Dellner Brakes is one of the world’s leading suppliers of brakes and related power transmission products for the industrial, marine, oil and gas, and wind energy markets.

We have a strong reputation for technical innovation that stretches back more than 50 years, and that expertise is built into everything we do. So, whether you’re looking for replacement parts, an off the shelf product or a fully custom built system, you can be assured of the very best quality and service from Dellner Brakes – and at competitive prices, too.

Our superior products are precision designed and tested by our skilled engineers, and you can find them hard at work all over the world. Applications include, for example, marine propulsion, dredging, wind and other renewable energy, oil and gas drilling, mining, quarrying, forestry, heavy lifting, general industry and pulp/paper manufacture.

First class, end-to-end service

Our customers are at the heart of everything we do at Dellner, which is why they come back to us time and time again. We offer a complete end-to-end service that includes upfront consultation to establish exact requirements, full liaison throughout the development process, on site installation and comprehensive after sales support and training. We also provide ongoing servicing and customer support on a long term basis, either remotely from our offices or on site, whatever is needed.

We also know how important speed of delivery can be for our customers – and that’s why we have strategically located warehouses and a global network of dedicated contractors and distributors working together to ship components and spare parts anywhere in the world in just 24 hours. We also stock a range of finished clutch/brake units and critical spare parts for ‘stopping, turning, locking’ and compact powered safety brake systems.

Quality assured

Dellner Brakes has quality, environmental and health and safety management systems that are certified according to ISO 9001:2015, ISO 14001:2015 and BS OHSAS 18001:2007.

Our commitment to cutting edge design, robust assembly and precision testing means you can count on reliable products of the highest quality, every time.

Our company

Dellner Brakes is part of the global Dellner Bubenzer Group, which was formed in 2019. The Group consists of Dellner Brakes, Pintsch Bubenzer and Rima. We are a family owned business providing brake systems and services for various applications, worldwide.
Dellner Brakes’ innovative Stopping, Turning, Locking (STL) systems comprise one or more disc brakes, turning devices and locking modules.

These systems are precision engineered and fully modular, so you can choose from the three functions to create a system that fits your application:

- Individual stopping, turning or locking functions
- Dual functions – stopping and turning, stopping and locking, or turning and locking
- A complete stopping, turning and locking system

Whichever combination you choose, the stopping, turning and locking functions are all operated through a single control panel or from an optional remote hand held control. They can even be operated wirelessly through a smartphone or tablet.

WHY STL?

Dellner Brakes’ STL systems give you complete control over your stopping, turning and locking functions, whether you’re at sea or based on land.

Marine propulsion

In marine vessels, the STL system fits around the propeller shaft to enable faster directional changes with maximum manoeuvrability. It also helps lower fuel consumption, reduces load on propulsion systems and makes routine maintenance quicker, easier and safer, including hydrodynamic bearing conditioning on large vessels.

Securing the propeller prevents damage to the shaft and bearings if the vessel is drifting or buffeted by waves. It also allows ROVs and divers to operate around the propeller blades in safety. When in harbour, using the turning function to rotate the propeller can also help to reduce marine growth on the blades and lubricated shaft bearings.

- Icebreakers – STL quickly stops the shaft if the vessel sails into thick or hard ice, then can turn the propeller to free it from the ice and prevent ice jams
- Trawlers – securing the propeller prevents damage to nets
- Military vessels – STL can be laboratory tested and built with flex in the mountings to provide shock protection and avoid damage to the system in the event of impact
- Luxury yachts – STL reduces drag by optimising blade positioning

Industrial machinery

The STL system allows large rotating machinery like mining equipment, iron ore pellet drums, kilns and car shredders to be cranked into operation, stopped and mechanically locked for safe maintenance.
How it works

Electrical system with continuous turning (eScTL)

The brake stops the disc quickly in any position.

An electric gear wheel moves the disc into position for locking – forwards or backwards – and can turn the disc continuously, all at variable speeds.

A tapered pin (pawl) pushes into a machined slot on the brake disc, locking it securely in place.

ELECTRICAL STL – A WORLD FIRST

Our fully automated, electrical STL braking system with continuous turning (eScTL) is a world first. It’s been developed in response to an increasing global focus on environmental issues, along with a demand for smaller, flexible braking solutions.

This patent pending system is powerful, compact and needs no additional piping, making it quicker, easier and less costly to install – especially where space is at a premium.

It’s simple to use, hard wearing and easy to maintain, and is perfect for applications where a clean environment is paramount, or for use in green shipping lanes.

STL SYSTEM SPECIFICATIONS

Our STL systems come in three standard sizes (small, medium and large) with either hydraulic or electric power. They can also be scaled up for large marine vessels or industrial machinery, and adapted to meet your specific needs.

For more information about the individual products that make up these systems, please see pages 5 to 10 of this brochure.

<table>
<thead>
<tr>
<th>Component(s)</th>
<th>Maximum torque</th>
<th>Component(s)</th>
<th>Maximum torque</th>
<th>Component(s)</th>
<th>Maximum torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake disc Ø</td>
<td>800 mm</td>
<td>1200 mm</td>
<td>1600 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopping</td>
<td>SKD 65 9,700 Nm</td>
<td>SKD 100 69,000 Nm</td>
<td>SKD 4x125 285,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indexed turning (IT) – hydraulic</td>
<td>IT 06 6,000 Nm</td>
<td>IT 54 54,000 Nm</td>
<td>IT 227 227,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous turning (cT) – electric</td>
<td>cT 15 15,200 Nm</td>
<td>cT 53 53,000 Nm</td>
<td>cT 119 119,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locking</td>
<td>LM 20 50,000 Nm</td>
<td>LM 20 75,000 Nm</td>
<td>LM 50 400,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stopping</td>
<td>SkDe 50 6,500 Nm</td>
<td>SkDe 130 90,000 Nm</td>
<td>SkDe 300 285,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous turning (cT)</td>
<td>cT 15 15,200 Nm</td>
<td>cT 53 53,000 Nm</td>
<td>cT 119 119,000 Nm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locking</td>
<td>LMe 20 50,000 Nm</td>
<td>LMe 50 300,000 Nm</td>
<td>LMe 50 400,000 Nm</td>
<td>LMe 70 600,000 Nm</td>
<td></td>
</tr>
</tbody>
</table>
S SERIES

Our S series disc brakes are precision engineered for powerful, reliable and safe braking with longer brake life. Available in a range of standard sizes and customisable to order, each model has two symmetrical brake halves with two cylindrical guide pins that transmit the tangential braking force from the brake lining to the brake housing and mounting stand. As a result, the brake pistons are not subject to any radial forces, which makes the brakes last much longer.

There is a range of optional extras available including mounting brackets, cylinder sealing kits in different materials, brake pads made from several different friction materials and indicators to show brake pad wear, whether the brake is ON or OFF, or needing adjustment.

We also produce offshore versions of these brakes that, with corrosion protection and hard wearing paint and pistons, are specially designed to withstand harsh conditions.

SKD working brakes

Applications

Anywhere you need to stop and hold something securely including:
- Ship propeller shafts
- Mining and drilling equipment
- Wind turbines
- Water turbines

With these hydraulic pressure or electrically applied, spring released disc brakes, braking force is directly proportional to the pressure applied and brake pad wear is automatically compensated for with increased piston stroke.

SKP failsafe brakes

Applications

For quickly stopping rotary or linear motion, for example in:
- Cranes and draglines
- Winches
- Mining and drilling equipment
- Wind turbines
- Oil rigs (draw works)

These spring applied, hydraulic pressure or electrically released disc brakes are suitable for quickly stopping rotary or linear motion. As the brake lining wears, an extension of the brake piston through the adjustment nut indicates that adjustment is needed. The disc spring can be adjusted to compensate and maintain full brake capacity.

You’ll find our SKP brakes operating in heavy lifting equipment in a range of environments, from warehouses and docksides to steel mills and wind farms – and even at Stockholm’s Royal Opera House, where our brakes play their part in lifting and holding the stage lights and side scenery in place. You’ll also find them hard at work in the mining industry, from large stone crushing machines to tumbler and gravel conveyor belts.
**SKD working brakes (hydraulic applied, spring released)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Braking force</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKD 35</td>
<td>Up to 8,000 N</td>
<td>7 kg</td>
</tr>
<tr>
<td>SKD 50</td>
<td>Up to 16,200 N</td>
<td>10 kg</td>
</tr>
<tr>
<td>SKD 65</td>
<td>Up to 27,300 N</td>
<td>18 kg</td>
</tr>
<tr>
<td>SKD 80</td>
<td>Up to 41,400 N</td>
<td>34 kg</td>
</tr>
</tbody>
</table>

**SKD 90**
- Braking force up to 104,800 N
- Weight: 59 kg

**SKD 100**
- Braking force up to 129,200 N
- Weight: 75 kg

**SKD 4x100**
- Braking force up to 258,800 N
- Weight: 260 kg

**SKD 4x125**
- Braking force up to 404,200 N
- Weight: 177 kg

**SKD 6x115**
- Braking force up to 513,000 N
- Weight: 210 kg

**SKD 75-SA**
- Braking force up to 37,110 N
- Weight: 65 kg

**SKP 50**
- Braking force 2,700 N to 12,400 N
- Weight: 12 kg

**SKP 95**
- Braking force 10,700 N to 33,500 N
- Weight: 46 kg

**SKP 140**
- Braking force 26,200 N to 113,600 N
- Weight: 150 kg

**SKP 220**
- Braking force 98,700 N to 294,400 N
- Weight: 410 kg

**SKP 65-SA**
- Braking force 2,000 N to 18,200 N
- Weight: 17 kg

**SKP 95-SA**
- Braking force 10,700 N to 33,500 N
- Weight: 70 kg

**SKP 140-SA**
- Braking force 26,600 N to 113,600 N
- Weight: 216 kg

**SKP 220-SA**
- Braking force 98,700 N to 294,400 N
- Weight: 980 kg

With a single acting (SA) brake, braking force is generated in one half of the brake and the other half slides towards it using a robust, low friction system, enabling self alignment, making them ideal for small spaces and applications with axial movement.
MODULAR S SERIES BRAKES
Our latest S series brakes have a modular design that allows you to combine several brake assemblies or customised housings with several pistons to deliver the very highest levels of braking power.

Heavy duty SKD working brakes
(hydraulic applied, spring released)

SKD 140
Braking force
up to 259,600 N
226 kg*

SKD 4x140
Braking force
up to 517,200 N
452 kg*

SKP lightweight failsafe brakes
(spring applied, hydraulic released)

SKP 180
Braking force
100,800 N to 226,800 N
315 kg*

SKP 4x180
Braking force
201,600 N to 453,600 N
630 kg*

*Weight excludes the brake support
SKP FAILSAFE BRAKE SYSTEM – COMPACT

Our lightweight and durable Compact series offers a complete, ready to use safety brake system which is suitable for outdoor use. It includes a spring applied, hydraulic pressure released brake and comes with a support and a hydraulic power pack.

STACKER CRANE SAFETY BRAKE SYSTEM (SBS)

Our safety brake system (SBS) for stacker cranes consists of an SKP 50, 65 or 95 disc brake that acts directly on the stacker crane travel railhead. The brake and integrated Dellner hydraulic power pack (HPP) is mounted on a bracket designed to fit the crane’s structure. For warehouses where regular hydraulic oil isn’t allowed, the systems can as an option be supplied with food grade, freeze grade or food-freeze grade oil, instead of the standard mineral based oil.

Compared with hydraulic buffers, an emergency brake system has the following advantages:

- Cranes can be stopped anywhere in the aisle if speed exceeds a set limit or in an emergency, so they can work at higher speeds
- Retardation and mechanical forces acting on the cranes can be up to three times lower, which can extend crane life or allow a lighter crane to be used
- Less space is required because you don’t need the extra racking or other strengthening mechanisms to handle buffer shock after an emergency stop
- Running and maintenance costs can be reduced

<table>
<thead>
<tr>
<th>Model</th>
<th>SKP 50</th>
<th>SKP 65</th>
<th>SKP 95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>6,000 N</td>
<td>12,000 N</td>
<td>16,000 N</td>
</tr>
<tr>
<td>Braking force*</td>
<td>3,900 N</td>
<td>7,300 N</td>
<td>9,800 N</td>
</tr>
<tr>
<td>Release pressure</td>
<td>60 bar</td>
<td>110 bar</td>
<td>105 bar</td>
</tr>
</tbody>
</table>

Air gap on all products 2 x 2.0mm. * Maximum tangential braking force after adjustment. Brake force values are calculated with $\mu = 0.3$ (dry railhead).
Our electric brakes are ideal for use in green zones or for any application where a non-hydraulic holding or stopping solution is needed.

**EMD single acting working brake (electro-mechanical applied and released)**

These electro-mechanical brakes offer braking force up to 168,000 N, which can be set as required. They are single acting, so braking force is generated in one half of the brake and the other half slides towards the force generating half so the two are aligned using a robust, low friction system. The electro-mechanical retraction system fully releases and retracts the brake from the disc.

**SKDe working brakes (electro-mechanical applied and released)**

Our SKD working brakes are also available using lever arms with electrically powered engagement and disengagement. The required brake force can be set using the integrated load cell.

<table>
<thead>
<tr>
<th>SKDe 50</th>
<th>SKDe 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braking force up to 16,200 N</td>
<td>Braking force up to 129,200 N</td>
</tr>
<tr>
<td>46 kg</td>
<td>200 kg</td>
</tr>
</tbody>
</table>
**TURNING DEVICES**

There are two types of turning device to choose from. Available in a range of standard sizes, these units can also be customised to meet specific needs.

** indexed turning (iT)**

Uses controlled hydraulic cylinders to turn the brake disc and connected shaft to an exact ‘indexed’ position.

**continuous turning (cT)**

Uses an electric gear wheel to rotate the brake disc and attached shaft to any position — forwards and backwards — or turn the disc continuously, all at variable speed.

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**LOCKING DEVICES (LM SERIES)**

With a locking force of up to 1,000 kN, which is higher than a holding brake, Dellner’s LM locking devices provide a compact, cost effective solution for holding brake shafts safely and securely in place. They are ideal for propulsion shafts, shaft lines, conveyors, wind turbines, dredgers and grinding machines.

They work by inserting a specially designed tapered pin (pawl) into a machined slot on the brake disc or shaft flange. They are equipped with proximity switches for on/off detection and, on marine vessels, the lock will stay engaged even in ship failure modes.

These versatile locking devices can be operated by a manual lever, a hydraulic cylinder or an electric drive.

<table>
<thead>
<tr>
<th>Locking force</th>
<th>125 kN</th>
<th>250 kN</th>
<th>500 kN</th>
<th>750 kN</th>
<th>1,000 kN</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM 20-E</td>
<td>LM 40-E</td>
<td>LM 50-E</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Heavy duty versions of all these locking devices are available on request.
PRESSURE SUPPLY

We offer three types of pressure supply unit, from powerful hydraulic solutions to a manual hand pump. We can also design and produce customised pressure supply units on request.

Hydraulic power packs

Our hydraulic power packs deliver pressure up to 200 bar and can be delivered with optional hydraulic cabinets and electrical terminal boxes. The electrical terminal boxes can be delivered with various options, including quick connectors and/or assist contacts and marine approved cables.

There are four different models to choose from, with the following features:

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compactus</td>
<td>Valve controlled, two way hydraulic plunger pump, Pneumatic pressure regulator with filter unit and shut off valves, Automatic stroke reversal using a direct mounted, self piloted 4/2 way valve, Pump restarts automatically as soon as hydraulic pressure drops to maintain constant pressure, Up to 200 bar hydraulic pressure, Intensification ratio: 1:44, Optional manual control valves available for controlling different brakes individually, Optional pressure switches and adjustable braking time unit</td>
</tr>
<tr>
<td>DH 2100</td>
<td>&quot;On/off&quot; unit with optional accumulator</td>
</tr>
<tr>
<td>DH 2200</td>
<td>Optional ‘Separate’ function for pressurising two units individually and independently, Additional accumulator, hand pump and pressure switches options</td>
</tr>
<tr>
<td>DH 2300</td>
<td>Proportional valves for controlled braking through a programmed braking curve, Can be controlled by the optional programmable logic controller (PLC) in an electrical terminal box, Additional accumulator and hand pump options</td>
</tr>
<tr>
<td>DH 2400</td>
<td>Double control valves for critical safety applications such as overhead cranes, Additional accumulator, hand pump, pressure switches and filter options</td>
</tr>
</tbody>
</table>

CONTROL SYSTEMS

Our programmable, computerised electronic control systems manage and monitor the operation of the entire braking system including the power pack and, for hydraulic applications, parameters such as oil level, oil temperature and hydraulic pressure. The system has an uninterruptible power supply so that a full braking cycle can be achieved, even in the case of a power outage. It is operated via a touch screen with menu navigation.
Active yaw brake calipers

Yaw brakes are used to stop and hold the rotating nacelle in position once the rotors have been turned to face into the wind. Our hydraulic active brake calipers feature special epoxy resin pads and, for added safety, drain ports that prevent oil getting onto the brake disc in the event of leakage. These robust, high performance brakes can work at temperatures from -40 to +60°C.

<table>
<thead>
<tr>
<th></th>
<th>JHS-8</th>
<th>JHS-16</th>
<th>JHS-32</th>
<th>JHS-36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braking force</td>
<td>136,000 N</td>
<td>200,000 N</td>
<td>542,000 N</td>
<td>542,000 N</td>
</tr>
<tr>
<td>Weight</td>
<td>30 kg</td>
<td>60 kg</td>
<td>198 kg</td>
<td>230 kg</td>
</tr>
</tbody>
</table>

Passive yaw sliding bearings

These passive yaw sliding bearings have a robust yet simple design that guarantees optimum performance throughout the life of the turbine. As few components are needed, they are reliable and virtually maintenance free, so there’s less need for outages or downtime. Brake torque is applied continuously and the system slides on the yaw bearing, so you don’t need an additional brake disc. The brake torque is mainly dependent on surface pressure and friction coefficient, so variations can be built in during the design process. The system can operate at temperatures from -40 to +70°C.

<table>
<thead>
<tr>
<th></th>
<th>JHS-PC-1x80</th>
<th>JHS-PC-4x80</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braking force</td>
<td>175,000 N</td>
<td>700,000 N</td>
</tr>
<tr>
<td>Weight</td>
<td>16 kg</td>
<td>200 kg</td>
</tr>
</tbody>
</table>

Rotor brakes

For slowing, stopping and holding the turbine’s rotors, including emergency stops.

<table>
<thead>
<tr>
<th></th>
<th>JHS-16-LS</th>
<th>JHS-22-LS</th>
<th>JHS-300</th>
<th>JHS-3000</th>
<th>JHS-PRC-317-AWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braking force</td>
<td>200,000 N</td>
<td>200,000 N</td>
<td>55,000 N</td>
<td>130,000 N</td>
<td>27,000 N</td>
</tr>
<tr>
<td>Weight</td>
<td>54 kg</td>
<td>60 kg</td>
<td>70 kg</td>
<td>180 kg</td>
<td>90 kg</td>
</tr>
</tbody>
</table>
Rotor locks
These hydraulic rotor locks fix the hub of a wind turbine so maintenance can be carried out in safety. A bolt extends and engages the rotor lock disc, the respective end position of the lock bolt is monitored and a corresponding signal transmitted to the turbine control.

<table>
<thead>
<tr>
<th>Model</th>
<th>JHS-R80</th>
<th>JHS-R200-154</th>
<th>JHS-R240, R240M, R240-154</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>Up to 270 bar</td>
<td>Up to 210 bar</td>
<td>Up to 250 bar</td>
</tr>
<tr>
<td>Activation time</td>
<td>60 seconds</td>
<td>60 seconds</td>
<td>35 seconds</td>
</tr>
<tr>
<td>Weight</td>
<td>50 kg</td>
<td>90 kg</td>
<td>150 kg</td>
</tr>
</tbody>
</table>

Hydraulic unit
Specially designed for our wind brakes, this hydraulic unit delivers constant pressure up to 250 bar, with up to 300 bar pressure available on request. It delivers a flow rate of up to 20 litres a minute, can work in temperatures from -20 to +40°C and has IP54 class protection.

Service pads
Sideliners and pistons with JHS-1604 brake pads which weigh 75% less than conventional pads. They offer stick-slip free running, no adhesive friction, resistance against oil and grease leakage and, being highly resistant to corrosive media, don’t need any corrosion prevention. They also have emergency operation qualities in not damaging the brake disc when the pads are worn.

Service tools
Our service tools make it easier for your technicians to install, remove or retrofit passive and active azimuth systems.

Brake pads
Our JHS-300 and JHS-3000 brake pads have been developed for high speed rotor brakes. They have a copper based sintered friction facing for dry running applications and they’re free of lead, antimony and nickel. A special combination of solid lubricants and friction coefficient-stabilizers gives high wear resistance, even under high energy conditions, and the pads can work at temperatures of up to 500°C, or even higher (up to 900°C) for short periods.

Our 218x108 yaw brake pads are simple, quiet and, in the best sense of the word, restrained. They are suitable for active and passive applications.

JHS-1604 is a composite material for yaw brakes with a supporting layer of glass-fibre reinforced epoxy resin and a sliding layer made from of a compound of epoxy resin filled with a combination of different solid lubrications and brake additives. This combination delivers high stability and load capacity, along with excellent tribological characteristics and low wear.
We provide a range of drum style pneumatic clutches and brakes, both constricting and expanding types, in six clutch/brake configurations that are fully interchangeable with all other clutch brands in the market today.

All our drum brakes and clutches feature an integrated nylon cord reinforced neoprene tube. The final tube pressure determines the element’s overall torque capacity, and the rate at which the air tube is pressurized directly affects the rate at which the torque increases.

The tables below show the range of clutches, sizes and powers we have available. For more details, or if you would like help to make a size selection for a new or replacement element, please contact us.

Constricting air clutches and brakes

When pressurized, the air tube forces the friction shoe assemblies inwards to radially engage the outer edge of the drum. All our constricting drum clutches are available with a choice of standard, Lo-Co, Hi-Co and cork friction linings.

Type FK (CB)

The FK constricting drum clutch is perfect for high speed, low to medium torque applications where high heat generation is not a factor. With a simple, reliable, versatile design, the FK compensates for less than perfect alignment in the driving system while still delivering an even transfer of power. Available in single, dual and split configurations, the FK is interchangeable with the Eaton Airflex® CB. Typical applications include can manufacturing, commercial laundry equipment, metal forming, drilling equipment, printing machines, rubber processing, tire manufacturing and textile machinery.

Type FKT (VC)

Considered the workhorse of drum clutches, the FKT was designed principally for high torque/high thermal capacity applications. It offers the versatility of the FK while enhancing heat dissipation, using highly ventilated friction shoes that promote greater volumes of air flow across the length of the shoe. This reduces heat and ultimately extends the operating life of the actuator tube and clutch. In addition, every single component is replaceable, meaning the FKT can be totally rebuilt. Available in single, dual and split configurations, the FKT is interchangeable with the Eaton Airflex® VC. Typical applications include grinding mills, marine propulsion, metal forming, drilling equipment, printing machines, rubber processing, tire manufacturing and textile machinery.

<table>
<thead>
<tr>
<th>FK models 18 types</th>
<th>Torque rating</th>
<th>Max RPM</th>
<th>Overall width</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric</td>
<td>Nm at 5.2 bar and 100 RPM 40.7-29,400</td>
<td>740-2,000</td>
<td>55-176 mm</td>
<td>160-1,235.1 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>LBS/in at 75 PSI 360-211,000</td>
<td>750-2,000</td>
<td>2.16-6.94 in</td>
<td>6.299-48.625 in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FKT models 23 types (10 narrow and 13 wide)</th>
<th>Torque rating</th>
<th>Max RPM</th>
<th>Overall width</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric</td>
<td>Nm at 5.2 bar and 100 RPM 3,050-316,000</td>
<td>480-1,800</td>
<td>324-940 mm</td>
<td>498.5-2085.9 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>LBS/in at 75 PSI 27,000-2,800,000</td>
<td>480-1,800</td>
<td>6.125-37 in</td>
<td>19.652-82.123 in</td>
</tr>
</tbody>
</table>

Applications include

Anywhere you need to start, stop or hold rotating equipment within the following industries:

- Marine
- Cement processing and mining
- Oil, gas and water well drilling
- Metal working, canning, pulp and paper, tire construction, textiles

Applications include
Type FM (CM) Marine Clutch
Designed primarily for marine applications, the FM clutch is dynamically balanced to minimize engine room vibrations to ISO G16 standard. It also has ABS Type and ABS PDA approval. Its integral rim/tube construction allows for controlled slippage during slow speed, forward and reverse maneuvering or common cyclical high speed operation, while still providing for consistent and smooth engagements under varying conditions. The FM also uses ventilated friction shoes as molded linings, promoting air flow for rapid heat dissipation. The FM’s unique rim registration feature facilitates single, dual and triple element assemblies. The FM is interchangeable with the Eaton Airflex® CM.

<table>
<thead>
<tr>
<th>FM models</th>
<th>Torque rating</th>
<th>Max RPM</th>
<th>Overall width</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric</td>
<td>Nm at 5.2 bar and 100 RPM 27,200-126,200</td>
<td>900-1,600</td>
<td>176-230 mm</td>
<td>882.7-1,511.3 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>Lbs/in at 75 PSI 284,000-1,190,000</td>
<td>900-1,600</td>
<td>6.94-9.06 in</td>
<td>34.75-59.5 in</td>
</tr>
</tbody>
</table>

Type LT – Oilfield Clutch
Similar to the FK and FKT in design and construction, the LT is used primarily on drilling equipment manufactured in China, Russia, and Romania. The LT is interchangeable with Drawworks Lanzhou LS®, Honghua® and Upetrom® products.

Expanding air clutches and brakes
When pressurized, the air tube forces the friction shoe assemblies outwards to radially engage the inner edge of the drum.

Type FKE (EB)
An expanding drum clutch/brake that’s best suited for applications with light starting and stopping loads. It is also often used as a slip clutch or tension brake for light horsepower and torque applications. The FKE has the flexibility to accommodate minor shaft misalignments and is interchangeable with the Eaton Airflex® EB.
Typical applications include sugar refineries, lumber, pulp and paper processing, rubber and textile manufacturing.

<table>
<thead>
<tr>
<th>FKE models</th>
<th>Torque rating</th>
<th>Max RPM</th>
<th>Overall width</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric</td>
<td>Nm at 5.2 bar 44-2,120</td>
<td>1,300-1,800</td>
<td>44-162 mm</td>
<td>100-402 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>Lbs/in at 75 PSI 390-18,750</td>
<td>1,300-1,800</td>
<td>1.75-6.38 in</td>
<td>3.94-15.81 in</td>
</tr>
</tbody>
</table>

Type FKR (ER)
The FKR drum brake (often called a coupling) has a neoprene rubber facing that engages the drum directly, creating a high torque friction force within a small package. The FKR also has both a flexible and disconnect coupling, so long as there is no speed differential between the driving and driven components. The FKR is interchangeable with the Eaton Airflex® ER.
Typical applications include commercial washing machines, centrifuges, textile and tire manufacturing.

<table>
<thead>
<tr>
<th>FKR models</th>
<th>Torque rating</th>
<th>Max RPM</th>
<th>Overall width</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric</td>
<td>Nm at 5.2 bar 174-9,400</td>
<td>900-1,600</td>
<td>78-605 mm</td>
<td>150-605 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>Lbs/in at 75 PSI 1,540-83,500</td>
<td>900-1,600</td>
<td>3.06-6.63 in</td>
<td>5.91-23.81 in</td>
</tr>
</tbody>
</table>
Flexible couplings

Our couplings are specifically designed to protect the more critical elements in a series of power transmission components. They work by dampening shock and vibrations while compensating for any minor shaft misalignments that may be present. There are various types available including Type A, a universal flexible coupling, and Type BR, a universal flexible coupling for high torque applications. Our couplings can be made with various types of hubs (inverted, integral and reinforced), spacers, extended shafts, flywhell mounts and treatments for adverse and harsh operating conditions.

<table>
<thead>
<tr>
<th>Couplings</th>
<th>Nominal torque</th>
<th>Max RPM</th>
<th>Major diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A: 34 sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metric</td>
<td>38-168,750 Nm</td>
<td>3,500</td>
<td>95-1,130 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>336-1,493,561 LBs/in</td>
<td>3,500</td>
<td>3.74-44.48 in</td>
</tr>
<tr>
<td>Type BR: 8 sizes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metric</td>
<td>4,080-150,400 Nm</td>
<td>2,500</td>
<td>302-740 mm</td>
</tr>
<tr>
<td>Imperial</td>
<td>36,110-1,363,012 LBs/in</td>
<td>2,500</td>
<td>11.89-29.13 in</td>
</tr>
</tbody>
</table>

DEZ rubber elements

The DEZ, DEZ-S and DEZ-R are highly durable rubber elements offering remarkable flexibility in all directions for torsional coupling applications. Their high damping characteristics and low dynamic torsional stiffness result in a low frequency drive system, ensuring that critical speeds remain below operational speeds.

For more details and technical information on our full range of couplings, see [www.dellner-brakes.com](http://www.dellner-brakes.com). Printed versions of our technical sheets are also available on request.

Rotorseals

Most pneumatic drum clutches and brakes operate with through-the-shaft air supply, which usually requires a rotorseal (rotary union) at the air supply end of the shaft. We supply a wide range of sizes and styles of rotorseal manufactured by DEUBLIN®, which can be found in a diverse range of applications and industries worldwide.

Quick release valves

When a particular application requires an immediate release of air pressure at or near the clutch at the end of a cycle, the most common solution is found with a quick release valve (QRV). We supply QRVs in a range of styles and sizes for different clutch configurations and applications. All our rotorseals and QRVs are directly interchangeable in both size and performance with other major brands.

<table>
<thead>
<tr>
<th>Product</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 rotorseals</td>
<td>RPM limit 1,000 to 3,000</td>
</tr>
<tr>
<td>4 QRVs</td>
<td>Thread sizes (NPT) 3/8 in to 1 in</td>
</tr>
</tbody>
</table>
We offer a complete line of disc clutches, brakes and PTOs manufactured by WPT Power Corporation.

**Power Grip**

Designed for in-line and shaft-to-shaft power transmission applications with large inertia loads, WPT Power Grip clutches offer quick response and have an air tube design for seamless, controlled engagement and disengagement with minimal air volume. They also need very little maintenance and can fit into smaller spaces.

Available in a range of sizes from 8 to 60 inches, the Power Grip features extended hub teeth and wave release springs, with options for standard or quick change driving adapters, plus split air tubes and friction discs for easier replacement and minimal downtime.

**Power Grip PO**

The WPT Power Grip PO features a large diaphragm for maximum torque and to compensate for wear over the clutch life. Available in 11 sizes with a choice of 1, 2 or 3 plate constructions, the Power Grip PO features quick release valves, plate separators with oversize release springs for positive mechanical plate separation and retained springs for easier servicing, mechanical lockup features for emergency use, a large diaphragm actuator for higher torque and reduced release drag. The WPT Power Grip PO is interchangeable with Twin Disc® PO Type Clutches.

**WPT Mechanical PTO**

The WPT Mechanical PTO (power take-off) consists of a lever actuated clutch with a shaft and bearings, mounted in a rigid cast housing. It is designed for in-line and side load applications on internal combustion engines with standard SAE industrial flywheel/flywheel housing dimensions.

Available in 12 different sizes, the PTO has ductile (nodular) iron or steel drive rings and, to eliminate lubrication problems, sealed-for-life pilot bearings. A heavy duty, laminated, gear tooth friction disc is available for heavy shock loads and we also offer roller pilot bearings in selected sizes for higher side loads.

**Pilotless WPT Mechanical PTO**

There is also a pilotless version of the Mechanical PTO, designed to eliminate the pilot bearing and increase side load capacity. It will optimize your costs by reducing inventory, simplifying installation, increasing uptime and engine and bearing life. Most sizes fit within the envelope of the previous PTO design. Features include a dual spherical roller main bearing and ball bearing engagement collars.

**WPT water cooled brakes**

WPT water cooled brakes (WCB) are designed for constant slip and severe high heat braking applications. The brakes are air actuated and cooled with a continuous flow of coolant from either a closed or open loop cooling system. The air tube design is corrosion resistant and requires no special coatings or treatments. Field service is simple and error free. In addition, Retrofit kits are available to convert an existing single or dual piston actuated WCB to air tube actuation with no other modifications required.
COMPONENTS

Brake discs and hubs
Our standard brake discs and hubs are made of steel. Other materials, sizes and customised designs can be manufactured on request.

Pillow blocks
We supply high quality cast iron and steel pillow blocks for a range of applications.

<table>
<thead>
<tr>
<th></th>
<th>GL</th>
<th>GLA</th>
<th>FL</th>
<th>SL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft size</td>
<td>40-100 mm</td>
<td>16-35 mm</td>
<td>30-135 mm</td>
<td>30-255 mm</td>
</tr>
<tr>
<td>Material</td>
<td>Flame cut, machined steel</td>
<td>Flame cut, machined steel</td>
<td>Cast iron</td>
<td>Flame cut, machined steel</td>
</tr>
<tr>
<td>Other features</td>
<td>Mounted plain or flange sleeve bearings (self lubricating or non-self lubricating with lubricating holes)</td>
<td>Teflon coated, steel backed Glacier DU mounted plain sleeve bearing</td>
<td>Meets DIN requirements, external guide machined to close tolerances</td>
<td>Cast iron lids and dowel pin holes, meets DIN requirements</td>
</tr>
</tbody>
</table>

Drums, hubs and spiders
We manufacture a wide range of mating components for our constricting clutches and brakes. Commonly referred to as iron parts, the drums, hubs and spiders for our FK, FKT and FM elements will interchange seamlessly for most associated applications within the marine, mining, industrial and oilfield markets.

Wind brake accessories
We also supply a range of accessories and brake and service pads for our JHS product range of wind brakes. See page 13 for more information.

Service tools
Service pads
JHS-300 and JHS-3000 brake pads
218x108 yaw brake pads
Pintsch Bubenzer is focused on the design, production and service of high quality braking systems, particularly for harbour container cranes, mining and the steel industry.

Applications include

**Cranes and container handling**

Backed by in-depth industry knowledge gained working closely with port operators, consultants and crane manufacturers for many years, Pintsch Bubenzer has a focus on continuous product development to deliver the very highest standards and service for real-work situations in the crane and container handling market.

**Mining and material handling**

Mining equipment and vehicles are often required to move millions of tons of materials and are in service 24 hours/day, for years. Pintsch Bubenzer has been meeting the special challenges of the mining industry for many years and today, we’re globally rated as one of the leading development partners and system suppliers for this industry.

**Iron and steel**

Hot, dusty conditions place tough demands on the drive systems and brakes used in steel making. Hot metal, semi-automated rolling mill and overhead loading cranes require the most reliable, maintenance-friendly braking systems possible. Our engineers and designers have decades of experience developing braking solutions for the steel industry and know the problem zones and pitfalls inside out.

Service brakes

Disc and drum brakes installed on the high-speed gear input shaft to hold the load safely.

Emergency brakes

Disc and drum brakes providing an additional safeguard for the installation, e.g. if a gear shaft should fracture.

Motor mounted brakes

Installed directly on the motor as a safety or service brake.

Couplings

For compensating relocation movements and absorbing torque shocks that occur on starting and under load.

Buffers

Impact energy absorbers for crane gantries, trolleys, elevators, stackers, reclaimers and other industrial applications.

Control and monitoring systems

Control and monitoring for improved operational efficiency and safety.

**BUEL®**

The patented BUEL electrohydraulic thruster is principally used as a brake release device in industrial disc and drum brakes. There are three models – the high speed BUEL H, the BUEL S that’s built for extra strength and the environmentally friendly BUEL G that uses only half a litre of high performance synthetic oil, compared to seven litres of hydraulic oil in standard hydraulic power units.

Rima storm brakes

Storm brakes for port operations including spring and self-blocking rail clamps, rail brakes and wheel brakes.

Dellner Brakes is very proud to be part of the Dellner Bubenzer Group, which includes Pintsch Bubenzer and Rima. On this page, we’ve included a brief overview of what’s available from these companies. For more information, visit [www.pintschbubenzer.com](http://www.pintschbubenzer.com) and [www.rimagroup.com](http://www.rimagroup.com).
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Dellner Brakes is proud to be part of the Dellner Bubenzer Group. For more information about our sister companies, Pintsch Bubenzer and Rima, see:
www.pintschbubenzer.com
www.rimagroup.com