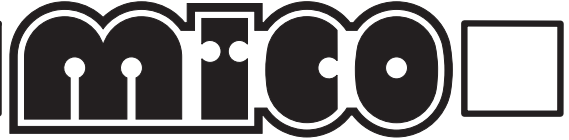


SINGLE LOCK

Installation and Service Instructions



BRAKE FLUID
MODEL NUMBER
02-640-023

MINERAL BASED HYDRAULIC OIL
MODEL NUMBER
02-640-122

READ GENERAL INSTALLATION GUIDELINES SHEET (FORM NO. 81-600-001) BEFORE PROCEEDING

⚠ WARNING

1. All MICO locking devices are **supplemental** safety equipment which provide additional brake holding action **when used with existing vehicle parking brake.**
2. The Low Pressure Warning Switch must be used in combination with an audible or visual alarm to signal any loss of system pressure. The Low Pressure Warning Switch is explained in the Operating Instructions (Form No. 81-640-039). **Do not disconnect Low Pressure Warning Switch.**
3. 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 that dirt and road residue are not allowed to enter hydraulic brake system. This can contaminate the system and interfere with proper operation of brakes and MICO locking devices.
4. Follow procedures outlined in Vehicle Manufacturer's Service Manual or SAE Standards when making new connections or adding to existing brake systems. Use only steel brake tubing conforming to SAE specifications.
5. Use only brake fluid conforming to latest SAE or DOT Standards. 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.
6. 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 components or MICO locking device.
7. All fittings and connections must be in good condition and tightened to proper torque values as specified in the Installation and Service Instructions.
8. Separate models of MICO locking devices are available for brake fluid and for mineral based hydraulic oil. Select model to conform with the type of fluid in system.
9. 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, brake system must be carefully inspected for leaks.
10. After installation, bleed system according to vehicle manufacturer's recommendations.
11. Follow INSPECTIONS and TESTS section as outlined in the Operating Instructions.
12. The self-adhesive warning label accompanying each MICO locking device must be affixed in cab in view of operator.
13. The Operating Instructions must be placed in cab of vehicle in a place available to operator.

MICO could not possibly know of and give advice with respect to all conceivable applications in which this product may be used and the possible hazards and/or results of each application. MICO has not undertaken any such wide evaluation. Therefore, anyone who uses an application which is not recommended by the manufacturer, first must completely satisfy himself that a danger will not be created by the application selected, or by the particular model of our product that is selected for the application.

MICO has made every attempt to present accurate information in catalogs, brochures and other printed material. MICO can accept no responsibility for errors from unintentional oversights that may exist. Due to a continuous program of product improvement, both materials and specifications are subject to change without notice or obligation.

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MOUNTING SINGLE LOCK

The MICO® Single Lock is remotely mounted and uses a cable and knob to lock and release brakes.

Locate the single lock for operator's convenience and allow for complete movement of knob/cable.

Tubing is not supplied because of the variation in each installation. Install tubing using shortest and most protected route. Use same size tubing when replacing a line, unless otherwise specified.

Thoroughly inspect port threads for any foreign material after removing vinyl plugs.

Bleeder screws provided must be used on installation. After installation the MICO® Single Lock may contain air. This air, if not removed, will cause an ineffective and perhaps inoperative brake system.

KNOB/CABLE OPERATED SINGLE LOCK

1. Locate single lock on vehicle frame. Allow for complete movement of linkage. Be sure that the MICO® Single Lock does not interfere with the other vehicle components.
2. Using the single lock mounting bracket as a template, drill necessary mounting holes.
3. Install bolts, lock washers, and nuts.

CABLE CONTROL ASSEMBLY INSTALLATION

1. Drill a 12.7 mm (0.50 in) diameter hole in dash panel (universal mounting bracket may be used instead).
2. Remove knob and lock nut from cable assembly.
3. Remove first 1/2 inch nut from cable assembly, leaving lock washer and second 1/2 inch nut on assembly.
4. Insert threaded end of cable through 12.7mm (0.50 in) hole from back side of dash panel.
5. Replace and tighten 1/2 inch nut 16.3-23.1 N·m (12-17 lb·ft) securing cable to dash panel.
6. Replace lock nut and knob allowing 6.4 mm (0.25 in) clearance between lock nut and first 1/2 inch nut.
7. Insert cable through firewall and route to cable clamp attached to single lock assembly. Avoid bends and kinks.
8. With cable held in position, move knob and check for binding. If binding, reposition cable.
9. Pull knob out to retract inner cable core approximately 152.4 mm (6.00 in). Trim entire cable to fit installation.
10. Insert end of sheath into cable clamp on single lock assembly and tighten set screw.
11. Install rubber boot on outside of cable housing, slide on at least 6.4 mm (0.25 in).
12. Push knob in and feed inner cable core through core clamp on operating arm of single lock assembly.

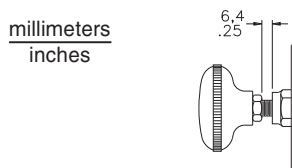


FIGURE 1

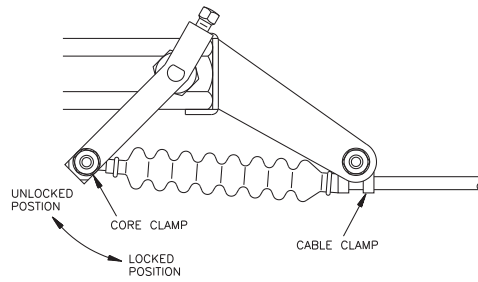


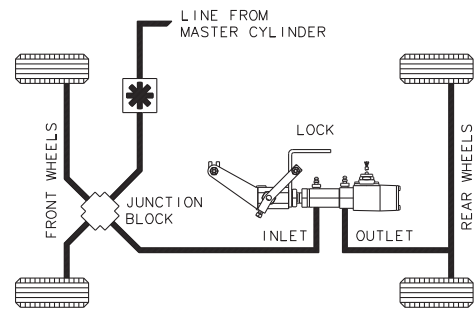
FIGURE 2

CONNECTING BRAKE LINES

⚠ WARNING

For all brake systems in use today, including antilock, the MICO Single Lock must be installed between last hydraulic component in supply line and wheels.

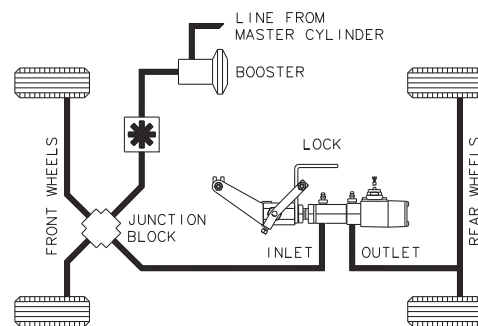
Single System



* If four-wheel lockup is desired, install lock in the line between master cylinder and junction block.

FIREWALL MOUNTED BOOSTER

FIGURE 3



* If four-wheel lockup is desired, install lock in the line between booster and junction block.

REMOTE MOUNTED BOOSTER

FIGURE 4

1. Disconnect line from rear wheels at junction block.
2. Install new line from the opened port of junction block to the INLET port of single lock. Install bleeder screws in upper ports of single lock.
3. Install new line in OUTLET port of single lock and connect to line from rear wheels using tube union provided.

TORQUE SPECIFICATIONS

All hydraulic line connections must be torqued to specifications listed below and be free of leakage.

Thread Size	Torque
3/8-24	10.8-20.3 N·m (8-15 lb·ft)
7/16-24	16.3-23.0 N·m (12-17 lb·ft)
1/2-20	16.3-23.0 N·m (12-17 lb·ft)
9/16-18	20.3-33.9 N·m (15-25 lb·ft)

Dual System

If vehicle has front disc/rear drum brakes, it may not be possible to lock adequate pressure in the rear wheels. For these vehicles we recommend installing MICO® Single Lock in front portion of system or preferably installing the MICO® Duallock or Dual 691 Brake Lock System.

Combination Warning Valve may not be used in some dual systems.

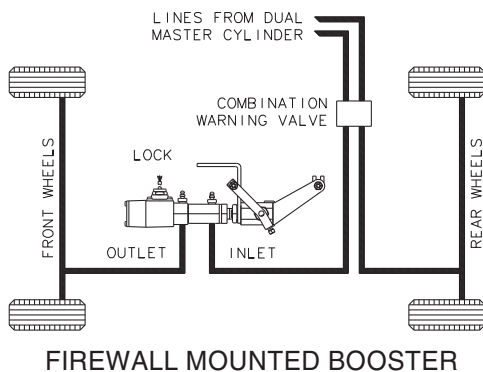


FIGURE 5

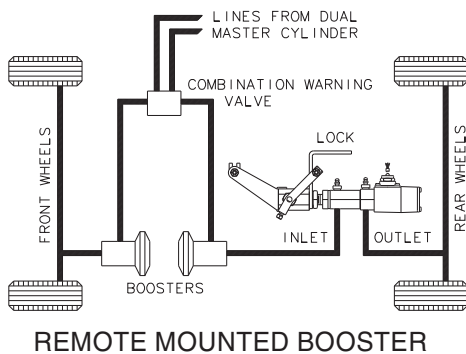


FIGURE 6

1. Disconnect line from wheels at combination warning valve.
2. Install new line from the opened port of combination warning valve to INLET port of single lock. Install bleeder screws in upper ports of single lock.
3. Install new line in OUTLET port of single lock and connect to line from wheels using tube union provided.

CONNECTING HORN RELAY AND LOW PRESSURE WARNING SWITCH

(Figures 7, 8 & 9)

⚠ CAUTION

If the vehicle does not have an auxiliary horn relay, install one as shown. The auxiliary horn relay must be used when the electrical load exceeds 3 amps. Do not make connections from warning circuit directly to battery terminal; pressure switch contacts will be damaged.

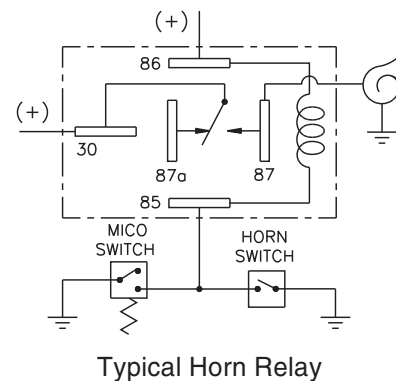
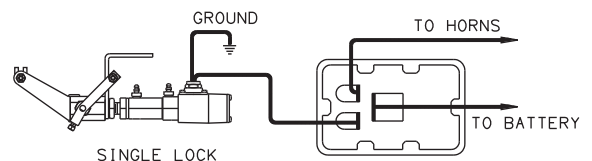
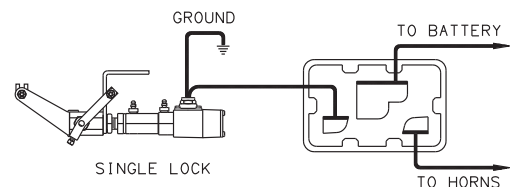


FIGURE 7



Using GM horn relay - Part No. 1-2480982

FIGURE 8



Using Ford horn relay - Part No. D6TZ-13853-A

FIGURE 9

BLEEDING PROCEDURE

See General Guidelines Sheet (Form No. 81-600-001) for bleeding instructions.

The hydraulic brake system must be bled whenever any line has been disconnected. 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 procedure and instructions as specified by vehicle manufacturer.

⚠ CAUTION

Use only Brake Fluid SAE J1703 or DOT Brake Fluid or brake fluid specified by vehicle manufacturer. Never reuse brake fluid that has been drained from the system.

⚠ CAUTION

Before moving vehicle, a firm pedal must be achieved when single lock is in full release position. If a firm pedal is not achieved, repeat bleeding procedure for single lock and brake system until a firm pedal is achieved. Make several brake applications with vehicle stationary and check fittings for leaks.

TROUBLE SHOOTING GUIDE

MICO® Single Lock is not field serviceable - do not attempt disassembly. If single lock is damaged by contaminants or impaired in any way return to MICO, Inc. for reconditioning or replacement and service other components accordingly.

PROBLEM	POSSIBLE CAUSE	RECOMMENDED SERVICE
System locked up and brakes will not release	Master cylinder or booster malfunction	Bleed at booster. If brakes release, problem is booster. Replace booster.
	Lock installed incorrectly between master cylinder and booster	Replumb lock so it is installed between vehicle brake and last hydraulic component in supply line.
Brake system will not hold pressure	Leaking conditions in tubing and/or fittings	Check all tubing and fittings in brake system. Tighten or replace where required.
	Leak in wheel cylinder or caliper	Check for moist condition. If moist condition exists replace or rebuild.
	Leak in lock valve	Replace lock.
Low Pressure Warning Switch operates inadvertently or will not shut off	Locked up pressure leaking off	See problems and conditions under heading "Brake system will not hold pressure".
	Wiring improperly installed or short in wires	Check installation to conform with installation diagram. Check for shorted wiring.
Spongy or soft brake pedal	Air in system, improper bleeding at time of installation	Follow good bleeding practices. Use pressure bleeder when available.
	Slow leak in system	Check fittings and wheel cylinder for leaks. Tighten or replace fittings. Replace worn or damaged wheel cylinder.