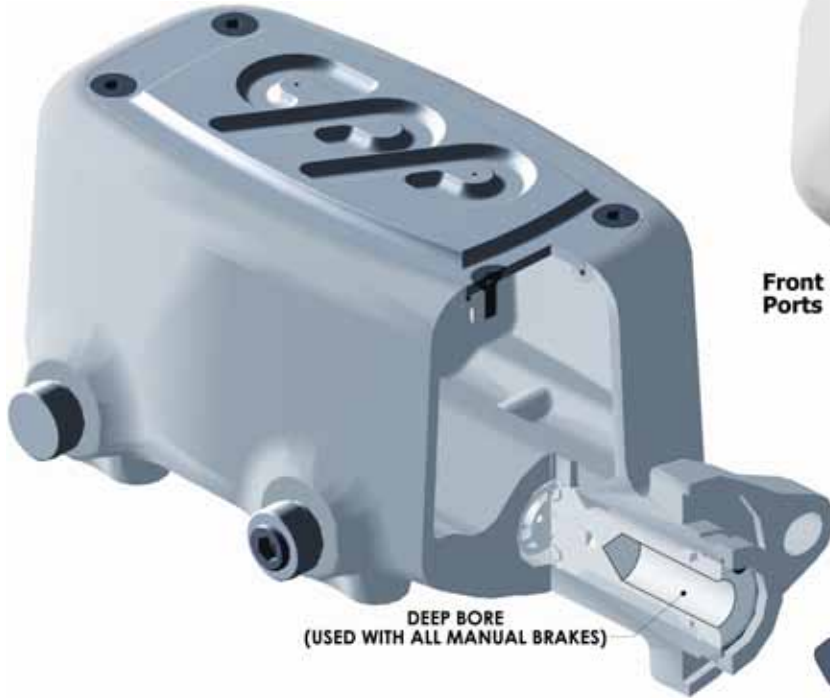




Steering, Brake & Suspension Specialists



DEEP BORE
(USED WITH ALL MANUAL BRAKES)

BORE ADAPTER CONVERTS
TO SHALLOW BORE
(USED ONLY WITH SOME POWER BOOSTERS)



Front Brake
Ports

Rear Brake
Ports

Stop Light
Switch Port

Note: This master cylinder has two front ports and two rear ports (3/16 inverted flare), and one stop light switch port (1/8 NPT) Do not connect the rear brakes to the top light switch port!

#CP31500, #CP31501, #CP31502 MCPV1 Master Cylinder Instructions

Instructions:

1. Make sure the mounting surface is clean.
2. Determine which type push rod bore is needed. There are two different style push rods that are commonly used. One is a shallow bore and can only be used with a brake booster. The shallow bore push rod will be below the mounting surface about 3/16". The other is a deep bore and should be used on all manual brake applications. The deep bore can also be used with a brake booster. The deep bore pushrod will extend about 1" beyond the mounting flange.
3. Configure the master cylinder push rod bore to match the pushrod. There is a special tool (MCDG) available to aid in adjusting the pushrod. The pushrod will not preload the master cylinder when properly adjusted.

Warning: Preloading the master cylinder will cause the brakes to drag and brake lock up.

Warning: It is unsafe to use a shallow bore master cylinder with manuals brakes! There is a possibility that the brakes will fail if the pushrod falls out of the master cylinder bore.

4. Bench bleed the master cylinder. Hold the master cylinder level and fill with brake fluid. Connect one end of the plastic tubes to the outlet port

on the master cylinder and submerge the other end of the tube in the brake fluid. Cycle the master cylinder until there is no more air visible through the plastic tubes. Note: It may be necessary to temporarily remove the metering valve from the master cylinder in order to get the front circuit to start bleeding. To remove the valve, carefully remove the large hex headed cover from the side of the master cylinder. Pull the metering valve out of the master cylinder, and reinstall the cover. Do not loose the metering valve or it's seal. After the front circuit is free of air, reinstall the metering valve and seals. Tighten the cover.

5. Install the master cylinder on to the vehicle. Make certain that the push rod has not preloaded the master cylinder.
6. Remove the plastic tubes and connect the brake lines to the master cylinder.
7. Bleed the brakes.

GENERAL TORQUE SPECIFICATIONS:

1/4	grade 5	10lb/ft	1/4	grade 8	14lb/ft
5/16	grade 5	19lb/ft	5/16	grade 8	29lb/ft
3/8	grade 5	33lb/ft	3/8	grade 8	47lb/ft
7/16	grade 5	54lb/ft	7/16	grade 8	78lb/ft
1/2	grade 5	78lb/ft	1/2	grade 8	119lb/ft
9/16	grade 5	114lb/ft	9/16	grade 8	169lb/ft
5/8	grade 5	154lb/ft	5/8	grade 8	230lb/ft

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#MCPV1 Master Cylinder Adjustment Procedure

NOTE: These steps are better understood if you have the master cylinder in front of you while reading through the entire instructions thoroughly before performing the adjustment procedure.

Variable factors:

The brake balance between the front and rear is affected by many factors:

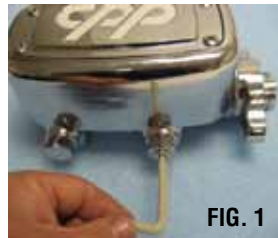
- Size of the rotors or drums
- Size of the caliper or wheel cylinder pistons
- Type of friction material
- Weight on each axle
- Wheel base
- Height of center of gravity
- Tire size
- Weight of the tire and wheel
- Tire tread and compound

The brake balance of all vehicles should be balanced to the front for safety. Most vehicles are “naturally” balanced to the front. These steps will help you set your balance and pressure to the rear brakes only.

The large screw controls front to rear balance.
The small screw controls brake pressure.

Caution: Do not over tighten the adjustment screws. These are small screws that do not need to be tightened. These are for ADJUSTMENT only! **Overtightening will void warranty.**

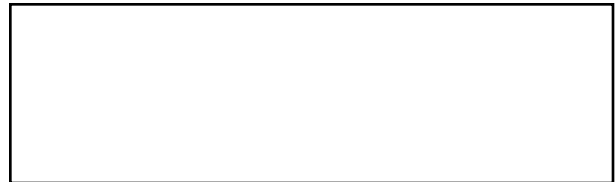
1. Make sure the MCPV1 is properly installed and the brakes are bled.
2. Adjust the maximum pressure to the highest setting. Using the small end of the supplied plastic wrench (1/8” allen wrench) turn the small screw counter clockwise until the screw stops. Fig. 1



3. Using the large end of the supplied plastic wrench (1/4” allen wrench) turn the large screw counter clockwise until the screw stops. Fig. 2. Check that the maximum pressure screw has remained all the way out. Warning: if the maximum pressure screw (small inner screw) can not be turned clockwise there will be no rear brake pressure.

4. Check the “natural” brake balance. Start at a very slow speed and make sure the brakes are working. All of the testing should be in an area that has enough space to safely stop the vehicle while skidding. Perform a full force stop checking if the rear brakes can lock up. (A full force stop is where the brakes are applied as hard as possible.)
 - a. If the rear brakes did not lock up the vehicle is naturally balanced to the front and there is no need to make any other adjustments.
 - b. If the rear brakes locked up after the front brakes locked up, the vehicle is naturally balanced to the front, but the maximum pressure adjustment can control the rear lock up.

- c. If the rear wheels locked up first, the vehicle is naturally balanced to the rear. The balance and pressure adjustments need to be performed.
5. Adjusting the maximum rear pressure: Be sure the large screw is all the way out, counter clockwise. Turn the small screw so that it is adjusted to the middle of its range. At this point the pressure will be limited to about one half of the starting pressure. Perform a full force stop. If the rear still locks up, continue reducing the pressure (turning the small pressure screw clockwise), and performing a full force stop until the rear lock up is eliminated. If the rear will not lock up, raise the pressure turning the small pressure screw counter clockwise, and perform a full force stop. Continue raising the rear pressure until the rear can lock up. Then reduce the pressure by 1/4 turn to prevent the rear from locking up. The maximum pressure is now safely adjusted.
 6. Count the number of turns required for the small pressure screw to go to a zero pressure adjustment by counting the number of clockwise turns the pressure screw can be turned before it stops. Write this number down for future reference.



7. Turn the small screw out, counter clock wise, as far it will go. Now turn the large screw in, clock wise, 1/2 turn less than the screw was adjusted to in step 6. (Subtract 1/2 turn from the number of turns counted in step 6.) Turn the small screw in, clockwise, until it stops. Then turn the small screw out counter clockwise 1/2 turn. The MCPV1 is now adjusted.

Example: The small screw moves 2 turns clockwise in step 6. Turn the large screw 1 1/2 turns clockwise. Turn the small screw all the way in clockwise, then back it out a 1/2 turn.

