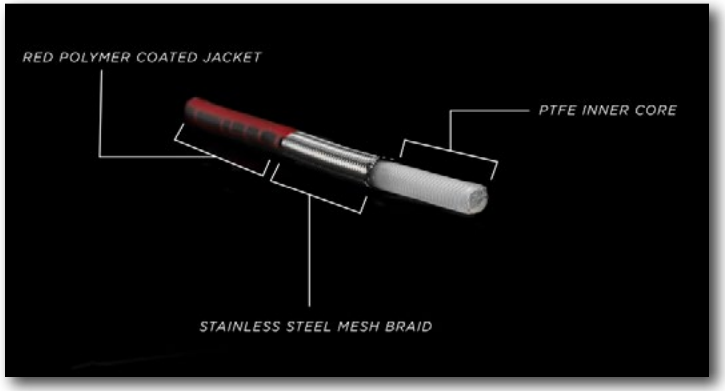
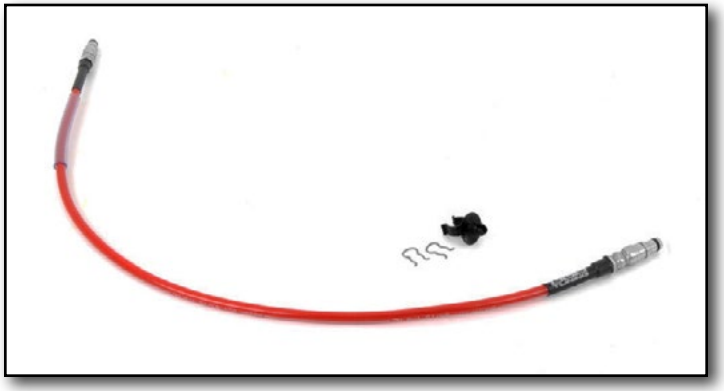
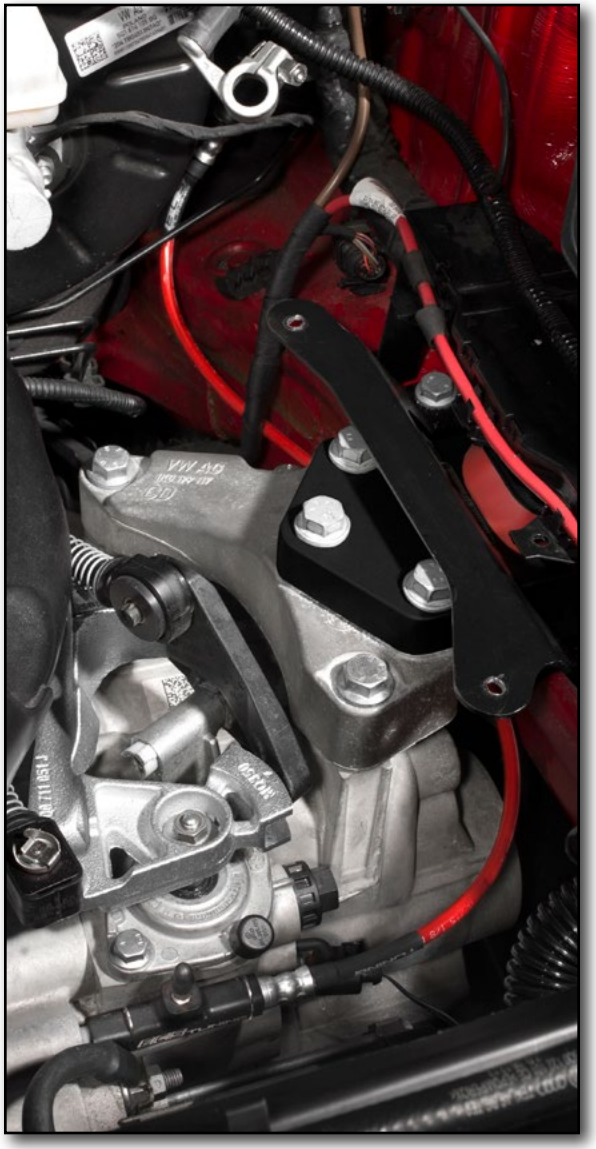
VW MK4, MK5, MK6, & MK7 Exact-Fit Clutch Hose Installation Instructions - Click HERE to Shop

Skill Level 1 - Easy

Basic Skills Required







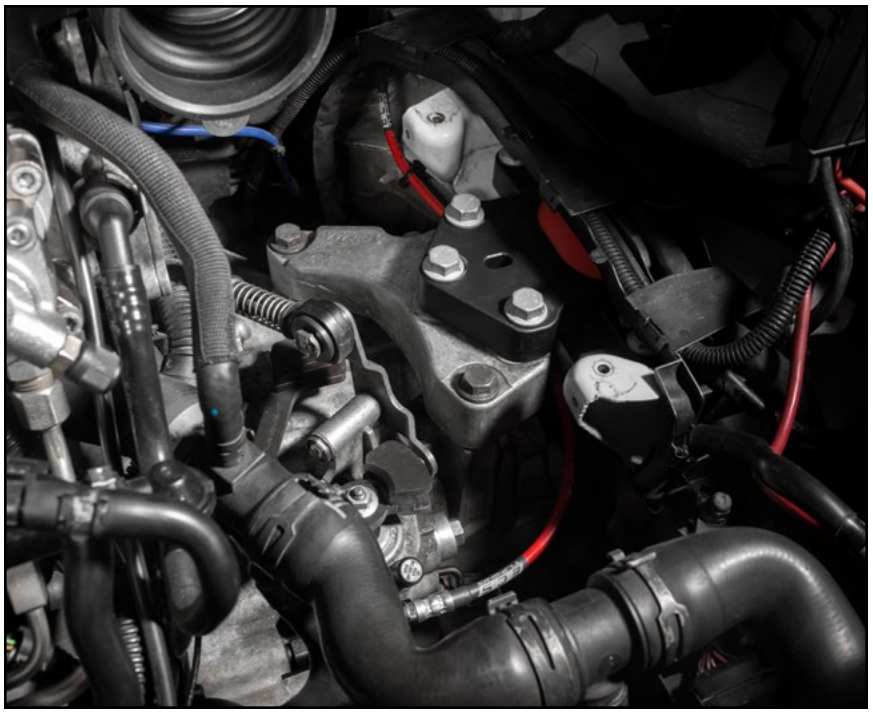
INTRODUCTION

Volkswagen Exact-Fit Clutch Hoses

Our new Volkswagen Exact-Fit clutch hoses are designed to be used as replacement parts or as a performance upgrade. Made with the highest quality components and designed and constructed to comply with DOT requirements, these hoses are the finest available. Utilizing a layer of stainless steel mesh allows our hoses to offer superior expansion resistance, creating a firmer and more direct pedal feel. Our signature bright red polymer coating used on these hoses, (as well as our Exact-Fit brake hoses), offers phenomenal protection from the elements and adds the incomparable ***Sizzle*** of ***ECS Style*** under your hood.

Installing an ECS Tuning Exact-Fit clutch hose is a fairly routine project, but be sure and plan enough time. Connecting the hoses will not be difficult, but on some cars space is limited near the firewall and you may have to remove a few components to gain the access you need. Bleeding the system can take some time if you're not familiar with the process so we outlined the theory and procedure to help you out.

There are a few special tools that will make the job a lot easier, and in some cases you may need to work from underneath. Read these installation tips first and assess the project on your car before you proceed. The proper preparation and equipment will make the job go smoothly and efficiently. Thank you for looking to ECS Tuning for all your performance and repair needs, we appreciate your business!



Applications:

MK4 (5-Speed) ..... ES#3085670
MK4 (6-Speed) ..... ES#3048034
MK5 & MK6 (5-Speed) ..... ES#3085671
MK5 & MK6 (6-Speed) ..... ES#2999161
MK7 (6-Speed) ..... ES#2999159

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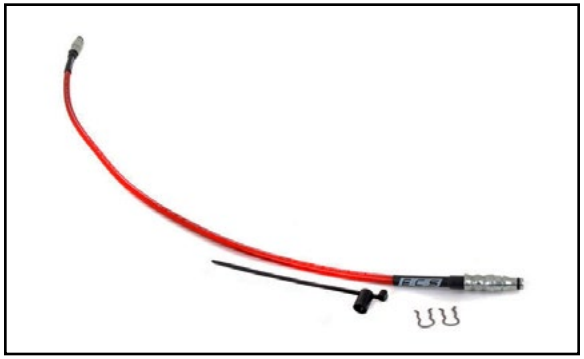
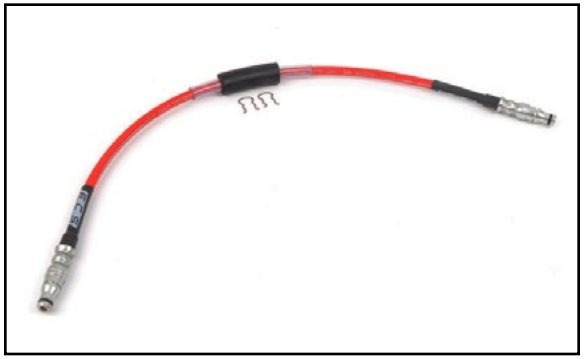
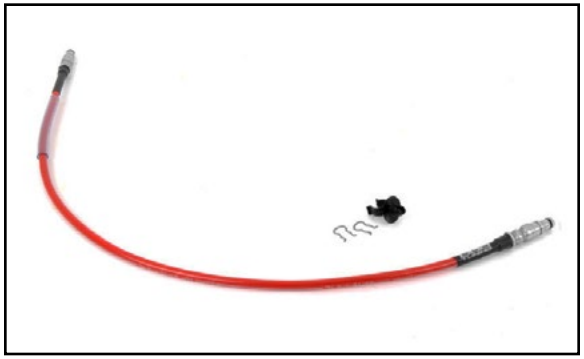
KIT CONTENTS







Multiple different clutch hose kits are available, many of which are shown here, however your kit may still vary slightly. The length of the hose, the routing, the shielding, and the hold down methods all vary between different models. Each of our Exact-Fit clutch hose kits is application specific, and will come with everything you need for a quality installation on your car.

AVAILABLE SHIFTER UPGRADES

Build-Your-Own 6-Speed Manual Transmission Upgrade Kit: ES#3420447

ECS Front-to-Back Shift Lever

ECS Side-to-Side Shift Lever

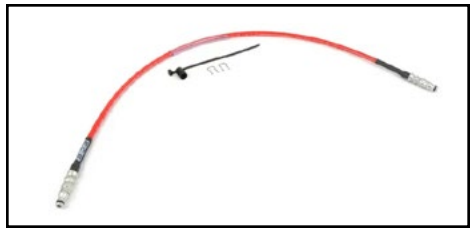
ECS Solid Shifter Cable Bracket Bushing Kit

ECS Solid Shifter Cable End Link Bushings

- OR -

ECS Billet Shifter Cable End Links

ECS 6-Speed Clutch Bleeder Block



ECS Exact-Fit Clutch Line

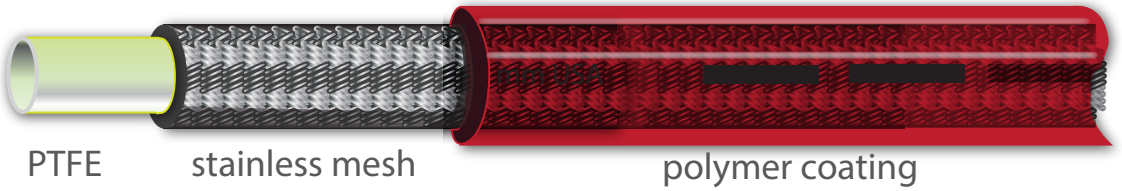
Transmission Service Kit w/ Magnetic Drain & Fill Plugs

EXACT-FIT CLUTCH HOSE CONSTRUCTION

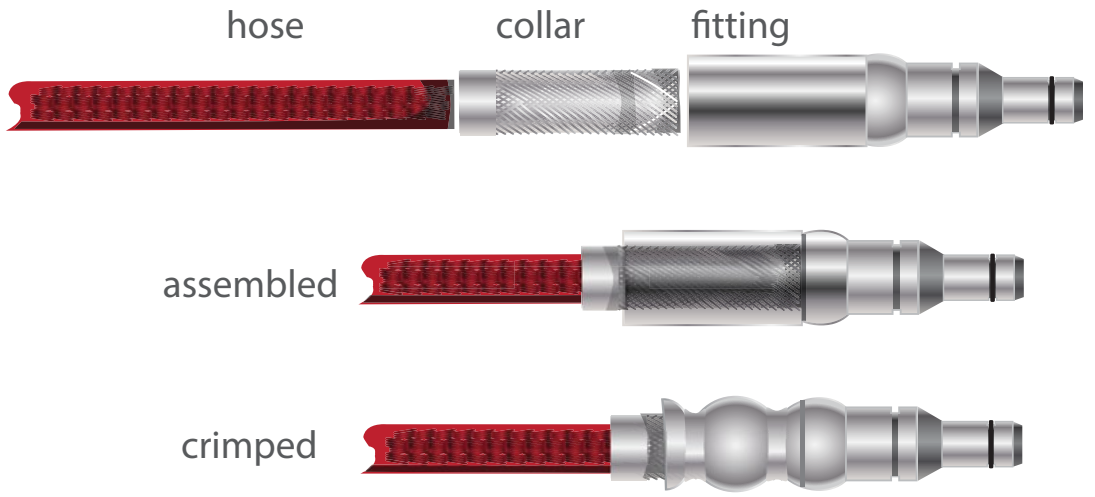
The core of an ECS Tuning Exact-Fit clutch hose is made of extruded PTFE. Stronger than rubber, PTFE swells less under pressure, is flexible and durable, and is unaffected by chemicals and petroleum based fluids that can be damaging to stock rubber type clutch hoses.

The inner core is surrounded by a stainless steel mesh that is stronger than the fabric mesh reinforcement used in stock hoses. As a result, the stainless mesh resists core expansion under pressure better than fabric mesh, and provides added shielding to protect the core from abrasion and impact damage. Less core expansion provides a consistent, positive clutch feel.

The outer coat is made of a bright red seamless polymer. Attractive and more impact resistant than synthetic and rubber materials that make up a stock hose, the Exact-Fit outer layer also provides added protection from chemical and UV attack.

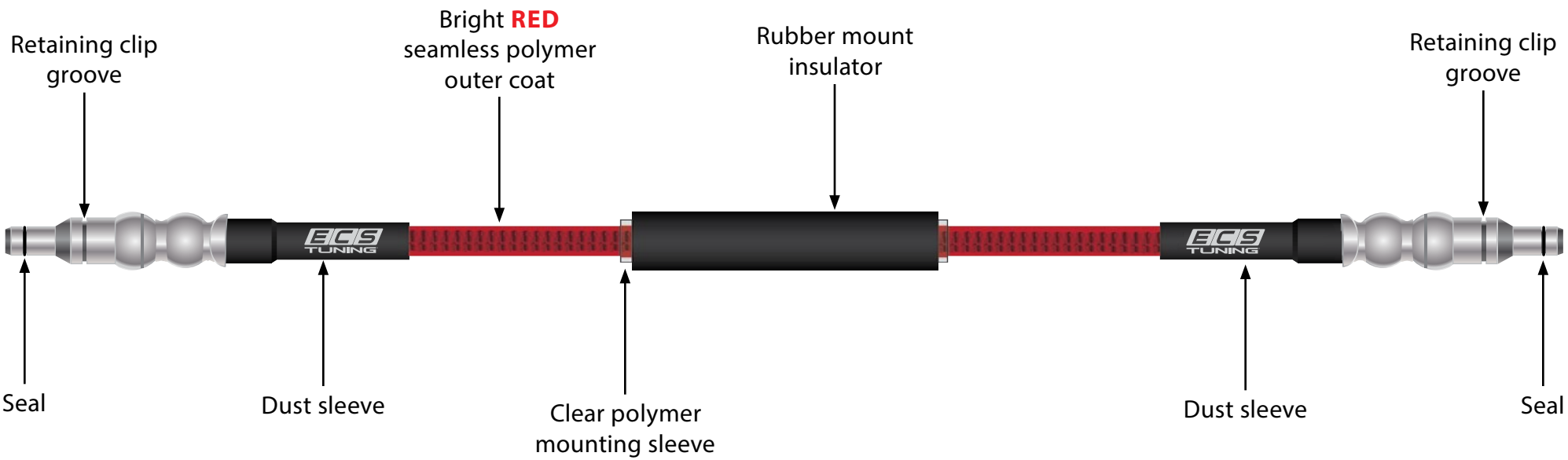


Exact-Fit clutch hoses use a two piece fitting design. An aluminum crimp collar is slid over the hose end, then the collar and hose are inserted into a zinc-coated, corrosion resistant fitting, which is then crimped by a shaped set of dies that compress the fitting and collar tightly around the hose. The fitting collar changes shape when crimped to create multiple compression bands for added strength.



All of our ECS Tuning Exact-Fit clutch hoses are engineered and constructed in house, complying to DOT FMVSS 106 standards and using DOT compliant hydraulic equipment. Finally, each and every hose is tested to 3000 psi before being packaged and shipped to you.

EXACT-FIT CLUTCH HOSE CONSTRUCTION



Keep in mind that your clutch hose may differ slightly than the one shown since each hose is application specific.

INSTALLATION NOTES

- **RH** refers to the ***passenger side*** of the vehicle.
- **LH** refers to the ***driver side*** of the vehicle.
- Always use the proper torque specifications.
- If applicable to this installation, torque specifications will be listed throughout the document and at the end as well.
- Please read all of these instructions and familiarize yourself with the complete process **BEFORE** you begin.

GENERAL PREPARATION AND SAFETY INFORMATION

ECS Tuning cares about your health and safety, please read the following safety information. This information pertains to automotive service in general, and while it may not pertain to every job you do, please remember and share these important safety tips.

- Park your car in a safe, well lit, level area.
- Shut the engine off and remove the key from the ignition switch.
- Make sure any remote start devices are properly disabled.
- **ALWAYS** wear safety glasses.
- Make sure the parking brake is applied until the vehicle is safely lifted and supported.
- Whether lifting a vehicle using an automotive lift or a hydraulic jack, be sure and utilize the factory specified lift points.
- Lifting a vehicle in an incorrect location can cause damage to the suspension/running gear.
- **ALWAYS** support the vehicle with jack stands.
- **ALWAYS** read and follow all safety information and warnings for the equipment you are using.

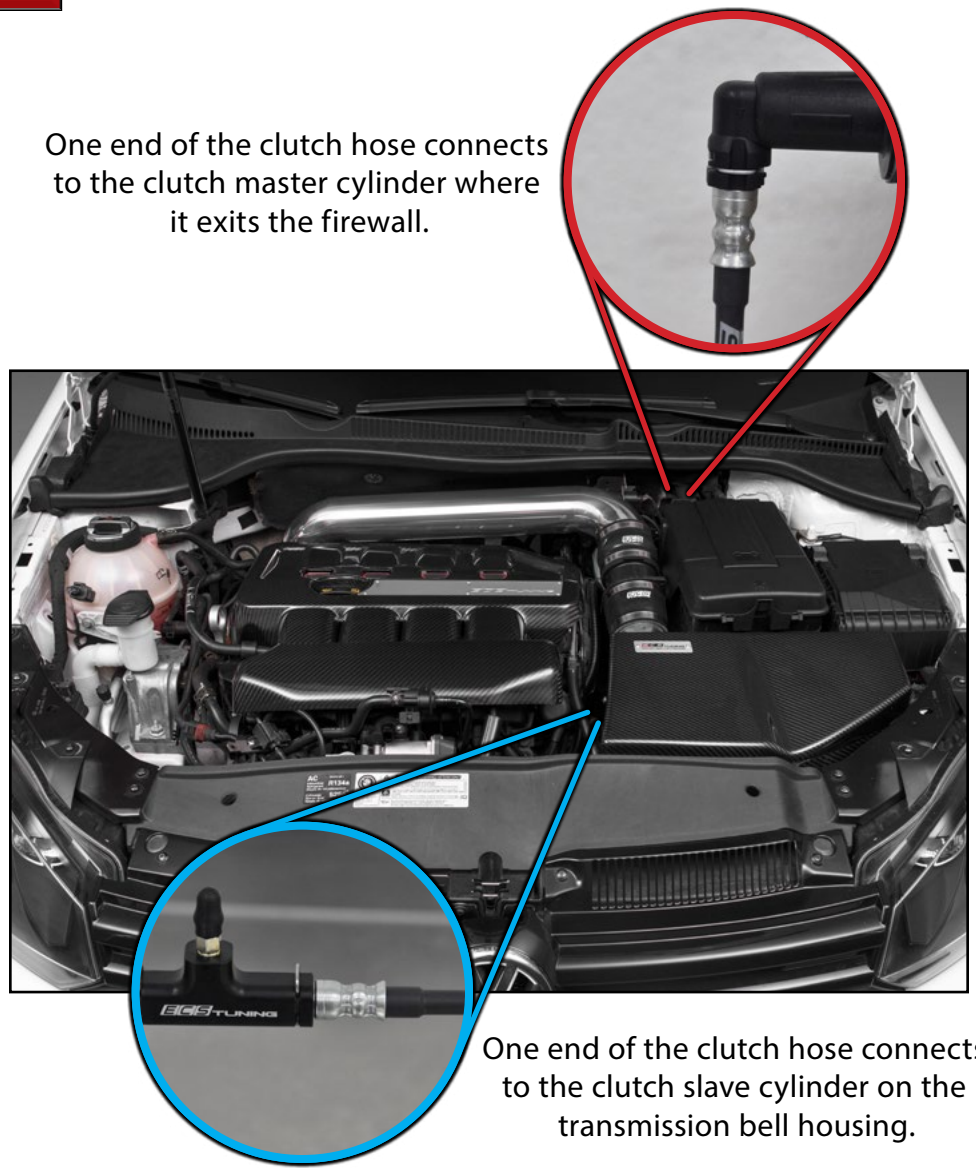
NEVER get underneath a vehicle that is supported only by a jack, and ALWAYS make sure that the vehicle is securely supported on jack stands.

INSTALLING THE EXACT-FIT CLUTCH HOSE

Getting Started: Where is it?

- Clutch hose location and installation, for arguments sake, is basically the same on all cars. The 5-speed and 6-speed transmissions differ slightly in the location of the slave cylinder, and depending on model year, the hold down or securing points of the hoses will differ.
- All hoses connect to the clutch master cylinder near the firewall on one end and connect to the slave cylinder on the transmission at the other end.
- The master cylinder location is the same on all cars, but some will have a dampening/delay valve located on the end. On cars without a delay valve, the ECS clutch hose connects directly to the clutch master cylinder. On cars with a delay valve, it connects to the end of the delay valve.
- On some cars, you can see right past the intake system and have clear access to the top of the transmission. On others, such as the MK6 shown here, access is blocked and you will need to remove the intake system.
- On MK4s, the battery is near the front and you have good access where the clutch master cylinder exits the firewall. On MK5, MK6, and MK7s, the battery is located near the firewall and you will need to remove the battery and battery tray to install the clutch hose.

One end of the clutch hose connects to the clutch master cylinder where it exits the firewall.



One end of the clutch hose connects to the clutch slave cylinder on the transmission bell housing.

INSTALLING THE EXACT-FIT CLUTCH HOSE

What Tools Do I Need?

- Basic hand tools are required to remove the intake system or battery as required, and here are a few things that will make the rest of the job go a little smoother:

Get a drain pan ready to catch dripping clutch (brake) fluid during the installation.

Available at ecstuning.com
Drain Pan
ES#2748892

Place a few pig mats down to protect the floor. Even with a drain pan, the fluid seems to somehow randomly drip wherever it wants.

Available at ecstuning.com
Pig Mats
ES#2137109

You'll need one small angled pick to pull out the retaining clips holding on the original clutch hose.

Available at ecstuning.com
Small Angled Pick Set
ES#2778980

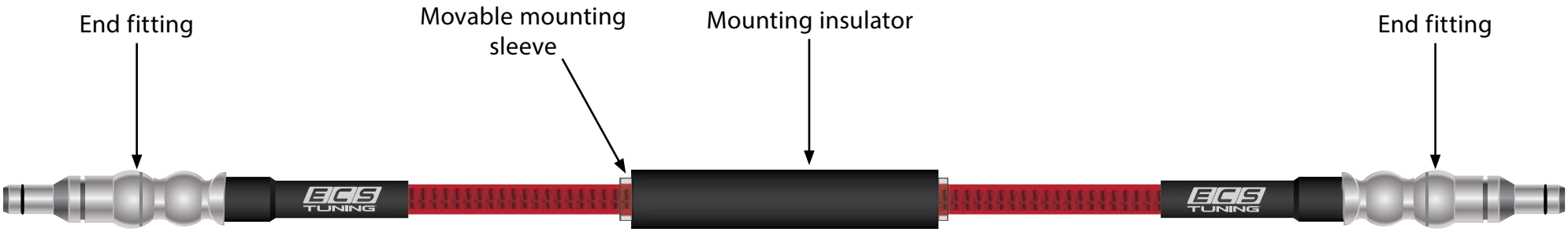
Line stoppers are handy to help keep the clutch master cylinder from running dry.

Available at ecstuning.com
Line Stoppers
ES#2748908

INSTALLING THE EXACT-FIT CLUTCH HOSE

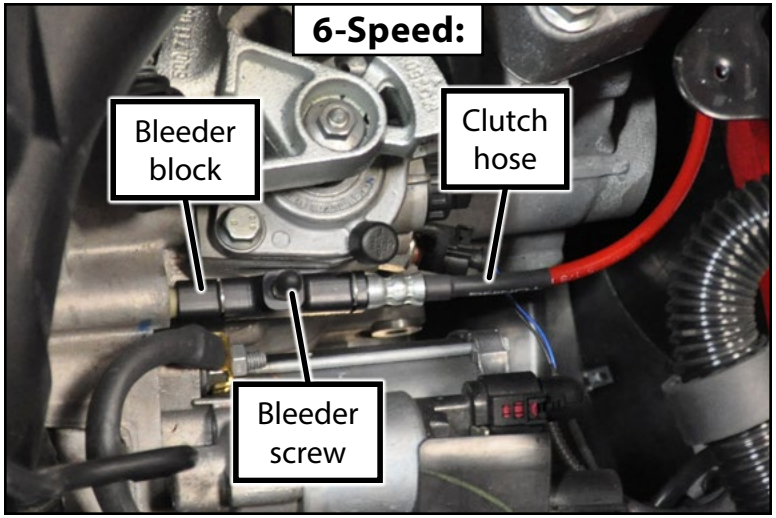
Now let's take a look at some of the basic features of the hose:

- Both end fittings are exactly the same.
- The hose is completely reversible, in other words, it can be installed in either direction.
- If the hose is equipped with a mounting sleeve, it will slide back and forth along the polymer outer coat and can be positioned where needed.

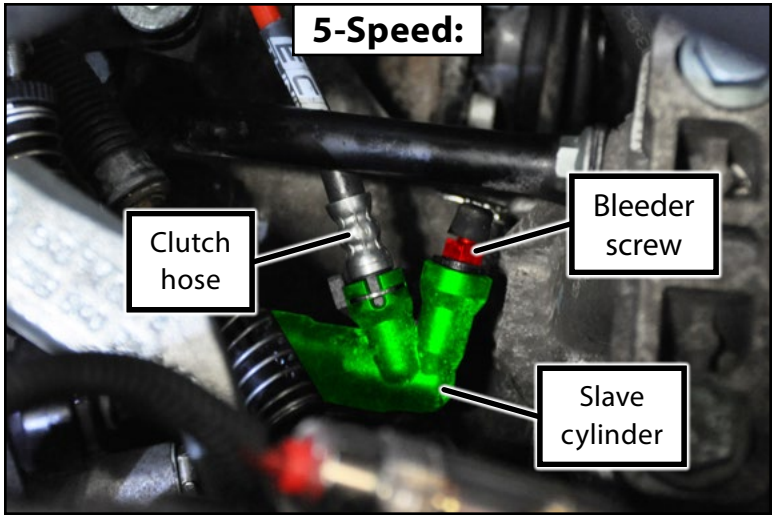


INSTALLING THE EXACT-FIT CLUTCH HOSE

Here's how it's connected at the slave cylinder:



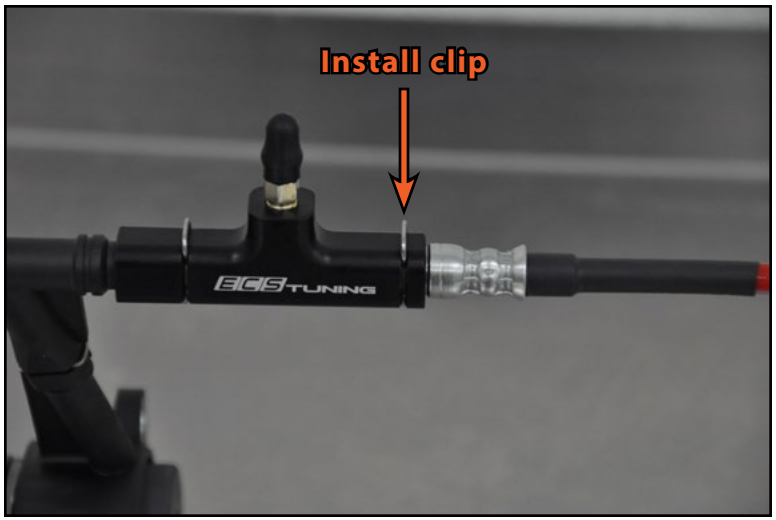
- On 6-speed cars, the slave cylinder is mounted inside the bell housing, integrated with the throwout bearing. A rigid fluid passage extends out of the top of the bell housing just behind the starter, where a bleeder block is installed. The clutch hose connects into the end of the bleeder block as shown here.



- On 5-speed cars, the slave cylinder is mounted externally on the top of the bell housing. Shown here, you can see how the hose enters the slave cylinder at an angle, right next to the bleeder screw which is located on the slave cylinder itself.

INSTALLING THE EXACT-FIT CLUTCH HOSE

Making the connection at the slave cylinder:



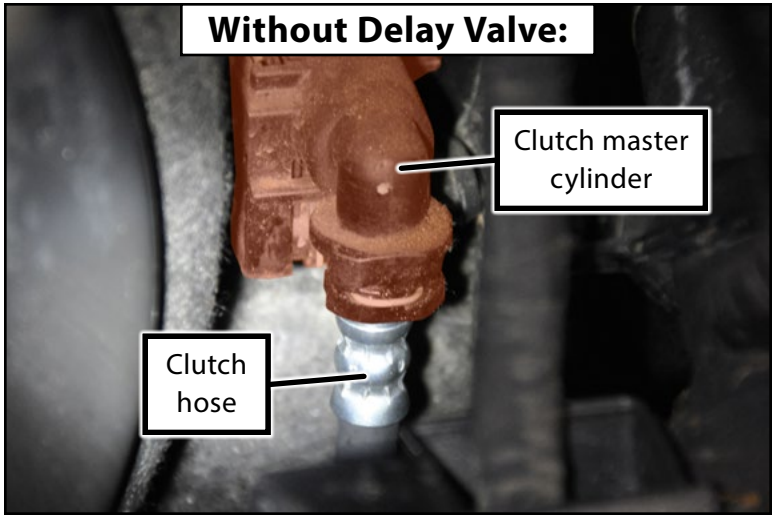
- Regardless of whether you have a 5-speed or 6-speed, connecting the hose at the slave cylinder is the same. To disconnect the original, simply remove the clip and pull out the hose or line. To install the new, simply push it into place until it is fully seated, then install one of the new clips included with the hose.

TECH TIP

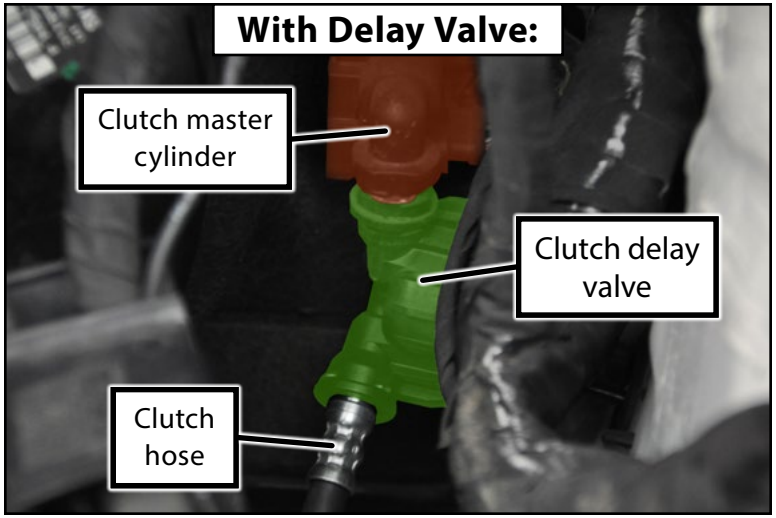
Some (***not all***) of the original clutch hoses have a molded line seal on the end like the one pictured here. Occasionally these seals will stick in the end of the slave cylinder, bleeder block, or clutch master cylinder. If your vehicle is so equipped, be sure and remove this seal or it will prevent installation of the new hose.

INSTALLING THE EXACT-FIT CLUTCH HOSE

Here's how it's connected at the master cylinder:



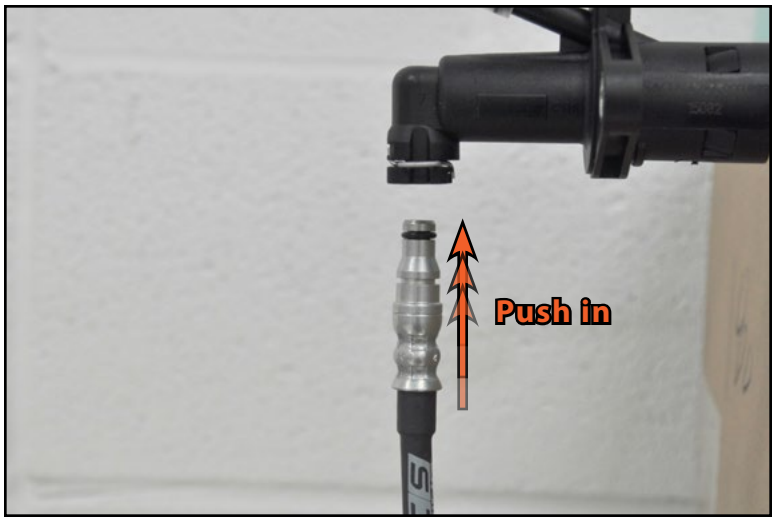
- This picture shows a car without a delay valve. In this case, the clutch hose attaches directly to the clutch master cylinder at the firewall.

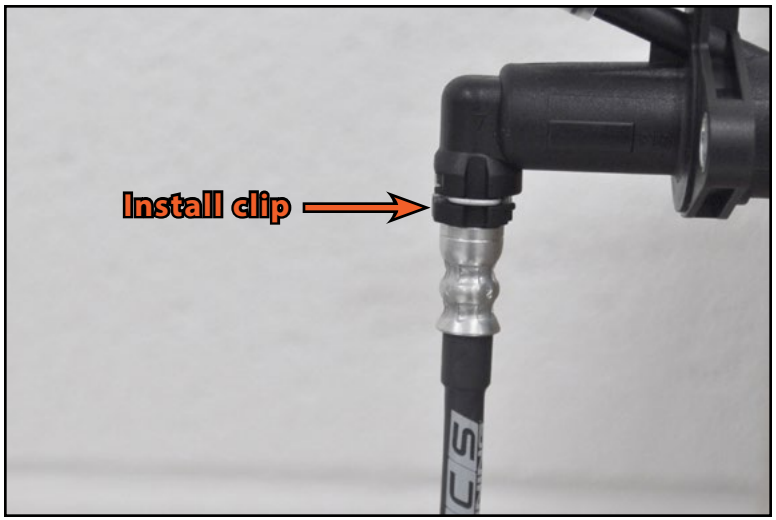


- This picture shows a car equipped with a dampening/delay valve. The delay valve is connected to the clutch master cylinder at the firewall. In this case, the clutch hose is connected to the delay valve.

INSTALLING THE EXACT-FIT CLUTCH HOSE

Making the connection at the master cylinder or delay valve:





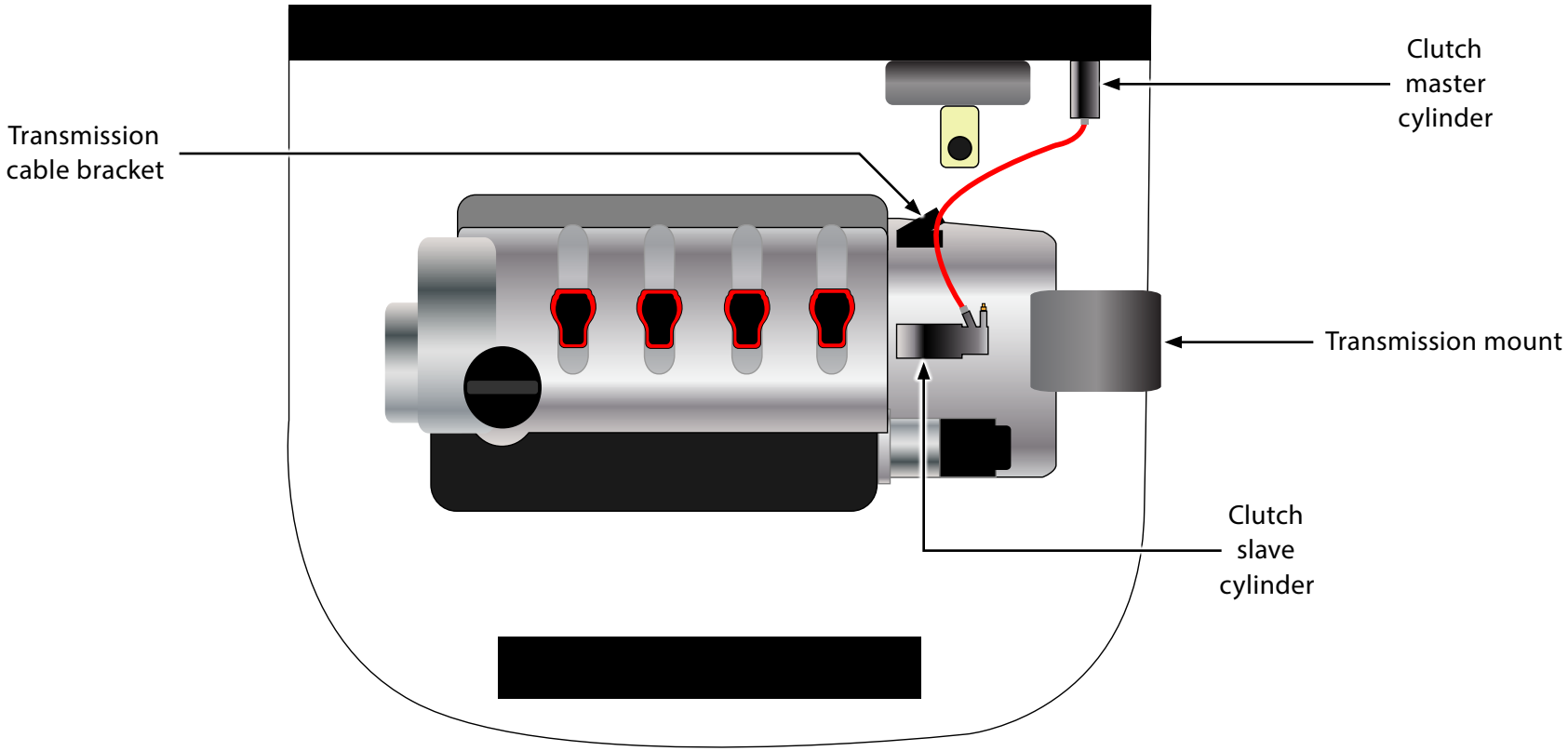
- Regardless of whether you have a 5-speed or 6-speed, connecting the hose at the master cylinder or delay valve is the same. To disconnect the original, simply remove the clip and pull out the hose or line. To install the new, simply push it into place until it is fully seated, then install one of the new clips included with the hose.

TECH TIP

Some ***(not all)*** of the original clutch hoses have a molded line seal on the end like the one pictured here. Occasionally these seals will stick in the end of the slave cylinder, bleeder block, or clutch master cylinder. If your vehicle is so equipped, be sure and remove this seal or it will prevent installation of the new hose.

CLUTCH HOSE ROUTING AND MOUNTING POINTS

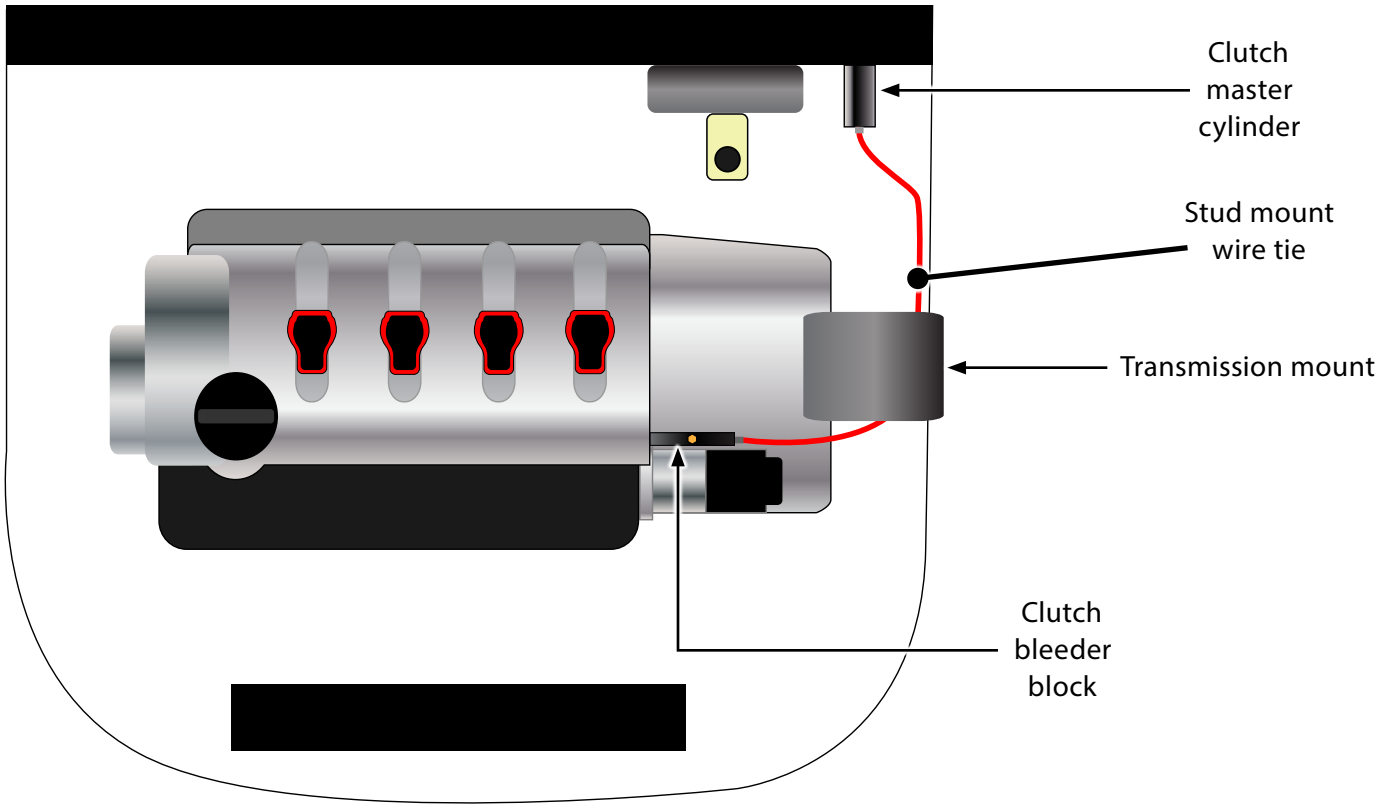
MK4: 5-Speed Transmission



- On a MK4 5-speed transmission, the clutch hose exits the slave cylinder at a 45 degree angle, mounts at the factory line support clip on the transmission cable bracket, then runs to the clutch master cylinder.

CLUTCH HOSE ROUTING AND MOUNTING POINTS

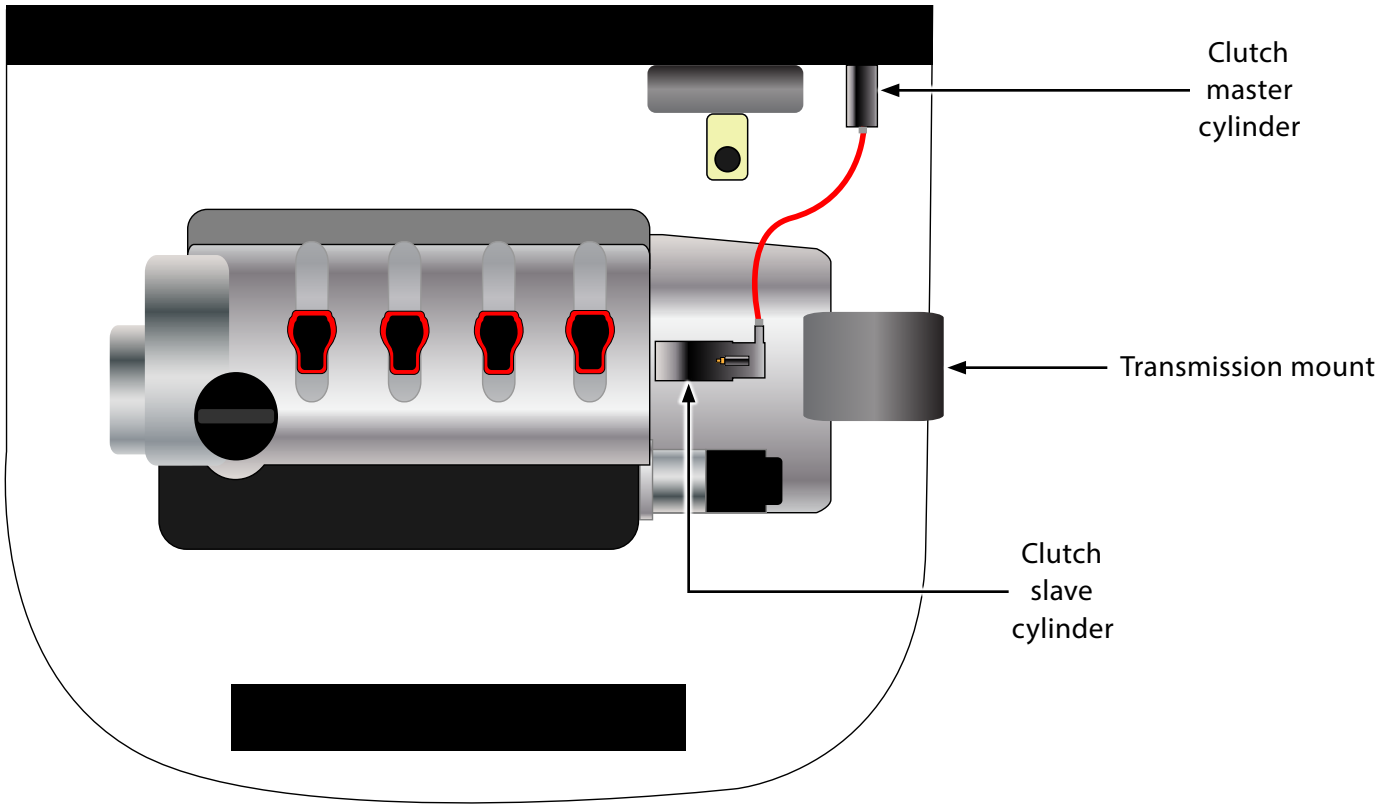
MK4: 6-Speed Transmission



- On a MK4 6-speed transmission, the clutch hose exits the bleeder block, runs under the transmission mount and connects to the clutch master cylinder. Secure it along the frame horn on using the stud mount wire tie included with the hose.

CLUTCH HOSE ROUTING AND MOUNTING POINTS

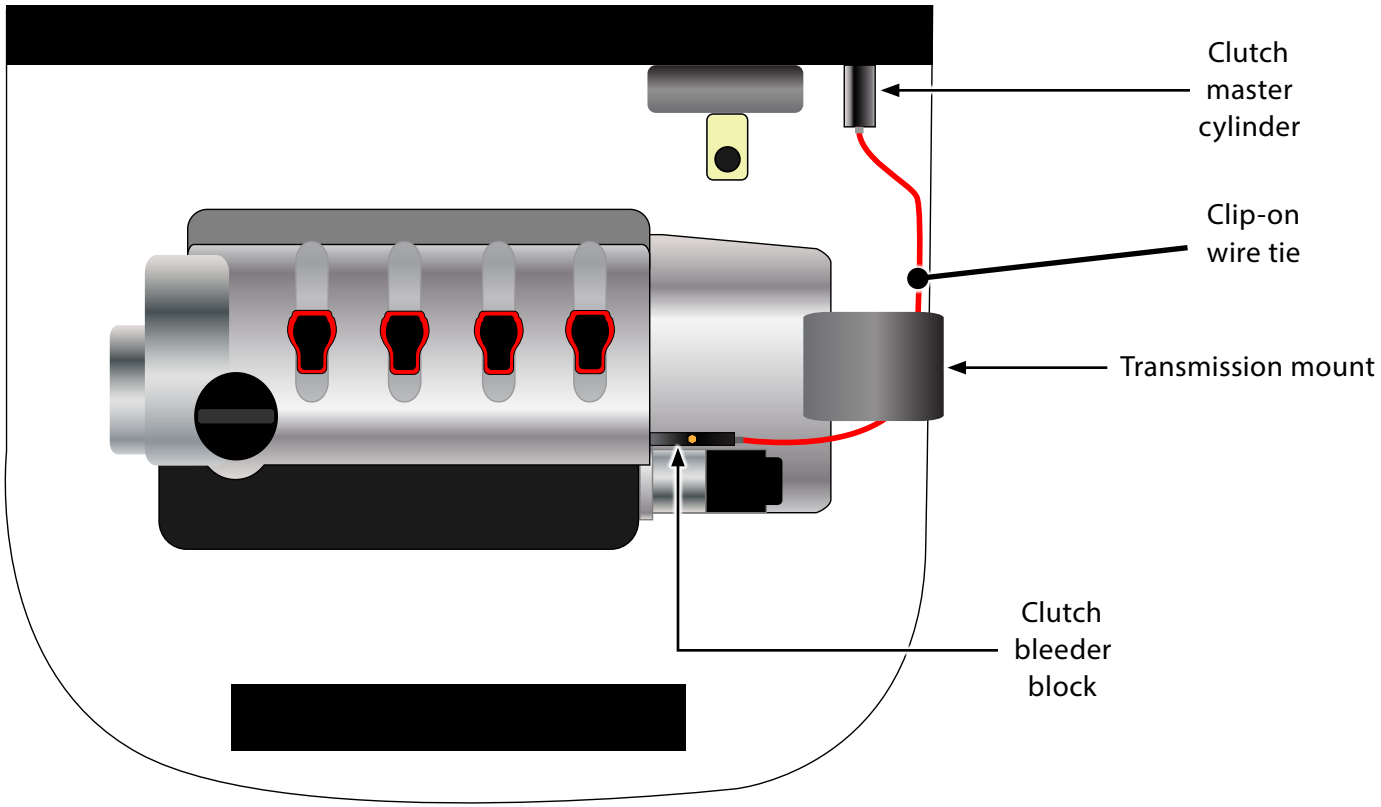
MK5 & MK6: 5-Speed Transmission



- On MK5 & MK6 5-speed transmissions, the clutch hose exits the slave cylinder at a 90 degree angle and runs directly to the clutch master cylinder. It does not require any additional support or hold down.

CLUTCH HOSE ROUTING AND MOUNTING POINTS

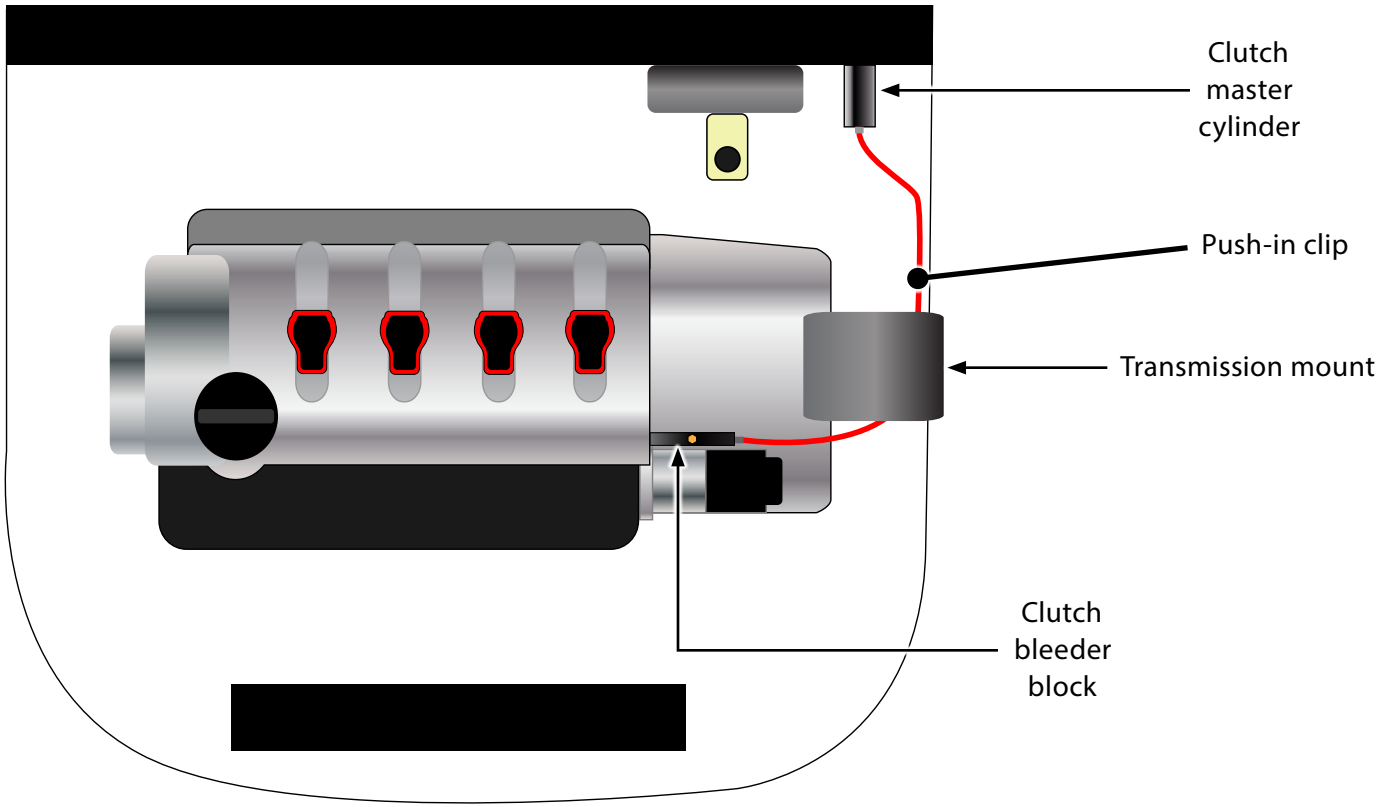
MK5 & MK6: 6-Speed Transmission



- On MK5 & MK6 6-speed transmissions, the clutch hose exits the bleeder block, runs under the transmission mount and connects to the clutch master cylinder. Secure it to the pinch weld using the clip on wire tie included with the hose.

CLUTCH HOSE ROUTING AND MOUNTING POINTS

MK7: 6-Speed Transmission

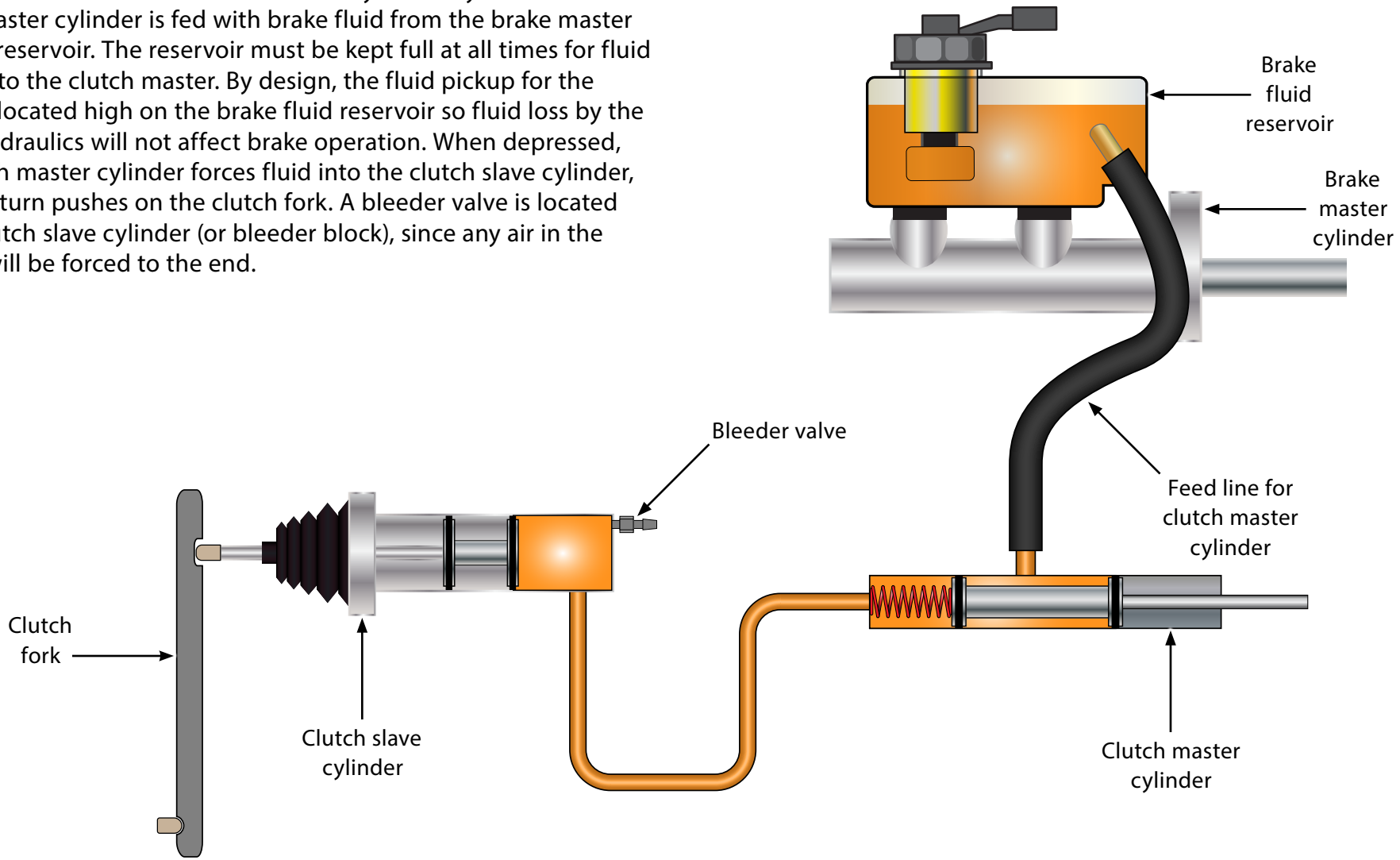


- On a MK7 6-speed transmission, the clutch hose exits the bleeder block, runs under the transmission mount and connects to the clutch master cylinder. Secure it along the frame horn using the push-in clip included with the hose. You will need to remove the original clip from the frame horn and install the new one.

BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Overview:

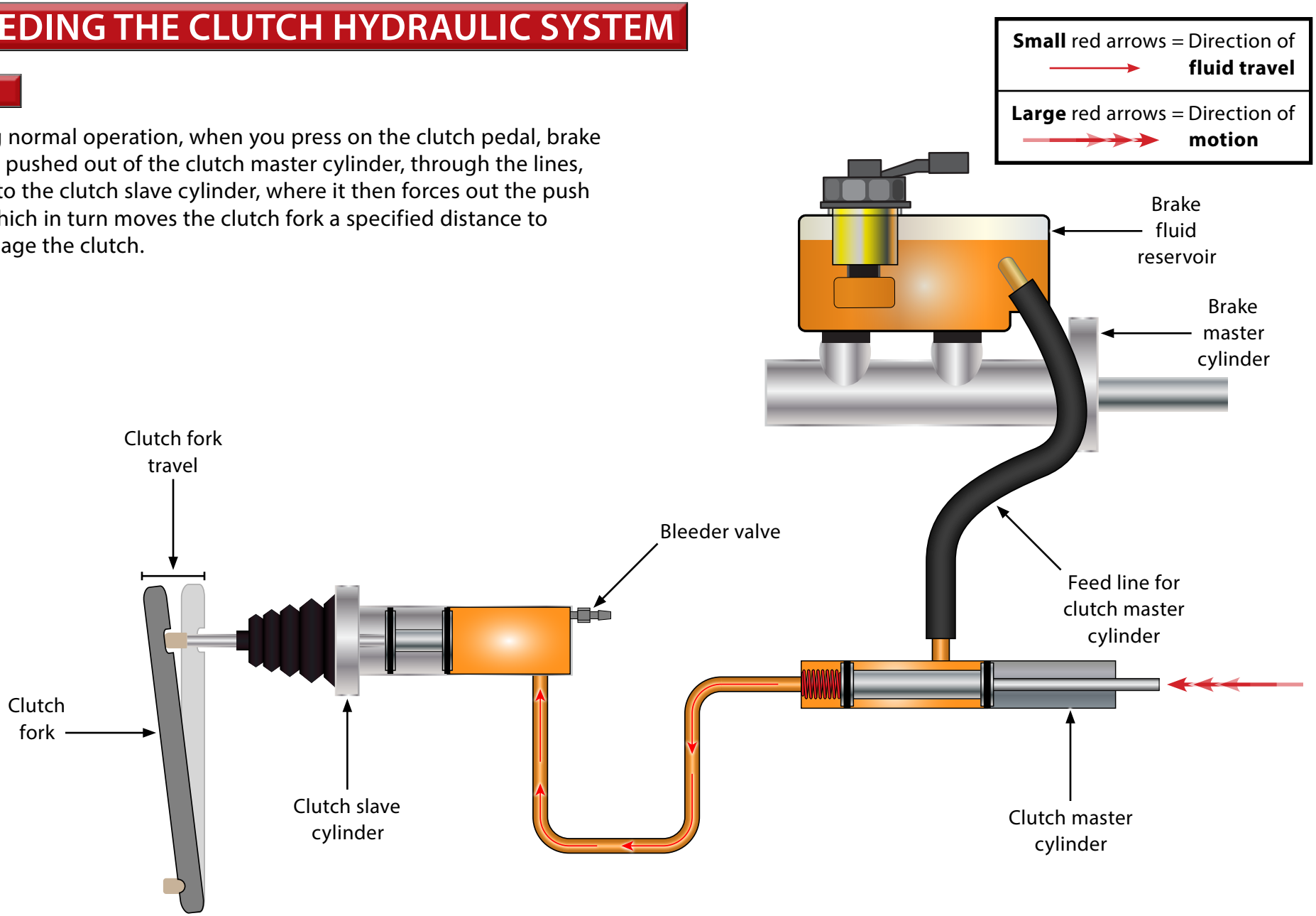
Let's start with an overview of the clutch hydraulic system. The clutch master cylinder is fed with brake fluid from the brake master cylinder reservoir. The reservoir must be kept full at all times for fluid to travel to the clutch master. By design, the fluid pickup for the clutch is located high on the brake fluid reservoir so fluid loss by the clutch hydraulics will not affect brake operation. When depressed, the clutch master cylinder forces fluid into the clutch slave cylinder, which in turn pushes on the clutch fork. A bleeder valve is located in the clutch slave cylinder (or bleeder block), since any air in the system will be forced to the end.



BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Step 1:

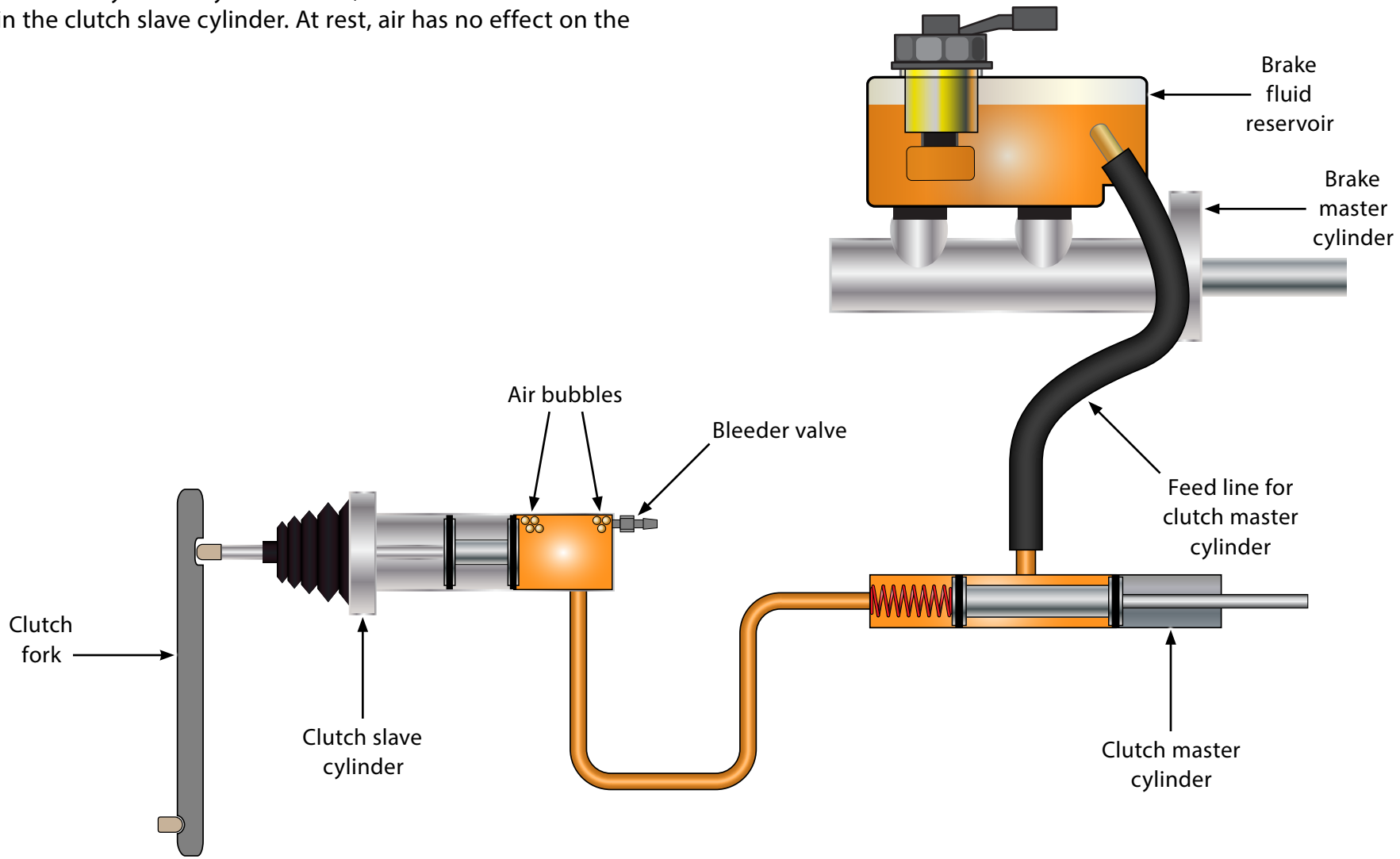
During normal operation, when you press on the clutch pedal, brake fluid is pushed out of the clutch master cylinder, through the lines, and into the clutch slave cylinder, where it then forces out the push rod, which in turn moves the clutch fork a specified distance to disengage the clutch.



BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Step 2:

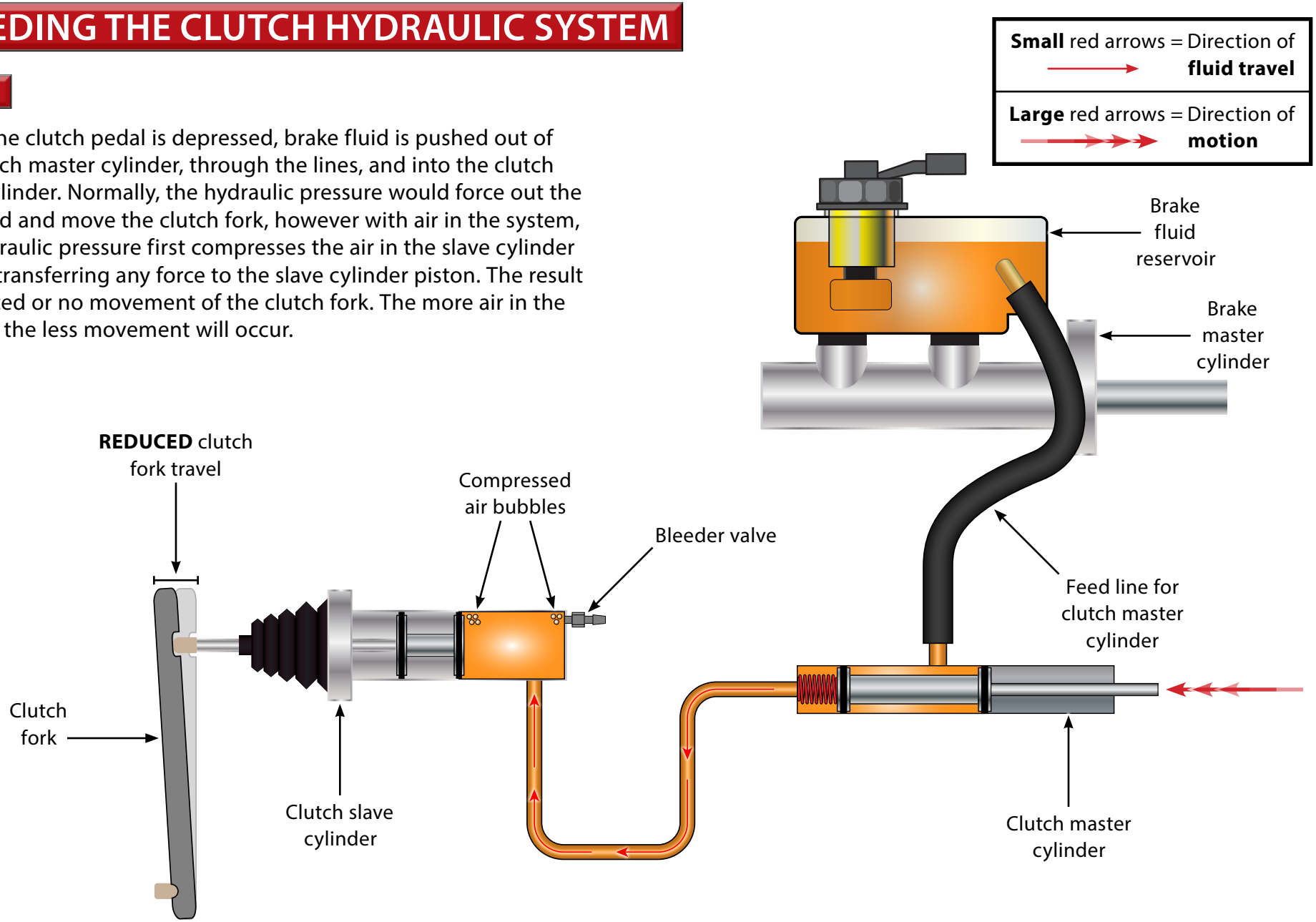
Here is the clutch hydraulic system at rest, but there are air bubbles trapped in the clutch slave cylinder. At rest, air has no effect on the system.



BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Step 3:

When the clutch pedal is depressed, brake fluid is pushed out of the clutch master cylinder, through the lines, and into the clutch slave cylinder. Normally, the hydraulic pressure would force out the push rod and move the clutch fork, however with air in the system, the hydraulic pressure first compresses the air in the slave cylinder before transferring any force to the slave cylinder piston. The result is reduced or no movement of the clutch fork. The more air in the system, the less movement will occur.



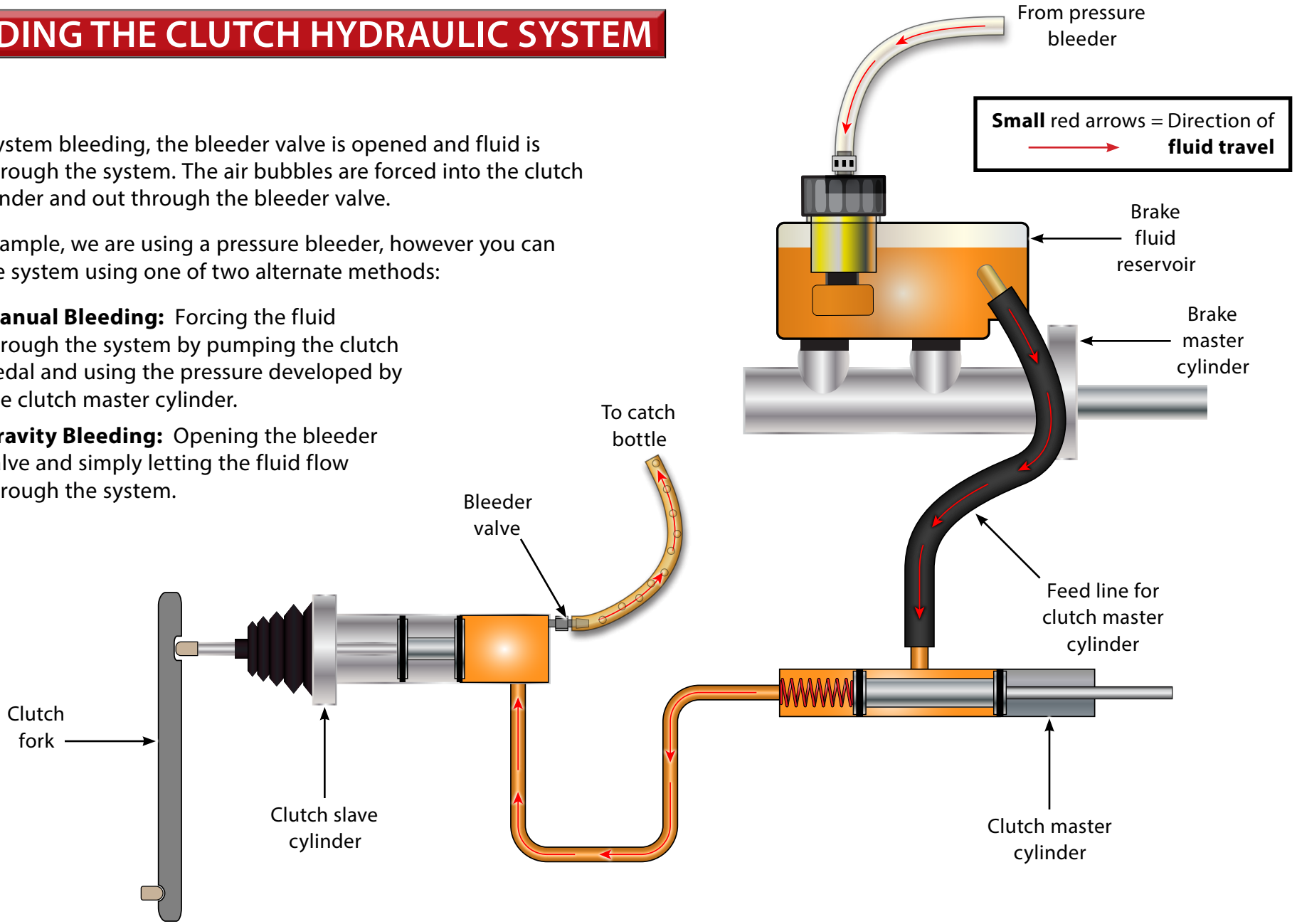
BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Step 4:

During system bleeding, the bleeder valve is opened and fluid is forced through the system. The air bubbles are forced into the clutch slave cylinder and out through the bleeder valve.

In this example, we are using a pressure bleeder, however you can bleed the system using one of two alternate methods:

1. **Manual Bleeding:** Forcing the fluid through the system by pumping the clutch pedal and using the pressure developed by the clutch master cylinder.
2. **Gravity Bleeding:** Opening the bleeder valve and simply letting the fluid flow through the system.



BLEEDING THE CLUTCH HYDRAULIC SYSTEM

Notes:

Now that we've covered the process, it's time to bleed the air out of the system. Decide what method you are going to use, keeping in mind the following:

- Pressure bleeding is generally the most efficient method for clutch systems.
- Due to the design of clutch hydraulic systems, it can sometimes be difficult to get all of the air out. You may have to use a combination of different methods to successfully bleed the system.

Pressure Bleeder
ES#2774831

- A pressure bleeder will efficiently force clutch (brake) fluid through the system.

Catch Bottle
ES#2773388

- A catch bottle makes bleeding or flushing a one person job, and makes it a lot cleaner too.

Brake Fluid
ES#1971190

- A high quality brake fluid such as Pentosin Super DOT 4 should be adequate for most systems. If you are not sure in any way what to use, consult your vehicle service information or a professional repair facility.

BLEEDING THE CLUTCH HYDRAULIC SYSTEM

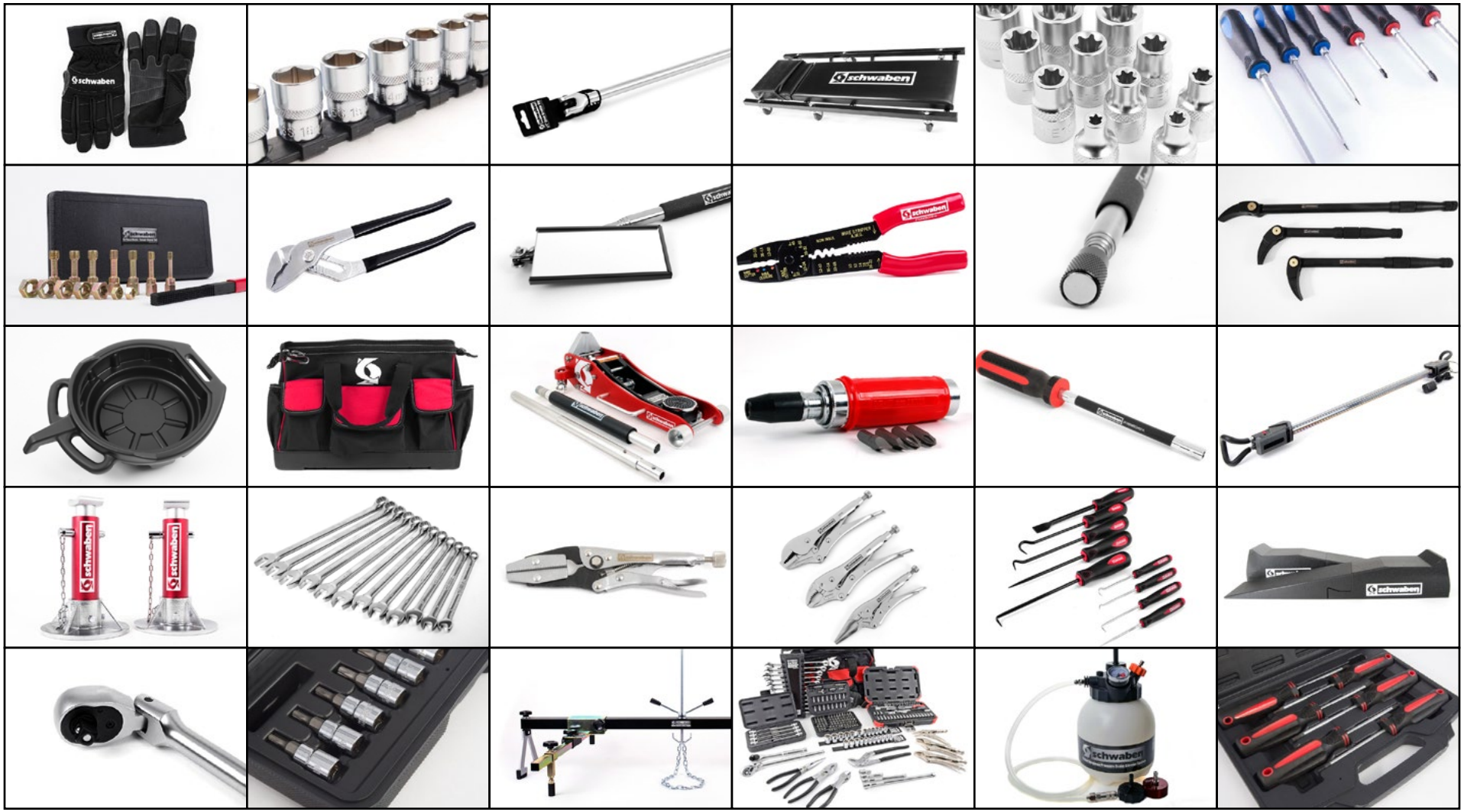
Notes:

Here are some final tips on bleeding the system:

- While installing the new hose, do not let the clutch master cylinder run dry, connect it at the master cylinder first, then allow fluid to gravity bleed and drip out of the end before connecting it to the slave cylinder. If you do this, you may find that most of the air has been forced out of the system. Depress the clutch pedal a few times to see how it feels, then open the bleeder valve and allow it to "gravity" bleed for a few moments. Any small remaining traces of air will exit through the bleeder.
- If you have installed a new Exact-Fit hose as a result of a failed line or if you have replaced multiple components, the system may have ingested a considerable amount of air. Be patient and use different methods if necessary to bleed the system.
- When bleeding a system that has ingested a large amount of air, when it appears as if you have bled all of the air from the system and have solid fluid coming out of the bleeder, it is not uncommon to have to pump the clutch pedal 25-30 times before it will build pressure. This is normal for this type of hydraulic system.
- Even if you find that the system has successfully "gravity" bled during installation of the new Exact-Fit hose, it is a good idea to flush all of the old fluid out. Use the same methods as bleeding the system.

Your installation is complete!

At ECS Tuning, we carry a line of high quality Schwaben Tools and Equipment to help you build your ultimate tool collection. Never before has affordability and quality been so closely related. Our entire Schwaben line is subjected to strict in house testing for strength and durability. See what we have to offer and equip your garage without breaking the bank.



Your Exact-Fit Clutch Hose installation is complete!

These instructions are provided as a courtesy by ECS Tuning

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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