

General Guidelines for installing Hydraulic Brake Components

MICO Hydraulic Brake Components are precision built devices and must be treated as such. The following guidelines must be followed at the time of installation to ensure optimum performance.

Where to Mount

To properly locate the brake component or brake line, you must . . .

1. Make it convenient for operator.
2. Use the shortest and most protected route. Protect components from road salts and general debris.
3. Avoid exposing components and lines in wheel compartments.
4. Avoid mounting near engine, exhaust lines, muffler or anywhere that heat may be generated. **NOTE: Excessive heat transferred to brake fluid may result in damage to lines or seals.**
5. Mount units that have to be bled lower than master cylinder and with bleeder screws on top to facilitate bleeding.

Internal Heat - Cause, Effect, Solution

It is possible for heat to come from within the system itself as in the case of heat generated by the friction of lining to drum when braking. This heat can cause the fluid to expand. If the fluid is then held captive, subsequent cooling and contracting can cause a pressure drop.

MICO Hydraulic Locking Devices that include a pressure accumulator are designed to dampen these fluctuations of pressure and to absorb the increase in pressure within its operating range.

Cleanliness

It is impossible to overemphasize the importance of cleanliness during installation. All lines, fittings and adjacent areas must be cleaned of dirt or road residue before any lines or fittings are disconnected. Special care must be taken so dirt and road residue are not allowed to enter the hydraulic brake system. This can contaminate the system and interfere with the proper operation of the brakes and other hydraulic components. Always . . .

1. Use good, clean, quality fluid. Improper or contaminated brake fluid may cause gummy deposits and softening and swelling of other rubber seals in the entire brake system. Such a condition must be corrected immediately.
 - a. Use brake fluid which conforms to SAE Spec. No. J1703 or DOT 3 or 4 if the product is used with a system utilizing automotive brake fluid.
 - b. Refer to vehicle manufacturer for fluid specification if product is used with:
 1. Mineral based hydraulic oil.
 2. Phosphate ester base fluid.
 3. Water/glycol fluid.
 4. Water-in-oil emulsion fluid.
 5. DOT 5 or silicone fluid.
2. Be sure fittings and seats are clean before making connections. Do not use sealants, tapes, teflon or cement compounds on any connections or fittings. These sealants or compounds can contaminate the hydraulic brake system and interfere with the operation of brake system components.
3. Clean top of master cylinder before removing filler cap.

How to Mount

To properly mount components and brake lines to withstand the most severe vibration conditions, always . . .

1. Follow the procedures outlined in Vehicle Manufacturer's Service Manual or SAE Standards when making new connections or adding to existing brake system. Use only steel brake tubing conforming to SAE specifications.
2. Use the proper size bolt for the hole and secure with a steel lock washer whenever possible.
3. Secure tubing to frame with proper size tube clamps to avoid possible fractures or fittings loosening and leaking.
4. Use good, factory flared lengths of steel tubing. Hand made flares, when used, must be double flared. Any flash or loose particles must be moved.
5. Use flexible brake line between frame and body.
6. Use grommets or some other means to protect brake lines that pass through the frame or firewall.
7. Make sure fittings and connections are in good condition and tightened to proper torque values as specified in the installation and service instructions.

Importance of Bleeding

The hydraulic brake system must be bled whenever any line has been disconnected. Air trapped in the system can cause spongy and inadequate brakes. There are two methods of bleeding hydraulic systems, pressure bleeding and manual bleeding. Both methods are acceptable and adequate but pressure bleeding is recommended if the equipment is available. Follow bleeding instructions as specified by vehicle manufacturer.

To properly bleed the system. . .

1. Be certain all fittings are tight to avoid leaking.
2. Depress pedal and open up bleeder screws to allow air to escape. Air will always seek the highest level.
3. Retighten bleeder screws and allow pedal to return.
4. Repeat cycle until pedal is firm.
5. Make several static brake applications and then repeat cycle once more.

Leak in the System

Even the smallest leak in a brake system will adversely affect the system. A leak will eventually deplete the reserve supply and reduce braking pressure. To help prevent leaking. . .

1. Check connections during bleeding and static brake processes to be sure they are tight.
2. Always reinstall new hoses, lines and fittings if they look the least bit questionable.
3. Brake hoses, brake lines, MICO locking device, brake components, cylinders, and all fittings must be routinely inspected for leaks, damage or wear. Adequate fluid levels must be maintained. In the event of any loss of fluid, the brake system must be carefully inspected for leaks.

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