

Servicing Steel Brake Lines

When installing new stainless-steel brake lines, the professional technician will take the proper steps of forming a line that duplicates that of the OE, making the job look professional while preventing problems that can result from haphazard routing.



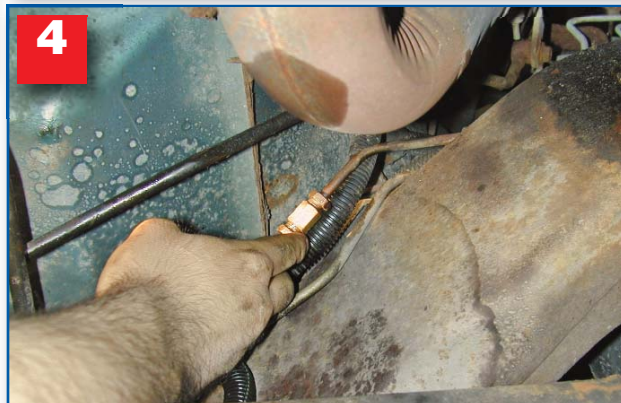
When you find a master-cylinder reservoir's cap with its bellows suspended downward you should ask yourself, "Where has the fluid gone?" It may simply be pad wear, but in other instances it could be a sign of a serious problem. Don't just add fluid. Determine the cause. This series of Chevy pickup is known to have problems with rusty steel brake lines. Get it on a lift for a thorough examination.



Once we got under the truck, we discovered that someone had spliced a new section into the rearward portion of the one-piece line. This isn't the way to fix a brake line.



Here's the splice connection. This flared connection is an issue because it is where fatigue and failure will likely occur from vibration.



The brake lines on these trucks connect near the firewall or slightly into the engine compartment. This is where you start the job when a line needs to be replaced.



Using line-nut wrenches we removed the rear-line tube nut from the factory connecting point.



6 With the line removed you can see the size and pitch of the flare nut. Make sure you compare the old nut with the new to make sure you use the same-size nut.



7 Here we've removed the line. Instead of cutting out the sections, it's important to take the line out in one piece so you can measure it. Make sure to retain the original bends.



8 Here's the original line. Because we took the time needed, the bends are the same as when it was installed on the truck. Now we can use it for a template when forming the new line.



9 We used a tape measure to make sure we could get the length as close as possible to the line that was removed. It's better to cut a little long to make sure you have enough length to form the flared ends.



10 Many shops stock rolls of various diameters of brake-line tubing. This makes the work easier with the tools we have for the job. Clamp the straightening tool in a vise and start the rolled line through it.



11 Work it back and forth a few times and you will get a straight line of tubing such as this.



12 Take a measurement to make sure your length is similar to that of the line you removed.

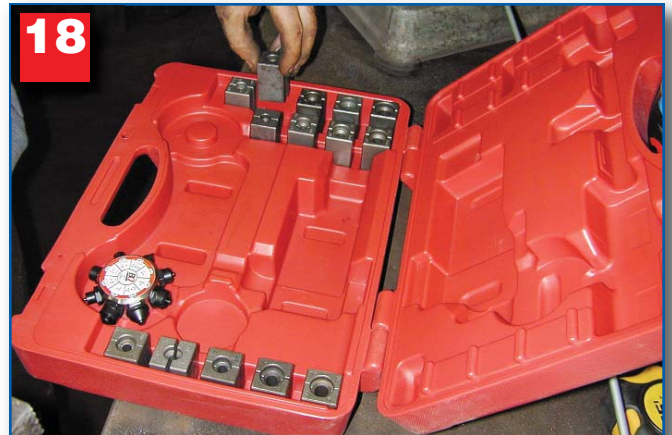


13 Mark it to the proper length.



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With the line still attached to the straightener, cut tubing to the proper length.



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Here are thepeen- and line-size dies used obtain the correct sizes of flare and line you need.



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Using a new flare nut is an option that many technicians choose. This kit has quite a selection of sizes. Make sure to check the size using the pattern shown in Figure 6.



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Here's the first step of the setup. The steel tube is passed through to be flush with the end of the die, and the turret is rotated to the No. 1 position for the correct diameter of line. Next the handle is depressed, forming the first part of the double flare.



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Here's the start of the flaring process using this kit.



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Now we rotate the die to turret No. 2 for the correct diameter and depress the handle, forming the second half of the double flare. This flaring tool works well, providing a double flare every time, provided you have the correct setup.



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The flare turret for a 45° double flare is being installed on the flaring tool.



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Here's one method of obtaining a duplicate of the original brake line. Align the ends and tape off starting points of the old and new brake lines. The old line had to be snipped off at the end because the flare nut wouldn't rotate on the line. The extended length is shown on the new line.



At the first bend apply another wrap of tape. A tubing pliers is used to stabilize the line while it's hand bent to follow the path of the old line.



Continue to tape and bend the line, using the necessary tools. At the end of the line, cut to the exact length, install the second tube nut and then form the flare – just as we had done in the beginning.



Here we install the new line using the OE clips that came with the truck. This makes the job professional and eliminates the chance of rubbing or vibration.



If the original path had not been used the line could have rubbed at this bend, causing it to become worn.



Now bleed the brakes and refill the master cylinder. A pressure-bleeding system is being used here.

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