We are certified to ISO9001:2008.

Your David Brown representative should be consulted prior to product selection and use.

In the interest of continuous technical development David Brown reserve the right to amend specifications and drawings without prior notice.

Print date 04/12   Revision date 04/12
The mining industry driven by David Brown

David Brown offers an extensive product range to serve the mining and cement industries, specialising in custom engineered orders. We can help serve your needs whether that be one gearbox, shovel component or drive system or thousands, David Brown is committed to being the best in industry.

Geared for mining excellence
- Local engineering support in the same time zone, ensuring quick turn-around
- Best cost, quality and delivery times in the industry
- In-house full load test rig capabilities
- Global network of service centres, backed up by strategically placed mining manufacturing facilities
- Repair to all David Brown and 3rd party gearboxes and other mining associated products

Custom engineering capabilities
- Extensive range of mining products spanning mining to port
- Global supply chains across 5 continents including manufacturing and service capabilities
- Bespoke design and repair of gearboxes for mining industry: engineering, design, manufacturing, service and sales
- State of the art design tools, manufacturing equipment and quality processes

Coal
Products
- Above and below ground conveyor drives
- Shovel and dragline replacement parts
- Stacker reclaimer replacement parts
- Pulverisers

Iron ore
Products
- Girth gears, pinions, mill drives for magnetite beneficiation
- Slurry pump gearboxes
- Conveyor drives
- Crushers

Cement
Products
- Girth gears, pinions, mill drives for rotary kilns and dryers
- Conveyor drives

Copper
Products
- Mills and crushers
- Drives for agitators & thickeners
- Shovel replacement parts
- Conveyor drives, girth gears, pinions, mill drives for grinding mills

Gold, silver & platinum
Products
- Above and below ground conveyor drives
- Girth gears, pinions, mill drives for grinding
- Crushers

Diamonds
Products
- Girth gears, pinions, mill drives for grinding mills
- Conveyor drives
- Crushers

Applying our expertise across the entire mining process
No-one understands the demands of the mining process better than David Brown. We see the big picture and understand that any process is only as robust as its weakest link.

David Brown is geared to deal with any challenge, at every stage of the process, anywhere in the world, at any time. Our diverse experience of mining, honed over decades of meeting complex engineering challenges in some of the world’s harshest operating conditions, ensures the absolute safety and reliability you need.
State of the art manufacturing capabilities
Global factories equipped with machinery made by leading gear cutting and grinding machine tools.

- David Brown is fully accredited to ISO 9001
- Worldwide facilities manufacturing:
  - Girth gears to 14.4m in diameter and up to 105,000kg in weight
  - Pinions tailored to suit your requirements
  - Annulus / internal ring gears up to 12m in diameter
  - Induction hardening of external or internal gears to 4.5m in diameter
  - Case carburising to 3m diameter and 4.5m length
  - Nitride heat treatment can be available on request
  - David Brown operates a zero defect policy

Requirements
- Reliability
- Cost effectiveness
- Short delivery period

Solutions
- Trouble free operation
- Lowest lifetime cost
- Short lead times due to optimised supply chains
- Engineered Around You!

Assembly and load testing
All gearboxes and associated mining products following strict quality control guidelines and review before being shipped to our customers worldwide.

Our full load testing capabilities includes the measurement of temperature, vibration and noise

David Brown offers no-load spin testing and full scale load testing of stand alone gear units or complete HV drive assemblies depending on customer requirements

Testing facilities vary worldwide, globally
David Brown can test gearboxes exceeding 3MW

Engineering expertise
David Brown has a dedicated global team of design and application engineers experienced in providing tailored state of the art solutions for all power transmission applications in the mining industry.

All designs are optimised using state of the art design tools and crafted using the latest manufacturing equipment.

Housings, couplings and shafts
- Designed to be thermally efficient
- Using the latest software design tools for FEA analysis (FEA, Ansys) and 3D modelling (Solid edge)

Gear design
- David Brown design to AS/AGMA, JIS, DIN or ISO standards
- Tooth modifications to achieve optimal load conditions
- Using the latest software design tools for power transmission (SMT masta, dontyne)

Quality control
Equipped with the latest and best gear inspection equipment available

We are the best in class, our modern manufacturing and service facilities can showcase our abilities

David Brown utilises the latest onboard and stand alone gear measurement technology

Requirements
- Reliability
- Cost effectiveness
- Short delivery period

Solutions
- Trouble free operation
- Lowest lifetime cost
- Short lead times due to optimised supply chains
- Engineered Around You!
David Brown have a dedicated global team of mining design and application engineers to provide around the clock dedicated support. David Brown mining products are designed using state of the art design software for gears, shafts and housings, aiming to be your complete gearing authority.

We have skilled technicians and engineers ready to solve your gearbox and associated product needs. We can design from scratch or reverse engineer an existing product. Whether you wish to change the ratio or improve an existing gearbox, David Brown is your one stop gear shop. We can evaluate your current gears and manufacture replacements that are stronger and longer lasting.

Send us your gearbox during a regular shutdown and we will evaluate the condition of your reducer. We can even make a drop-in assemblies that will help minimise downtime.

A team of skilled professionals provide expert assistance who can either work from detailed engineered drawings or from sample pieces. If required, original engineered specifications and drawings can be designed and developed. David Brown can be your complete mining solution provider however complex or time dependent.

David Brown can manufacture gears and gearboxes to any rating or gear grade currently in existence.

David Brown utilise some of the industries most sophisticated gear inspection machines. This ensures David Brown products are of the highest quality and robustness.

Our fully automatic CNC controlled gear measuring machines are designed for larger work-piece diameters up to 2000mm. These measuring machines are suitable for testing spur and helical gears as well as hobs, shaper cutters, worms and worm gears, bevel gears and general deviations in dimension, form and location of rotation-symmetrical workpieces, curve and camshaft measurements and rotors. They are also critical for reverse engineering to ascertain the exact tooth profile of the sample part.

David Brown offers full scale load testing of gearbox products if requested by customers. No-load spin testing and full scale load testing of stand alone gear units or complete HV drive assemblies are available. For more information, ask a David Brown representative.

David Brown can manufacture gears and gearbox to any rating or gear grade currently in existence.

Send us your gearbox during a regular shutdown and we will evaluate the condition of your reducer. We can even make a drop-in assemblies that will help minimise downtime.

A team of skilled professionals provide expert assistance who can either work from detailed engineered drawings or from sample pieces. If required, original engineered specifications and drawings can be designed and developed. David Brown can be your complete mining solution provider however complex or time dependent.

David Brown can manufacture gears and gearboxes to any rating or gear grade currently in existence.
Complete mining product range

Conveyor drives
The CX range of gearboxes have been field tested over many years operating in some of the harshest environments.

Stacker/reclaimer drives
These drives are traditionally a single reduction unit with a ratio.

Barring drives
These drives are traditionally a single reduction unit with a ratio.

Dredge drive
The dredge drive can be designed and supplied to suit your requirements. Committed to provide high-class products with rapid turnaround timescales.

Mill drives
The MXR range of mill drives are specifically designed for various product applications. Our reputation for reliability and craftsmanship is unmatched in the industry.

Winders drives
Mine hoists and associated equipment are available in many types and sizes and can be supplied as geared or as direct drives. David Brown can custom design to your exact specifications.

Pinions
David Brown can manufacture both integral and non-integral mill pinions, for SAG and Ball mills applications and rotary kilns.

Girth gears
Girth gears are used to drive horizontal grinding mills globally. Our girth gears products have a large global installed base with applications in the copper, gold, iron ore, cement and diamond, coal and platinum industries.

Slew drives
David Brown have been manufacturing mill drive systems for a number of years. Our reputation for reliability and craftsmanship is unmatched in the industry.

Pump drives
David Brown have supplied pump drives for centrifugal and positive displacement pumps.

Shovel and dragline components
David Brown can service existing or supply upgrade replacement gearboxes, pinions and rack components for shovels and draglines.

Agitator drives
Mineral processing plants require various heavy duty tanks for diverse applications for which David Brown has created specific vertical mounted high efficiency units.

David Brown is geared to deal with any challenge at any stage of the mining process, anywhere in the world. Our diverse experience of mining honed over decades of meeting complex engineering challenges in some of the world’s harshest operating conditions ensures the absolute reliability you need.

David Brown aims to supply our customers with the most innovative and cost effective engineered solutions for all type of geared products found in the mining industry. Our products are renowned worldwide for their reliability in mission critical applications such as grinding and conveying where failure means lost production and profits.

Every David Brown product is ‘Engineered Around You’
Conveyor drive systems

The CX range of helical and bevel helical gear units are designed to meet the most arduous of power transmission application needs. Reliable and efficient in operation, they provide a cost-effective solution to all our customers’ needs. Designed to David Brown’s long established standard of quality, these quiet running units provide exceptional levels of performance, versatility and life expectancy to meet the demanding requirements of modern industry.

Key features
- Gearbox, hold backs, brakes and fluid couplings for mineral transport systems to over 3000kW per unit
- Drives can be load tested and measured prior to dispatch for temperature, noise and vibration
- No external cooling or lubrication system required
- Increased reliability with no loss in performance
- Double ended output and invertible design
- Minimised spares requirements
- Drives can be load tested and proved in up to 45 degrees in ambient conditions

Special feature options
- Alignment free tunnel mount is available on selected drives
- Output shaft cover (for unused output extension)
- Double lipped seals (non contact)
- Non-contact double grease labyrinth shaft sealing (input or output)
- Forced lube system (application specific)
- Immersion heater (application specific)
- Swing base (application specific)
- Fluid coupling (application specific)
- Brake (application specific)
- Flywheels (application specific)

Product range
10 different final centres (13 gearbox sizes): Starting at 185mm final centres, biggest size has a max torque rating of 600kNm

- Speed range (input speeds) 580 rpm to 1750 rpm
- Humidity up to 100% including direct rain
- Ambient temperature range -20°C to 45°C (-4°F to 113°F)
- Maximum operating sump temperature 90°C (194°F)
- Nominal rated sump temperature 80°C (176°F)
- Mean time to repair 50,000 hours
- Product life span 7 - 10 years
- Warranty 2 years minimum, 5 years optional (subject to maintenance agreement)

Gearing design
Designed to DIN 3990 up to 750kW, AGMA 2101 for >750 kW

Right angle units 2 and 3 stage as well as 2 stage 1450, parallel units for conveyor application. 1 stage parallel units can be available but not as standard

Power range from 55 to 3000kW, input speeds, 985, 1190, 1450, 1750rpm (in line with 185mm ctrs to 600kNm max torque rating (sf=1.9))

The scope of configuration offerings and ratio by size range for the CX product line

<table>
<thead>
<tr>
<th>2-Stage Parallel</th>
<th>2-Stage Right Angle</th>
<th>3-Stage Right Angle (R3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>185 - max</td>
<td>185 - max</td>
<td>185 - max</td>
</tr>
</tbody>
</table>
Mines are often located in the harshest and most remote locations on earth. The CX range of conveyor drive gearboxes have been specifically designed to meet our customers’ demand for highest reliability for lowest cost and build on the performance of our conveyor drive gearboxes and systems. David Brown’s CX range of gearboxes have been in operation for decades, some surviving hurricanes and sweltering 45°C temperatures, virtually maintenance free.

Let David Brown solve your conveyor gearing problems, no matter how big or small.

The CX range of helical and bevel helical gear units are designed to meet the most arduous of power transmission application needs. Reliable and efficient in operation, they provide a cost-effective solution to all our customers’ needs.

Designed to David Brown’s long established standard of quality, these quiet running units provide exceptional levels of performance, versatility and life expectancy to meet the demanding requirements of modern industry.

Key benefits
- Ductile iron two piece housing ensures no case leaking and easy serviceability during rebuilds
- Heat dissipating cooling fins increase reliability no auxiliary cooling systems required
- Bevel or parallel input shaft options
- Rigid high speed cartridge design
- Minimises bevel noise and easy to service
- Optimised gear geometry
- Keyed or shrink fit (oil injection) coupling options

Reference list

<table>
<thead>
<tr>
<th>Project</th>
<th>Qty</th>
<th>Motor Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron Ore Export Terminal</td>
<td>27</td>
<td>630 – 800kW</td>
</tr>
<tr>
<td>Iron Ore Export Terminal</td>
<td>14</td>
<td>710 – 1120kW</td>
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<tr>
<td>Iron Ore Export Terminal</td>
<td>20</td>
<td>185 - 900kW</td>
</tr>
<tr>
<td>Iron Ore Export Terminal</td>
<td>23</td>
<td>430 - 710kW</td>
</tr>
<tr>
<td>Coal Export Terminal</td>
<td>20</td>
<td>630 – 830kW</td>
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<tr>
<td>Coal Export Terminal</td>
<td>94</td>
<td>7.5 -450kW</td>
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<tr>
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<td>6</td>
<td>1000kW</td>
</tr>
<tr>
<td>Iron Ore Mine</td>
<td>18</td>
<td>315 - 1000kW</td>
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<tr>
<td>Coal Mine</td>
<td>7</td>
<td>315 - 450kW</td>
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<tr>
<td>Coal Mine</td>
<td>110</td>
<td>110 - 500kW</td>
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<tr>
<td>Coal Mine</td>
<td>100</td>
<td>110kW</td>
</tr>
<tr>
<td>Diamond Mine</td>
<td>50</td>
<td>315-450kW</td>
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<tr>
<td>Platinum Mine</td>
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<td>tbc</td>
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</table>

Existing designs exist to 3Mw capacity, as the industry demands larger drives.

Product list

<table>
<thead>
<tr>
<th>CX Model Number</th>
<th>Motor Sizes</th>
<th>Max Torque</th>
<th>Units</th>
<th>Motor Sizes</th>
<th>Max Torque</th>
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<td></td>
<td>(Min)</td>
<td>(Max)</td>
<td>(Min)</td>
<td>(Max)</td>
<td>(Min)</td>
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<tr>
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<td>45</td>
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<td>365</td>
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<td>210</td>
<td>55</td>
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<td>25.6</td>
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<td>185</td>
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<td>61.3</td>
<td>880</td>
<td>2000</td>
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<td>336</td>
<td>260</td>
<td>315</td>
<td>68.6</td>
<td>1000</td>
<td>2500+</td>
</tr>
</tbody>
</table>

Ratio range - 10.3 to 47.1, 2 or 3 stages
Safety factors - 1.25 to 1.5+

Let David Brown solve your conveyor gearing problems, no matter how big or small.
The criticality of these enormous machines in the transportation of bulk materials in a port, mine or processing plants make it crucial to use high quality and reliable products in all of its components.

**Complete conveyor systems for the stacker**

We can design and manufacture all kinds of conveyor systems to suit your specifications, radial stackers, belt conveyors, coal conveyors, screw conveyors or bucket elevators, or load hoppers serving metals, steel, mining, and cement industries.

- Cases are manufactured using high grade cast steel
- A range of components offering high reliability and performance
- Offering a variety of radial stacker conveyor components with features and material options

**Bogie drive**

- Managing your equipment requirements with in-house designing, machining and testing capabilities
- Custom made cast steel bogie

**Drive systems for the bucket wheel excavator**

Bucket wheel excavators have been used in mining as long as most can remember, used in conjunction with mining equipment such as conveyor belts, spreaders, crushing stations, mine materials and waste.

- Components built to last indefinitely
- Heavily engineered for heavy usage
- Reliability and performance, second to none
- Manufactured to customer’s specifications and to service requirements

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**Stacker reclaimer**

David Brown delivers dependable systems to guarantee efficient running of the bulk material handling process.

Flexible design to meet your specific needs and requirements

Highest quality | international quality standards | designed to last

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16 17

Mining product catalogue
The MXR series range are specially optimised and are available as both replacement units, or designed as part of a MXR mill drive system to achieve the most economic solution.

Key benefits
- Reducers and their ratios are selected to complement the girth gear design and reduce the cost of the entire system.
- Gear cases are machined using CNC technology, ensuring perfect shaft alignment and flat sealing surfaces.
- All shaft extensions are keyed according to industry accepted standards, imperial shaft extensions are also available on request.
- Adequate cooling and lubrication is achieved with the use of an external lubrication system.
- Ductile iron material offering excellent properties preventing distortion after initial manufacturing and good damping properties, reducing noise emissions and dynamic deflections.
- Gear cases designed with state-of-the-art FEA technology for optimal stiffness that ensuring tooth contact and load distribution in fabricated steel and ductile iron (SG iron).
- Provision for lubricant inlet and drain pipe connections are provided, but can be changed to suit client specific requirements.
- Units operate using dry-sump technology to improve efficiency, which do not operate with an oil level in the unit, therefore no dipstick or oil level sight glass is required.
- A large inspection cover is provided which allows for inspection of gear teeth and lubricant spray patterns.
- Durable lifting points are provided on both halves of the gear housing.
- All gear cases are shot blasted to SA 2-½ or better before priming and painting. Painting according to customer specification available on request.

With over 150 years of gearing expertise of manufacturing, designing and developing gearing solutions, David Brown offer a range of horizontal mill drive reducers. The MXR series is a simple, durable unit designed to achieve cost effective solutions specifically aimed at the horizontal mill drive market.

Key features
- Single stage design which covers ratios from 5.8 to 7.1:1.
- Powers ranging from 1600kW to 10000kW.
- Four unit sizes are available as standard.
- Can be single or double reduction, depending on the required ratio and motor speed.
- Triple reduction drives are available for Kiln and dryers, cast or fabricated gear casings.
- Specially optimised ratios are available on request for replacement units, or designed as part of a MXR mill drive system to achieve the most economic solution.
- Double extended input shafts are supplied as standard for main motor and barring/inching drive inputs, and for extended output shafts.
- Gear cases are manufactured from high quality cast iron.

The development of the MXR series gear units are another example of David Browns superior technical expertise.
Sealing

All shaft seals are designed as a combination of mechanical and contact sealing. The leak proof design consists of flingers eliminating the bulk of the lubricant, a lip seal and a grease purged labyrinth that eliminates dust contamination. A complete non-contact arrangement is also available on request.

Gears and shafts

David Brown gear geometry is optimised to provide excellent torque to center distance ratios with good load sharing characteristics to achieve maximum performance. A proven double helical design eliminates axial thrust loads which reduces equivalent bearing loads, and offers extended bearing life.

All gears are manufactured using high quality alloy case hardening steels to provide long life resistance and fatigue life. CNC gear grinding technology improves gear tooth surface finish and accuracy for optimal performance. AGMA 2000 A88 Q12 gears are offered as standard.

Shafts and keyways are designed for an infinite life under normal operating conditions and standard keyway dimensions are used. Special shaft diameters and lengths can be accommodated on request.

Bearings

Standard spherical roller bearings are used and only approved brands are installed. Spherical roller bearings offer excellent radial and axial load carrying capacity. Axial loads however impacts significantly on bearing life. The use of double helical gearings eliminates the axial load as well as the need for additional thrust bearing requirements which reduce the cost and minimise the number of components. Reliability is increased by the simplicity of the design.

The bearing life listed in the tables below is calculated in accordance with the ISO method. No Bearing life modification factors are used; bearing lives listed are L10h basic. More information on this subject is available from our Application engineers.

Bearing life is calculated in accordance with the ISO and L10h basic method. No bearing life modification factors are used. Please speak to a David Brown representative for more information.

Lubrication

External lubrication systems allow closer monitoring of gear unit lubrication through temperature, pressure and flow transducers. Oil filtering and cooling as well as the ability to indicate water contamination ensures adequate lubricant viscosity that maintains hydrodynamic oil film between the active components.

The MX reducer internal lubrication system comprise of dedicated bearing feed lines as well as gear mesh sprays from both the entering as well as exiting sides of the mesh to ensure adequate cooling and lubrication.

Sealing

All shaft seals are designed as a combination of mechanical and contact sealing. The leak proof design consists of fingers eliminating the bulk of the lubricant, lip seal and a grease purged labyrinth that eliminates dust contamination. A complete non-contact arrangement is also available on request.

Applications

David Brown will also service and repair systems provided by other manufacturers. Machinery serviced includes:

- Semi autogenous mills (SAG) and autogenous mills (AG)
- Ball, rod or tube mills
- Rotary kilns and dryers girth gears with tangent plate designs

Reference list

<table>
<thead>
<tr>
<th>Job No</th>
<th>Customer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>705081</td>
<td>Cement manufacturer</td>
<td>SPS 170 gear unit ratio 5,647:1</td>
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<tr>
<td>705080</td>
<td>Gold mining</td>
<td>Valemt gear unit ratio 7,937:1</td>
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<tr>
<td>705064</td>
<td>Gold mining</td>
<td>40” gear unit as per ratio 7654RH</td>
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<tr>
<td>705060</td>
<td>Uranium production manufacturer</td>
<td>David Brown 856crs gear unit</td>
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<tr>
<td>705058</td>
<td>Nickel mining manufacturer</td>
<td>SPS170 gear unit same as 710021</td>
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<tr>
<td>705030</td>
<td>Mineral ore manufacturer</td>
<td>TPS108 Extended L series</td>
</tr>
<tr>
<td>705051</td>
<td>Platinum manufacturer</td>
<td>BEW SB40 gear unit new box</td>
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<tr>
<td>705047</td>
<td>Global distributor of mining equipment</td>
<td>BEW SB118-46 gear unit ratio 5,654:1</td>
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<tr>
<td>705042</td>
<td>Uranium manufacturer</td>
<td>BEW DB28 gear unit same as -80</td>
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<td>Gold mine</td>
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<td>705034</td>
<td>Copper mine</td>
<td>David Brown 36” wide type gear unit</td>
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<tr>
<td>705025</td>
<td>Supplier of equipment, services for cement and minerals</td>
<td>David Brown DPS 126 gear unit</td>
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<td>705029</td>
<td>Platinum mine</td>
<td>David Brown 180crs gear unit</td>
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<td>Platinum mine</td>
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<td>Copper mine</td>
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<td>Cement works</td>
<td>David Brown 8.5E mlV/mill gear unit</td>
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<td>Supplier of equipment, services for cement and minerals</td>
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<td>David Brown DPS 108 ratio 609:1</td>
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<td>Copper mine</td>
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<td>David Brown cold mill drive #11 gear unit</td>
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<td>700275</td>
<td>Gold mining and exploration manufacturer</td>
<td>David Brown 810crs gear unit</td>
</tr>
</tbody>
</table>
David Brown designs and manufactures high torque precision integral and non-integral pinions for SAG and ball mill applications and rotary kilns:

- Mill pinions manufactured up to 50 module
- Pinion shafts of up to 4m can be manufactured and carburised
- A maximum gear face width of 1.2m can be manufactured
- David Brown can manufacture mill pinions of up to 10 tons in mass
- Profile and lead optimisation using latest design software
- Mill pinions can be manufactured as integral with the shaft or non-integral (removable)

High torque, high precision design and manufacturing capabilities at David Brown
Girth gears

Record installed base | established product | highest integrity

David Brown girth gears are used to drive horizontal grinding mills globally. Girth gears manufactured by David Brown have reached a record installed base with applications in copper, gold, iron-ore, cement and diamond, coal and platinum industries.

Key features
• Girth gears can be manufactured in 2, 3, 4, 5, 6 or 8 segments and both T and Y section gears
• Weight optimised through FEA simulation
• Power range up to 10,000 MW
• Smaller girth gears of 7m or less in diameter
• Largest gears 8-14m
• High integrity girth gears to AGMA level 10 and beyond, ideal for all type of horizontal mills
• Up to 105,000kg in weight
• Manufactured in temperature controlled rooms, to ensure highest accuracy and efficiency and noise
• Girth gears can be manufactured for hardness ranges between 180-340BHN
• Can be manufactured from either cast steel to BS3100 or Ductile Iron to ASTM A536, or fabricated forged steel plate

David Brown engineers the correct solution, offering high reliability with the low lifetime cost
Through investment in advanced machining and gear cutting technology, combined with development of new materials and techniques used in the manufacturing process, David Brown has rewritten the handbook on girth gears.
Shovel and dragline components

Critical failure analysis | product enhancement | optimising solutions

Shovels and draglines are used extensively in the copper, gold, iron ore, coal and diamond industries to remove overburden and minerals. David Brown can service existing and / or supply upgrade replacement gearboxes, planetaries and components for shovels and draglines.

Key benefits
- Replacement components engineered to optimise product reliability
- Options for preventative maintenance, contracts and scheduled servicing
- Service, repair and upgrade of existing equipment, gearboxes and components
- Options for service exchange or drop in replacement units
- Most machine models covered

Products serviced
- Crowd gearboxes, shafts, pinions and racks
- Propel planetary drives and gearboxes
- Hoist planetary drives, gearboxes and rope drums
- Swing planetary drives, gearboxes, shafts and pinions
- Drag gearboxes and rope drums

Product improvements
- Failure analysis
- Design parameter analysis
- Material selection
- Heat treatment procedures
- Gear cutting technology and accuracy
- Bearing and seal selection
- Lubrication selection

Reference list

<table>
<thead>
<tr>
<th>Machine Types</th>
<th>Machine Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;H shovels</td>
<td>2800XPB, 2800XPC, 4100A, 4100XPC</td>
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<tr>
<td>Bucyrus shovels</td>
<td>495B, 495BL, 495H, 495H-F, 495HR, 495HR2</td>
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<tr>
<td>Bucyrus shovels</td>
<td>182M</td>
</tr>
<tr>
<td>P&amp;H dragline</td>
<td>752</td>
</tr>
<tr>
<td>Marion</td>
<td>7400, 8050, 8200, 8750</td>
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</tbody>
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David Brown is heavily focused on product improvement. Our objective is to understand component failures and engineer them out.
Gearboxes and transmissions

Hoist
Mine hoists and associated equipment are available in many types and sizes and can supplied as geared drives. David Brown can custom design to your exact specifications.

Stealth drives
Patented conveyor drive for most demanding noise requirements. Acoustically designed cathedral shape for lowest noise transmission.

Agitator drives
Gearboxes for agitators, thickeners and mixer systems used in mineral processing and water treatment industries.

Winch or winder drives
David Brown can design and manufacture specialist hoists and winches for custom applications for a number of industries including mining. We can offer both repairs and refurbishments with quick turnarounds to improve efficiency and reliability.

Slurry pump drives
Slurry pumps can be made available in both horizontal and vertical configurations to meet your requirements. These products offer exceptional Quality and reliability, minimising downtime in operation.

Barring drives
To meet high power specifications, bucket wheels use barring drives. To reduce speed and power, a smaller barring drive can be used. Barring drives and clutches can be designed and supplied to match the gearbox if required.

David Brown goes to the very heart of the mining industry, providing tailored gear products and systems, inspection and maintenance with thorough service and repairs to all parts of the mining process including; extraction, processing and transportation. The portfolio of David Brown gear systems ranges from universal standard units through application specific gear units to customer specific solutions. Being an integral part of industry for over 150 years, the David Brown name speaks for itself. A one stop shop for your mining requirements, the best-in-class solution provider.
Aftermarket expertise driven by David Brown

Global service centres allows repair and refurbishment of all gearbox types including worm, planetary, parallel, helical and spur gears. David Brown can repair any damaged gearbox, including the remanufacture of broken or pitted gears and shafts we can repair almost anything

David Brown has been recognised as a mining gear specialist, with existing facilities operating closely to its customers. We focus on building and maintaining long term relationships with all our key channel stakeholders; OEM’s, engineering houses, prime maintenance contractors and mining operators

Aftermarket services

Engineering
- Giving our customers sound technical advise with speedy repairs and upgrades
- Offering the best solution to fix your problem
- Maximise operational ability

Quotations
- Competitively priced at your specified lead time
- Honest and professional service

Site services
- Global fast response, with the best and dedicated engineers
- In situ inspections
- Full asset management services
- Warrant parts and services to minimise downtime impact
- Gearbox repairs and upgrades

Project management
- Co-ordinate teams to offer repairs and redelivery of your gearbox and other associated products
- Pro-active to work around you
- Fully supported teams, backed by a global network

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David Brown understands that, fast response is key to any customer who requires aftermarket services. Our service centres will strive to ensure your gear system is up and running with optimum performance, and minimum downtime.

- Repair and refurbishment of planetary gearbox for a reclaimer
- Repair and refurbishment of 28.5 tonne mill drive gearbox
- Repair and refurbishment of 970kw drives for a power station

Maximising equipment reliability and availability, minimising downtime

- Full diagnostic and performance testing
- Inspection and maintenance with in-depth reporting
- Consulting failures analysis and strain gauging
- Repairs, overhauls and upgrades
- Retrofit replacement gearboxes