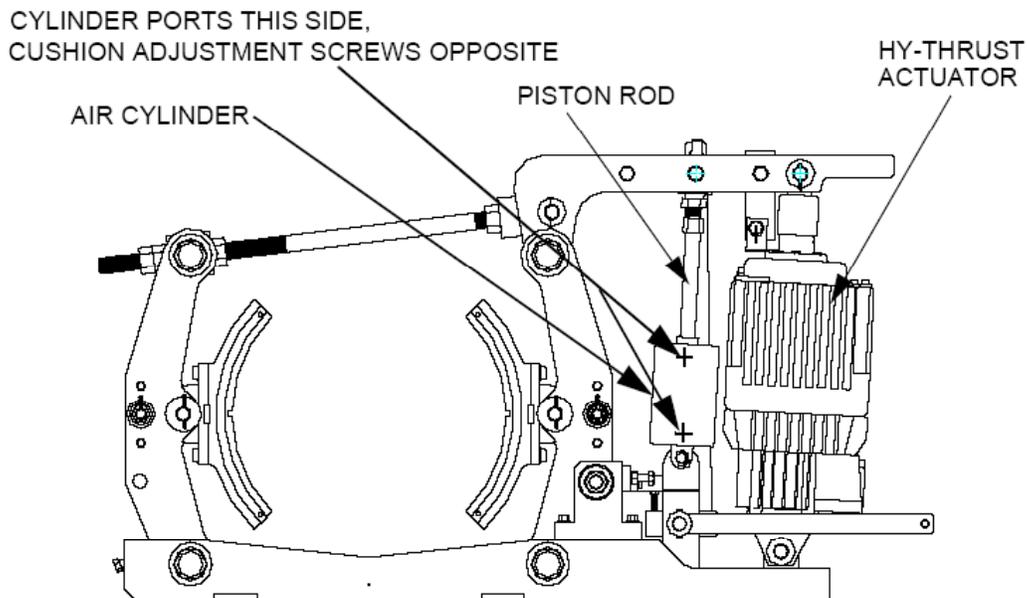




- This Technical Bulletin forms part of the Basic Instruction Manual. Be familiar with, and observe, all warnings in the Technical Bulletin and the Certified Instruction Manual.
- Disconnect, lock out, and tag out the disconnect switch which feeds this equipment to prevent power from being applied while service is being performed.
- Disconnect, lock out, and tag out the air supply to the air release cylinder. Leave the piston rod fully retracted.
- Protect against the possibility of movement due to the effects of gravity, wind or other source of energy, which has the potential to create a hazard when the brake is being worked on or is removed entirely.
- On a hoist, chock the drum to prevent any rotation due to the effect of gravity on the hook block etc.
- Before removing the air cylinder for service, please review and observe all safety warnings contained in this bulletin and in the accompanying instruction manual.

Figure 1

Typical Mondel Hy-Thrust Actuated Brake With Air Cylinder Release



1.0: Description

- 1.1: An over-riding air cylinder is arranged to release the brake as an alternative to the Hy-Thrust actuator.
- 1.2: When adequate air pressure is applied to the lower cylinder port, and the upper, or rod-end port, can exhaust, the piston rod raises the brake lever at a rate subject to the available air flow into, and out of, the cylinder. This compresses the torque spring and releases the brake.
- 1.3: The brake will then remain released as long as there is sufficient air pressure on the lower cylinder port. When the air pressure is cut off, or falls below a minimum level, so that the spring force exceeds the air cylinder piston force, the brake will begin to re-apply.
- 1.4: It is essential that the brake is both released and applied at a rate which does not produce either a prolonged release or a prolonged application as the braking energy imposed on the wheel may exceed its thermal capacity. Excessive slippage will eventually over-heat the linings resulting in a considerable loss of braking torque.

2.0: Installation of Air Connections

- 2.1: Design responsibility for the sizing and logic of the pneumatic control circuit is by "Others"; the following is provided only as a guide.
- 2.2: Connections to the cylinder must be sufficiently flexible to permit the cylinder to pivot slightly.
- 2.3: For the final cylinder connections use suitable rated, flexible pressure hoses, with ½" NPT male swivel connectors.
- 2.4: Supply and exhaust lines and hoses must be rated for the ambient temperature, the working pressure, and suitably protected for the environment.
- 2.5: Contaminants must be excluded from entering both the supply and exhaust ports at any time. The air supply must be adequately dried, filtered and lubricated.
- 2.6: Routing of the hoses and connectors must not impede other aspects of the brake from functioning as intended.

3.0: Operation

- 3.1: The air cylinder can be used for operation of the brake as an alternative to the Hy-Thrust Actuator.
- 3.2: The brake spring is common to both the Hy-Thrust Actuator and the Pneumatic Release Cylinder. The brake spring is contained within the Hy-Thrust Actuator. The brake spring applies the brake but only when the Hy-Thrust Actuator is de-energized and air pressure is exhausted from the Release Cylinder.
- 3.3: Protective interlocking, to avoid conflict between the two brake release systems, is the responsibility of others.

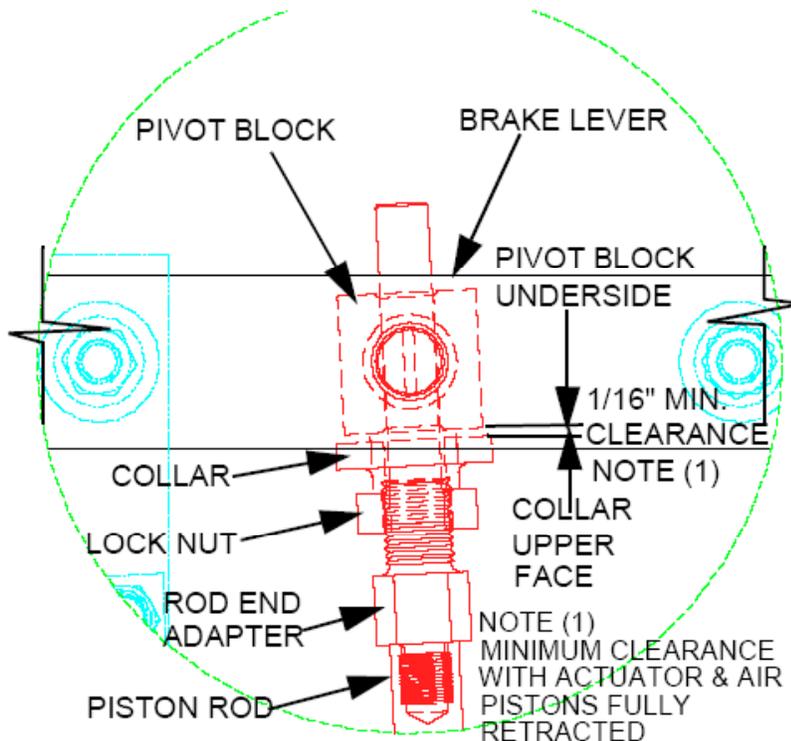
- 3.4: The required operating pressure is between 80 and 120 psig.
- 3.5: The air cylinder applies pressure to the brake release lever via a piston rod extension device with an adjustable collar. The device is designed to allow normal release by the Hy-Thrust Actuator without moving the air cylinder piston.

4.0: Adjustments

- 4.1: The piston rod extension device must never be allowed to prevent the Hy-Thrust Actuator rod from fully retracting, or the brake spring will be prevented from applying shoe pressure and brake torque may be totally lost.
- 4.2: The rod end adapter, lock-nut, and collar are factory set to provide specified operation of the type "P" air cylinder over-ride. No routing adjustments are necessary. If, for any reason, the setting is disturbed it can be adjusted as follows:

Figure 2

Detail, Piston Rod End Extension



4.3: Adjust the brake rod (see certified instruction manual), to allow the Hy-Thrust Actuator piston rod to fully retract into the actuator body, ie: to set the reserve stroke to zero. Then, with the air cylinder piston rod fully retracted, loosen the lock-nut and turn the rod end adapter collar to leave 1/16" clearance between the collar and the pivot block. Re-tighten the lock-nut. See detail drawing of the Piston Rod End Extension, above.

Note: To prevent the air cylinder over-ride from interfering with normal brake operation, there must be 1/16" minimum clearance between the upper face of the air cylinder rod end collar, and the underside of the brake lever pivot block when the piston rods of both the air cylinder and the Hy-Thrust Actuator, (ie: reserve stroke equals zero), are fully retracted.

4.4: The collar, which lifts the brake release lever when air pressure is applied to the cylinder, is now correctly positioned to operate, without impeding normal brake operation, during the life of the linings.

4.5: Re-position the brake rod adjusting nuts to provide the correct reserve stroke setting. See "Actuator Stroke Adjustment" in Chapter 6 of the instruction manual.

4.6: Check that no other settings have been disturbed. See Chapter 6 of the instruction manual.

4.7: Run a full operational test, as directed in Chapter 8 of the instruction manual, before placing the brake into service. The air cylinder requires no periodic service other than to keep its piston rod and linkage mechanism free of dirt build-up.

4.8: The air cylinder has factory set air cushion stops at both ends of travel. If required, the cushion setting can be adjusted on site by turning either cushion adjustment screw in (to increase cushion effect), or out (to decrease cushion effect). Do not unscrew either cushion adjustment screw too far; the head must not project above the surface of the cylinder end cap.

4.9: Should it be necessary to service the air cylinder, a cross-sectional drawing and table of recommended replacement seal parts is shown below. A repair kit containing replacement seals, etc., see table below, is available from Magnetek. When ordering any spare parts always quote the brake serial number.

Figure 3

Cross Section, Air Release Cylinder Repair Kit

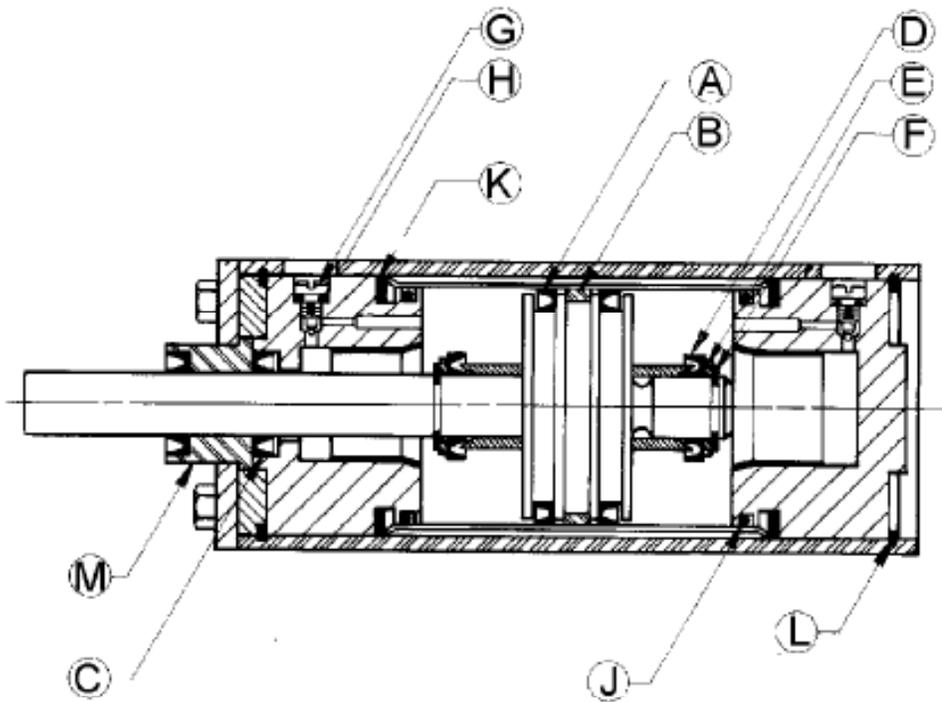


Table 1

Air Cylinder Repair Kit

ITEM	DESCRIPTION	QUANTITY
A	Piston Seal	2
B	Piston Bearing Ring	1
C	Rod Seal	1
D	Cushion Seal	2
E	Cushion B/U Washer	2
F	Cushion Retaining Ring	2
G	Cushion Adjusting Screw	2
H	O-Ring (Cushion Screws)	2
J	O-Ring	2
K	Wave Spring	2
L	Retaining Ring (Tie-Tube)	2
M	Rod Wiper Bushing Assembly	1