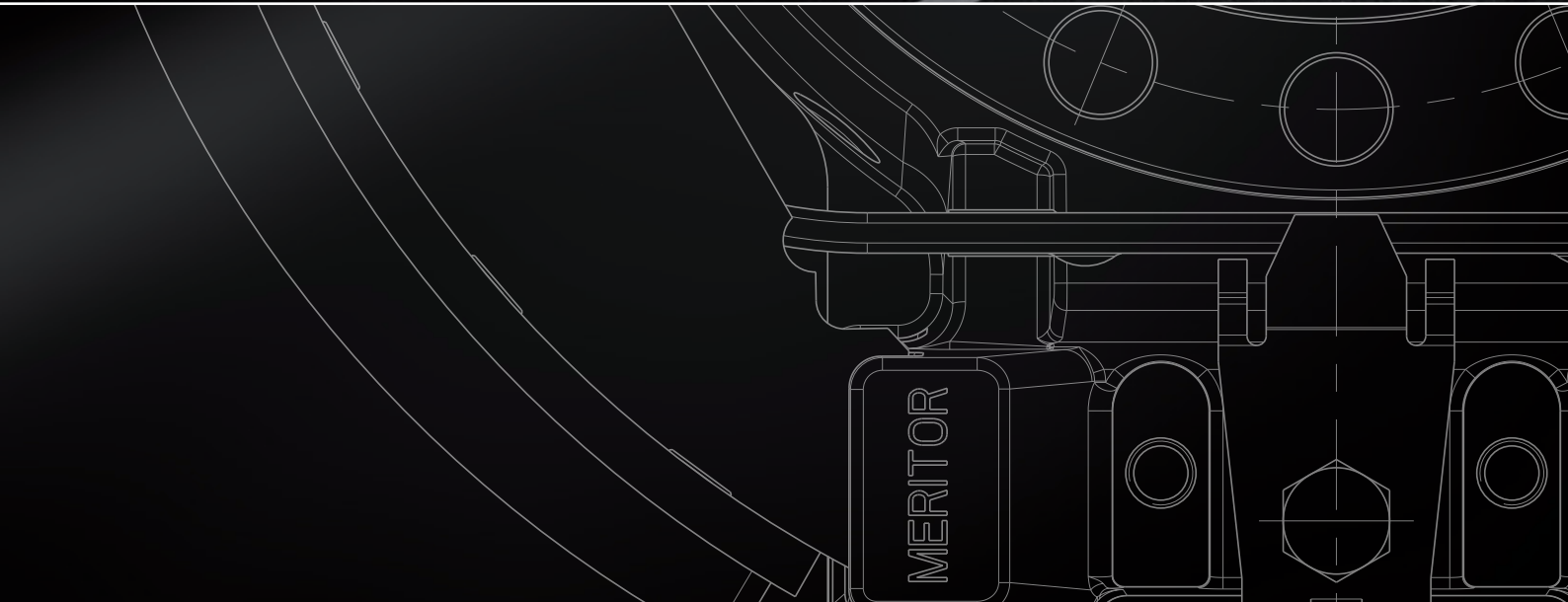
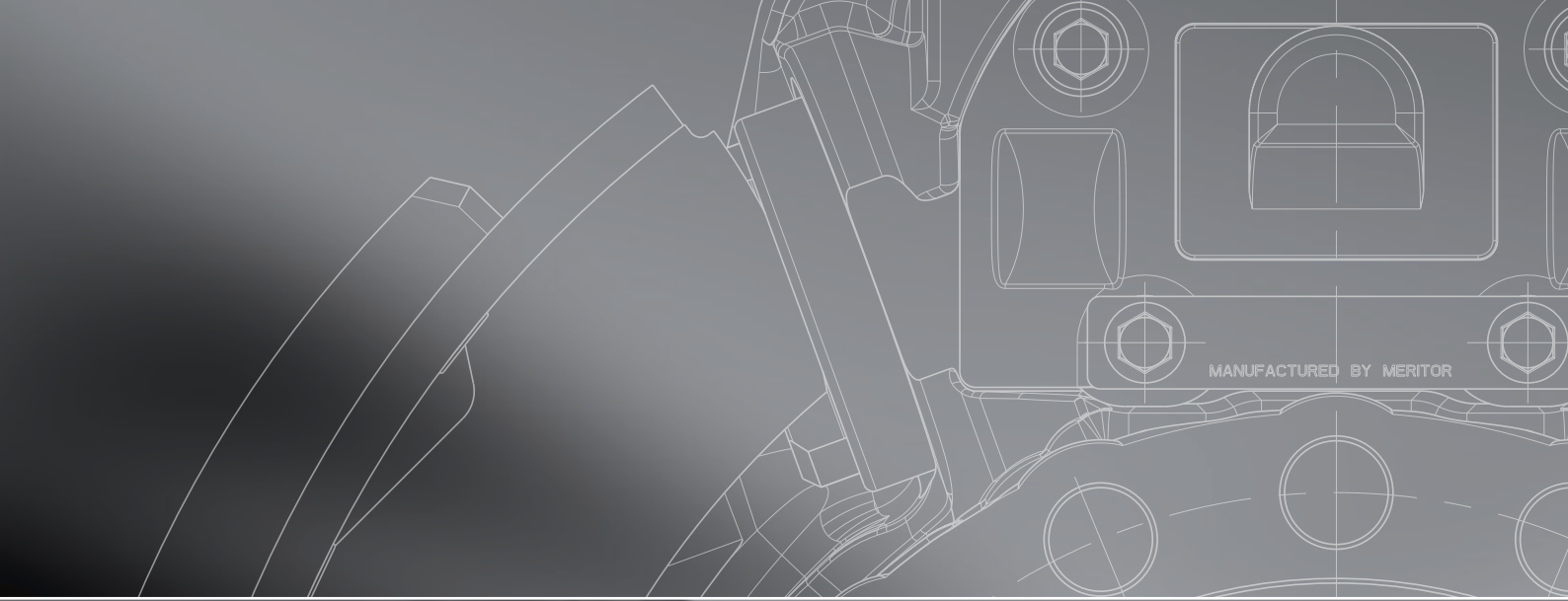


MERITOR® BRAKES







MERITOR'S EUROPEAN BRAKING SOLUTIONS

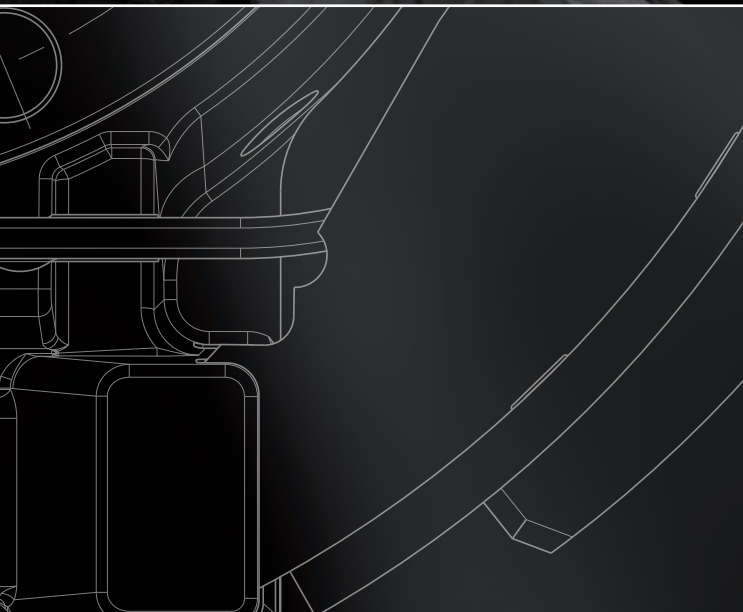


Meritor® is one of Europe's leading suppliers of brakes in both size and capacity for trucks, trailers, buses and coaches as well as off-highway and specialty vehicles. The company is one of the few foundation brake manufacturers that can offer a complete portfolio of air disc, hydraulic disc and air drum brakes as well as drums, discs and hubs. With global product platforms and worldwide application support, Meritor is the supplier of choice for original equipment manufacturers seeking 16-inch to 25-inch wheel equipment with brake torque requirements up to 40 kNm.*

Meritor's Cwmbran, United Kingdom facility is the company's air disc brake center of excellence. The site uses best-in-class technology to design, develop and manufacture air and hydraulic disc brakes as well as drum brakes that offer global customers consistent and reliable high-performance products, longer component life and enhanced stopping power.

Leading global vehicle manufacturers rely on Meritor's knowledge and experience to design and supply solutions for any application around the world, tailored to deliver optimum reliability and cost of ownership.

On the operations side, Meritor's comprehensive portfolio allows original equipment manufacturers and vehicle operators to work with one reliable and expert supplier for service, warranty and replacement parts needs.



* Dependent on duty cycle

AIR DISC BRAKES

Meritor® ELSA air disc brakes deliver superior stopping distance and durability. They are engineered for fast pad changes and need only periodic inspection. Routine maintenance schedules are not required.

The Meritor ELSA brake family has been in production since 2000.

ELSA Brake Models	175	195	225L	225H	225E	250H
Type	Single-piston air disc brake	Twin-piston air disc brake	Twin-piston air disc brake	Twin-piston air disc brake	Twin-piston air disc brake	Twin-piston air disc brake
Axial actuator angle	Yes	Yes	Yes	Yes	Yes	Yes
Radial actuator angle	Not available	Yes	Yes	Yes	Yes	Yes
Maximum-rated torque* (kNm)	Up to 13	Up to 20	Up to 25	Up to 30	Up to 33	Up to 30
Caliper weight with pads (kg)	23	From 33 (axial) From 36,5 (radial)	From 33 (axial) From 37 (radial)	From 37 (axial) From 36,5 (radial)	From 42,6 (axial) From 45,4 (radial)	From 45 (axial) From 47,2 (radial)
Pad area/brake (cm ²)	240	320	322 - 360	400 - 452	406	406
Rotor size (mm)	330	375 ; 377	402 ; 410 ; 430 ; 434	430 ; 432 ; 434	434	500
Rotor thickness (mm)	34	45	45	45	45	45
Air chamber angle (degrees)	12	0 ; 4 ; 12 ; 90	0 ; 4 ; 12 ; 90	0 ; 12 ; 90	0 ; 82	0 ; 12 ; 90
Minimum wheel size (in.)	17,5	19,5	22,5	22,5	22,5	25
Application	Light-duty	Light- / medium- / heavy-duty	Medium-duty	Medium- / heavy-duty	Extra heavy-duty	Heavy-duty

* Dependent on duty cycle



ELSA 225H
air disc brake

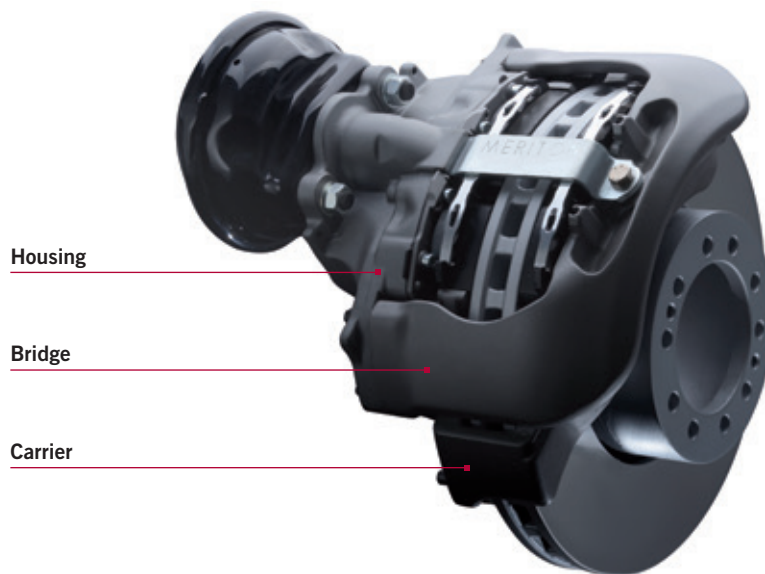
FEATURES AND BENEFITS

- Modular brake optimizes product to the application:
 - Common global housing assembly matches housings with various bridges and carriers to meet installation and performance demands of multiple applications
 - Modular flexibility for different packaging envelopes offers the best solution between application requirements and brake design
 - High degree of commonality provides manufacturers with global standards, logistics and localization benefits
 - Within the ELSA brake family, 80 percent of components are common*

E175	E195	E225L**	E225E	E225H	E250H	E195	E225L**	E225E	E225H	E250H
Axial						Radial				
Standard piston and adjuster										
Single Piston Cartridge	Double piston cartridge									
Housing A	Housing B		Housing C	Housing D		Housing E		Housing F	Housing G	
Bridge and Carrier 1	Bridge and Carrier 2	Bridge and Carrier 3	Bridge and Carrier 4	Bridge and Carrier 5	Bridge and Carrier 6	Bridge and Carrier 2	Bridge and Carrier 3	Bridge and Carrier 4	Bridge and Carrier 5	Bridge and Carrier 6

* 60 percent for ELSA 175

** Different bridge and carrier for 434 mm rotor size

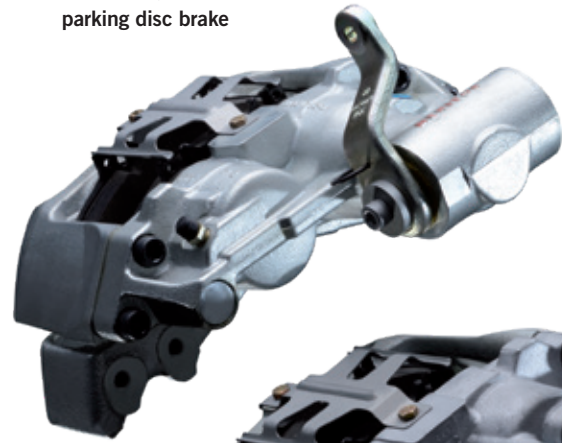


- Frame optimized for low weight, high torque and stiffness
- Frame and air chamber angle options depending on application/duty cycle for easy installation
- Optional secondary sealing and hardening of wear surfaces, as well as wear sensing and indication options available to ensure long brake life under the harshest conditions
- High commonality of aftermarket service kits with other ELSA brakes for easy maintenance
- Simple servicing

HYDRAULIC DISC BRAKES

Meritor® hydraulic disc brakes are designed for light and medium truck and bus applications. Available in fixed and sliding variants, they offer flexibility in design and application from 16" up to 25" wheels (for specialist applications). The new ELSA hydraulic variant offers quick and cost effective solutions that are interchangeable with Meritor's class leading ELSA pneumatic brakes. Sharing common bridges, carriers, sliding system, rotors, pads and service kits, the new development can easily be installed on existing customer wheel end arrangements.

B-Frame hydraulic parking disc brake



B-Frame hydraulic disc brake



Hydraulic Brake Models	B-Frame	Quadrauclic	ELSA
Type	Twin-piston hydraulic sliding disc brake	Four-piston hydraulic non-sliding disc brake	Single- and twin- piston hydraulic sliding disc brake
Maximum-rated torque* (kNm)	Up to 9	Up to 10	Depending on variant
Caliper weight with pads (kg)	From 15	From 18	Depending on variant
Piston size (mm)	54 ; 58 ; 60 ; 68	64 ; 70	Not applicable
Pad area/brake (cm ²)	214	270	Up to 452
Rotor size (mm)	304 ; 324	390	Up to 500
Rotor thickness (mm)	34	39	34 - 45
Minimum wheel size (in.)	16; 17,5	19,5; 22,5	17,5; 19,5; 22,5; 25
Application	Light-duty	Light-/medium-duty	Light-/medium-duty

* Dependent on duty cycle

FEATURES AND BENEFITS

- Visual wear indication options
- Simple pad changes
- Range of piston sizes to suit applications
- 16" and 17,5" brakes share common service kits
- ELSA modular family extended to include hydraulic options benefitting from ease of product optimisation and common parts/service kits
- ELSA hydraulic brake mounting and installation common with ELSA pneumatic brakes

AIR DRUM BRAKES



SAC drum brake

Meritor® drum brakes for on- and off-highway truck and trailer linehaul and vocational applications are available in three variants: S-cam, SAC and wedge operation. Each brake design is optimized to deliver consistent performance, stopping distance and simple servicing.

For vocational and service vehicles, including fire and rescue, construction and utility, heavy-haul, bus and coach and other heavy-duty and service applications, Meritor drum brakes offer added durability and reliability.

Brake Model	Heavy-Duty S-CAM	Simplex Air Cam (SAC)	Air Wedge RS (Single Wedge)	Air Wedge RD (Dual Wedge)
	Global standard drum brake	Integral, fully sealed, automatic adjuster mechanism	Integral, fully sealed, automatic adjuster mechanism	Integral, fully sealed, automatic adjuster mechanism
Maximum-rated torque* (kNm)	27	25	24	24
Drum diameter (mm)	410	410	360 ; 370 ; 381 ; 410	381 ; 394 ; 410
Shoe width (mm)	180 to 200	125 to 225	152 to 200	152 to 200
Minimum wheel size (in.)	22,5	22,5	19,5 ; 22,5	19,5 ; 22,5

* Dependent on duty cycle

FEATURES AND BENEFITS

- S-cam brakes feature:
 - Industry-leading friction materials, ensuring longer intervals between services
 - Extended lining life, reducing total cost of ownership
 - Enhanced camshaft bushings, double-anchor pin design and extended lube option, minimizing maintenance and downtime
 - Quick-change shoes, offering fast shoe replacement and minimizing downtime
- SAC and air wedge brakes feature:
 - Sliding shoes, offering optimum lining life and drum loading
 - Fabricated shoes, minimising unsprung mass
 - Very compact packaging, allowing installation in application with a reduced space envelop
- SAC has a sealed-for-life expander to reduce total cost of ownership

