



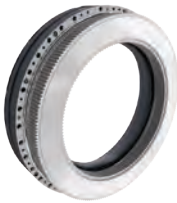
## **BRAKE SYSTEMS FOR MOTOR GRADERS**

Carlisle Brake & Friction has been the brake supplier of choice in the construction industry for decades, counting many of the world's largest and most respected OEMs as customers, including CAT, Volvo, Liebherr, Case and Terex.

Carlisle motor grader braking systems deliver effortless performance providing exceptional control and consistent stopping power to ensure a smooth and predictable braking response. Additionally, our friction materials, hydraulic actuation technology and brake assembly solutions are built to last using only the finest quality materials resulting in decreased equipment downtime and increased operator productivity and efficiency. At Carlisle, our products are engineered for durability, safety and proficiency in the toughest grading environments, stop after stop.

Carlisle consistently remains at the forefront in off-highway braking technology by adapting to changes in the industry, expanding the technology envelope and ultimately providing best-in-class solutions to world-class OEMs across the globe.

## WET FRICTION MATERIALS



### Brake Materials

Carlisle has developed a variety of friction materials with high energy absorption capability and smooth engagement characteristics.

- High heat capability
- Ability to withstand high unit loading
- Smooth engagement characteristics
- Resists glazing from oil abuse
- Comprehensive material technology coverage
- Manufactured in ISO certified facilities



### Power Transmission Materials

Carlisle has developed a wide range of friction materials for powershift and counter shaft transmission applications.

- Oil cooled friction materials with high energy capacity
- Tolerance to operate under very high unit loading
- High dynamic and static coefficients of friction
- Available in a range of thicknesses and oil groove patterns
- High power
- Minimizes “hot spotting” of opposing plates
- Smooth engagement characteristics

## HYDRAULIC ACTUATION



### Accumulator Charge Valve

Accumulator charging solution, monitors the minimum pressure in the accumulators and charges as soon as the pressure drops below pre-defined values (cut-in pressure).

- Monitors and charges the accumulators automatically
- Gives priority to accumulator circuit
- Fast acting isolation valve allows brake system to continue to function during single brake system failure
- Pressure port for pressure sensing
- Hydraulic pressure sensing and charging, hence no electrical signal for charging
- Single and dual options available



### 1100 Series Power Valve

Single and tandem circuit, modulating hydraulic control valve.

- Smooth modulation at all output pressures for Automotive style pedal feedback
- Rugged construction and thorough testing ensure superior performance and endurance for even the most severe job applications
- Externally adjustable to provide precise pressure settings
- Custom pedal and mounting options for simplified cab installation



### SAHR Park Brake Valve

Designed around the unique needs of the end user to consolidate functions and simplify vehicle plumbing.

- Parking brake control valve
- Spotting option
- Slippery road option
- Brake circuit isolation

## PARK & EMERGENCY BRAKES



### SA Series SAHR Brake

Spring-applied hydraulically released park brakes.

- Open caliper for easy access and serviceability
- Simple lining adjustment
- Lining retraction spring eliminates drag
- Organic or Sintered Metallic Linings Available
- Low release pressure options available



To learn more about Carlisle's construction vehicle braking systems contact one of our sales offices or visit [www.carlislecbf.com](http://www.carlislecbf.com)

#### United States

6180 Cochran Road  
Solon, OH 44139 USA  
440 528 4000  
440 528 4099 fax

#### Europe

Via Pacinotti 9  
Orzinuovi (BS) 25034 Italy  
+ 39 030 994 1016  
+ 39 030 994 2768 fax

#### Asia-Pacific

Suite E & F, 9th Floor Majesty Building  
No. 138 Pudong Ave. Shanghai, P.R. China 200120  
+ 86 21 6100 5222  
+ 86 21 6100 5220 fax