



BRAKE UPGRADES LOWER MAINTENANCE COSTS

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The reliability maintenance team at the fine papers division of a major multinational paper producer recently discovered an alternative to the maintenance and repair aggravation they were experiencing from the pneumatic dual disk brakes on their slitter/sheeter lines and off-line paper winders.

The plant's #6 and #7 slitter/sheeter lines were unwinding 52-inch wide rolls, 48 inches in diameter, at about 1,100 fpm. With the maintenance team short on staff and time, it was critically important to find ways to reduce parts failures and labor-intensive repair tasks. Ruptured brake diaphragms and friction pad replacement on the machines' forty-eight unwind brakes were two unwelcome and recurring maintenance problems.

The design shortfalls of the lines' original dual disk brakes: 1) Over time the sharp-edged springs in the piston assemblies were puncturing the diaphragms. To replace the diaphragms, the brake and the actuators had to be disassembled—a complicated and time consuming procedure; 2) Replacement of worn friction pads required brake disassembly, another time-consuming task for a maintenance technician.

Dover Flexo's brake upgrade program with the advanced **Universal Actuator™** design was offered as a solution, and plant management took action. Slitter/sheeter lines 6 and 7 were retrofitted with forty-eight Universal Actuator assemblies (actuators with corresponding adapter hardware) and friction pads. Replacement of the existing disk/hub assemblies was unnecessary.

The paper mill now plans more brake actuator upgrades throughout the facility.



Universal Actuator™ assembly for 130 Series Dual Disk Brake

Why upgrade to DFE's **Universal Actuators™**?

'Quick-Change' release locks allow worn friction pads to be changed out in seconds without tools. The machine operator can do this himself, so **downtime for pad changes by maintenance personnel is eliminated.**

Zero-maintenance piston design. The piston diaphragms are sealed from contact with the actuator spring. This feature has eliminated the possibility of a punctured or ruptured diaphragm. Also, the actuator's **limited-travel pistons** prevent disk scoring.

Patented 'anti-squeal' friction pads are warranted not to make screeching or squealing sounds for the life of the pad.

5-YEAR WARRANTY. All DFE products are **warranted to be free of defects in material and workmanship for 5 years.**



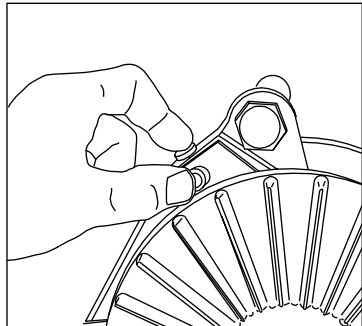


PRODUCT INFO

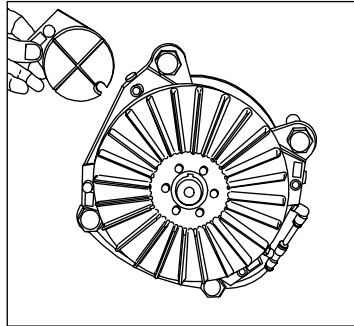
UA™ BRAKE ACTUATOR BRINGS BIG BENEFITS

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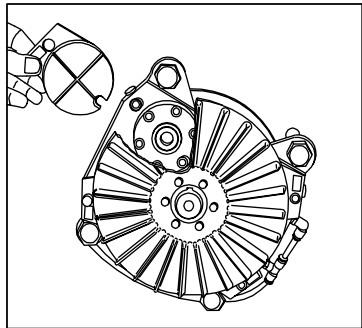
REPLACE A WORN BRAKE PAD IN UNDER 30 SECONDS



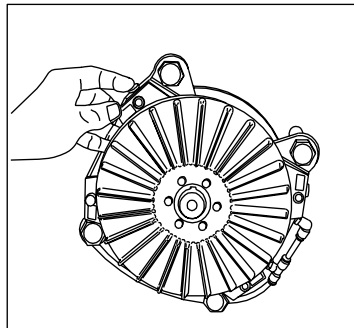
1. Press the release button, then the torque post over the friction pad you wish to change.



2. Slide the friction pad out.



3. Slide the new friction pad in.



4. Press down release button to lock friction pad in place.



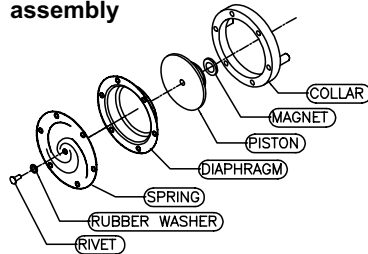
DFE dual disk brake, UA and pads

Universal Actuator™ Assembly Upgrade

The **Universal Actuator™** is the pneumatic braking mechanism used in DFE's Heavy-Duty dual disk brakes. An actuator assembly is two or more Universal Actuators (each with dual cylinders and friction pads) connected in a ring with all-steel adapters. The assembly mounts between the dual disks of brake disk/ hub assemblies. DFE's Service department is available to perform upgrade installations.

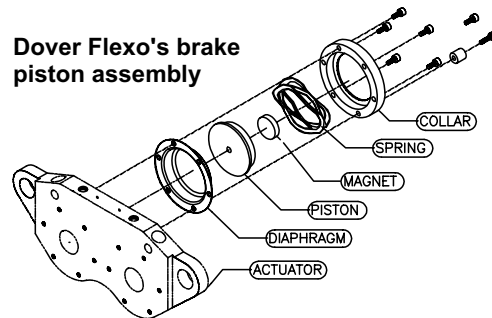
Pneumatic Brake Piston and Actuator: Standard vs Dover Flexo

Standard brake piston assembly



- **Puncture-prone diaphragms.** The sharp-edged spiral springs in the 'industry standard' piston assemblies tend to puncture the rubber diaphragms over time and repeated use.
- **High-maintenance pad changes.** Replacement of worn friction pads requires partial actuator disassembly and therefore the attention of a maintenance technician.

Dover Flexo's brake piston assembly



- **Zero-maintenance piston design.** The piston diaphragms are sealed from contact with the actuator spring. This feature has eliminated the possibility of a punctured or ruptured diaphragm. Also, the *limited-travel pistons* prevent disk scoring.
- **'Quick-Change' release locks** allow worn friction pads to be changed out in seconds without tools. The machine operator can do this himself. That means *one less hassle for maintenance personnel, and downtime for pad changes is eliminated.*



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