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WARNING Proper operation of your brakes is essential for your safety and the safety of others. Any brake service should be performed **ONLY** by persons experienced in the installation and proper operation of brake systems. It is the responsibility of the person installing any brake component or kit to determine the suitability of the component or kit for the particular application. After installation, and before operating your vehicle, be sure to test the function of the brakes under controlled conditions. **DO NOT DRIVE WITH UNTESTED BRAKES!**

IMPORTANT Take time to read all the literature that came with this kit. Before beginning installation check the provided list of parts against what you received to ensure that all parts are present. While this kit was designed to make the process of changing brake parts as simple as possible, **NOTE: WITH SOME KITS IT MAY BE NECESSARY TO MAKE MINOR CHANGES TO YOUR CAR! READ ALL WARRANTY DISCLAIMERS AND RETURN POLICIES INCLUDED IN THIS KIT PRIOR TO INSTALLATION!**

NOTE Always utilize safety restraints when operating the vehicle. The installation of disc brakes will require the use of 15" wheels. Any attempt to install disc brake with a 14" wheel will be the customer's responsibility.

NOTE This kit is an aftermarket solution. It is not intended to be a direct installation or OEM replacement. Due to changes in production in certain years, your car may require modifications beyond these instructions for this kit to install properly.

PARTS INCLUDED WITH THIS KIT:		
PART #	DESCRIPTION	QUANTITY
CB5558	Caliper Bracket	2
5514	Rotors	2
HSDBK-10mm	Brake hoses	2
HWK5558	Hardware Kit	1
A6	Inner Bearings	2
A2	Outer Bearings	2
7934	Seals	2
20618101	Dust Caps	2
4039/4040	Calipers	2
PERFORMANCE UPGRADE PARTS:		
5514LX/5514RX	High performance drilled and slotted rotors	2
HSDBKSS-10mm	Stainless steel braided hoses	2
OPTIONAL PARTS (NOT INCLUDED WITH KIT, AVAILABLE FOR SEPARATE PURCHASE):		
	Power Booster	
	Master Cylinder	
	Proportioning Valve Kit	
	Vacuum Hose & Fittings	

PREPARING YOUR VEHICLE TO INSTALL YOUR BRAKE SYSTEM UPGRADE

1. Rack the vehicle.
2. If you don't have a rack, then you must take extra safety precautions.
3. Choose a firmly packed and level ground to jack up the vehicle.
4. Chock the rear wheels.
5. Jack the vehicle up and support it with jack stands and secure the pins.
6. Set the parking brake and put the transmission in park if automatic, reverse if manual transmission.
7. The front wheels should be allowed to free hang to relieve tension on the coil springs.

IMPORTANT NEVER rely on jacks to support a vehicle! Always test the steadiness of your stands that are supporting the vehicle before attempting to work on a raised vehicle!

PREPARING YOUR PARTS

1. Locate the spindles and the inner wheel bearings. In order to install the inner bearings on new spindles, often you must remove .0004" from the inner bearing seating diameter. This can be accomplished with 240 grit emery paper and a rotary sanding motion on the spindle. Be sure to sand around the radius of the spindle which avoids flat spots. Continue this operation until the inner bearings can be slid onto the spindle without binding. Remember to use brake parts cleaner to keep all surfaces free of debris. Also use a lubricant such as bearing grease to ease them on. Do not grind or file on the spindle!
2. Pack all bearings with hi-temp wheel bearing grease. A bearing packing tool is ideal for the job. (See Figure 1)
3. Adhere the brake pads into place using disc brake quiet and bend outer brake tabs over calipers accordingly. Let them cure!
4. Mate up each threaded nut with its' designated bolt or threaded surface.
5. Group your kit parts to speed up the installation.
6. Check your quantity of components versus the items list.



FIGURE 1

COMPONENTS TO INSPECT, REPLACE OR UPGRADE DURING INSTALLATION OF DISC CONVERSION KITS

Tie rod ends and nuts	Adjustment sleeves	Control arm shafts, mounting bolts, & nuts
Control Arms	Idler arm and nut	Pitman Arm and nut
Upper Ball Joints and nuts	Lower Ball Joints and nuts	Shocks and hardware
Residual valves	Metering valves	Proportioning valves
Brake lines	Stainless steel brake lines	Stainless steel hardware

SUGGESTIONS:

- » Take the time to identify any suspect parts that are not included in this kit.
- » Consider making upgrades such as converting to polyurethane bushings, performance shocks, tubular a-arms, etc.
- » Plan any Installation (s) of replacement parts during the various stages of the drum to disc conversion process.

INSTALLATION OF THE DISC BRAKE KIT REQUIRES THE USE OF THE FOLLOWING TOOLS & CHEMICALS:

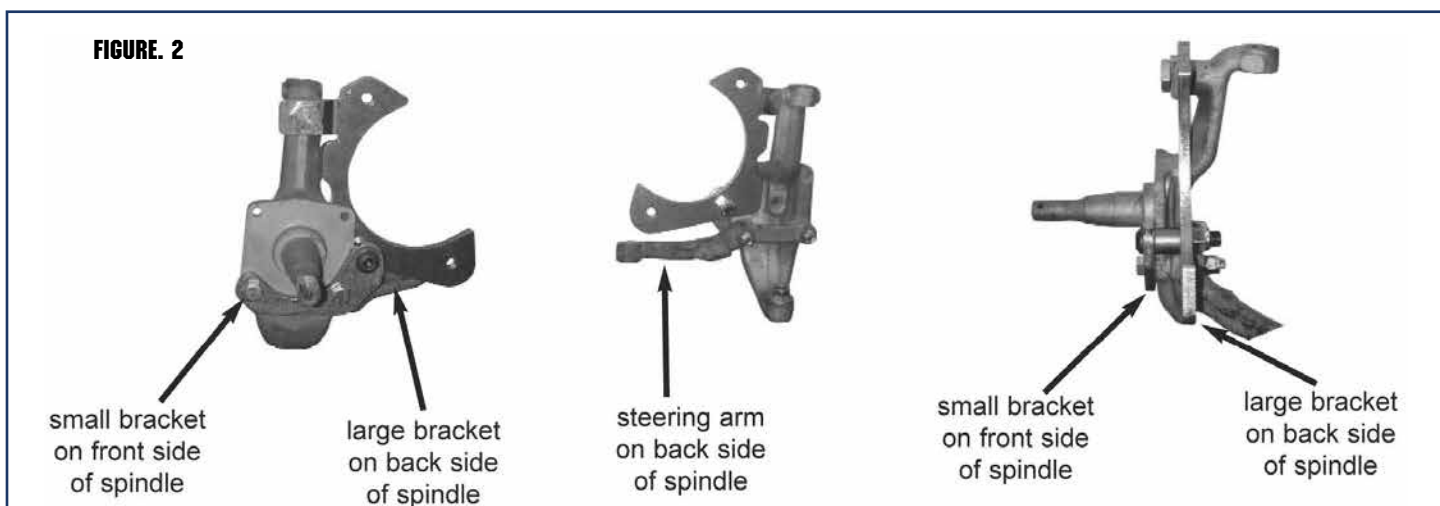
Wheel bearing seal driver	Drum brake tool	Flare wrench set	Wheel chocks
3/8" ratchet drive set	3/8" Allen wrench or socket	Jack stands	Brake spring pliers
Box end wrench set	Ball joint fork	Tire iron	Brake bleeder wrench
Pliers	Screwdriver	Snips	Grease gun
Universal Bearing Packer 555-W1218	Line bending tool 555-80086	Disc brake quiet	Wheel bearing grease
Ball pein hammer	Disc brake pad spreader tool	Brake Fluid	Brake cleaner
Caliper slide grease	Hand cleaner		

INSTRUCTIONS

INSTALLATION OF BRACKETS, ROTORS, & CALIPERS

1. Remove the stock Chevy front drums, brakes and backing plates. Clean and inspect the spindles for cracks or damage. Be sure to thoroughly clean out the 5/8" threaded hole at the top of the spindle. This is extremely important. Use a non oil based cleaner such as Brake Clean. Clean the threads out with a bottoming tap if necessary.
2. In order to install the inner bearing on some spindles, you must remove .0004" from the inner bearing seating diameter. This can be accomplished with 240 grit emery paper and a rotary sanding motion on the spindle. This operation must be continued until the inner bearing can be slid onto the spindle without binding. Do not try grinding or filing the spindle. It only takes a few minutes with emery paper.
3. Once the bearings have been fitted to the-spindle, take the small support bracket (See Figure 2) and install it on the outer surface of the spindle in the two lower holes. Install the shorter 7/16-20 bolt (2 1/4") in a similar manner through the front hole. Install the locknuts supplied in the kit and tighten.

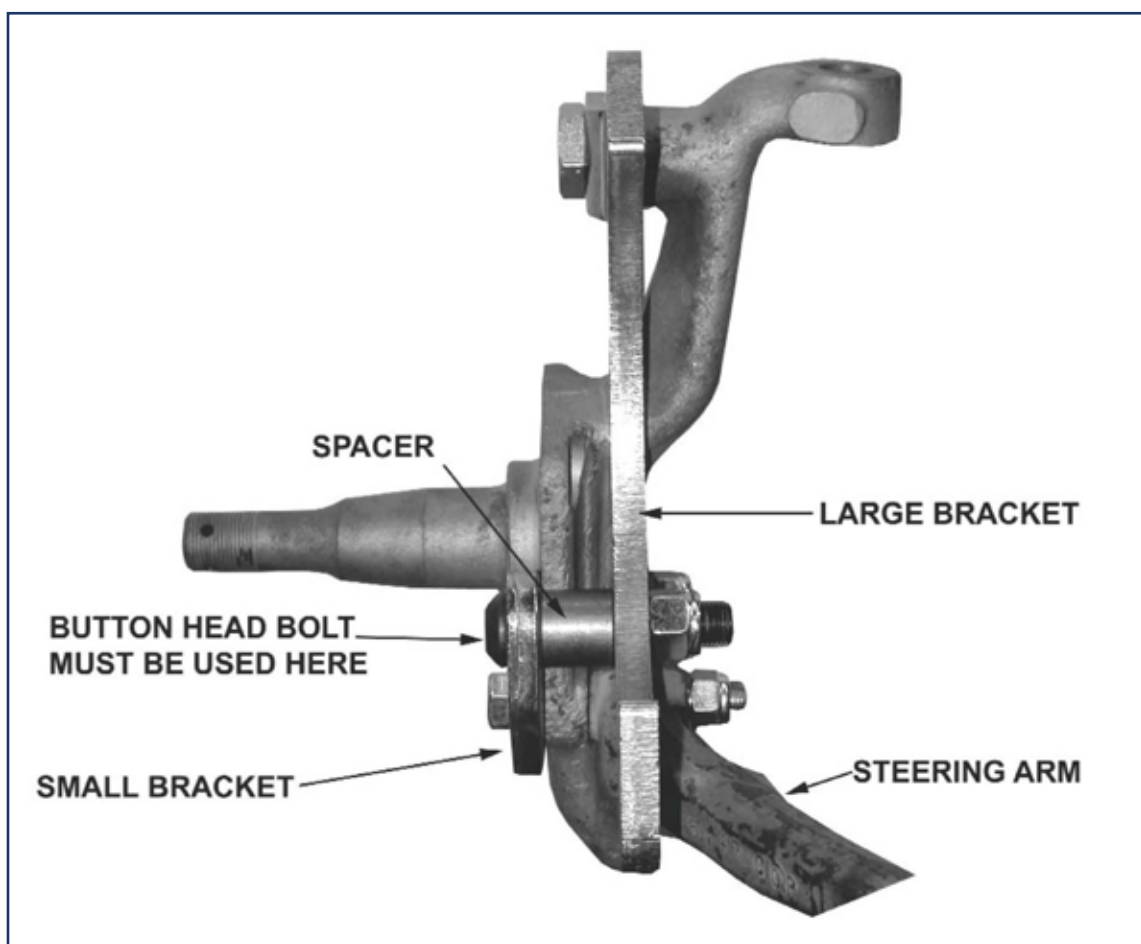
FIGURE. 2



4. Take the appropriate caliper bracket (LH or RH as marked on the inside of the bracket) and install it as per figure 2. Install the 1/2" x 2 1/2" bolt and support bracket as shown. Install the 1/2" locknut but do not tighten it yet, just snug it up.
5. Take the 5/8 x 1" bolt and install it through the bracket into the spindle. Do not tighten it yet, just snug it up.
6. Take the rotor, clean it and inspect as necessary. Install the inner bearing with grease followed by the 7934 S seal.
7. Install the rotor on the spindle followed by the outer bearing. Put the bearing retaining washer and nut-on the

spindle to hold everything in place temporarily.

8. Turn the rotor on the spindle and check for any interference or minimal clearance between the inside surface of the rotor and the attaching hardware.
9. When you have adequate clearance, make sure the threads in the spindle are clean. Install the bolt, tighten it and the 1/2" bolt previously installed.
10. Re-check all the bolts for tightness and re-install the rotor and. outer bearing. Install the new bearing retainer washer followed by the special wheel bearing retaining nut supplied in the kit. Do no attempt to use the stock bearing- nut, the cotter pin hole will not line up. Adjust the wheel bearings and install the cotter pin. Check for clearance and freedom of movement once more.
11. Install the caliper on the bracket (remember there is a left hand and right hand caliper) using the standard GM caliper mounting belts. Tighten bolts to recommended GM torque specifications. BLEEDER SCREWS MUST FACE UP ON THE CALIPERS.
12. Repeat the procedure for the opposite side.
13. Connect the calipers to the brake lines using the supplied hoses.

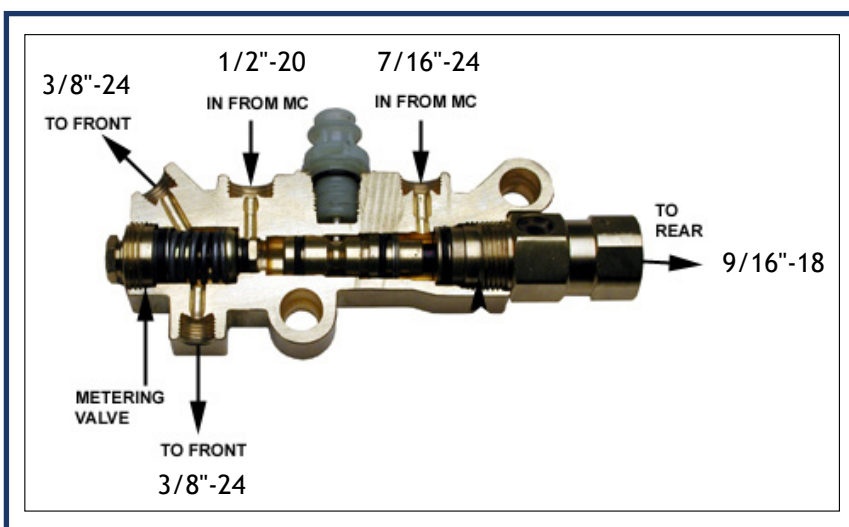
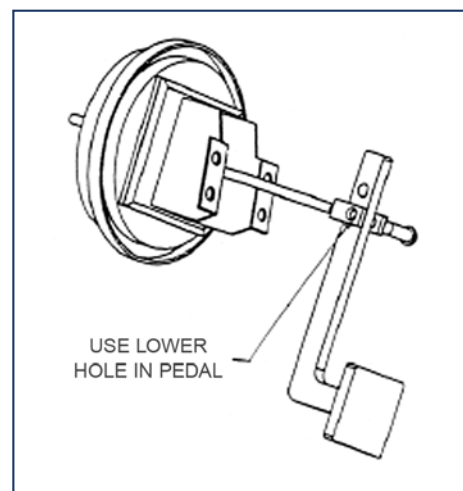


BOOSTER & MASTER CYLINDER INSTALLATION

1. Disconnect the old master cylinder lines (Remember, if operating around painted surfaces, avoid brake fluid to paint contact). Remove any valves that are installed in the drum system and discard. If the vehicle has a pressure differential switch, it must also be removed. Remove the old master cylinder.
2. When changing from a manual brake system to a power system, the clevis assembly that attaches the push rod to the brake pedal must be removed and lowered one inch. If two holes are in the pedal use the lower hole for the power booster rod attachment. If only one hole exists from the manual system a second hole must be drilled one inch lower. Remove the clip and pin that attaches the clevis to the brake pedal and retain

them. If the lower hole does not already exist, one must be drilled. Screw the clevis assembly onto the new push rod on the booster about 1/2".

3. Mount the booster to the fire-wall with the existing studs or bolts. Place the clevis assembly into the lower hole in the pedal and install the pin and clip.
4. Install the proper fitting into the intake manifold for vacuum. Connect the vacuum hose from the engine to the power booster. **YOU WILL NEED AT LEAST 18" VACUUM TO OPERATE A BOOSTER.**
5. Bench bleed the master cylinder with the supplied bleeder kit.
6. Install the master cylinder onto the booster.
7. Mount the combination valve to supplied bracket and attach the bracket and lines as shown in fig. 4.
8. You will now need to run two lines from the supplied combination valve to the frame. Tie the lines into the existing front and rear lines with brake line couplers. You may run two separate lines from the combination valve to each front wheel or you may plug one outlet to the front, run one line and then split it to each front wheel.



INSTALL LINES AS SHOWN IN DIAGRAM:

The most common proportioning valve plumbing is shown. An alternative plumbing method is to plug off the top front line and have the bottom front line go to a "T" fitting. From the "T" fitting, the front lines are then split off to the left and right calipers.

TESTING THE PROPORTIONING VALVE FOR PROPER OPERATION:

1. Use a test light by attaching a clip to a positive contact on the vehicle and touch the point of the tester to the electrical connection of the combination valve. If the light does not come on, the valve system is operation correctly and no further testing is required.
2. If the light does come on, this indicates that the pressure differential valve is stuck in the front or rear position.
3. Bleed the brake system to determine if the front or rear lines are blocked off. Set up one front wheel and one rear wheel for bleeding at the same time. Crack both bleeder screws and gently pump the pedal a few times. The blocked side will trickle fluid out when the bleeder screw is cracked and the pedal pressed. An unblocked line will squirt fluid out the bleeder.
4. The lines that are clear must be left open and the blocked lines should have the bleeder screws tight to cause pressure to build up on that side. Be sure to use the standard bleeding procedures to prevent air from entering the system.
5. Slowly press the pedal with steady pressure a number of times until the light goes out; this will center the differential valve. You may also hear a pop come from the proportioning valve. This is the metering valve returning to its equalized position. When the light goes out, close the bleeder screw.

TEN REASONS FOR A POOR BRAKE PEDAL

CAUSE	REASON
Bleeder screws on calipers not on top.	The bleeder screws on calipers must be at the 12:00 position on the caliper to allow all the air to escape during bleeding. A very common mistake installers will make is to reverse the side the caliper goes on giving you a situation where the caliper bleeder screw is facing down. It's also common to use the wrong caliper on a bolt on disc kit giving a situation where the bleeder hole is shifted from the 12:00 position producing a pocket of air at the top of the caliper bore which can not be dislodged. Check your bleeder hole orientation.
A defective master cylinder which does not hold pressure.	If brake fluid bypasses a pressure seal on a master cylinder you will get a pedal that fades. To test for this obtain two inverted flare plugs at an auto parts store and plug both master cylinder outlets. Try your pedal. If the pedal is high and firm the master is good. If the pedal fades the master is bad. Replace master as necessary.
No residual pressure valve to rear drums.	Drum brakes require the use of a 10 lb residual pressure valve in the line. This residual pressure counter balances the drum brake spring tension keeping the shoes close to the drums. This results in a higher firmer pedal. You can test this by clamping off the rear hose removing the rear drums from the system. Now test your pedal. If the pedal gets better you will need to splice a 10 lb residual pressure valve into the rear line.
Hard line that loops up.	Hard brake line that loops up and then back down will tend to trap air. It doesn't take much air to cause problems so check your lines carefully.
Incorrect master cylinder.	If the bore size of the master cylinder is too small for the fluid requirements of the system you will get a very poor pedal. This will happen most frequently with four piston calipers and with four wheel disc brakes. The only solution for this is to install a larger bore master cylinder or a true four wheel disc master.
Incorrectly bled or adjusted rear calipers.	Rear calipers that have an internal parking brake with a lever can be troublesome. These calipers must be adjusted so that the piston is moved out and the pads are close to the rotor. If this initial adjustment is not made the pistons will travel outward during activation but no squeezing of the rotor will occur. This can be checked by clamping off the rear hoses and checking if the pedal gets better. Adjust as necessary.
Incorrect booster pin length.	The booster pin that pushes on the master cylinder must almost be touching the master cylinder piston face. A gap larger than 1/32" will begin to introduce a spongy pedal. Adjust as necessary.
Silicone brake fluid.	While silicone fluid is great because it does not attack paint it also aerates very easily and can give a spongy pedal.
Rear wheel cylinders too large.	Rear drum wheel cylinders that are too large will give a poor pedal. Check as in step six above.
Loose front wheel bearings.	Loose front wheel bearings will cause rotor wobble. This will cause the caliper pistons to retract too far into the caliper giving a spongy pedal every time you hit the brakes. Check and adjust as necessary.

UNIVERSAL FRONT DISC BRAKE CHECKLIST

	Spindle properly secured to ball joints and tie rods with castle nut and cotter pin.
	All mounting bolts properly tightened.
	Wheel bearings properly packed with grease.
	Inner bearing must be installed before grease seal.
	Rotor I bearings slide onto spindle with ease.
	Washer, castle nut properly torqued and cotter pin installed.
	Calipers installed and properly torqued.
	Spin rotor and check for any interference. (If any interference is found, resolve problem before driving vehicle.)
	Flex lines are properly installed with no interference.
	Power booster (if applicable) installed properly.
	Master cylinder bench bled according to the instructions.
	All brake lines are properly tightened and free of leaks.
	Turn wheels lock to lock and check for any interference.
	Place wheel onto vehicle and spin the wheel to make sure there is no interference between the brakes and wheel.

UNIVERSAL REAR DISC BRAKE CHECKLIST

	All bolts on base bracket properly tightened.
	All caliper mounting bolts properly tightened.
	Rotor slides onto axle with ease.
	No interference with rotor and any other parts (splash shield, brackets, etc.).
	Caliper is centered over the rotor (because of difference in axle lengths, you may have to shim caliper in or out).
	No interference with caliper and rotor.
	All brake lines are tight with no leaks.
	Parking brake is properly adjusted and not dragging, with vehicle on ground.
	Adjustable proportioning valve installed (if applicable).
	Distribution block modification made (if applicable).
	Brake system properly bled.

IMPORTANT WITH EVERY NEW SET OF ROTORS AND PADS, YOU SHOULD GIVE YOUR VEHICLE 200 - 250 MILES OF EASY DRIVING TO PROPERLY SEAT THE PADS TO THE ROTORS. DO NOT TAKE THE VEHICLE UP TO 60 MPH AND JAM ON THE BRAKES BEFORE THE FIRST 200 - 250 MILE BREAK IN PERIOD IS OVER, OR YOU WILL GLAZE THE PADS AND ROTORS.



BOOSTER CONVERSION KIT INSTRUCTIONS



UNBOXING YOUR KIT:

1. Remove new booster, bracket assembly and master cylinder from their boxes and inspect the parts. Depending on what booster conversion kit you may have purchased you will be using a similar booster bracket & clevis/rod like shown below.

Common Booster Brackets



Pedal Rods & Clevis



2. New boosters come with a protective plastic or rubber boot over the front pin area for shipping purposes. Remove this before the installation.
3. This kit features a universal booster that has the short pin in the front of the booster. The new cylinder may have a **piston adapter** to convert it from deep to shallow hole. Install the piston adapter. Use a shallow pocket master cylinder on a power brake booster with the short pin.

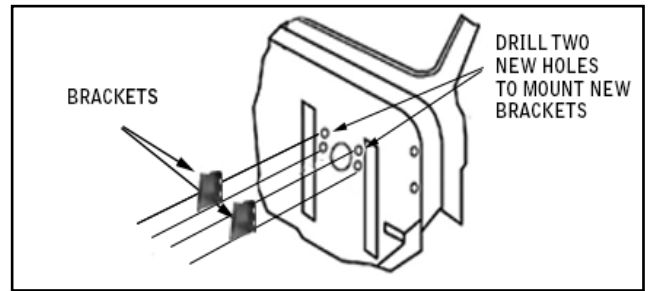


Piston Adapter

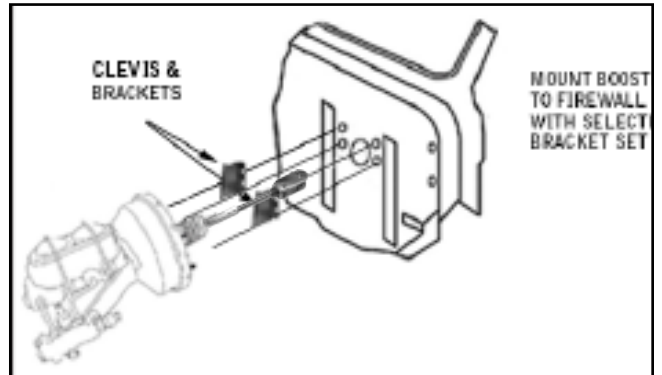
REMOVING AN OLD MASTER CYLINDER:

4. Perform brake work on a level surface. Chock the wheels, set the emergency brake and put the transmission in Park.
5. Protect painted surfaces from brake fluid and place absorbent materials such as rags under the master cylinder. Since brake fluid is caustic to paint, use a fender cover mat.
6. Spray the master cylinder nuts and fittings with penetrating spray.
7. Mark which lines connect to which port on the master cylinder and which supplies fluid to the front and rear wheels respectively. (If you have the ability to take a digital picture for reference before disassembling the lines from the valve, this would be a good time to do so.)
8. Make a note of the brake pedal ride height inside the cab of the vehicle.
Use a wooden block to rest the pedal on so you will have a reference when you set it back up. (If you have the ability to take a digital picture for reference before disassembling the lines from the valve, this would be a good time to do so.)
9. Use flare nut wrenches to loosen the master cylinder nuts. On stubborn fittings, sometimes attempting to tighten them before loosening them helps break them free. Be careful with the tube nut hex heads and tubes themselves if you are re-using them.

10. Again, to protect important painted surfaces you might cover the master cylinder with a plastic trash bag and or wrap it with shop rags or towels. Consider removing all of the old brake fluid from master cylinder first.



11. Inside the car, disconnect the master cylinder rod's clevis from the brake pedal swing arm and note which hole it was connected to.



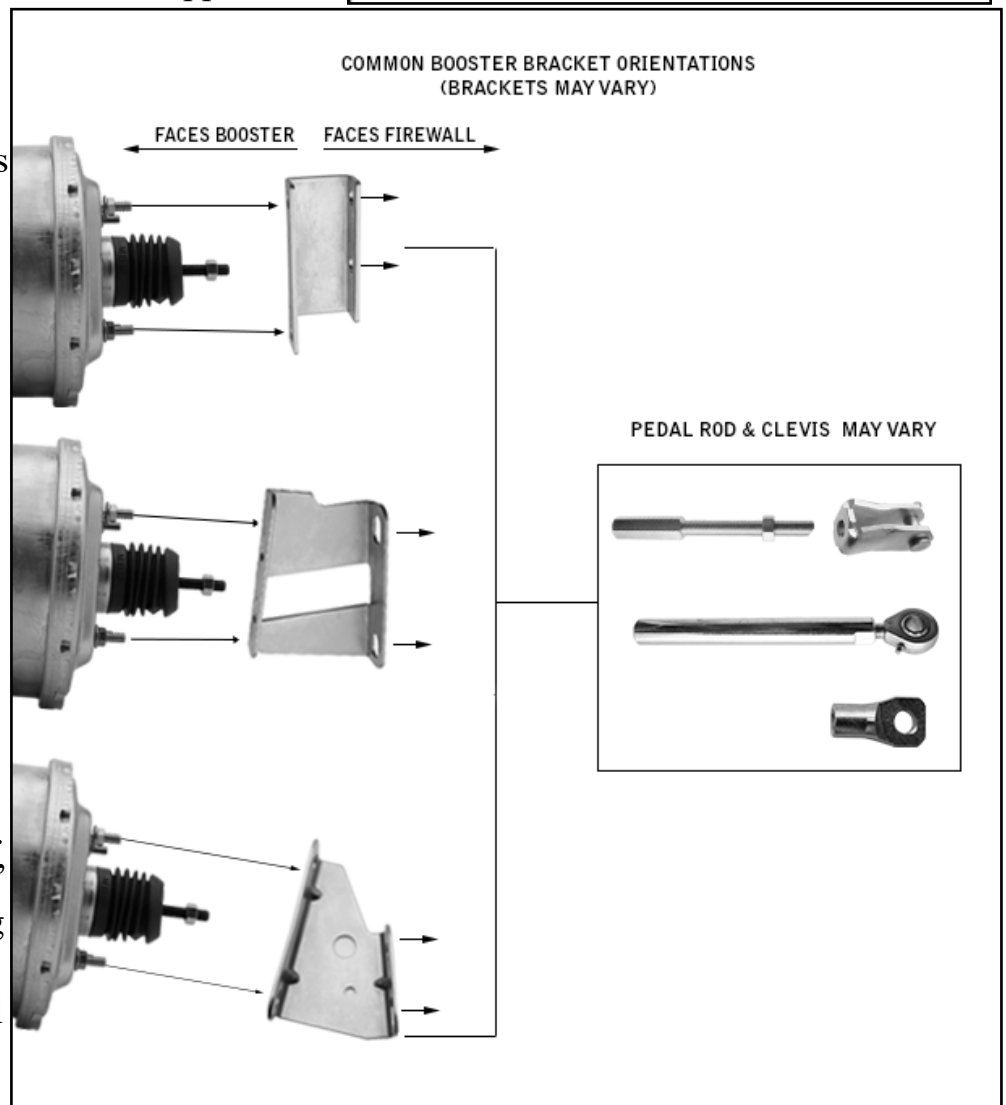
12. Clean the firewall where the master cylinder was mounted, and grind down any welded areas, re-paint if necessary. The bracket has to mount flush to the firewall.

13. Place the bracket up to the firewall, mark the location on the wall for the two upper support holes. You may need to drill two new upper holes or your car may already have bolt holes in these locations. Re-use the master cylinder mounting studs and fasten the nuts and cinch the bracket up to the firewall. Hand tighten the bracket on the firewall. Do not tighten the upper two bolts at this time.

14. With the new bracket assembly on the firewall, install the booster and guide its' pedal rod arm through the hole.

15. Using a wooden block or similar object, position the foot pad at the desired ride height versus the floor pan.

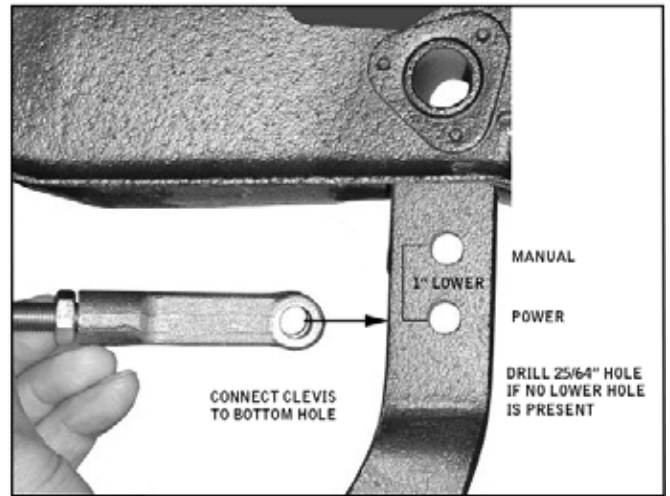
16. Connect the brake pedal 1" lower to to the pedal swing arm inside the cabin area of the car. Secure the pedal attachment using its' original nut and bolt remove



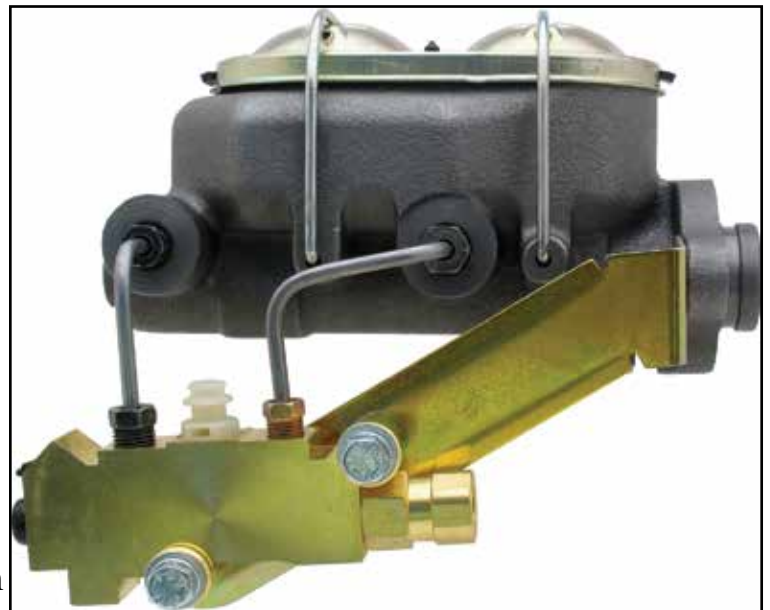
the wooden block and test the range of travel of the pedal. Adjust the clevis as necessary to your preferred pedal ride height.

17. Perform a final tightening of all four nuts that hold the bracket to the firewall.
18. Proceed to bench bleeding and installing the master cylinder onto the brake booster or installing proportioning valve kit if purchased.
19. If using a left mount kit steps 20-33.
If using a bottom mount kit steps 34-53.

**INSTALLING PROPORTIONING VALVE KIT
(LEFT MOUNT AS SHOWN)**



20. Verify that you have the following: 1 valve, 2 lines, 1 bracket, 1 harness connector, 1 bag that contains 2 bolts, 4 washers and 2 nuts (bottom mount only)
21. Place the valve on your work bench and position the valve as shown with the large hex nut end towards your right.
22. Position the bracket behind the valve and line up the bolt holes.
23. Next locate the small bag with the bolts and washers
24. Pick up both bolts and place a lock washer and then a flat washer onto each.
25. Insert the bolt through the valve into the bracket. Hand tighten it.
26. Install and hand tighten the second bolt with its' washers into the valve and bracket.



27. Next hand tighten the brake lines as shown.
28. The next step can be done with the master cylinder either on or off of the brake booster or firewall.
29. As a unit position the valve and bracket assembly up to the ports of the master cylinder.
30. Hand tighten each line (Do Not Use Teflon tape) as you place the brackets on to their mounting studs which are in front of the master cylinder mounting ears.
31. Use a flare nut or box end wrench to tighten the tube nuts on the brake lines.
32. Place the mounting nut onto the studs which the proportioning valve mounts. Tighten it down.
33. Connect the dash warning light connector to the factory harness.

INSTALLING PROPORTIONING VALVE KIT (BOTTOM MOUNT AS SHOWN)

Verify that you have the following: 1 valve, 2 lines, 1 bracket, 1 harness connector, 1 bag that contains 2 bolts, 4 washers and 2 nuts (bottom mount only)

34. Place the valve on its' edge with the white switch facing you on your work bench and position the valve as shown with the large hex nut end towards your right.

35. Place the bracket and valve in the position shown.

36. Position the bracket on top of the valve and line up the bolt holes.

37. Next locate the small bag with the bolts and washers, and empty the parts onto the work bench.

38. Pick up both bolts and place a lock washer and then a flat washer onto each.

39. Be sure to have the bracket and valve in a position that allows you to insert the bolts through the valve and through the bracket.

40. Push each bolt through the valve and bracket and secure the hex nuts. Hand tighten.

41. Locate the brake lines.

42. Identify which line will connect to which port on your master cylinder.

43. If you have a dual bail wire master cylinder, the lines will mount side by side.

44. If you have a single bail wire master cylinder, they cross in an X pattern.

45. Next hand tighten the brake lines as shown onto the valve.

46. The next step can be done with the master cylinder either on or off of the brake booster or firewall.

47. As a unit position the valve and bracket assembly up to the ports of the master cylinder.

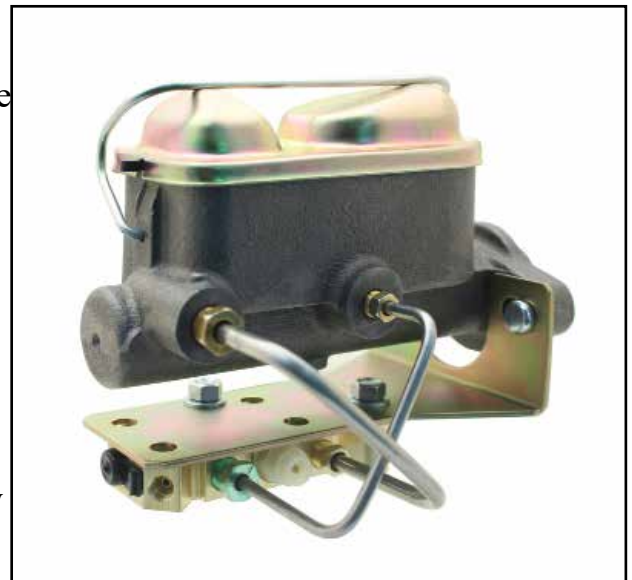
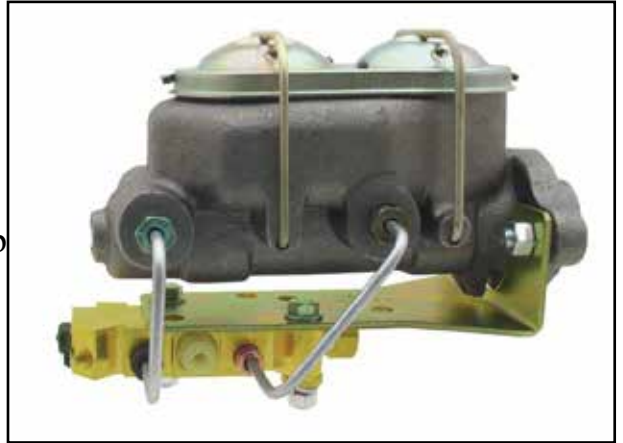
48. Hand tighten each line (Do Not Use Teflon tape) as you place the brackets on to their mounting studs which are in front of the master cylinder mounting ears.

49. Use a flare nut or box end wrench to tighten the tube nuts on the brake lines.

50. Once satisfied with the brake line positions, finish tightening the valve's brackets bolts and nuts.

51. Place the mounting nuts onto the studs which the proportioning valve bracket mounts. Tighten it down.

52. Connect the dash warning light connector to the factory harness.



BLEEDING MASTER CYLINDER

53. Use the plastic clip to secure the hoses that return into the reservoir so that the hose ends are below the fluid line.

****The hose tips must be submerged under the fluid level.**

54. Using a blunt tool or punch, push the pistons $\frac{3}{4}$ "-1" in with a series of steady strokes to expel air bubbles. This may take several cycles to expel all of the bubbles. Do this until it cannot be compressed more than $\frac{1}{8}$ ", & no air bubbles are visible.

55. Remove the bleeder kit. Install the lid. Wipe off any excess brake fluid.

56. Position & place clean shop rags or towels in the engine compartment of the car to protect painted surfaces.

57. If mounting the master on a power brake unit with a short pin, install the piston adapter to make the shallow hole. If using a long pin, no adapter.

58. If you have yet to do so, remove the protective cover from the front of the booster to expose the front pin.

59. Mount the master cylinder on to the booster. Don't drop the adapter.

60. Torque the hex nuts to 20-25 ft. lbs.

INSTALL THE PROPORTIONING VALVE AND BRACKET (PROPORTIONING VALVE KITS SOLD SEPARATELY)

61. Be sure to install the correct brake valve for your application. Due to a wide range of applications, a brake proportioning valve is not included in the booster conversion kit.

62. If you already have the kit, attach brake line tube nuts to the master cylinder. Don't use Teflon tape.

BLEEDING ON THE VEHICLE.... NEVER USE OLD BRAKE FLUID!

63. Use a brake screw bleeder wrench to open and close the bleeder screws.

64. Bleed the wheels in this order. Right rear, left rear, right front, left front. (Bleed from farthest from the master cylinder to the closest).

65. Have an assistant pump the pedal 3-5 times and hold the pedal.

66. As you open the bleeder screw, the assistant follows/pushes the brake pedal all the way to the floor. When they reach the floor, you tighten the bleeder screw and the cycle repeats.

67. Bleed each wheel until no air comes out and there is only fluid. Wipe fluid.

68. Be sure to check the fluid level in the master cylinder frequently. Keep the reservoir full of fluid and the lid installed in the process. Remember to protect painted surfaces with rags.

69. You should notice the pedal requiring more effort to depress it as you progress towards the front left wheel.

70. Repeat the bleeding process until the brake pedal is firm and holds.

71. When done, remove the wheel chocks and release the emergency brake.

72. Test brakes slowly in a safe area away from other cars or objects by making a series of stops. Try a 5 mph stop, a 15 mph stop, a 30 mph stop & a 50 mph stop.

Drive safely and responsibly.

73. Stop the car & check brake fluid level.

74. Drive safely to get a "feel" for the braking action of your car.

