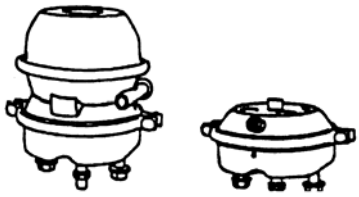


**MGM Brakes**
A Division of Indian Head Industries, Inc.

# TECHNICAL BULLETIN

## SUBJECT: Air Leak Test Procedure for Field Checking J-Series Actuators

**1. <u>Air Leak Test Equipment for MGM J-Series brakes.</u>**

Equipment consists of:

A) Pressure gauge that can read up to 10 Bar (2)
B) Shut-off valve that is leak proof (4)
C) 2 M of 5mm tubing
D) Tee fitting (4)
E) Tube fittings

**2. <u>Leak Testing Procedure - Parking Spring Air Supply Port 12</u>**

2.1. Connect the leak test system to parking spring supply port 12 per FIGURE 1

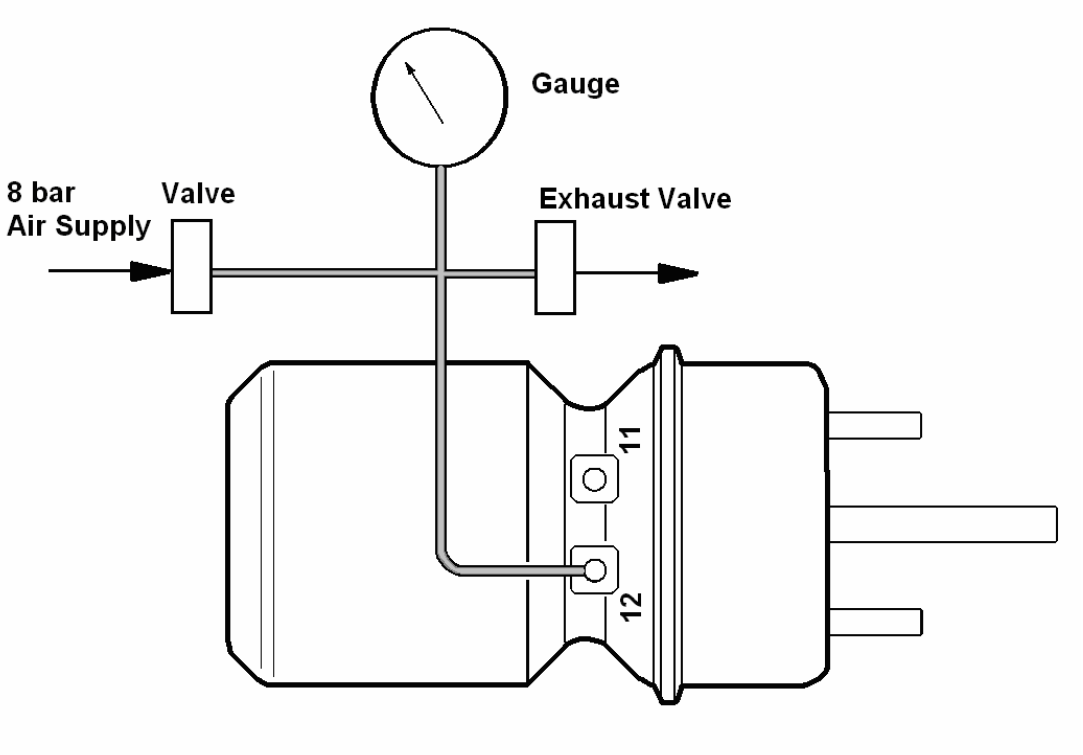
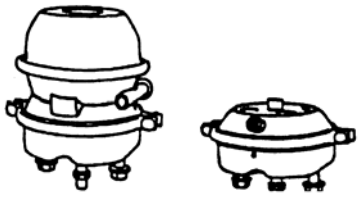



**FIGURE 1**

2.2. Close exhaust valve
2.3. Open the air supply valve. Note: Some minor movement (2.5 mm Max) to initially position the head may be noticed at the roll in area, this is normal and should give no concern. (Ref. Bulletin EB 06-005)
2.4. Uncage Spring brake (Release bolt in), Screw in the release bolt with air applied "do not over torque" **<u>Torque release bolt to 68 - 81 N-m (50-60 lb. ft.).</u>** ***<u>Power tools should not be used on the release bolt.</u>***





**SUBJECT: Air Leak Test Procedure for Field Checking J-Series Actuators**

2.5. Pressurize the brake to 8 bar by opening the air supply valve
2.6. Cycle unit 2 to 3 times by releasing and applying air pressure. Caution – be careful of rod movement
2.7. Pressurize the system to 8 bar and close the air supply valve
2.8. Wait for the system to stabilize; approximately 1 minute
2.9. Open the air supply valve to restore the test system to 8 bar
2.10. Close the air supply valve and begin counting the time (3 minutes)
2.11. Use a soapy water or air leak detection liquid solution to detect air leaks at the following locations (see FIGURE 3 and 4)

| Location | Cause |
|---|---|
| ① Roll-In Area | Damaged O-Ring<br>Flange Case Porosity |
| ② Pushrod Seal (Single unit) | Pushrod Seal Worn or Damaged<br>Scratch on Pushrod<br>Flange Case Porosity |
| ③ Service port (11) (Tandem unit) | Pushrod Seal Worn or Damaged<br>Scratch on Pushrod<br>Flange Case Porosity |
| ④ Breather Elbow | Main Seal Worn or Damaged<br>Porosity in Piston Casting<br>Pushrod and Piston Connection<br>Cracked Piston |
| ⑤ Release Bolt Threads | Pushrod and Piston Connection |

2.12. After 3 minutes, record the final pressure and compare against the following chart

| Spring Side | Minimum Allowable Pressure (Gauge) after 3 minutes (bar) |
|---|---|
| MJSxx24E | 7.7 |
| MJSxx28E | 7.8 |
| MJSxx30E | 7.8 |

## SUBJECT: Air Leak Test Procedure for Field Checking J-Series Actuators

2.13. Recage the power spring before fitting to vehicle or checking service side for leaks. ***CAUTION: DO NOT EXCEED 100 N-m (74 lb. ft.) MAX TORQUE***. ***Power tools should not be used on the release bolt.***

### 3. Leak Testing Procedure – Service Air Supply Port 11

3.1. Connect the leak test systems to spring supply port 12 and service supply port 11 per FIGURE 2
3.2. Close exhaust valves
3.3. Open the air supply valve to port 12
3.4. Pressurize port 12 to 8 bar (Spring caged)

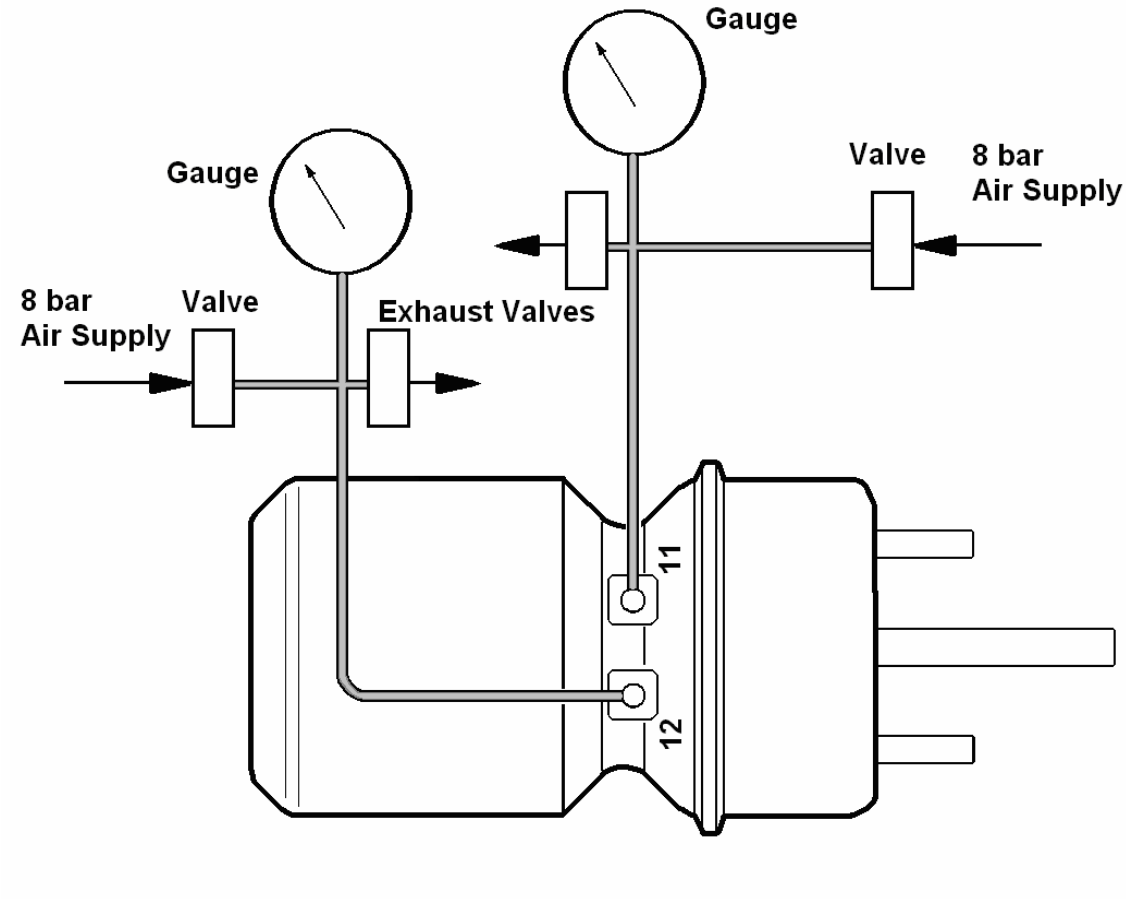
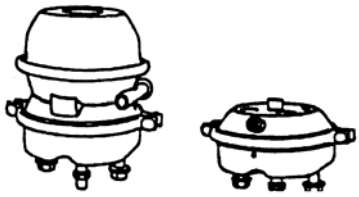



**FIGURE 2**

3.5. Open the air supply valve to port 11
3.6. Pressurize the service side (port 11) to 8 bar
3.7. Cycle unit 2 to 3 times by releasing and applying air pressure. Caution – be careful of rod movement





**SUBJECT: Air Leak Test Procedure for Field Checking J-Series Actuators**

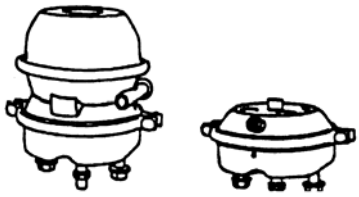
3.8. Pressurize the service side (port 11) to 8 bar and close the air supply valve
3.9. Wait for the system to stabilize; approximately 1 minute
3.10. Open the air supply valve (port 11) to restore the test system to 8 bar
3.11. Close the air supply valve and begin counting the time (3 minutes)
3.12. Use a soapy water or air leak detection liquid solution to detect air leaks at the following locations (see FIGURE 3)

| Location | Cause |
|---|---|
| ⑥ Clamp Band | Clamp Band Bolt Torque Low*<br>Pulled Diaphragm |
| ⑦ Elbow or Drain Hole | Damaged Diaphragm<br>Pulled Diaphragm |

*Note: Clamp Band bolt torque for 3/8-16 UNC is 41-47 Nm (30-35 ft-lbs)

3.13. After 3 minutes, record the final pressure and compare against the following.

| Service Side | Minimum Allowable Pressure (Gauge) after 3 minutes (bar) |
|---|---|
| MJS20xxE | 7.4 |
| MJS24xxE | 7.5 |
| MJS30xxE | 7.6 |



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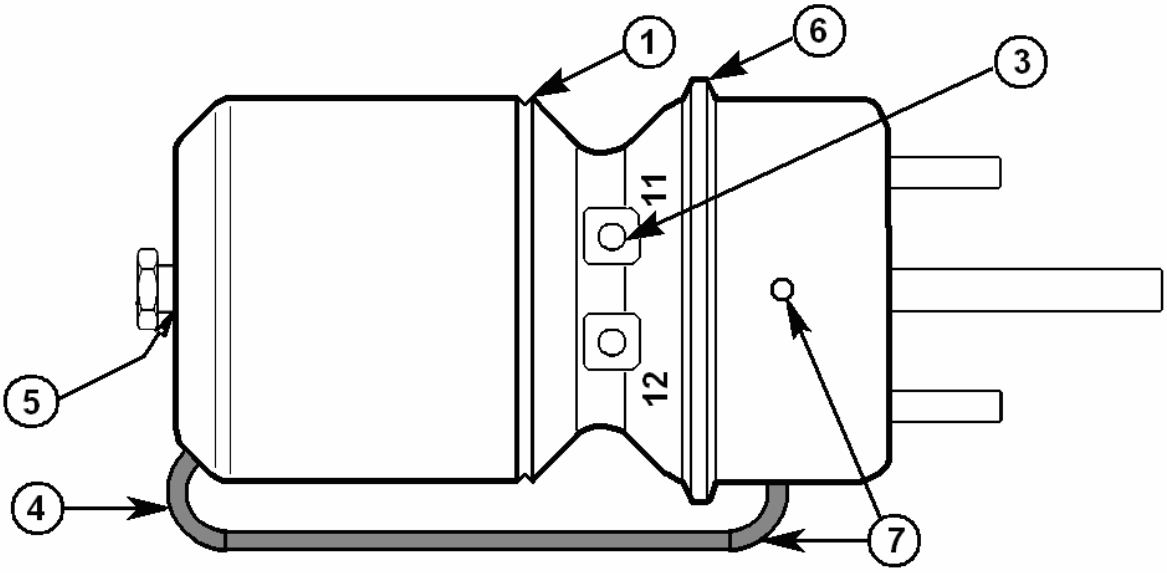


FIGURE 3


FIGURE 4