



INSTALLATION INSTRUCTIONS

FRONT DISC BRAKE KIT SUM-BK1524, SUM-BK1524-DS, SUM-BK1526, SUM-BK1526-DS
1964-1/2 - 69 Ford & Mercury

Thank you for choosing SUMMIT RACING EQUIPMENT for your braking needs. Please take the time to read and carefully follow these instructions to insure the ease of your installation as well as the proper performance of the complete system.

Before beginning your installation, please verify you have received all the parts indicated on the packing slip. If you believe anything to be missing or incorrect, please call our Customer Service Department at 330-630-0240.

To assure your installation will go safely and smoothly, have the following items on hand to assist you:

JACK & JACK STANDS
TORQUE WRENCH
TUBE WRENCHES
MALLET
WHEEL BEARING GREASE

LUG WRENCH
SOCKET SET
WRENCH SET
BRAKE FLUID
BRAKE CLEANER



THIS KIT IS DESIGNED FOR CARS WITH V-8 SPINDLES (5-LUG WHEELS) ONLY AND WILL NOT FIT CARS WITH 6 CYLINDER (4-LUG WHEELS) SPINDLES.

TIP: BEFORE BEGINNING INSTALLATION, SPRAY ALL FITTINGS AND FASTENERS WITH PENETRATING OIL.

Front Drum Brake Removal

- 1) Raise the car until the wheels and tires clear the floor and support the car on jack stands. Remove the wheel covers or hub caps and remove the wheel and tire assemblies from the drums.
- 2) Remove the grease cap from the hub. Remove the cotter pin, nut lock, adjusting nut, and flat washer from the spindle. Remove the outer bearing.
- 3) Pull the hub and drum assembly from the spindle. If the brake drum will not come off easily, retract shoes by inserting a narrow screwdriver through the brake adjusting slot in the backing plate and disengage the adjusting lever from the adjusting screw. While holding the adjusting lever away from the adjusting screw, back off the adjuster.
- 4) Drain system of all the brake fluid as follows:
 - a) Remove master cylinder cover. Use a syringe to remove as much fluid from the master cylinder reservoir as possible.
 - b) Attach hoses to front bleeder screws and place other end of hose in a container. Open bleeder screw.



BE CAREFUL NOT TO GET BRAKE FLUID ON THE PAINT. IT CAN CAUSE SEVERE DAMAGE!!

- c) When fluid stops draining, disconnect the flexible hoses from the rigid brake line at the frame and remove horseshoe clips. Use plenty of penetrating oil between the tube nut and the mating fitting. We strongly recommend the use of a tube wrench available from any tool supply store including Sears.
- 5) Remove drum brake as follows:
 - a) Remove flexible hose from the back of both brake cylinders and remove brake cylinder.
 - b) Remove entire drum brake assembly as a unit by removing the four (4) bolts attaching the backing plate to the spindle flange. Discard assembly.
- 6) Installation of Conversion kit (refer to Figure I)
 - a) Install caliper mounting bracket followed by rotor splash shield (over gasket, if there) on spindle. Make sure mounting bracket bosses face toward inside of car and bracket and shield are for the correct side of car (marked left or right).
NOTE: Calipers will mount towards front of car.
 - b) Attach shield and bracket to spindle with grade 8 bolts supplied in kit from the outside in so the head of the bolt is on the outside. Secure with locknuts and torque to 35-45 ft./lbs.
- 7) Rotors and Bearings (refer to figure II)
 - a) Remove the protective coating from the new rotor with brake cleaner (available at most parts stores).
 - b) Pack the inner (larger) bearing with wheel bearing grease, and place in inner cup (which is already in the rotor assembly). Pack grease lightly between the

lips of the grease seal and then install seal. Use a soft mallet or a piece of wood so as not to distort the seal.

- c) Install the rotor and hub assembly on the spindle.
- d) Pack and install the outer wheel bearing, washer and adjusting nut.
- e) The wheel bearing adjustment as follows is especially important with disc brakes: Rotate rotor while torquing spindle nut to 17-25 ft.-lbs. Back off the adjusting nut 1/2 turn and retighten to 10-15 in.-lbs. Selectively position nut retainer on adjusting nut so that a set of slots are in line with the cotter pin hole. Adjusting nut should not be rotated during this operation. Lock adjusting nut and retainer with cotter pin and install grease cap.



FOR THE BALANCE OF THESE INSTRUCTIONS, BE CAREFUL THAT ALL HYDRAULIC COMPONENTS ARE KEPT CLEAN AND FREE OF DEBRIS INSIDE AND OUT. REMEMBER; DIRT IS THE ENEMY OF HYDRAULIC SYSTEMS, AND WE WILL NOT BE RESPONSIBLE FOR SYSTEM FAILURES DUE TO AN UNCLEAN NSTALLATION !

8) Caliper Installation

- a) Place pads in caliper (lining material should face each other).
- b) Install stainless steel pad retaining splash shield and secure the shield to the caliper with the stainless retaining bolts and lock washers supplied. Torque bolts to 7-11 ft./lbs.
- c) Connect flexible brake lines to the caliper with one (1) copper washer between the hose fitting and the caliper.
- d) Slide caliper over rotor and install the caliper mounting bolts and torque to 45-60 ft/lbs. Check to insure that the rotor runs squarely and centrally between the two bosses of the caliper. There should also be approximately 0.090-0.120 inch clearance between the caliper body and the rotor outside diameter. Make sure bleeder screws point up.



IF CALIPER DOES NOT SLIDE EASILY INTO PLACE OR DOES NOT LINE UP CORRECTLY WITH MOUNTING BRACKET, MINOR TRIMMING OF THE SPLASH SHIELD MAY BE REQUIRED. IF TRIMMING IS REQUIRED, IT SHOULD ONLY BE DONE ON THE TWO EDGES OF THE SHIELD THAT ARE ADJACENT TO THE CALIPERS.

- e) Attach caliper flex line to frame (12 point bracket) and push horseshoe clip over end of hose to retain it.
- f) With both front wheels off the ground, turn wheels through a full left to right turn to insure that the hoses do not twist or take a double bend. If hoses do not bend correctly, remove them from the 12 point bracket and reorient them so that they bend with a minimum of twisting. Failure to complete this part of the installation may cause brake lockup in service since the thin wall interior hose may collapse and restrict the fluid from relieving caliper line pressure when the brake pedal is released.

- 9) To insure the proper function of your brake system several other parts will be required to complete the installation. If you did not purchase these parts at the same time as your brake kit they can be ordered from or your distributor. If you choose to source your own parts please keep the following points in mind.
- a) Master Cylinder
A master cylinder designed for disc brake applications must be used. Be sure the depth of the piston is correct for the pushrod length you are using. For manual brake applications a bore size of 15/16"-1" is needed. For power applications a 1" bore size will work correctly.
 - b) Power Booster
The vehicle must have a minimum of 16" of vacuum at idle for the booster to work properly. If you do not have 16"Hg you will need a vacuum pump or you will have to run a non power system. There are several different booster assemblies available for 1960's-70's Ford vehicles. Factors such as year, transmission, and engine size all determine which booster will fit your specific vehicle. In addition some vehicles will need a new pedal assembly and/or a pedal support bracket. With this in mind we strongly recommend that you contact us directly to select the proper parts your installation.
 - c) Proportioning Valve
Installation of a proportioning valve will be necessary to insure the rear brakes do not lock up prematurely causing a loss of control. This is necessary due to the increased pressure generated by the disc brake master cylinder. We recommend an adjustable proportioning valve to allow fine tuning of the proper rear brake pressure for your specific vehicle.
 - d) Brake Line Connection
All brake lines should be steel or stainless steel tubing. All flares should be SAE Inverted double flares. For some applications little or no plumbing changes will be necessary while others will require all new lines from the frame rail up to the master cylinder. Be sure all lines take smooth bends avoiding kinks or restrictions in the lines. Be sure to connect the brakes to the proper reservoir of the master cylinder. For GM cars the reservoir closest to the firewall usually feeds the rear brakes, while on most Ford and Mopar vehicles that reservoir feeds the front brakes. If you are using an aftermarket master cylinder check with the manufacturer for proper connections.
- 10) Filling and Bleeding system
- a) It is advisable to replace the brake fluid if the color is brown or muddy. This is due to water that has been absorbed by the fluid which will eventually corrode the brake lines and master cylinder. This absorbed moisture can also cause a vapor lock situation under extreme braking conditions. Flush system with clean brake fluid and replace with a good grade of disc brake fluid. DOT 3 or DOT 4 fluids are acceptable.
 - b) The simplest and most effective way to bleed your brakes is to use the gravity bleeding approach as follows:
 - 1) With calipers installed, make sure all fittings are tight and master cylinder is topped off.
 - 2) Open one bleeder screw at a time starting at the wheel farthest from the master cylinder and working your way back around the wheel closest to

the master. With bleeder screw open, observe bleeder. At first the fluid will begin to escape with intermittent air bubbles. When the air bubbles stop and a steady flow of fluid is observed for several seconds, close the bleeder valve and move on to the next wheel.



MAKE SURE TO KEEP A CLOSE WATCH OVER THE FLUID LEVEL INSIDE THE MASTER CYLINDER DURING THE BLEEDING PROCESS. NEVER LET THE RESERVOIR RUN DRY. ALWAYS KEEP IT AT LEAST 1/3 FULL.

- 3) After bleeding both wheels and topping of the master cylinder make 20-30 applications of the brake pedal. If a hard pedal is experienced, no further bleeding is required. If pedal is spongy, repeat bleeding process until a hard pedal is achieved.

FINAL INSPECTION

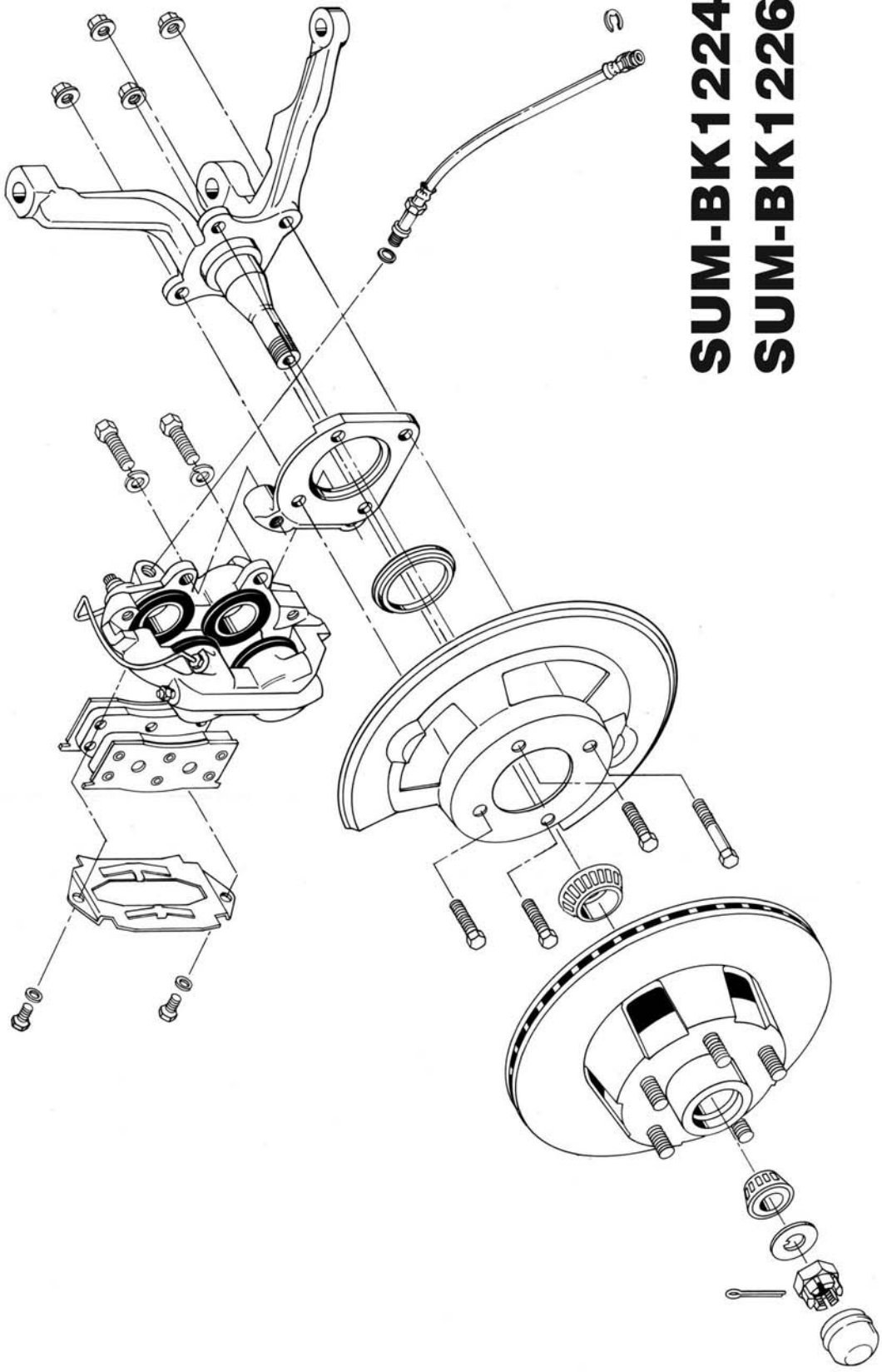
- 11) Once a hard pedal is achieved, all fittings and connections must be inspected to make sure there are no leaks. Also check the level in both reservoirs of the master cylinder and top off, if needed.
- 12) Put wheels back on the car and turn wheel by hand to insure that the wheel spins freely and does not interfere with any brake components. If any interferences are detected, DO NOT drive vehicle until problem can be identified and corrected.

DO NOT DRIVE IN TRAFFIC UNTIL THE BRAKES SAFELY STOP THE CAR IN A SAFE DISTANCE WITHOUT A SPONGY PEDAL FEEL!

BRAKING TESTS SHOULD ALWAYS BE DONE IN A SAFE OPEN AREA!

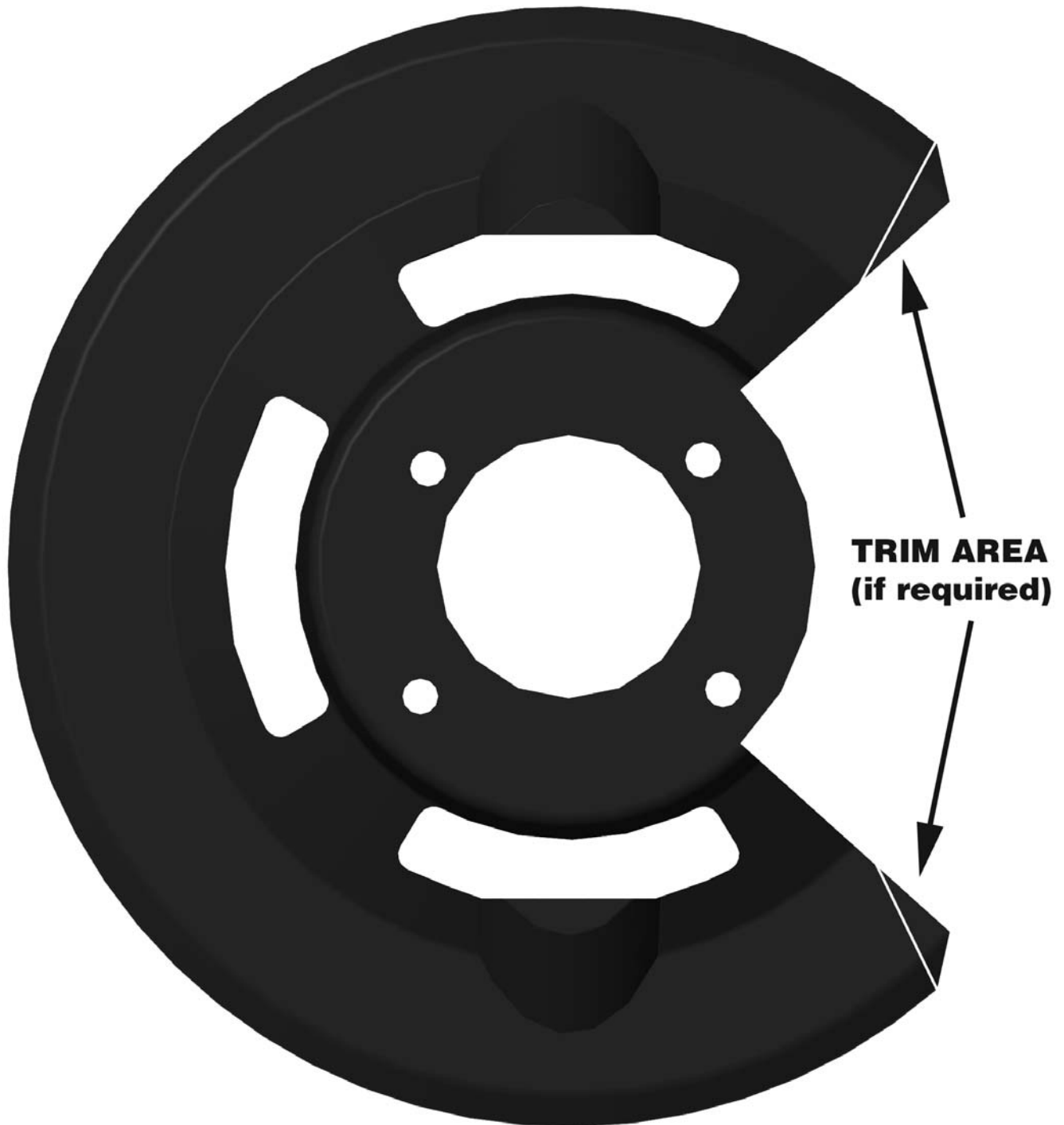
TECH LINE -- If technical help is required, please call 330-630-0240.

NOW ENJOY TRUE PERFORMANCE BRAKING!



SUM-BK1224
SUM-BK1226

POSSIBLE INTERFERENCE BETWEEN SPLASH SHIELD AND CALIPER.



Since this part is made by a vendor beyond our control, we occasionally encounter parts that fall outside ideal tolerance, which will cause interference between the shield and the caliper housing. If you experience this interference, slight trimming of the shields in the marked areas will correct the problem.

We have been told that this situation also occurred during the original production of 1964.5-67 models.

Solutions Guide

to commonly asked questions.

Why is my brake pedal soft?

1) In most cases, Air is trapped in the lines or calipers. Try re-bleeding the system. Do not force new fluid into new brake lines. It may foam and be very difficult to bleed. **Make sure that the bleeder screws on the calipers are facing upward!**

2) If all the air is out of the system, the pushrod from the booster may need adjustment, under the dash, to make it longer. Do not extend it too long or it will not allow the fluid to return, causing brakes to drag. Your pushrod may not be adjustable. If the pushrod can be made longer, try ¼ turn adjustments at a time. Summit stocks adjustable pushrods for many vehicles. In addition, the pushrod between the Booster and the Master Cylinder may need adjustment. Not all Booster to Master pushrods are adjustable.

3) You may have a bad Master Cylinder. Before you determine this, you should make sure that all the air is out of the system. When installing a new Master Cylinder, always bench bleed first. If you did not, take off the Master Cylinder and bench bleed it. (See Bench Bleeding Instructions below)

Why does the car pull to one side?

The side that the car is pulling to is the caliper that is working. Re-bleed the opposite side and try carefully stopping again.

Why does it feel like there is no Power Assist?

The Booster may not be getting enough vacuum to operate. On some high lift cams, the engine does not develop enough vacuum. The Booster needs at least 16" of vacuum to operate correctly at idle. If you do not have at least 16 inches of vacuum at idle, you may have to add a vacuum pump to your system.

Check for vacuum leaks. There may be leaks in the intake manifold or hoses that would cause low vacuum. The Booster may be bad. Do a vacuum test. If the Booster can retain a vacuum for three (3) minutes after the vehicle is shut off, it is not a bad Booster (refer to steps 1 & 2). All Master Cylinders must be bench bled in a vise before being installed on the vehicle.

How do you bench bleed a Master Cylinder?

Secure one of the ears in a vise so that you can take a large screwdriver and push the piston in. Fill the reservoir with clean fluid. Take a dummy line or our M/C bleeding kit and hook it up to the two ports. Front line to front and rear line to rear reservoirs. Slowly stroke the master and let it return slowly. You should see many air bubbles in the fluid. Repeat this step until you do not see any more air bubbles. Summit recommends ten (10) slow pumping strokes after you see no more air bubbles. This will insure a good hard pedal. (See Summit master cylinder bleeder kit instruction Sheet)

What is the best pad for my vehicle?

Your choice of pads should be determined by how and where you drive the vehicle. If you drive in heavy stop and go traffic you would need a different pad than someone who is road racing. Contact Summit for the correct application.

How often should brake fluid be changed? (street application only, not racing)

When brake fluid turns brown, it is time to change the fluid. The brown color indicates that the fluid has absorbed water and dirt. D.O.T. #3 & #4 fluids absorb water. Silicone brake fluid is not for track racing.

How can I tell which reservoir is the front or rear of the Master Cylinder?

The front reservoir is usually larger than the rear. In some cases, they are the same size. As a rule, for GM cars & trucks, the rear reservoir is for the rear brakes. On Ford cars & trucks, the front reservoir is for the rear brakes. On front wheel drive vehicles, the brakes are split diagonally. Each bowl of the master cylinder services one front wheel and one rear wheel. This will be important if you are installing a distribution block, proportioning valve, or residual valve. Hint: The larger bowl will feed the disc brakes.

Where is the best place to install a proportioning valve?

The best place to install a proportioning valve is after the distribution block. **Do Not install it between the Distribution Block and the Master Cylinder.** You will not be able to get a hard pedal. Anywhere after the Distribution Block and before the rear flex hose is acceptable for installation.

Why should the flex hoses be replaced? They look O.K. from the outside.

Flex hoses should be replaced every time the calipers are serviced. They flex up and down, just like a shock absorber. They are also under high pressure internally. Flex hoses have a rubber liner that will collapse over time. If it does collapse, it will act as a check valve and not allow fluid to return to the Master Cylinder.

Will my pedal get harder by replacing the flex hoses?

No. When the flex hoses are replaced, re-bleed the brake system. Normally what happens is that bleeding causes a harder brake pedal. A better bleeding job and taking your time will result in the same situation.

Are the rubber flex hoses expanding causing a soft pedal?

Not likely. A soft pedal is usually a sign of air in the system due to poor bleeding. Flex hoses have nylon webbing that is molded into the internal rubber. It is very strong and will hold up to 3,000 P.S.I. Installing braided stainless steel hoses is not necessary; it only improves appearance.

How much brake pressure does it take to stop my vehicle?

Most vehicles, power or non power brake, develop 1,200 P.S.I. When you panic stop or jump on the brakes hard, a surge of 1,400 P.S.I. can be achieved. If a factory proportioning valve installed on the vehicle, the rear brakes are only developing 600 – 700 P.S.I. Drum brakes require lower pressure because they grab more quickly. When rear disc brakes are installed, the rear brake pressure may be increased to 800 – 1,000 P.S.I. or more. A good way to check the pressures and to see if the system is working correctly, use a pressure gauge screwed into the bleeder port. A vehicle with less than 600 P.S.I. will not stop!

How tight should the wheel bearings be?

The front bearings should always be torqued. Not just hand tightened. Bearings usually require 12-15 Ft./Lbs. of torque. Then you will probably need to back off a little to align the cotter pin hole. Do Not over tighten; the bearing life will be shortened. This procedure only applies to rear wheel drive vehicles with separate bearings and races. On vehicles with one piece sealed bearing assemblies or hub assemblies, refer to a service manual.

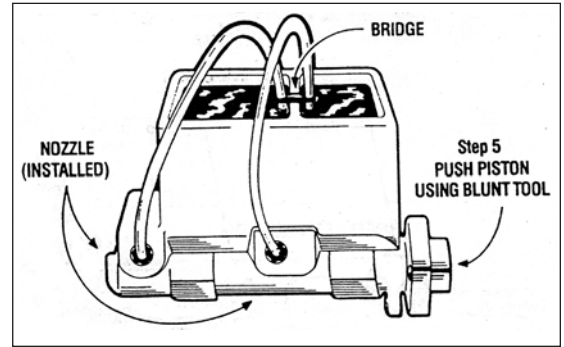
What type of differential fluid should I use in my rear axle?

If you have positraction, use a Hypoid or Limited Slip additive that is designed for your particular rear end. If you do not have positraction, any type of 80 –90 weight gear lube is acceptable. Fluid should be changed often if you are trailering or any type of extreme usage. This fluid does brake down with time and usage.

How and why do I bench bleed a master cylinder?

When installing or replacing a master cylinder, it is critical that all air is removed from the master cylinder. This can easily be done by bench bleeding the master cylinder prior to installation. Using the master cylinder bleeder kit:

- 1) Place your master cylinder in a vise by the ears (not body). Make sure it is level.
- 2) Attach a piece of clear plastic hose to the short end of one of the plastic nozzles. Do the same to the other hose and nozzle.
- 3) Clip the plastic bridge to the wall and push the ends of the hose through the holes so they are SUBMERGED in the reservoir on either side of the wall.
- 4) Press the tapered end of the nozzle FIRMLY into the cylinder port hole with a twisting motion. Repeat this procedure on the other port hole.
- 5) Fill the reservoir with CLEAN brake fluid recommended by the manufacturer.
- 6) Using full strokes, push the piston in, then release. Do this until ALL the air bubbles have disappeared from the clear plastic hose. **(CAUTION-MASTER CYLINDER WILL NOT BLEED PROPERLY UNLESS HOSES ARE SUBMERGED IN BRAKE FLUID UNTIL THE BLEEDING PROCESS IS COMPLETED.)**



Now mount master cylinder and avoid brake fluid leaking out of front and rear ports during installation.

Bleeding steps for Dual Port Master Cylinder

If you have a master cylinder with dual port holes (4 port holes - 2 on each side), it is necessary to bleed both port sides of the master cylinder. If both sides of the master cylinder are not bled, there will be air trapped in the master cylinder and your brakes will not function properly.

To bleed dual port master cylinders:

- 1) Follow steps 1 - 6 above on the side you will be hooking the brake lines to. Plug the other side.
- 2) Once the air bubbles are no longer visible in the plastic hose, open the bleeder screws in the supplied plugs and allow the mater cylinder to gravity bleed. **DO NOT** push the master cylinder piston in while the plugs are gravity bleeding.
- 3) When clear, steady streams of fluid are coming out of both bleeders, close and tighten the bleeders. Give the master cylinder piston several strokes, making sure there are still no bubbles present in the clear plastic tubes.
- 4) Remove the tubes and plastic fittings and mount the master cylinder on the vehicle being careful not to spill brake fluid on any painted surfaces.