



INNOVATION BY DESIGN

www.dellner-brakes.com

Precision engineering that works all over the world

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Dellner Brakes reserves the right to make modifications to the systems, products and components contained within this brochure without specific notice.

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 out 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

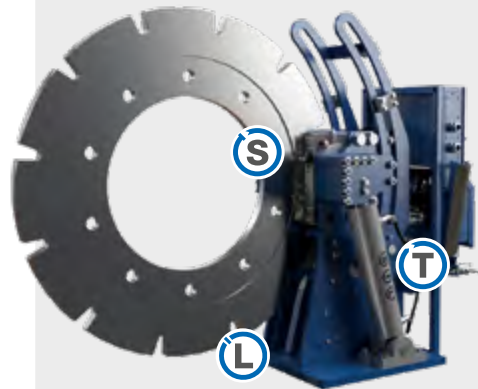
Industrial machinery

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

Hydraulic system with indexed turning (SiTL)



- S** The brake stops the disc quickly in any position
- T** Controlled hydraulic cylinders turn the brake disc forward to a precise, indexed position
- L** A tapered pin (pawl) pushes into a machined slot on the edge of the brake disc, locking it securely in place

This system is also available with electrical continuous turning (ScTL)

BUEL STL



Our compact, self contained BUEL STL systems combine elements from STL with Pintsch Bubenzer's patented BUEL electrohydraulic thruster/power package.

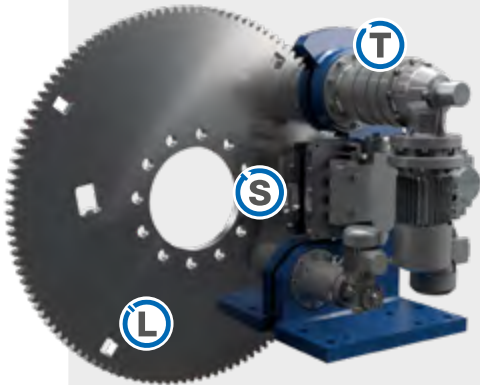
Needing no external piping, the systems are compact, easy to install and, with the BUEL using only half a litre of high performance synthetic oil (compared to up to 30 litres of hydraulic oil in standard hydraulic power units), are cheaper to run and environmentally-friendly too.

See page 19 for more about BUEL.



How it works

Electrical system with continuous turning (eScTL)



- S** The brake stops the disc quickly in any position
- T** An electric gear wheel moves the disc into position for locking – forwards or backwards – and can turn the disc continuously, all at variable speeds
- L** A tapered pin (pawl) pushes into a machined slot on the brake disc, locking it securely in place



The UK Royal Navy's two new Queen Elizabeth Class aircraft carriers are each fitted with two custom built 11,000 kg Dellner STL systems

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.

	Component(s)	Maximum torque	Component(s)	Maximum torque	Component(s)	Maximum torque
Brake disc Ø	800 mm		1200 mm		1600 mm	
Hydraulic	Small: STL 09		Medium: STL 69		Large: STL 285	
Stopping	SKD 65	9,700 Nm	SKD 100	69,000 Nm	SKD 4x125	285,000 Nm
Indexed turning (iT) – hydraulic	iT 06	6,000 Nm	iT 54	54,000 Nm	iT 227	227,000 Nm
Continuous turning (cT) – electric	cT 15	15,200 Nm	cT 53	53,000 Nm	cT 119	119,000 Nm
Locking	LM 20	50,000 Nm	LM 20 LM 40	75,000 Nm 150,000 Nm	LM 50 LM 70	400,000 Nm 600,000 Nm
Electric	Small: eSTL 06		Medium: eSTL 90		Large: eSTL 285	
Stopping	SKDe 50	6,500 Nm	SKDe 130	90,000 Nm	SKDe 300	285,000 Nm
Continuous turning (cT)	cT 15	15,200 Nm	cT 53	53,000 Nm	cT 119	119,000 Nm
Locking	LMe 20	50,000 Nm	LMe 50	300,000 Nm	LMe 50 LMe 70	400,000 Nm 600,000 Nm

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 tumblers and gravel conveyor belts.



Dellner's SKD disc brakes are fitted in marine crafts all over the world, from workboats and ferries to Cunard's flagship RMS Queen Mary 2



Royal Opera House, Stockholm



Mining conveyor belt reeler, Australia

SKD working brakes (hydraulic applied, spring released)



Model	Braking force	Weight
SKD 35	Up to 8,000 N	7 kg
SKD 50	Up to 16,200 N	10 kg
SKD 65	Up to 27,300 N	18 kg
SKD 80	Up to 41,400 N	34 kg



SKD 90	SKD 100	SKD 4x100
Braking force up to 104,800 N	Braking force up to 129,200 N	Braking force up to 258,800 N
59 kg	75 kg	260 kg



SKD 4x125	SKD 6x115	SKD 75-SA
Braking force up to 404,200 N	Braking force up to 513,000 N	Braking force up to 37,110 N
177 kg	210 kg	65 kg

SKP failsafe brakes (spring applied, hydraulic released)



SKP 50	SKP 95	SKP 140	SKP 220
Braking force 2,700 N to 12,400 N	Braking force 10,700 N to 33,500 N	Braking force 26,200 N to 113,600 N	Braking force 98,700 N to 294,400 N
12 kg	46 kg	150 kg	410 kg



SKP 65-SA	SKP 95-SA	SKP 140-SA	SKP 220-SA
Braking force 2,000 N to 18,200 N	Braking force 10,700 N to 33,500 N	Braking force 26,600 N to 113,600 N	Braking force 98,700 N to 294,400 N
17 kg	70 kg	216 kg	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)

SKP lightweight failsafe brakes (spring applied, hydraulic released)



SKD 140	SKD 4x140
Braking force up to 258,600 N	Braking force up to 517,200 N
226 kg*	452 kg*

SKP 180	SKP 4x180
Braking force 100,800 N to 226,800 N	Braking force 201,600 N to 453,600 N
315 kg*	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.



Compact 50	Compact 95	Compact 140
Braking force 2,700 N to 12,400 N	Braking force 10,700 N to 33,500 N	Braking force 26,200 N to 113,000 N

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



Model	SKP 50		SKP 65		SKP 95	
Type	6,000 N	12,000 N	16,000 N	21,000 N	24,000 N	35,000 N
Braking force*	3,900 N	7,300 N	9,800 N	12,600 N	13,900 N	21,200 N
Release pressure	60 bar	110 bar	105 bar	115 bar	75 bar	115 bar

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)**



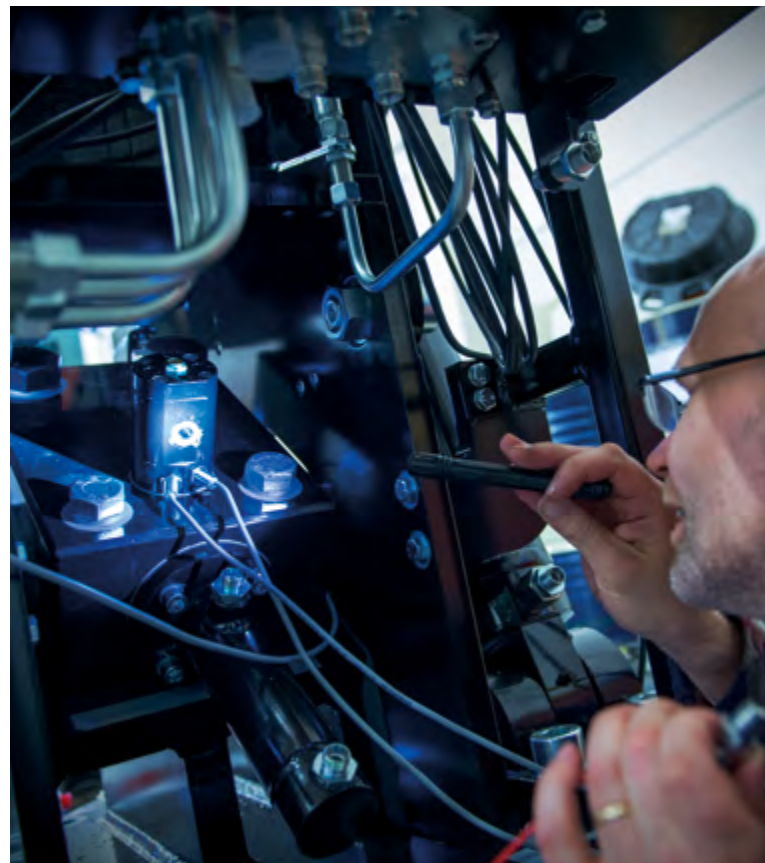
These electro-mechanical brakes offer braking force up to 168,000 N, which can be set as required. They are single acting, so braking force is generated in one half of the brake and the other half slides towards the force generating half so the two are aligned using a robust, low friction system. The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

SKDe 50	SKDe 100
Braking force up to 16,200 N	Braking force up to 129,200 N
46 kg	200 kg



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.

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.

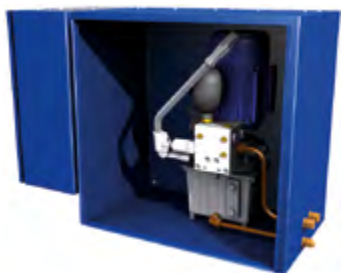
These versatile locking devices can be operated by a manual lever, a hydraulic cylinder or an electric drive.

Locking force	125 kN	250 kN	500 kN	750 kN	1,000 kN
	LM 20-H 	LM 40-H 	LM 50-H 	LM 70-H 	LM 95-H
	LM 20-M 	LM 40-M 	LM 50-M 	LM 70-M 	LM 95-M
	LM 20-E 	LM 40-E 	LM 50-E 		

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.

DH 2100

- 'On/off' unit with optional accumulator

DH 2200

- Optional 'Separate' function for pressurising two units individually and independently
- Additional accumulator, hand pump and pressure switches options

DH 2300

- 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

DH 2400

- Double control valves for critical safety applications such as overhead cranes
- Additional accumulator, hand pump, pressure switches and filter options



Compactus

Compactus is a pneumatically operated hydraulic pump system that ensures there is sufficient hydraulic pressure to operate disc brakes at the rated capacity. The unit is supplied in an enclosed cabinet. It's easy to use – just plug in the inlet air, the hydraulic brake or brake control piping and the electrical signal cables and you're ready to go.

Key features include:

- 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



Hand pump

Our hand pump can be used to simply activate the Dellner brake calipers and also as a back-up for the primary pressure supply system. We can also supply hand pumps with logics (e.g. accumulators, pressure switches), which are attached to a control panel creating an easy to connect system.



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.



Through our JHS product line, we offer a range of lightweight, noise-free systems for braking and gliding processes in wind turbines. Noise reduction has been the core focus in the development of this comprehensive range of brakes and sliding bearings, recognising that noise prevention plays a substantial role in the overall acceptance of wind energy. These products set standards for the industry and are used worldwide by nearly all leading manufacturers of wind power plants.

Five of our wind turbine braking products have gained independent GL Type Certification, which demonstrates that their design delivers performance and safety in accordance with international standards and systems.

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.



JHS-8	JHS-16	JHS-32	JHS-36
Braking force 136,000 N	Braking force 200,000 N	Braking force 542,000 N	Braking force 542,000 N
30 kg	60 kg	198 kg	230 kg

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.



JHS-PC-1x80	JHS-PC-4x80
Braking force 175,000 N	Braking force 700,000 N
16 kg	200 kg

Rotor brakes

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



JHS-16-LS	JHS-22-LS	JHS-300	JHS-3000	JHS-PRC-317-AWA
Braking force 200,000 N	Braking force 200,000 N	Braking force 55,000 N	Braking force 130,000 N	Braking force 27,000 N
54 kg	60 kg	70 kg	180 kg	90 kg

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.



Model	JHS-R80	JHS-R200-154	JHS-R240, R240M, R240-154
Pressure	Up to 270 bar	Up to 210 bar	Up to 250 bar
Activation time	60 seconds	60 seconds	35 seconds
Weight	50 kg	90 kg	150 kg

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.



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.

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.

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.

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

Constricting air clutches and brakes

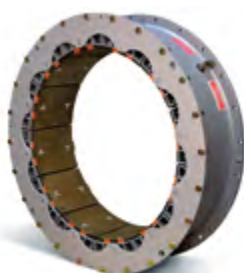
When pressurized, the air tube forces the friction shoe assemblies inwards to radially engage the outer edge of the drum. All our constricting drum clutches are available with a choice of standard, Lo-Co, Hi-Co and cork friction linings.



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.

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



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, pulp and paper machinery.

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



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.

FM models 5 types	Torque rating	Max RPM	Overall width	Major diameter
Metric	Nm at 5.2 bar and 100 RPM 27,200-126,200	900-1,600	176-230 mm	882.7-1,511.3 mm
Imperial	LBs/in at 75 PSI 284,000-1,190,000	900-1,600	6.94-9.06 in	34.75-59.5 in



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.

FKE models 6 types	Torque rating	Max RPM	Overall width	Major diameter
Metric	Nm at 5.2 bar 44-2,120	1,300-1,800	44-162 mm	100-402 mm
Imperial	LBs/in at 75 PSI 390-18,750	1,300-1,800	1.75-6.38 in	3.94-15.81 in



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.

FKR models 6 types	Torque rating	Max RPM	Overall width	Major diameter
Metric	Nm at 5.2 bar 174-9,400	900-1,600	78-605 mm	150-605 mm
Imperial	LBs/in at 75 PSI 1,540-83,500	900-1,600	3.06-6.63 in	5.91-23.81 in



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, flywheel mounts and treatments for adverse and harsh operating conditions.

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



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. 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.

Product	Details
11 rotorseals	RPM limit 1,000 to 3,000
4 QRVs	Thread sizes (NPT) 3/8 in to 1 in

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.

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

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

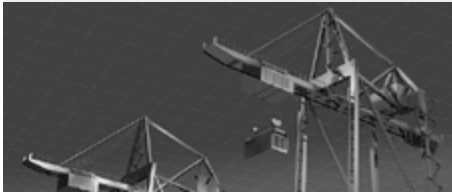
JHS-300 and JHS-3000 brake pads

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.

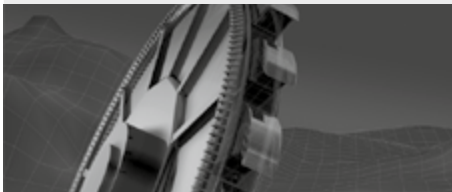
Applications include

Cranes and container handling



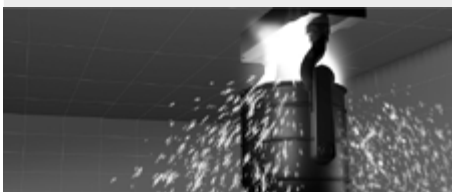
Backed by in-depth industry knowledge gained working closely with port operators, consultants and crane manufacturers for many years, Pintsch Bubenzer has a focus on continuous product development to deliver the very highest standards and service for real-work situations in the crane and container handling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

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.pintschbubenz.com and www.rimagroup.com.



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.

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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