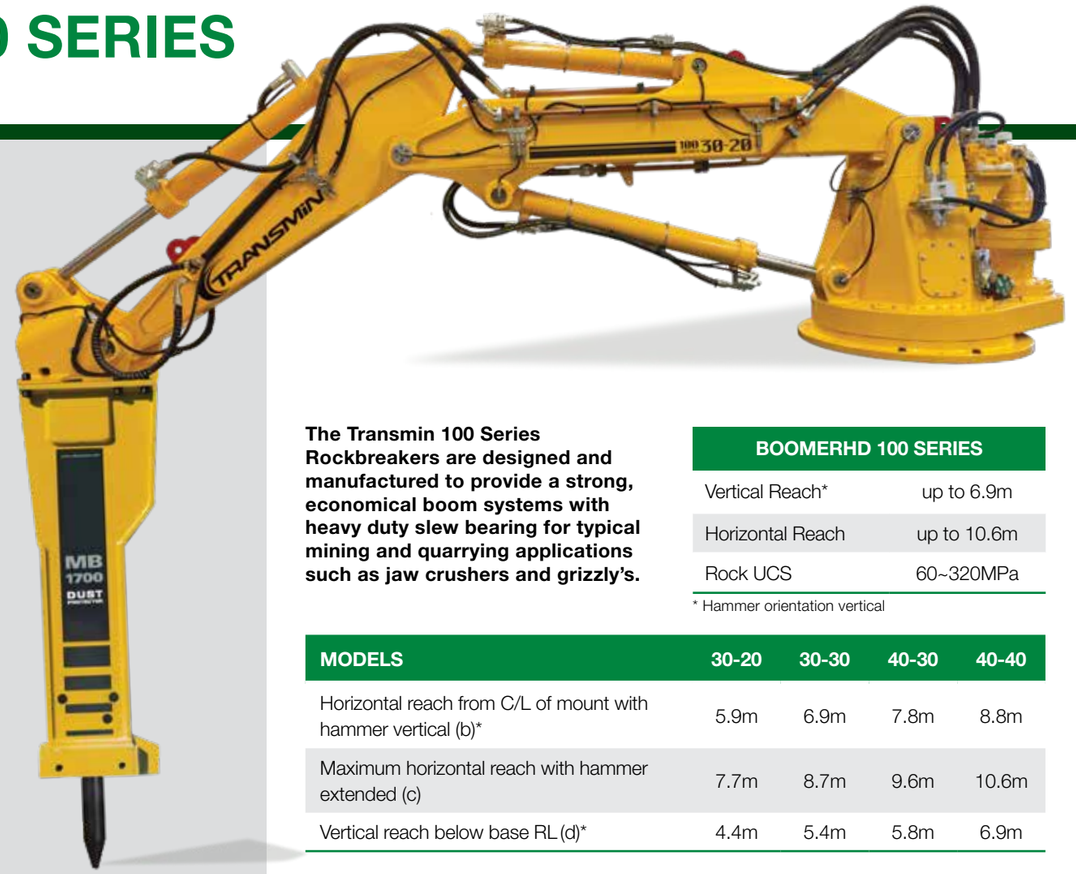
With many years of design evolution and experience in the world's largest grizzly and gyratory crusher applications, Transmin has enhanced its range of rockbreaking solutions to give customers a rockbreaker which is stronger, faster and has increased durability than previous models.

Made up of three models; 100, 130 and 160 Series these rockbreakers are some of the largest rockbreakers in the world and are deployed in the toughest conditions imaginable. Engineered for large-scale mining and minerals processing plants, these rockbreakers offer longer periods between maintenance requirements and achieves lower life cycle costs.

ROCKBREAKERS

- Suitable for all conditions; arctic, tropical, underground and high elevations
- Remote control available via the RockLogic automation package
- Recommended for use with Epiroc hammers however suitable for all hydraulic attachments
- Training packages available

100 SERIES



The Transmin 100 Series Rockbreakers are designed and manufactured to provide a strong, economical boom systems with heavy duty slew bearing for typical mining and quarrying applications such as jaw crushers and grizzly's.

BOOMERHD 100 SERIES	
Vertical Reach*	up to 6.9m
Horizontal Reach	up to 10.6m
Rock UCS	60~320MPa

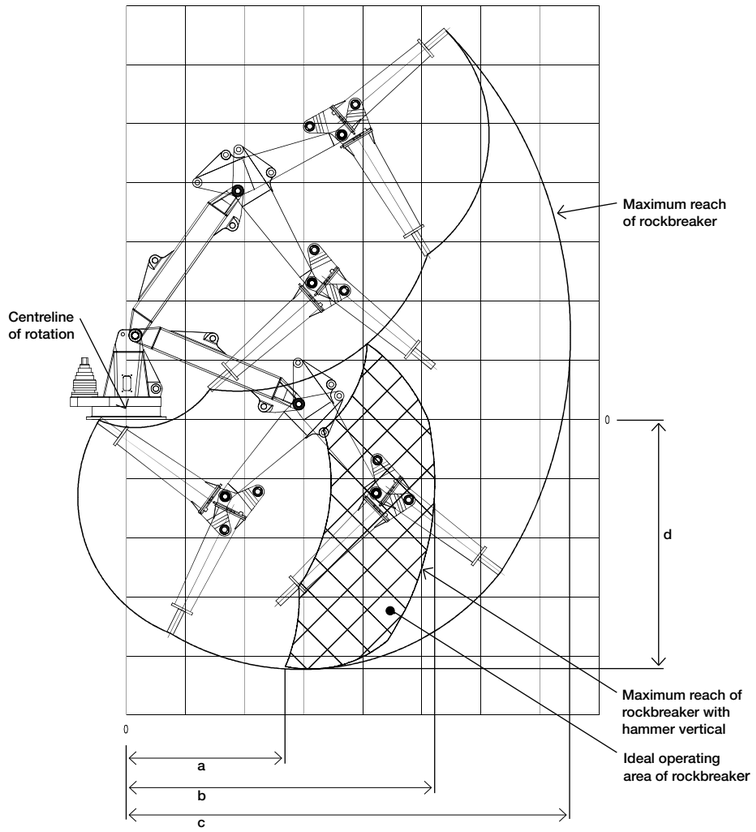
* Hammer orientation vertical

MODELS	30-20	30-30	40-30	40-40
Horizontal reach from C/L of mount with hammer vertical (b)*	5.9m	6.9m	7.8m	8.8m
Maximum horizontal reach with hammer extended (c)	7.7m	8.7m	9.6m	10.6m
Vertical reach below base RL (d)*	4.4m	5.4m	5.8m	6.9m

PILBARA, WESTERN AUSTRALIA

Two machines were installed at the primary crushing station, over a grizzly and primary crusher, reducing run of mine ore to manageable sizes.

This application was customised to run both machines from one single power pack.



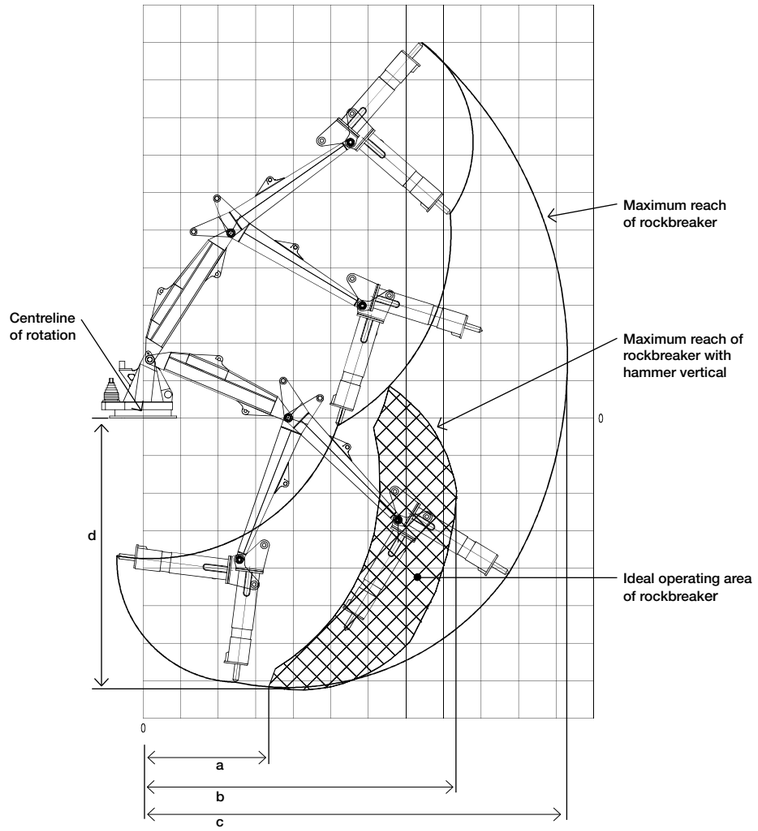
130 SERIES

The Transmin 130 Series Rockbreakers will take all that you can throw at them while delivering excellent performance. Placed over a large grizzly or crusher the Series 130 Rockbreaker will clear any blockages with ease.

BOOMERHD 130 SERIES	
Vertical Reach*	up to 8.7m
Horizontal Reach	up to 13.8m
Rock UCS	100~320MPa

* Hammer orientation vertical

MODELS	40-40	50-40	50-50	60-50
Horizontal reach from C/L of mount with hammer vertical (b)*	9.0m	9.9m	10.9m	11.9m
Maximum horizontal reach with hammer extended (c)	10.9m	11.8m	12.8m	13.8m
Vertical reach below base RL (d)*	7.0m	7.3m	8.3m	8.7m



PILBARA, WESTERN AUSTRALIA

Three 130 Series rockbreakers were designed, manufactured & installed at the ROM Bin to break ore lumps to a manageable size that they pass through to the grizzly to the apron feeder and primary sizer.

Each rockbreaker operates with 90kW powerpack and control panel.

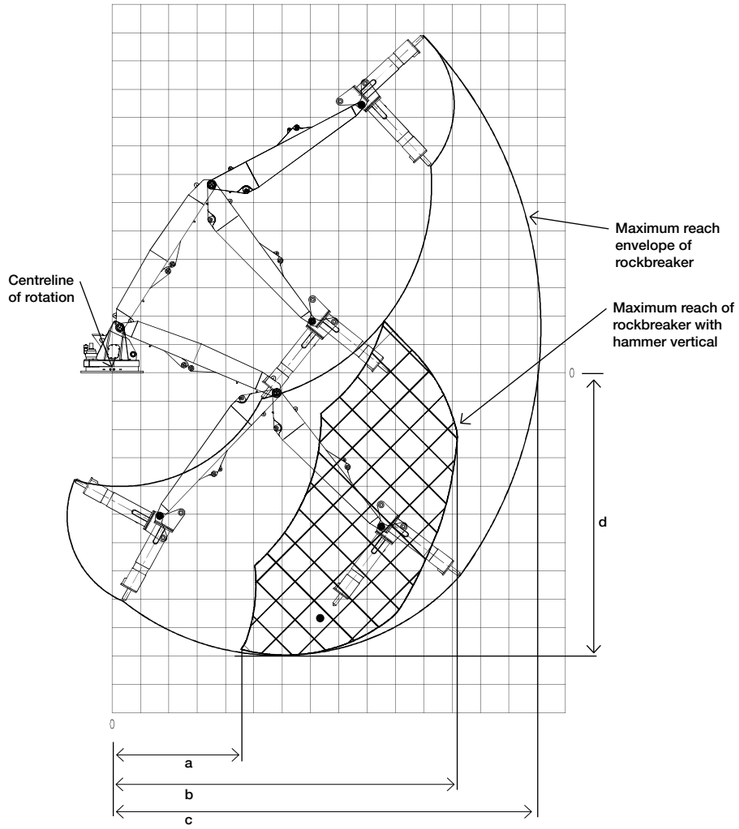
160 SERIES

The Transmin 160 Series Rockbreaker comes with a standard 270°, or optional 360° slew, along with twin high strength planetary gearboxes. These huge machines make light work of the world's biggest gyratory crushers and grizzly screens.

BOOMERHD 160 SERIES	
Vertical Reach*	up to 11.8m
Horizontal Reach	up to 17.5m
Rock UCS	160~320MPa Plus

* Hammer orientation vertical

MODELS	60-60	70-70
Horizontal reach from C/L of mount with hammer vertical (b)*	13.1m	15.1m
Maximum horizontal reach with hammer extended (c)	15.1m	17.5m
Vertical reach below base RL (d)*	9.9m	11.8m



MIDWEST, WESTERN AUSTRALIA

A 160 Series rockbreaker was installed to break rocks with strengths in excess of 360MPa.

The rockbreaker was installed with a 4 ton hydraulic attachment to handle the competent material. To date the boom system is working better than expected.

HYDRAULIC POWER UNIT

Transmin has a range of standard hydraulic power packs as well as custom designs to suit client needs. All power packs are designed to the required standards.

Technical description - mechanical

- Variable displacement piston pump with load sensing power on demand
- Standard four pole motors (voltage to suit site requirements)
- Oil cooler
- Low/High level oil shut down
- Pressure and return filters with visual indicators
- Pressure and temperature gauges
- Minimises hydraulic test points
- Drip tray
- Oil reservoir and level indicator
- Mid steel painted, frame hot dip galvanised
- Filter breather

Technical description - electrical

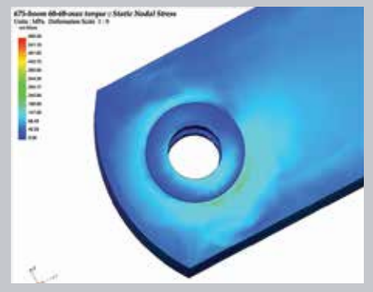
- Cat 1 HPU control panel fully wired
- Local and remote mode selection
- Integrated emergency stop
- Alarm and showdown facilities with indicator light
- RCD protection and GPO inside panel
- NHP circuit breaker, contractors and auxiliaries
- Allen Bradley PLC and HMI
- Painted mild steel IP66 X 15 orange panel

Options

- Installation hoses - 2.5 m hose kit for connection to site run piping
- Isolation valves - interconnection between site run piping and HPU hoses
- Reservoir heater - 3 kW Immersion heater, thermostatically controlled
- Reservoir breather - desiccant gel prevents ingress of moisture
- 316 Stainless steel reservoir - added protection against particle ingress from corrosion
- Pressure transducer - digital monitoring of system output pressure
- High altitude motor - for ensured performance above 1000m ASL
- Electric blocked filter indication - pressure differential switches on pressure and return fitters for remote monitoring
- Additional low level switch - additional site glass and level switch for more accurate monitoring
- Fire suppression systems - AFFF systems - information available upon enquiry
- Dulpex Pressure and return filters
- 110% bunded reservoir

FULL ROCKBREAKER POWER PACK TESTING

FEATURES



Design

True boom operating loads have been established during years of experience in the field. Testing has allowed Transmin to compare calculated loads with actuals; refining our internal design programs.

Boom & Jib Locking Kit

Boom and jib locking valves prevent boom and jib collapse if a hydraulic line is severed. Each valve fitted to the cylinder offers load holding capability, to provide the safest possible operation.

Heavy Duty Slew

With a normal operating arc of 270º and a single or twin high torque planetary gearbox, making light work of the largest rocks. The unique slew motion control valve brings the rock breaker to a controlled stop when the slew control is released and delivers optimum torque through the drive train, improving safety, performance wear rates and reliability.

Custom Designed Cylinders

Transmin cylinders are designed to provide superior strength and extended life under arduous conditions. All cylinders are specifically built for rock boom applications with special rod coatings and full strength rod end attachment.

Soft Slew Limiting Kit

The Soft Slew Limits will stop slew movement beyond a preconfigured operational zone determined during commissioning. The functionality comes from 2 inductive proximity sensors following a track mounted around the fixed slew base.

Standard Lubrication

Grease nipples mounted directly into pins, spherical bearings and slew gear/bearing, for manual greasing by grease gun.

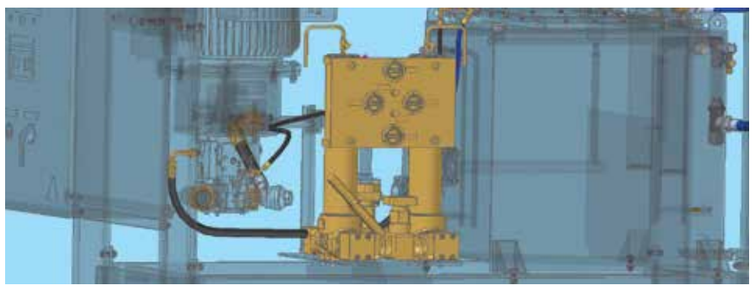
Automatic Greasing System via a lincoln grease pump and progressive dividers, pins are designed to accept and spread grease where required ensuring equipment longevity.

Taper Lock Bush Assembly

Transmin has designed and developed standardised taper lock bushes. These ensure that the pins remain correctly aligned and prevent any suffering from unforeseen bending loads by gripping radially and axially. This feature often prevents the need for rebuilding and line boring pivot areas in old machines that have been operating for extended periods.

Duplex Pressure & Return Filters

The duplex pressure and return filter option is set up as a duty and standby system that allows the filter to be switched over during operation of the HPU. Gauges on the pressure filters indicate the filters pressure. A blocked filter pop-up button allows visual indication of the filter condition with electrical indication available.



FEATURES

Hose Support Stand

4.5m Hose support stand, fixed mounting, comes with bunch binder kit for hose restraint .

Quick Hitch Coupler

The quickhitch coupler facilitates quick and easy change out of attachments. Control of the quick hitch is via the radio remote control.

Radio Remote Control

Mobile wireless radio control system enables precise movements and maximising user visibility. Fixed pendant stand available.

Fire Suppression System

Aqueous Film Forming Foam, the roof of the HPU is fitted with a series of brass nozzles which disperse AFFF over the HPU when fire is detected. The system can be manually actuated as well as automatically actuated

RockLogic

The RockLogic intelligent rockbreaker control system maximises safety, increases productivity and reduces downtime and maintenance costs with the systems advanced suite of control modules.

Bunded Reservoir

Drip tray is standard - 110% bunded reservoir optional.

Scraper & Water Canon Attachment

Custom Design

Transmin has the engineering capability to supply custom designed booms able to operate in the harshest of climates, including operating environments in extreme high and low temperatures.

ROCKLOGIC

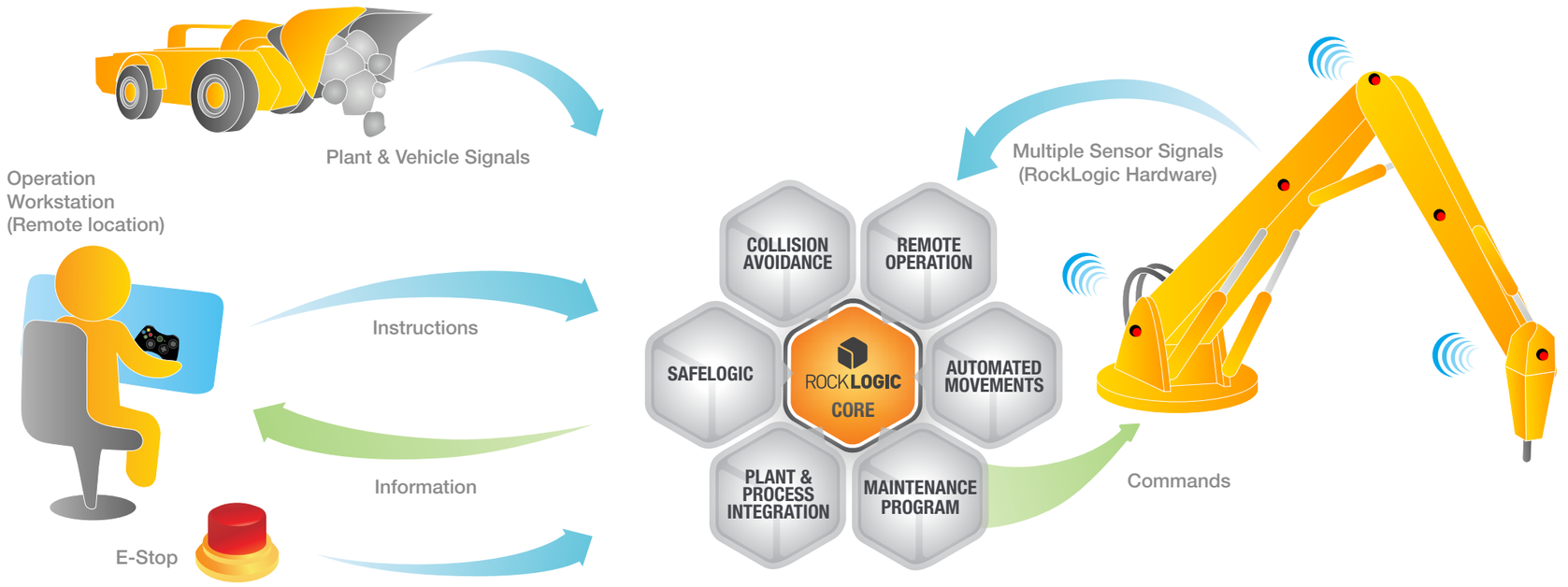
INTELLIGENT ROCKBREAKER CONTROL

The RockLogic™ Intelligent Rockbreaker Control System maximises safety, increases productivity and reduces downtime and maintenance costs through the systems' advanced suite of control modules.

- **Improve safety and productivity with remote operation.** Reduce personnel fatigue and heat stress. Remove personnel from flyrock, dust, noise and vibration hazards.
- **Control multiple rock breakers from one centralised remote location.** For high output mines, multiple rock breakers at different crushing stations can be controlled efficiently from one control centre, improving staff utilisation.
- **Improve rock breaker efficiency with automated movements.** Go to park and deploy positions with the press of a button, minimising crushing delays.
- **Eliminate site damage with collision avoidance.** Prevent unnecessary downtime by eliminating damage to rock breaker and surrounding plant equipment with customised collision avoidance software.
- **Increase throughput via improved communication between equipment with plant & process integration.** Signals to and from vehicles and plant equipment to automatically retract the rock breaker for continuous crushing operation.
- **Reduce the rock breaker operating costs with preventative maintenance.** Smoother rock breaker movements, cylinder sensing, data logging and collision avoidance minimises component wear and dramatically reduces on-site maintenance costs.
- **Integrate your safety procedures with SafeLogic.** A tailored programmable safety system with accommodation for isolation gates and E-Stops saves lives. Available as a standalone product.
- **ZoneLogic - an economical version of the full automatic system.** Suitable for retrofitting to all existing rock breakers. Provides configurable slew limiting. Create slow down zones to restrict rock breaker speeds. Available as a stand alone product.

BENEFITS

- Improve safety by eliminating hazards
- Improve production capacity/ throughput
- Increase rock breaking efficiency
- Improve staff utilisation and reduce reliance on fifo
- Reduce downtime and maintenance costs
- Complete integration with site operations
- Operation from remote operation centres.



Case Study:

BoomerHD 160 SERIES HEAVY DUTY ROCKBREAKER

Location:
Western Australia

Operation Type:
Iron ore (magnetite)

Equipment Solution:
BoomerHD 160 Series

Project Scope:

The client required a highly versatile Rockbreaker hydraulic boom system for an iron ore mine in the Mid West of Western Australia.

Working in a high vibration, dust laden atmosphere, with temperatures ranging from -5°C to 48°C, the boom system needed to handle this environment plus breaking rocks in the vertical position of the crusher throat with unconfined compressive rock strengths in excess of 360MPa.

Transmin's Solution:

The brief therefore, was for a BoomerHD 160 Series hydraulic boom system fitted with a 4 ton hydraulic hammer. The horizontal reach required was 17m, with a vertical depth of 10m and an operating angle of 280°.

Automatic lubricating system and the control panel mounted on the power pack were all requirements from the client.

To conclude the brief, the boom system would need to be powered via an independent 110kW hydraulic power pack and be tested under load for a minimum of 2 hours.

The drive of the slew mechanism was via two heavy duty hydraulic planetary gearboxes.

Transmin's standard design of cylinder rod-ends with full penetration butt welding and 100% ultrasonic testing were supplied. The cylinder rods have HVOF (High Velocity Oxygen Fuel) coatings on surfaces to provide wear characteristics far superior than chrome plating for mining conditions.

Transmin used custom designed boom and jib locking valves specifically to suit Transmin's inhouse designed cylinders. These bolt directly onto a machined port to allow the best possible safety that can be provided.

Hydraulic test points with quick connect couplings were fitted throughout the system at all critical areas, making testing and trouble-shooting very easy to perform without spillage.

The boom system also incorporates Transmin's proven "Taper Lock" style pin and bush locking system. The system was designed to enable the tapered caps at each end of the pin to provide rigid support, even though the pins may become worn. The taper lock system also allows easier maintenance and access to the pins.

To date the boom system is working better than expected - aiding plant productivity and reducing downtime.

Case Study:

BoomerHD XHD Series HEAVY DUTY ROCKBREAKER

Location:
Papua, Indonesia

Operation Type:
Gold Ore & Copper

Equipment Solution:
BoomerHD XHD Series

Scope of Project:

Due to ongoing maintenance problems with their existing Rockbreaker, Transmin was approached to design, engineer and fabricate a heavy duty Rockbreaker that could handle very competent, abrasive rock underground at a mine based in Indonesia.

Working in a high vibration, high humidity and dust laden environment, the Rockbreaker's job is to break oversize and bridging rock in, around and over the gyratory crusher. It must be able to reach, manipulate and break rocks, with the hammer operating in a vertical position.

Designed, engineered and fabricated within 30 weeks,Transmin delivered ahead of time and on budget - easily meeting the Clients expectations and requirements.

To date Transmin has supplied the client with over 13 BoomerHD Rockbreakers which all utilise the same or similar cylinders, hammers and power packs which make for good commonality for spares on site.

The XHD series supplied is considered to be the heaviest duty Rockbreaker presently being manufactured.

Project Outcome:

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HEAD OFFICE

Western Australia

Local Call: 1300 127 091
International Call: +61 (0) 8 9270 8555
International Fax: +61 (0) 8 9249 6116

Email: wasales@transmin.com.au

Address: 33-37 Denninup Way Malaga
Perth, Western Australia, 6090

Queensland & Northern Territory

Local Call: 1300 800 609
International Call: +61 (0) 7 3736 3340
International Fax: +61 (0) 8 9249 6116

Email: qldsales@transmin.com.au

Address: 76 Dulacca Street
Acacia Ridge, Brisbane
Queensland, 4110

INTERNATIONAL OFFICES

South Africa

Email: sales.rsa@transmin.com.au

South America

Email: sales.sa@transmin.com.au

North America

Email: sales.ca@transmin.com.au

India

Email: sales.in@transmin.in

www.transmin.com.au



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