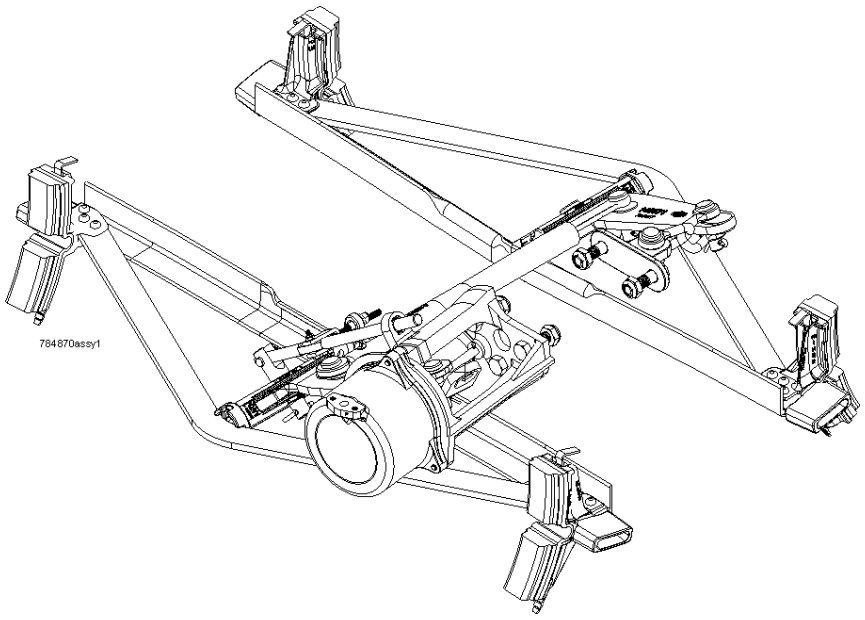
NEW YORK AIR BRAKE

Technical Guide For The Product User

BMB-60

Bolster Mounted Brake System



FEATURES:

- Uses standard 2" brake shoes
- Fits all 70, 100, 110, and 125 ton, right and left hand trucks
- 9" and 10" pneumatic actuator sizes
- Cylinder to Bolster mounting is more visible and accessible
- Lever ratios:
  Brake 1:3.75, Handbrake 1:5.53
  Brake 1:3.92, Handbrake 1:5.62
  Brake 1:4.48, Handbrake 1:6.13
- Slack Adjuster - Face Friction Clutch allowing for infinite adjustments of slack adjuster

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BMB-60 BOLSTER MOUNTED BRAKE SYSTEM

GENERAL DESCRIPTION

NEW YORK AIR BRAKE has developed a new bolster mounted brake system for railroad freight cars, designated BMB-60.

The BMB-60 equipment (see Figure 1) consists of a bolster mounted pneumatic actuator, a low maintenance, double acting slack adjuster (see Item 3, Page 4), two brake beams, two levers, a push rod, a slack adjuster trigger rod and a handbrake lever with a mechanical chain pull. The pneumatic actuator is available in 9 and 10 inch diameter cylinders for application on 70 to 125 ton railway trucks.

DESIGN ADVANTAGES

- Cylinder vibration frequency level (90-100 Hz) is outside the natural frequency range of 30 to 60 Hz.
- Cylinder body and non-pressure head are cast ductile iron. Process allows for adding or shaping areas to reduce stress levels.
- Cylinder to bolster mounting more visible and accessible.
- Slack adjuster trigger rod is captured by a spherical bearing.
- Securing the arm will eliminate wear when system is not loaded.
- The double acting slack adjuster maintains a constant 2 inch piston stroke at 50 psi resulting in uniform brake performance as brake shoes and wheels wear. The slack adjuster will extend to 16 inches, which will compensate for a total combination of shoe wear, wheel wear, clearance and lever ratios (see Page 4).
- BMB-60 uses standard 2 inch thick AAR brake shoes.
- All cylinders are equipped with a piston stroke indicator.
- The system is designed to operate on 70, 100, 110, or 125 ton, right and left hand trucks with 33", 36", or 38" wheel diameters and 5'8", 5'10", or 6'0" wheel bases.
- Lever Ratios: Brake 1:3.75, Handbrake 1:5.53
  Brake 1:3.92, Handbrake 1:5.62
  Brake 1:4.48, Handbrake 1:6.13
- The estimated air brake efficiency is 80%.
- The estimated handbrake efficiency is 85%.
- Designed and approved for use on AAR No. 18 and 24 beams.

BRAKE SHOE CHANGE OUT

Extension of the slack adjuster will increase automatically as the shoes and wheels wear.

Changing the brake shoes is easy and fast. With the brake released, use a pry bar and force back the brake head from the wheel, thus retracting the double acting slack adjuster.

Remove the brake shoe keys and replace the brake shoes. Secure the new brake shoes with the brake shoe keys. The slack adjuster will automatically adjust the brake shoe clearance to the proper value when the brakes are applied and released. This usually takes from one to three service applications.

INSTALLATION

1) To install the beams slide the brake beams in from the open guide side and reassemble the truck.
2) Secure cylinder and bracket to the bolster.
3) Secure active and inactive levers to the beams.
4) Install push rod into cylinder and then secure to active lever.
5) Secure slack adjuster to both levers.
6) Secure inactive lever to bracket.
7) Install the trigger rod to the cylinder and clevis pin.
8) Secure the link assembly to the trigger rod.
9) Adjust the slack adjuster trigger to set 2-3/4" piston stroke.

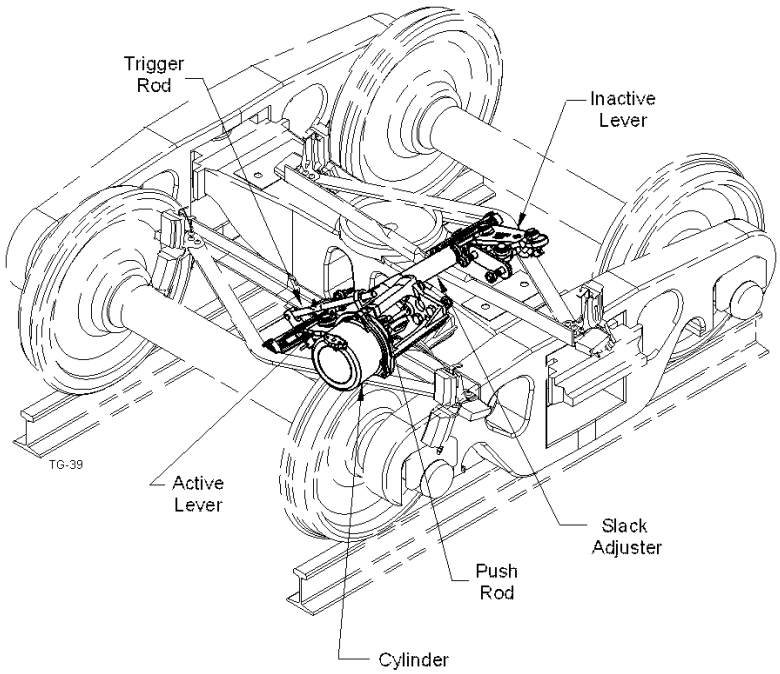


Figure 1

10) On models with the mechanical chain pull handbrake;
    a) Depending on handbrake location, a sheave wheel and bracket must be welded to a convenient place on the car body such that the chain pulls straight back on the lever.
    b) Attach the handbrake chain to the hole in the lever.
    c) A chain support may be needed to ensure the chain does not rub on the bolster.
11) The proper badge plate must be secured to the car in accordance with AAR standard S-374.
12) Piston stroke indicator decals (Figure 2) must be located on each corner of the car.

ADJUSTMENT

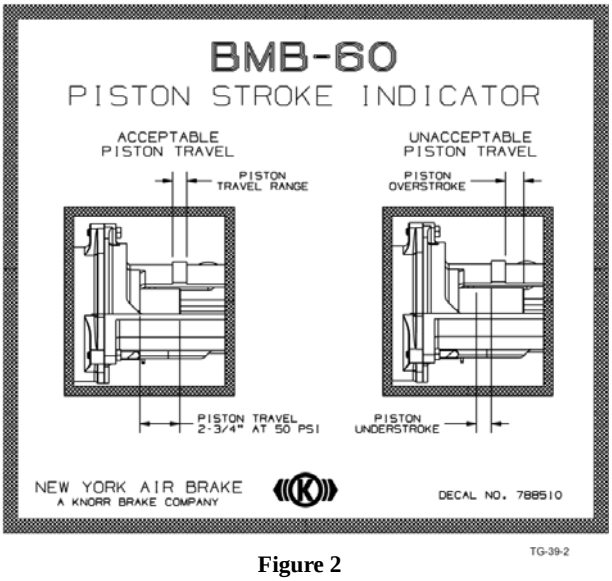


Figure 2

1) Adjustment is completely automatic and accomplished by the slack adjuster. One to three brake applications will properly set the slack adjuster.

2) Actual forces per truck (lbs).

Cylinder Size (inches)	Approx Piston Travel At 50 PSI (inches)	Brake Cylinder Volume (cubic inches)	Actual Shoe Force Per Truck (pounds at 65 PSI)		
			LR 1:3.75	LR 1:3.92	LR 1:4.48
9	2-3/4	174.9	12,400	12,970	14,820
10	2-3/4	216.0	15,320	16,010	18,300

PISTON TRAVEL MEASUREMENT

1) The slack adjuster is double acting. It automatically maintains a constant piston travel by taking up or letting out slack with each brake application. The piston stroke is approximately 2-3/4 inches with 50 psi brake cylinder pressure.

2) The piston stroke indicator is mounted on top of the non-pressure body of the pneumatic actuator (Figure 1 and 3).

3) Piston stroke is acceptable when the end of the piston is within the stroke indicator of the non pressure body with 50 psi of brake cylinder pressure (Figure 2).

4) Piston stroke is unacceptable (overtravel) if the end of the piston is beyond the stroke indicator with 50 psi on brake cylinder pressure (Figure 2).

For a detailed installation procedure for the complete system use NYR-470.

For detailed installation information for cylinders, levers, slack adjusters, and pins use Installation Drawing 788500 and IP-256.

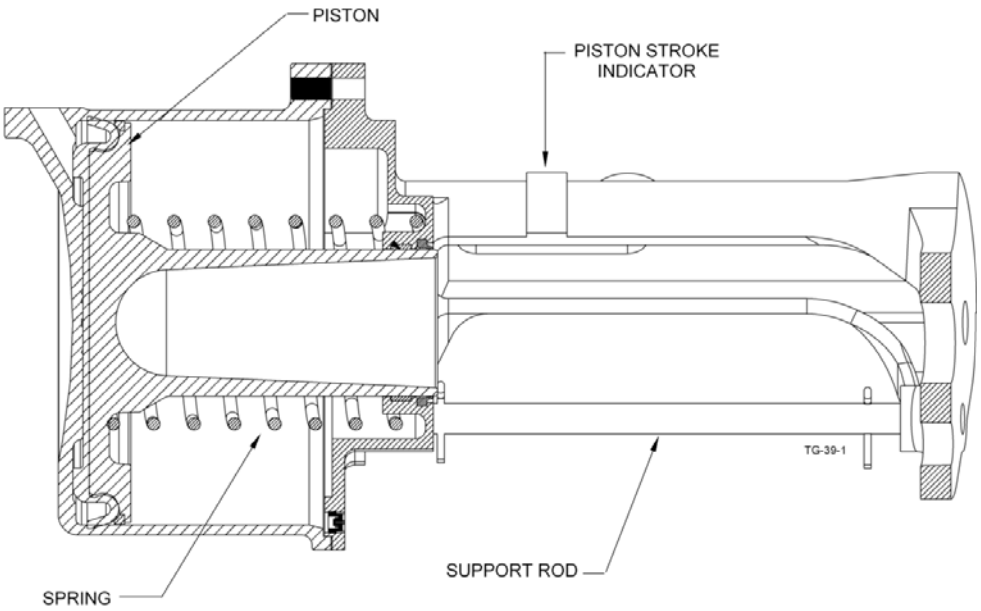
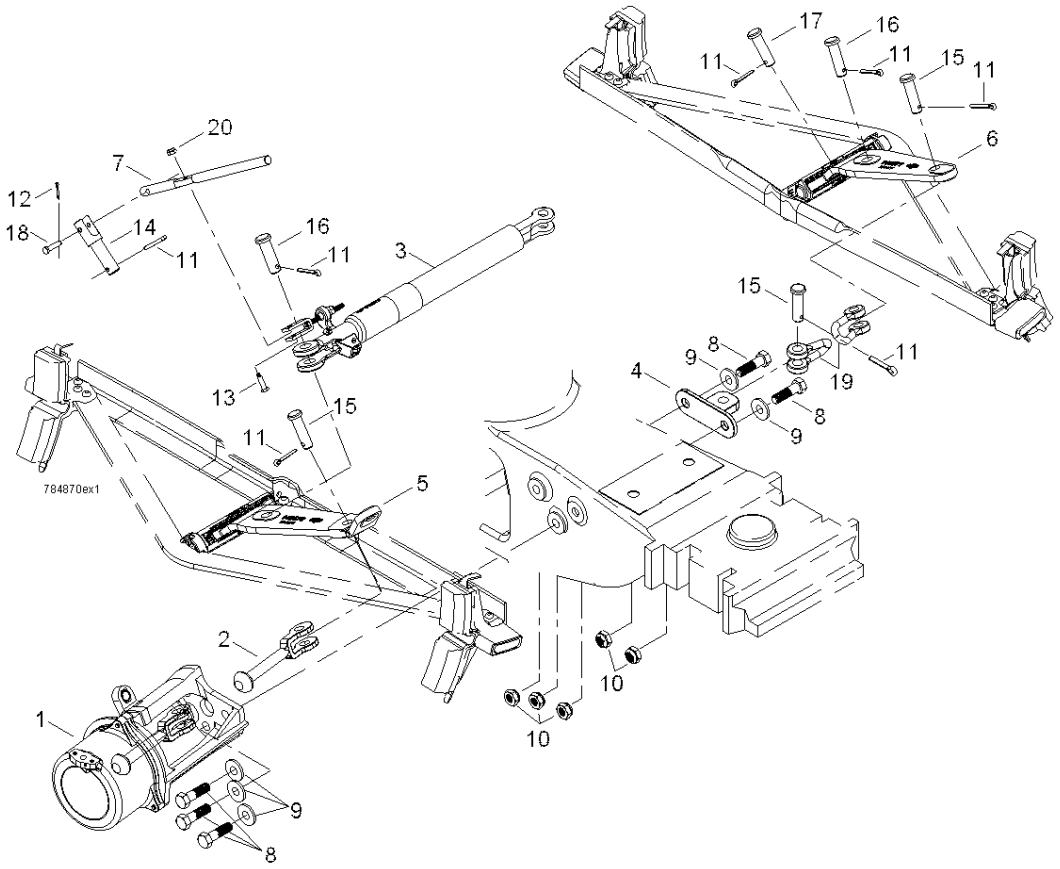


Figure 3

BMB-60 BOLSTER MOUNTED BRAKE SYSTEM



BMB-60 SYSTEM

Designed for four different lever ratios: **LR 1:3.75** **Lever Assembly Drawing 777131**
LR 1:3.92 **Lever Assembly Drawing 777798**
LR 1:4.48 **Lever Assembly Drawing 776302**

Item No.	Qty	Description	Item No.	Qty	Description
1	1	Cylinder Assembly	11	7	Cotter Pin
2	1	Push Rod	12	1	Cotter Pin
3	1	Slack Adjuster Assembly	13	1	Screw, Hex Head Shoulder
4	1	Deadman Bracket	14	1	Clevis Pin, Slack Adjuster
5	1	Lever, Active	15	3	Clevis Pin
6	1	Lever, Inactive	16	2	Clevis Pin
7	1	Trigger Rod, Slack Adjuster	17	1	Clevis Pin
8	5	Screw, Hex Head Cap	18	1	Pin
9	5	Washer, Flat	19	2	Clevis
10	5	Nut, Elastic Stop	20	1	Nut, Elastic Stop