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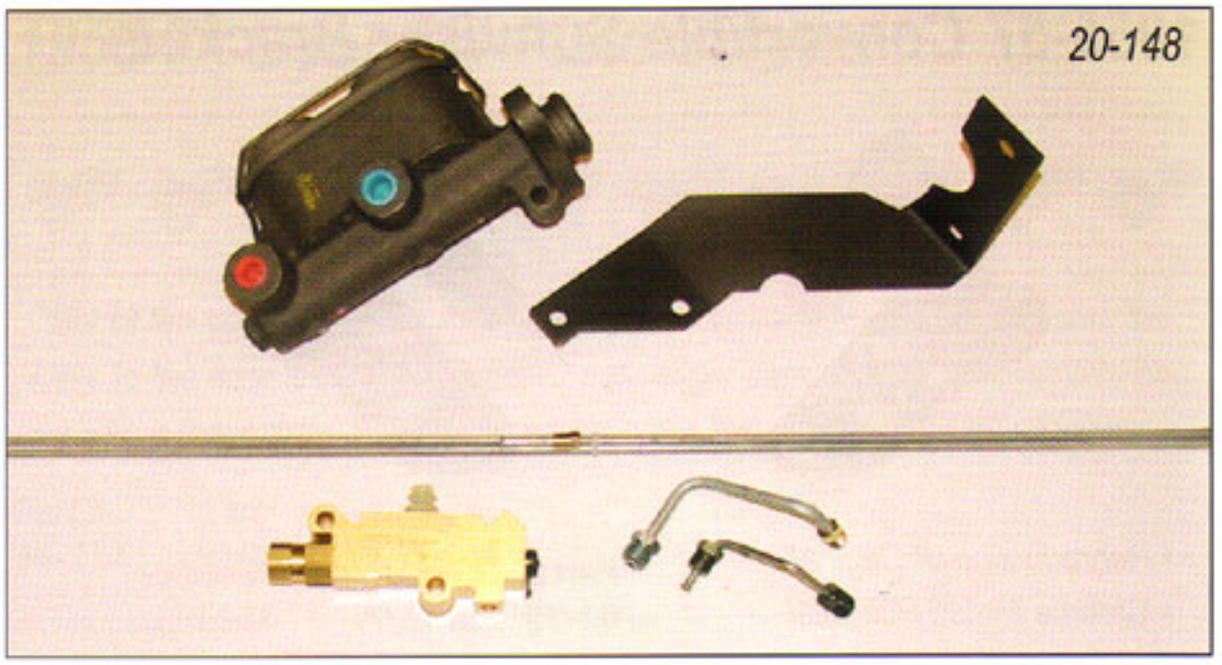
ACTUAL PARTS, YEARS AND BODY STYLES CONTAINED

IN THIS ARTICLE MAY DIFFER SLIGHTLY FROM YOUR APPLICATION. "

Dual Master Cylinder Conversion with GM Proportioning Valve, 1955-57

by Randy Irwin



*One of the best upgrades to improve safety of a tri-five Chevy is the brakes. The single action master cylinder works fine, but if there is ever a hydraulic failure, such as a brake hose or wheel cylinder failure, there is no back up to help bring the car to a stop. The safest thing to do is to install a dual master cylinder with a GM style proportioning valve, which basically gives you two braking systems, one front and one rear. If you ever have a failure with a dual master cylinder and GM style proportioning valve, the brakes can be pumped and the car will be able to stop. In this tech article we will replace the original single action master cylinder and stock brake lines with a drum brake dual master cylinder conversion kit, **part #20-148**, in the engine compartment.*

In this article we will be working on an all restored, stock 1956 convertible. The stock master cylinder bolts to the firewall with four 9/16" nuts and lock washers and has a single brake line that connects to a junction block just behind the driver's upper A-arm (**photo #1**).

Disconnect the brake line from the master cylinder, then remove the four 9/16" nuts and the master cylinder can be removed from the firewall (**photos #2a & #2b**). The stock push rod from the brake pedal swing arm will stay attached to the swing arm and will be reused (**photo #3**). The proportioning valve bracket, **part #20-33**, will anchor to the firewall using the two upper studs from the stock master cylinder (**photo #4**).

The master cylinder, **part #20-66**, is for the cars using drum brakes in the front and rear. If the car has disc brakes in the front you would use **part #20-68**. The master cylinder will bolt to the two lower studs on the firewall and use the stock push rod from the brake pedal (**photo #5**).

The difference between a manual and power master cylinder is the bore size of the piston and the depth of the hole in the rear of

Parts Needed:

20-148 55-57 Drum brake dual master cylinder conversion kit (non-power)
Kit includes: drum brake dual master cylinder, non-power proportioning valve bracket, GM style proportioning valve, dual master cylinder brake line kit from valve to wheels, pre-bent brake lines from master cylinder to proportioning valve and bolt kit for proportioning valve to bracket.

20-149 55-57 Disc brake dual master cylinder conversion kit (non-power)
Kit includes: disc brake dual master cylinder, non-power proportioning valve bracket, GM style proportioning valve, dual master cylinder brake line kit from valve to wheels, pre-bent brake lines from master cylinder to proportioning valve and bolt kit for proportioning valve to bracket.

20-66 55-57 Dual master cylinder (non-power drums)
Also requires use of part numbers 20-32, 20-34, 20-33, 20-86. When using a dual master cylinder, a proportioning valve should always be used.

20-68 55-64 Dual master cylinder (non-power discs)

20-33 55-64 Proportioning valve bracket (without booster)

20-147 55-81 Pre-bent brake lines for master cylinder to proportioning valve (non-power)

20-32 55-64 Proportioning valve

20-86 55-57 Line kit, dual master cylinder- from proportioning valve to wheels
Includes two 74" lines, one 20" line, and one 3/16" coupler.

Time Frame:

5 Hours

Tools Needed:

3/8" wrench
7/16" wrench
1/2" wrench
9/16" wrench
Brake fluid

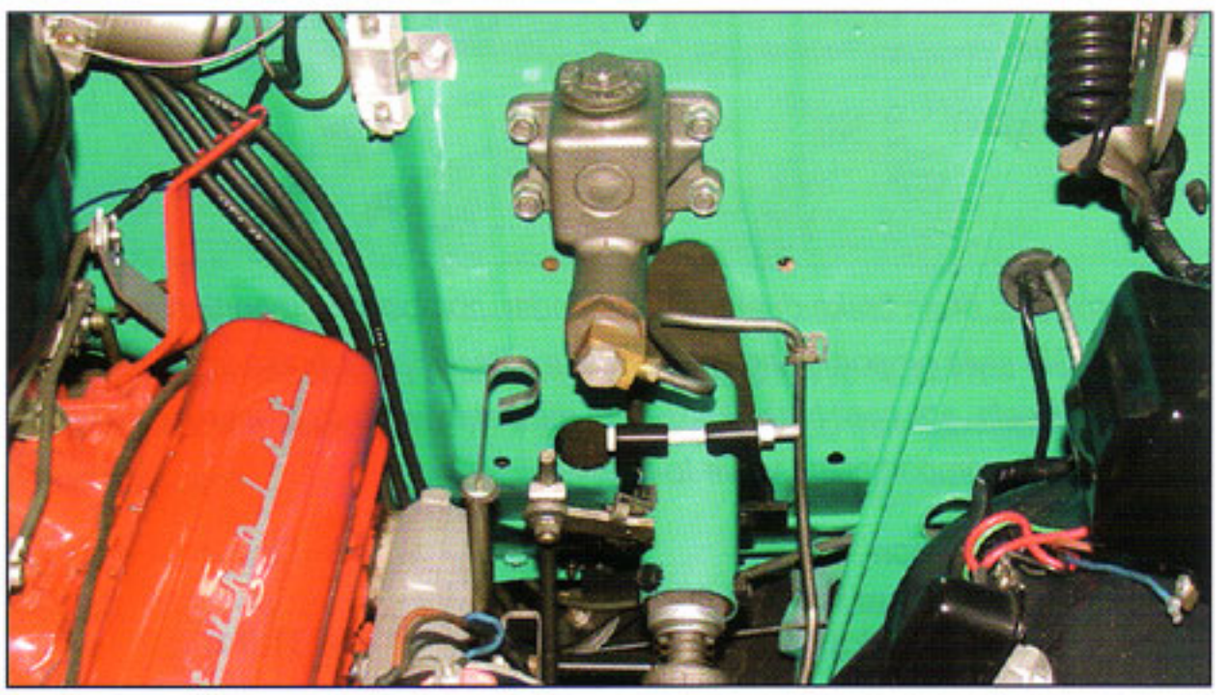


Photo #1

Photo #2a

Photo #2b

the piston. The bore size on a manual master is smaller to achieve higher line pressure to help stop the car without a booster. The hole in the rear of the piston is deeper on a manual master so that the push rod will fit up inside the piston and not be able to come out **(photo #6)**.

Next, remove all the stock brake lines and brass blocks from the frame. These will be replaced with new lines supplied in the kit **(photo #7)**.

The proportioning valve, **part #20-32**, is a GM style that is set from the factory and not a universal adjustable valve. This will keep the bias set between the front and rear brakes. The valve will bolt to the outside of the bracket **(photo #8)**.

To make this installation easier and give it a clean look, we have a pair of prebent brake lines, **part #20-147**, to connect the master cylinder to the proportioning valve **(photo #9)**.

The line kit, **part #20-86**, has three brake lines and one brass coupler (refer to **Diagram #1** for brake line routing). The 74" line has a large nut on one end and is for the rear brakes. It will screw into the rear of the proportioning valve, feed across the front engine crossmember and couple to the factory rear line on the passenger side of the car using the supplied coupler **(photos #10a & #10b)**. The 20" line is for the left front wheel and will connect to the lower forward port on the proportioning valve and to the stock front brake hose **(photos #11a & #11b)**. The last line to connect is for the right front wheel. There is a 74" line with small fittings on each end that will connect to the upper forward port on

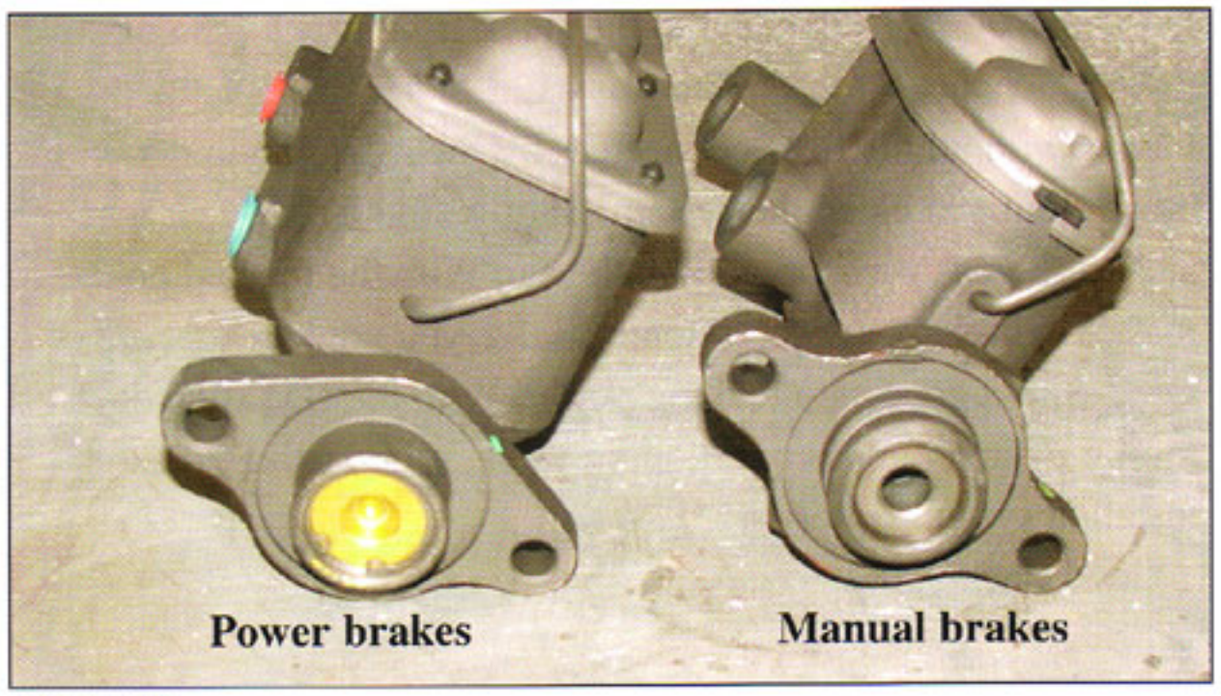
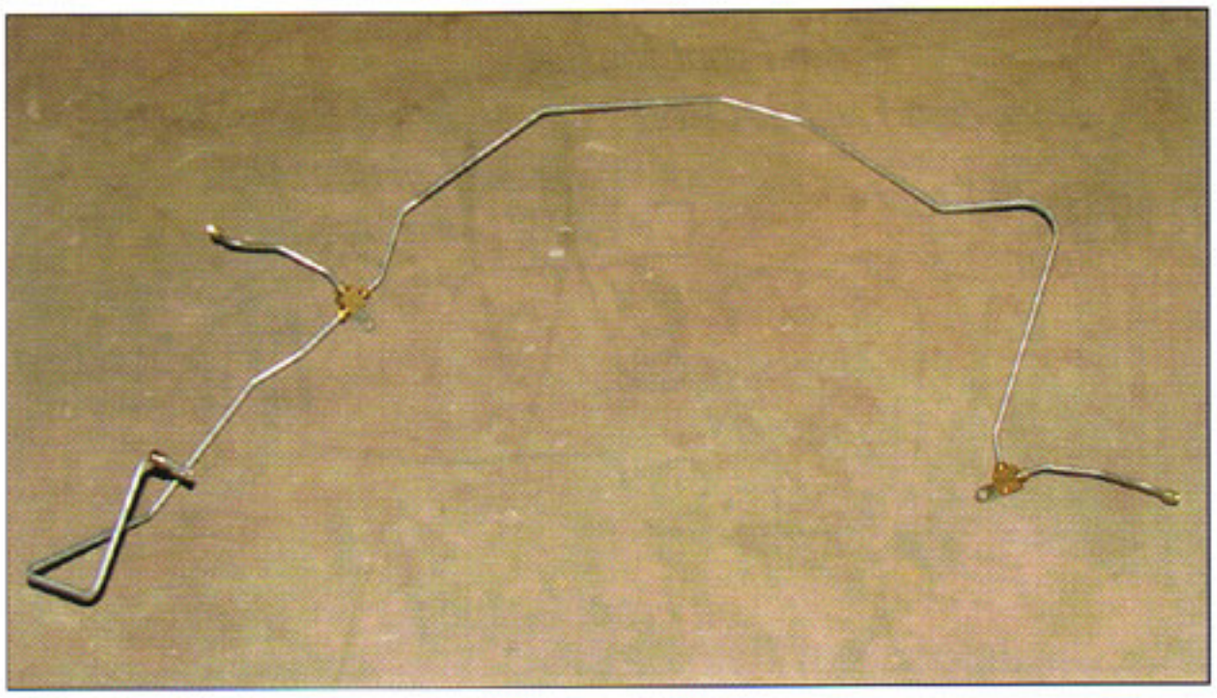


Photo #6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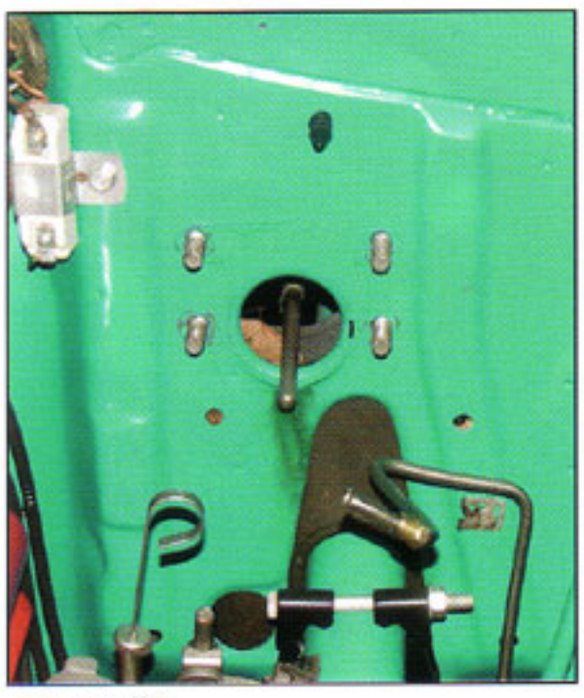
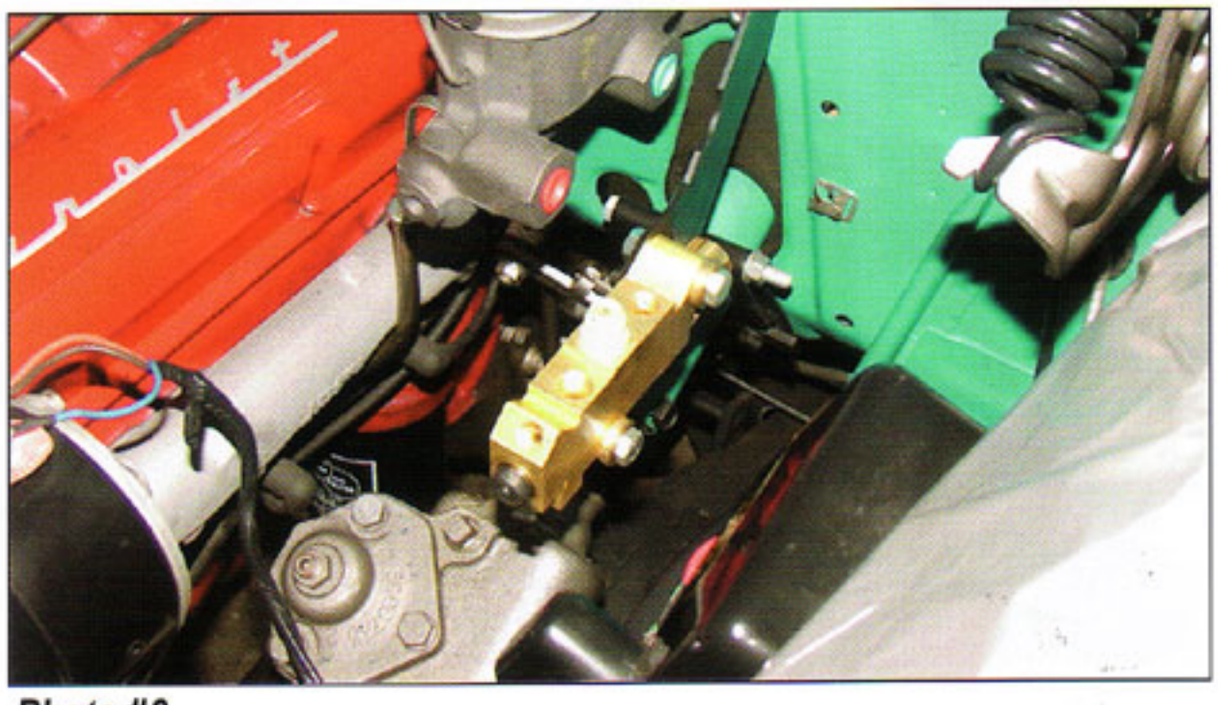


Photo #3


Photo #4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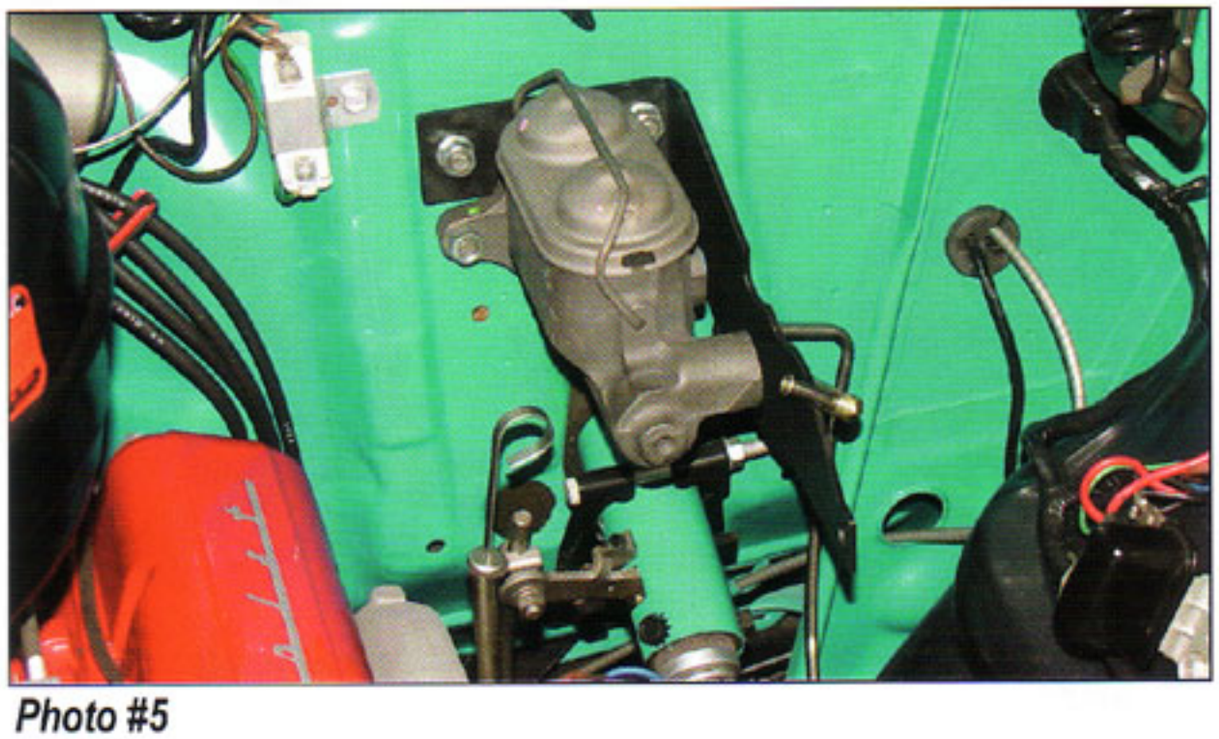
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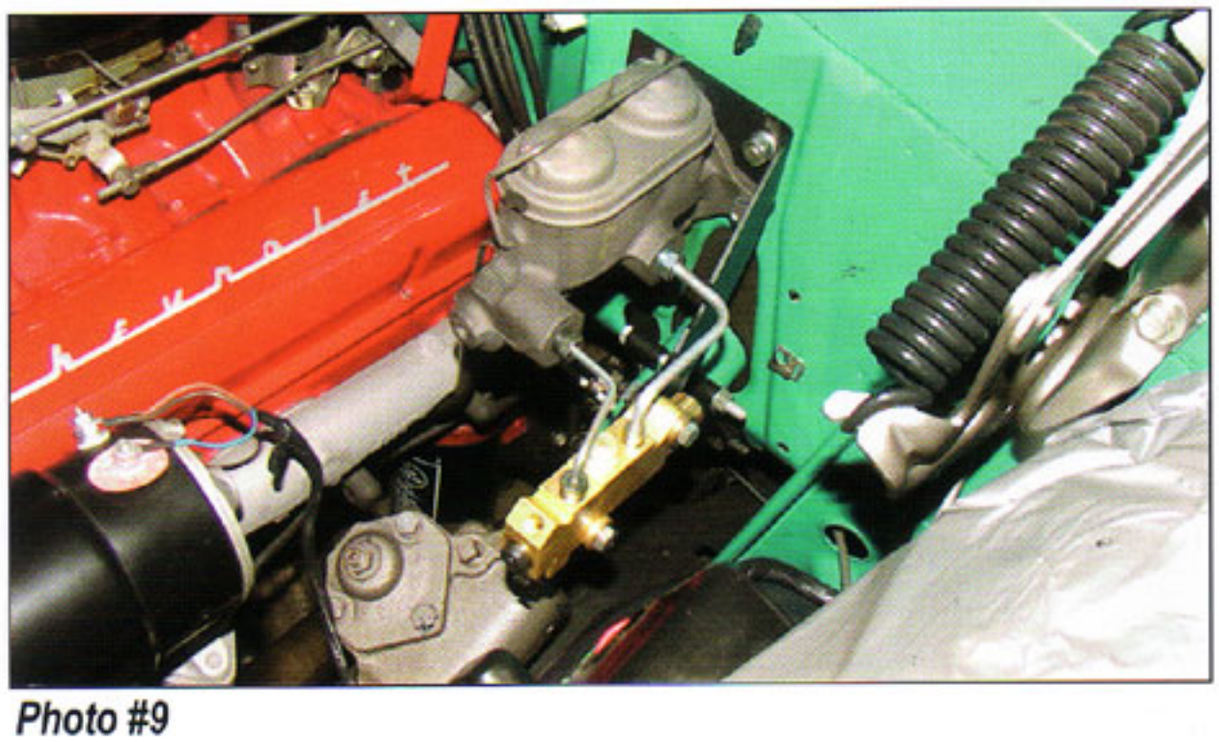
Photo #9

the proportioning valve and to the stock front brake hose on the right hand side of the car **(photos #12a & #12b)**.

Now with all the lines connected, fill the master cylinder with brake fluid and bleed the system. Start with the right rear wheel and work your way forward on the car. With the manual dual master cylinder and proportioning valve you now have peace of mind with a good safe braking power. With the GM style dual master cylinder and proportioning valve, it looks like a factory installed system **(photo #13)**.

Good Luck!

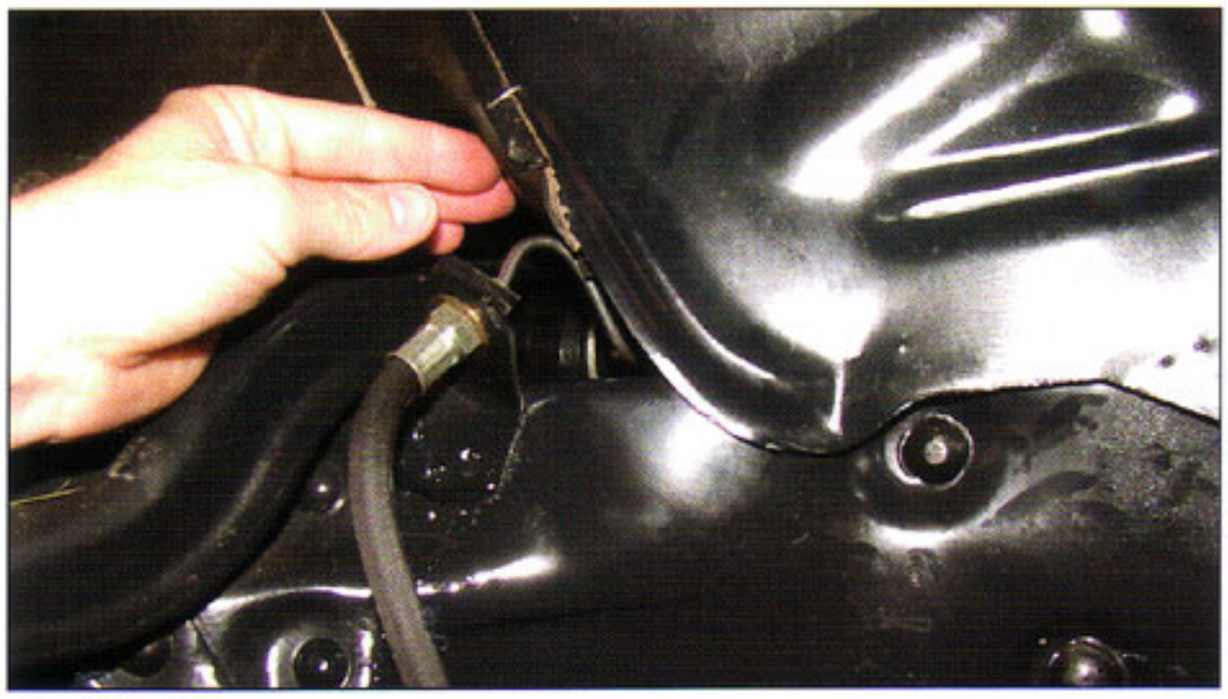

Photo #11b

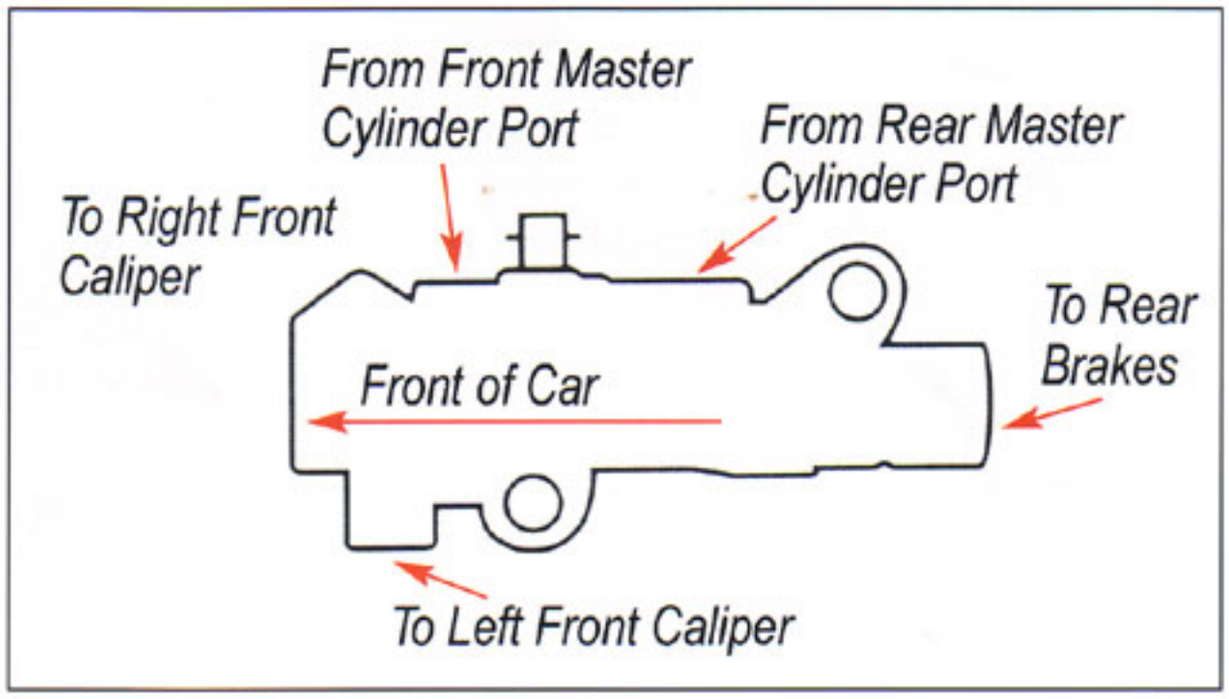

Diagram #1 — Proportioning Valve

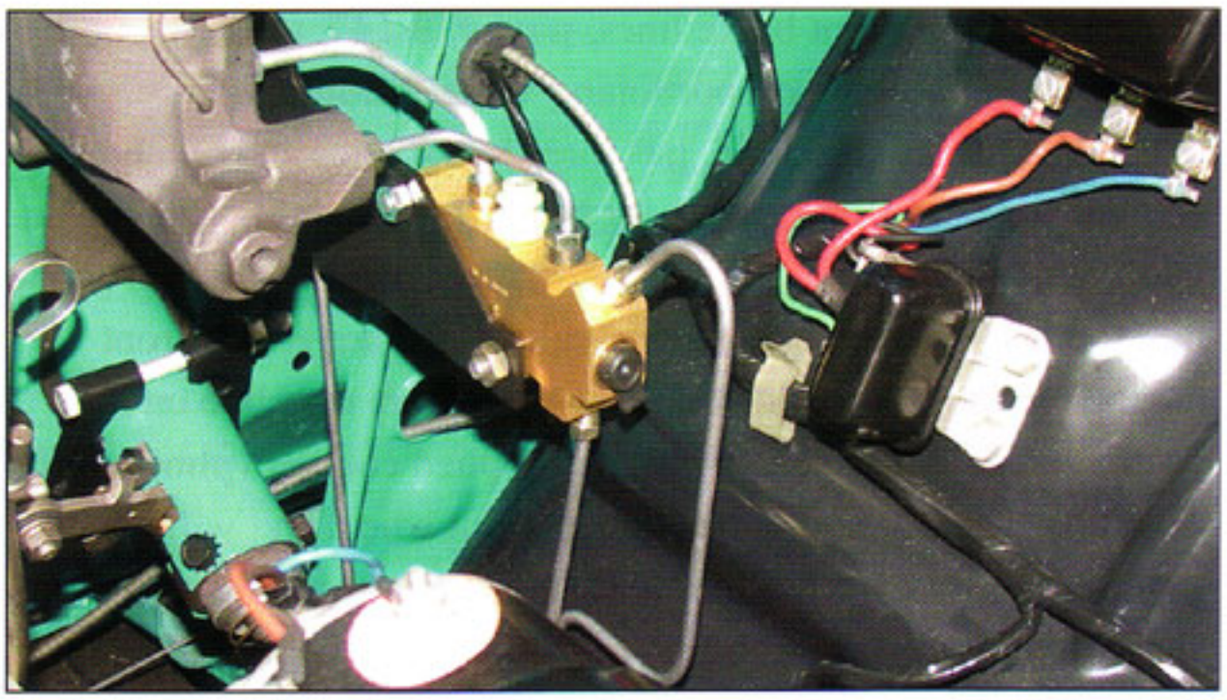

Photo #12a

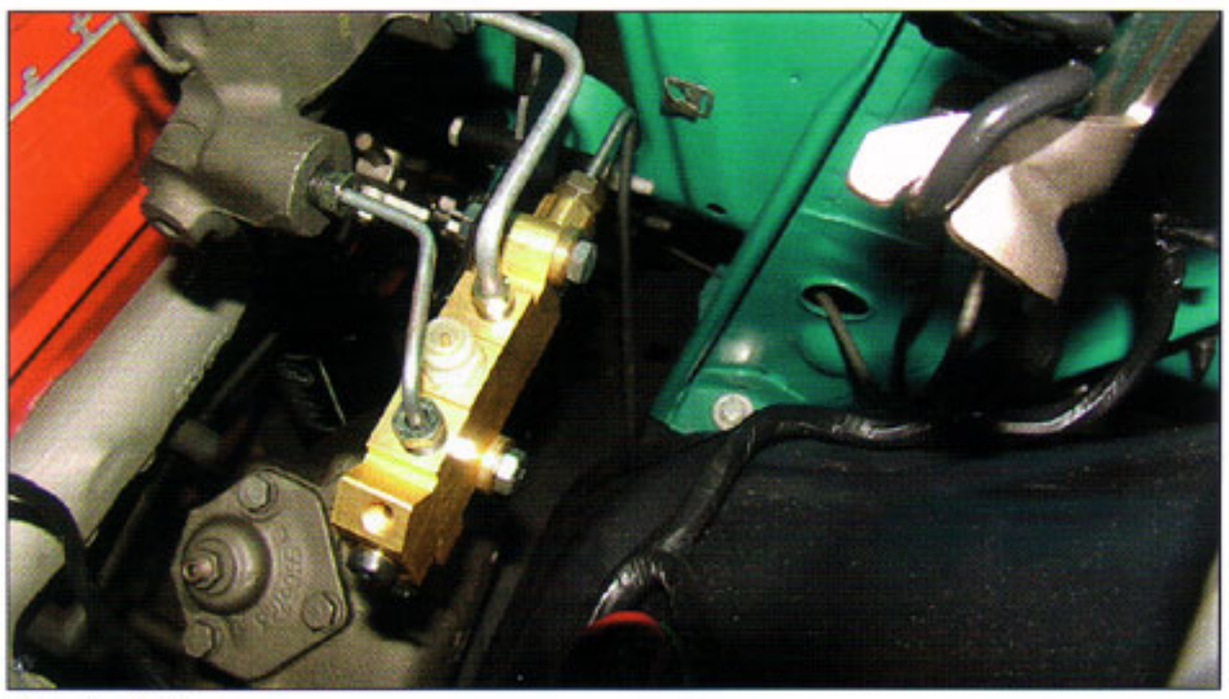

Photo #10a

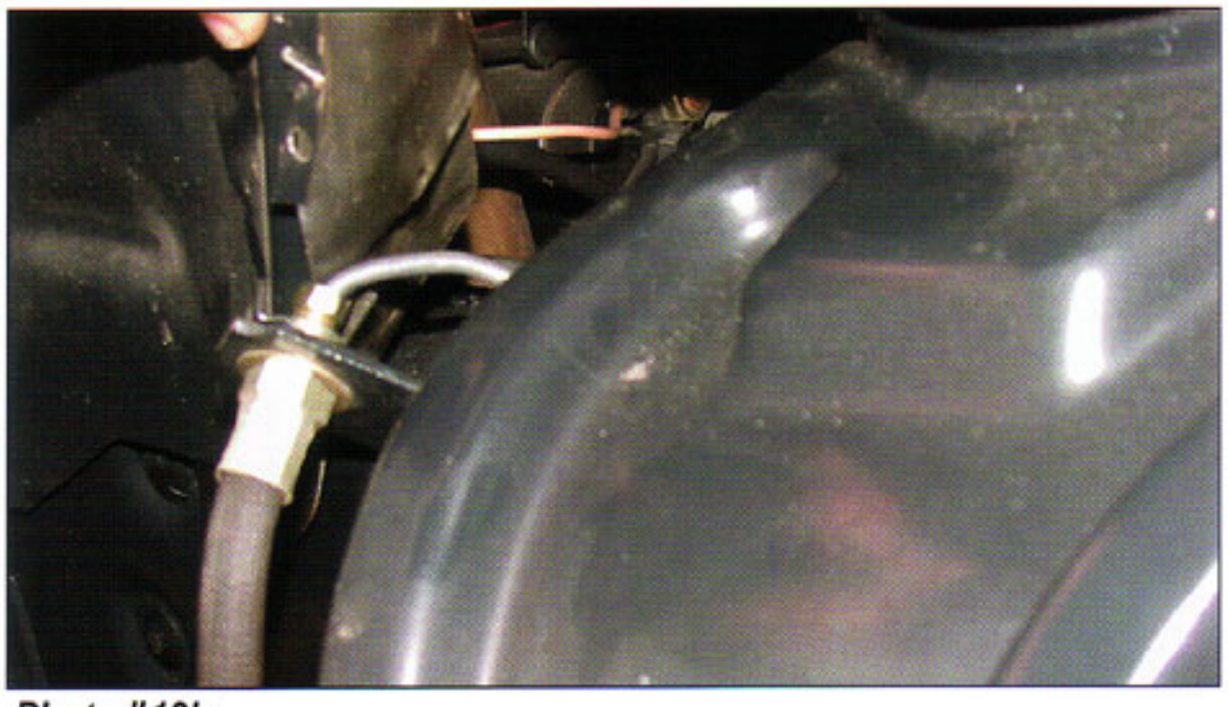

Photo #12b

Photo #10b

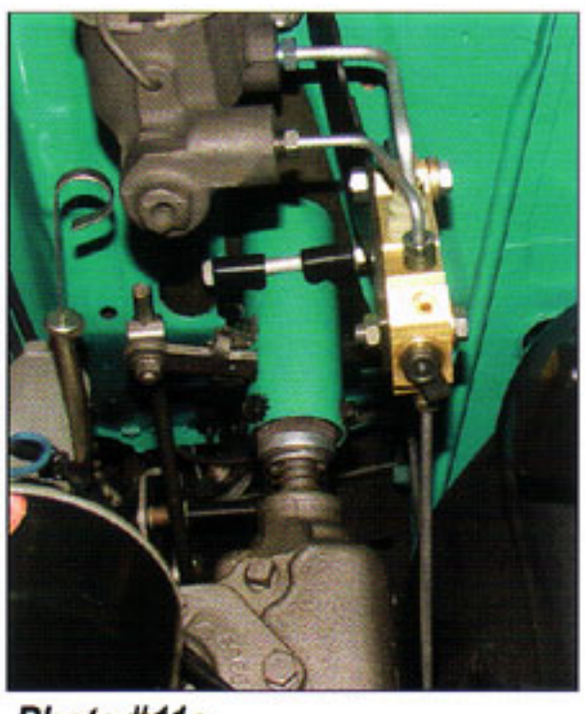

Photo #11a

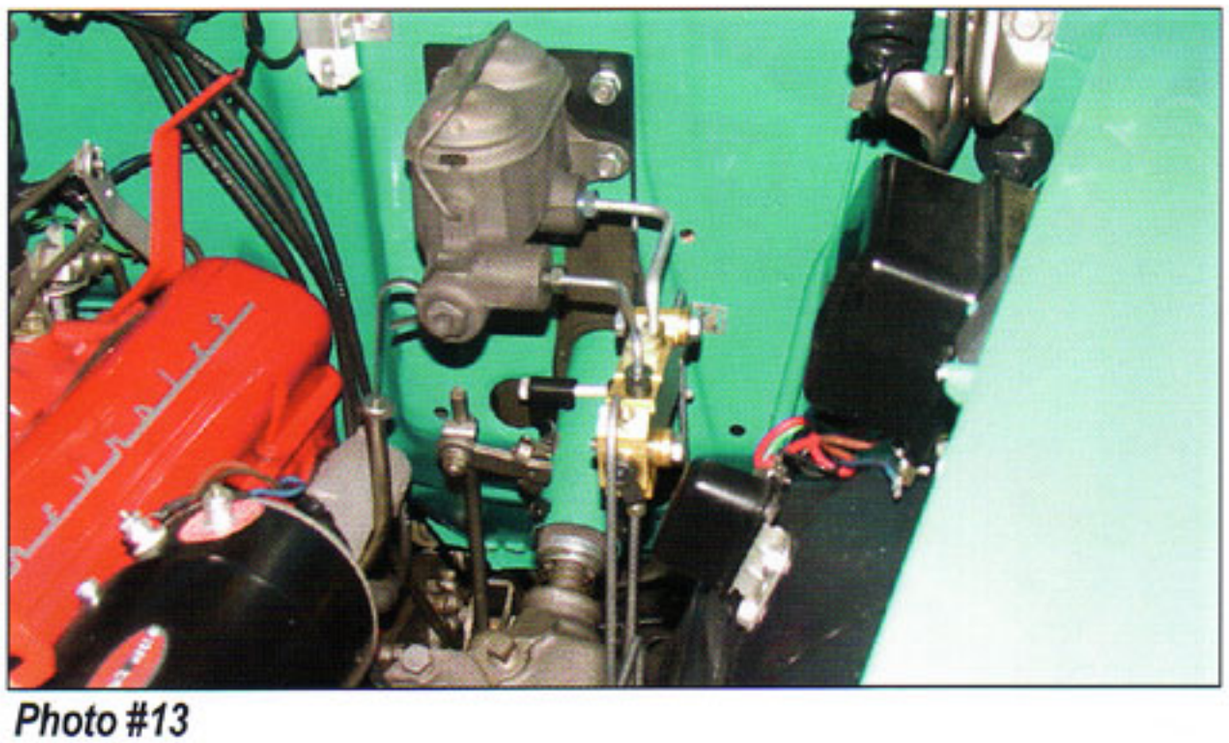

Photo #13