

### Common Installation problems

The most common problem with lines not fitting properly is that they are installed incorrectly or the car has been modified. Changes in master cylinders, manual to power brakes, proportioning valves, calipers, rear ends, fuel pumps, carburetors, radiators, transmissions or disc brake conversions can each affect the fit of a part. Lines are typically very specific to the model, and sometimes even depend on the month of production. Although some lines do cross over from year to year, most do not. If you are unsure of how the lines go back on your car, We offer a large variety of assembly manuals to assist in your project. Below is a general guide to installing your replacement lines.

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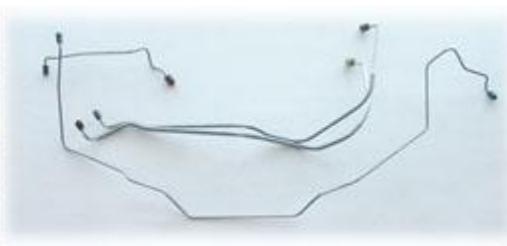
### Carefully remove the old lines



**Step 1.** Even with extensive research and resource library, we still find some original cars with parts that differ from our patterns. Multiple vendors made lines for the OEM, they start and end in the same location but the bends may be slightly different. Always remove your old lines carefully for comparison. Always keep your old lines for reference. If your old line is different, we may need to see your original line as an example of what was on your car.

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### Compare old and new lines



**Step 2.** Make sure the line you are comparing to is a true original line. If your line has a long fitting on one end and short fitting on the other, it is remade. If the line has wave-like bends and/or wraps around to take up the slack in the line, it is remade. The original line will have crisp, clean bends just like our replacement line. If a line must be altered to fit a non-stock application (line lock, dual master, disc brake conversion, replacement rear end) or your application varies from our part, be aware that once the part is bent, cut, or not in the original shape, it is NOT returnable.

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### Clean and prepare block and valves



**Step 3.** In some cases, you will be re-using the original brake distribution block, proportioning valve, or other blocks that are not available new. These blocks should be cleaned and inspected before reassembly. Valves are available for all common cars on the [web site](#).

Clean the thread ports carefully using solvent, a small brush and compressed air. Inspect the cone shaped seat in the bottom of each port. If the seats have multiple crush rings or off-center crush rings, you may have trouble with leakage. If the seats look bad, you may consider buying a new replacement valve. In most cases, blocks are available new, but in some cases the original block may have to be reused. In many cases the brake hoses may have a brass block that looks like it is part of the hose. This block is often overlooked and thrown away.  also carries all these brass items.

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### Routing the new lines



**Step 4.** With the protective caps in place, route the new lines into place on the car. The end caps protect the threads and prevent dirt from entering the lines. If you have new clips, install them in the exact position of the original clips. New clips are available from  for all common applications. Carefully route the new lines in the line clips and start the bolts in the clips, but do not completely tighten the lines or the clips.

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### Start Threading



**Step 5.** With the new lines loosely in place, be sure the ends are near the port where they will install, and pointing the proper direction. Leave all connection points such as valves, blocks, clamps, and wheel cylinders as loose as possible. This will give you some free play while you are starting the fittings. Your new lines should line up close to the attaching points. You may have to align the new lines slightly by gently bending the ends into place. Make sure that the fittings have the correct angle to the receiving female threads to avoid cross-threading. The seat of the flare will be resting against the cone of the component so make sure the line is straight into the fitting hole and aligned to the seat, this will prevent a potential future leak. Remove the end caps and finger tighten all fittings. Do not tighten any fittings clamps or blocks until all lines are in place.

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### **Choosing a fluid**

Standard DOT 3 brake fluid will work just fine in your new system. Be sure it has not been exposed to moisture. An open container of DOT 3 fluid will collect moisture from the atmosphere. DOT 3 fluid will also damage your paint, so do not spill on any on your vehicle.

DOT 5 (silicone fluid) repels moisture, and will not harm your paint. Under extreme braking conditions (constant drag racing) or excessive braking, DOT 5 does not perform as well as DOT 3. When DOT 5 fluid heats up, performance decreases. When changing a system over to DOT 5, be sure to flush out all reused components, blocks, cylinders, and lines. DOT 5 & DOT 3 fluids should never be mixed.

Any brake fluid can't hold air bubbles so never shake the container. If it has been shaken, pour it into a container that may be heated. Place the container over low heat for 10-15 minutes. If it appears to boil, it is just the air coming out of the fluid. Allow the fluid to cool and pour it back into it's container. It is now ready to be used.

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### **Finishing the job**



**Step 6.** With all fittings started, tighten all blocks and clamps. Now fully tighten all fittings. When you tighten fittings, make sure to use a line wrench. Your new lines are now installed. Fill your master cylinder with new brake fluid. Bench bleed the master and make sure caliper and wheel cylinder pistons are fully depressed. This will save time in the bleeding process. Then bleed the air out of the entire system starting with the wheel farthest from the master. Bleeding the brakes when a new component has been installed

can take quite a bit of time, fluid and energy. Once the system is air-free, check each connection for leaks.

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### **Finished Job**



All your new lines are now installed.

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### **Trouble shooting lines that still leak**

If you have a leaky line on a new component, the line has not been tightened enough to crush and seal the line to the brass seat, or the tube is not straight on the brass seat. Loosen the line slightly, align and retighten to force a seat between the brass and the line. Repeat until a seat occurs which will stop the leak. If you have a leaky line on a used component or block, see step 2.

Never use Teflon to seal lines. Teflon seals the threads to the component but does not stop the leak. Remember the cone of the component and the flare of the tube is what seals the connection. The tube nut simply holds the flare to the seat. Teflon is only used on pipe fittings (tapered fittings), NOT on brake line fittings.

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### **Consult your mechanic**

This page is intended for use as a basic guide to help install new brake and fuel lines. If you are unsure about any part of the installation procedure, please consult a certified, professional mechanic for assistance. assumes no responsibility or liability for improperly installed lines.

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### ***Quick Tip: Line Installation***

**Line Installation** - Refer to the disassembly photos. There are many holes in the frame and it is impossible to remember which are the correct holes for line clip mounting. If you do not have photos, we sell factory assembly manuals that show in detail where each of the clips are located in the frame.