



## INFORMATION AND PROCEDURE FOR CHECKING BRAKE CYLINDER INSTALLATION

The following information is to be used with the vehicle brake calculation information and brake cylinder manufacturers recommendations. If you are unsure of the recommended brake set up, please contact BPW technical services OE on 0116 281 6199 or email [services@bpw.co.uk](mailto:services@bpw.co.uk).



Front housing

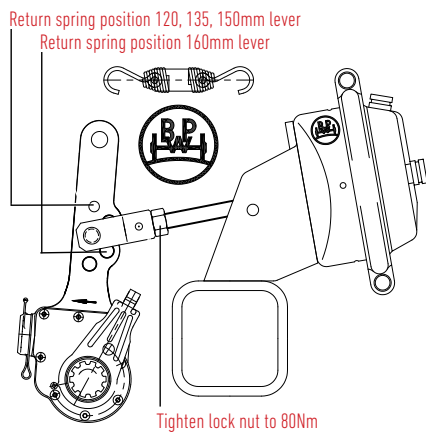


Rear housing

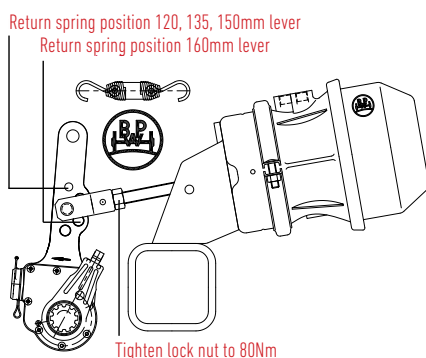
Depending on which type of brake chamber you are installing, bottom vent plugs should be removed upon installation. If these vent plugs are not removed as specified, incorrect operation of the cylinder will occur.

## BPW BRAKE CYLINDERS

### BPW Single Diaphragm Brake Cylinder (Drum Brake)



### BPW Double Diaphragm Brake Cylinder (Drum Brake)



### INSTALLATION INSTRUCTIONS

1. Ensure the brake cylinder type and part number conform to the brake calculation.
2. Using the tool provided compress the internal spring. Cut the push rod length as per the brake calculation ensuring that the cylinder is in the **fully off** position. Fit the clevis pin to the cylinder. Tighten the lock nut to 80Nm.
3. Ensure the mounting interface is clean and flat to accept the brake cylinder. Do not paint the air cylinder mounting bracket to brake cylinder interface.
4. Fit the brake cylinder to the correct mounting bracket position (as per the brake calculation) using the supplied mounting fixtures. Torque to 180Nm - 210Nm.
5. **Remove the lower plastic vent plugs from the front and rear housing.**
6. Connect the air pipe to the brake cylinder port.
  - Port 11 - Service Section
  - Port 12 - Secondary Section
7. Mount to the corresponding lever length position as per the brake calculation.
8. **Ensure the trailer is chocked and secure. Release the handbrake and remove the cylinder compression tool and stow. Apply the handbrake.**
9. Adjust the brakes as per manufacturers recommendations.
10. Install the return spring.
11. Test the brake cylinder for correct operation.

### SAFETY NOTICE

Under no circumstances should any attempt be made to open the spring brake unit due to risk of personal injury from the stored spring energy.

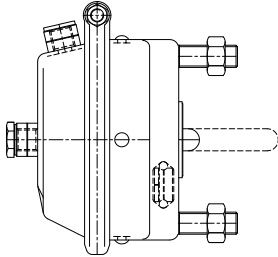
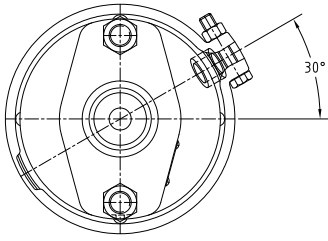
### NOTE

All blue text applies to the Double Diaphragm Brake Cylinder ONLY.



# BPW BRAKE CYLINDERS

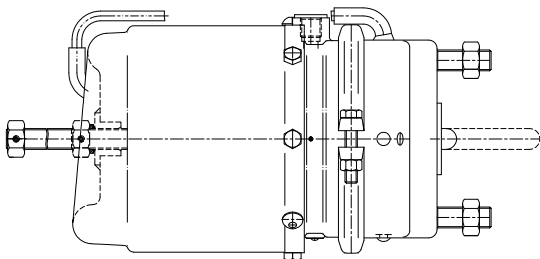
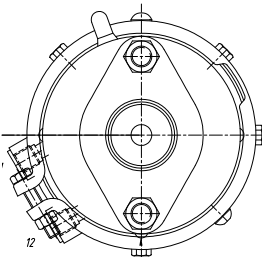
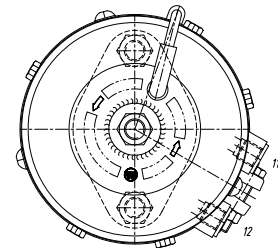
## BPW Single Diaphragm Brake Cylinder (Disc Brake)



### INSTALLATION INSTRUCTIONS

1. Ensure the brake cylinder type and part number conform to the brake calculation.
2. BPW disc brake cylinders are handed to ensure uniformity of the pipework installation.
3. Ensure that the caliper mounting interface is clean to accept the rubber seal of the brake unit. Do not paint the caliper to brake unit clamping interface.
4. If fitting to a new caliper ensure that the yellow plastic transit plug is removed from the caliper.
5. Fit the brake cylinder to the caliper using the supplied fixings. Torque to 200Nm  $\pm$  20Nm.
6. Connect the air pipes to the air port.
7. **Remove the lower plastic vent plug from the service housing.**
8. Adjust brakes as per manufacturers recommendations. Test the brake cylinder for correct operation.

## BPW Diaphragm/Piston Brake Cylinder (Disc Brake)



### INSTALLATION INSTRUCTIONS

1. Ensure the brake cylinder type and part number conform to the brake calculation.
2. BPW disc brake cylinders are handed to ensure uniformity of the pipework installation.
3. Ensure that the caliper mounting interface is clean to accept the rubber seal of the brake unit. Do not paint the caliper to brake unit clamping interface.
4. If fitting to a new caliper ensure that the yellow plastic transit plug is removed from the caliper.
5. Fit the brake cylinder to the caliper using the supplied fixings. Torque to 200Nm  $\pm$  20Nm.
6. **Remove the lower plastic vent plug from the service housing. It is important that the vent pipe is positioned to the top.**
7. Connect the air pipe to the brake cylinder port.
  - Port 11 - Service Section
  - Port 12 - Secondary Section
8. Wind in the cylinder compression bolt.
9. Adjust brakes as per manufacturers recommendations. Test the brake cylinder for correct operation.

### SAFETY NOTICE

Under no circumstances should any attempt be made to open the spring brake unit due to risk of personal injury from the stored spring energy.

## Brake chamber replacement any manufacturer:

Brake chamber replacement is a straight-forward repair but the following observations must be met. In-service testing other than a dynamic brake roller test once the foundation brake has been confirmed as serviceable is limited:

1. Type of chamber used in replacement is identical to the type quoted within the trailer brake calculation.
2. Plastic breather “bungs” are removed, breather positioning is observed and remains with openings pointing to the ground.
3. The respective brake chamber manufacturer instructions MUST be adhered to in every individual case – not all chamber manufacturers recommend the installation of washers under the securing nuts – bracket damage will occur if incorrectly installed.
4. Brake chamber pushrod lengths are adhered to in accordance with the trailer brake calculation.
5. The brake “set up” is confirmed when refitting – chamber position and clevis position are correct in accordance with the trailer brake calculation.
6. The yoke locknut must be tightened to 80Nm.
7. Brake adjustment is completed with full air supply axle elevated and handbrake released alternate wheel chocked – The slack adjuster collar MUST be fully depressed by the 19mm socket - lock the wheel when spinning and release the adjuster half a turn. Check 10-15% of effective lever length push rod travel.
8. Good practice would be to undertake a laden dynamic brake roller test to confirm compliance with the required minimum brake forces and imbalance allowances across all axles of the trailer.

### Consequences:

- Incompatible and non-compliance with type approval and brake calculation – DVSA enforcement issue.
- IM59 Leaking, defective, loose, incorrectly fitted, or inefficient in service – delayed, immediate, or even S marked prohibition – enforcement issue.
- Automatic brake adjustment may not take place and under certain conditions the brake can unwind if the adjuster lever is damaged during this process – enforcement issue.

All will impact on operator OCRS scoring.

### Further information:

Can be found at: [www.bpw.co.uk](http://www.bpw.co.uk)

Contact: [services@bpw.co.uk](mailto:services@bpw.co.uk)

Phone: 0116 281 6100 option 4 technical services.

### Other references:

DVSA guide to maintaining roadworthiness.

DVSA HGV and PSV inspection manual.

DVSA categorisation of defects.

All are available free to download.