

INSTALLATION PROCESS:

FK003D945-7 Complete Front, Rear, and Clutch A.B.S. KIT 2014-2017 Harley Davidson FLH Touring Models



Parts List:

4 Lines	1 Brake Light Switch Adapter
7 Single banjo bolts	2 Caliper Bleeder Bolts
2 Single Clips	7 Zip Ties
22 crush washers	6 12 mm crush washers

YOU WILL REUSE 2 OF THE 12MM A.B.S. BLOCK BANJO BOLTS

We strongly suggest having a professional mechanic install your brake lines, all other installs may void your warranty. This kit is very involved and requires a great understanding of the motorcycle. ***Be sure to read through the instructions before installing Galfer lines.***

Step 1:

To prevent paint damage from brake fluid, completely cover the front and rear end of the bike. Installing brake lines can be a messy process, and brake fluid *WILL* spill! Remove all brake fluid from the OEM brake system. Take note of how the stock system was routed (you may want to take pictures for reference).

NOTE:

Galfer stainless steel banjos and bolts are to be torqued between 15 – 17 ft. pounds

Galfer stainless steel blocks and hard lines are to be torqued between 5 - 7 ft pounds

Step 2:

To begin the install of the Galfer U.S.A. brake line kit you will first need a factory service manual. You will need to know how to remove the dash and the fuel tank. **Be sure to reference the factory service manual to remove fuel tank and dash.** Also you will need to remove the front faring to gain access for the removal and installation of the new lines. These instructions will cover several models and each model has specific instructions to remove the fuel tank and the front fairing depending on your particular motorcycle.

Step 3:

Now that access is granted to all the lines, we can start to remove the O.E.M. lines from the motorcycle. We will begin with the front master cylinder and caliper lines. It is easier to remove these lines as a complete unit through the front of the motorcycle. Remove the banjo bolt from the master cylinder and both caliper bolts.

(SEE FIGURE 1). Once the master cylinder line is loose you will need to pull it through the faring and get it free from the wiring loom. There will be a few factory zip ties that need to be removed. **(SEE FIGURE 2).**

On the lower triple tree there will be a plastic holder that helps to align the factory lines down to the calipers. In order to free the front caliper lines you will need to open and remove the factory holder. There will be 2 zip ties that need to be cut and the use of a pick will be necessary to open the plastic holder in order to expose the factory hard lines. Once open there will be 2 torx head bolts, remove these and set aside as these will be reused.

(SEE FIGURE 3). Once the lines are free of the holder then you will be able to maneuver the lines through the front of the fairing along with the master cylinder line. **(SEE FIGURE 4).** Once the brake lines are pulled toward the front you may now start to work your way down the line removing the factory holders and zip ties.

(SEE FIGURE 5). The last step to removing the factory lines is removing them from the A.B.S block. Each line has its own port in the A.B.S. block so be sure to take pictures for reference. The A.B.S. block is also labeled for your reference as to what line goes where. **(SEE FIGURE 6).** Remove all 3 banjo bolts but make sure to retain the master cylinder banjo bolt for it will be reused. The next step is much easier with an extra pair of hands. Pull the three lines out through the front of the motorcycle as a complete unit.

Step 4:

We can now move on to the rear lines of the motorcycle. The first line that will need to be removed will be the rear master cylinder line. This line has very tight clearances and you will have some difficulty removing the factory brake line. When the banjo bolt is loose you will need to unplug the factory brake light switch. Once unplugged maneuver the line down and under the frame rail and remove the factory brake light switch from the brake line. Set the switch aside for it will be reused. (SEE FIGURE 7). Under the frame of the motorcycle you will see a factory holder that can be pried open with a pick or small screw driver. The rest of the holders are just press fit and the line can be pulled out. There will be on bolt that holds a clip near the swing arm that needs to be removed. As the line continues it will turn into a metal hard line and here you will see 2 plastic holders that retain the line against the frame, remove both of these holders and set aside as they will NOT be reused. You can now remove the 12mm bolt at the A.B.S. block and remove the line from the motorcycle. (SEE FIGURE 8) The last line to be removed will be the easiest. The rear caliper line will have a single banjo bolt and 2 plastic holders the keep it in place. These plastic holders can be opened easily with a pick or small screw driver. Once all the holders are released you may remove the line. (SEE FIGURE 9)

Step 5:

the very last line to be removed from the motorcycle will be the clutch line. The clutch line will have a similar removal process as the front master cylinder line. The first thing that will need to be done will be to gain access to the clutch slave cylinder that is located behind a cover on the right side of the motorcycle (SEE FIGURE 10). In order to gain access it is recommended to remove the exhaust.

(PLEASE REFER TO YOUR FACTORY SERVICE MANUL TO REMOVE THE EXHAUST) . Once access is gained you will see the bleed port and the line. You will need to remove all the fluid from the system. After all the fluid is removed you may now remove the banjo bolt at the clutch master cylinder located on the left handlebar. (SEE FIGURE 11). You will have to maneuver the line through the front fairing and out. Once the line is pulled toward the front of the motorcycle, you can now remove the metal retaining clips that clip the line to the frame. Retain these clips as they will be reused for the new clutch line. (SEE FIGURE 12). You can now remove the clutch line from the slave cylinder and remove from the motorcycle (SEE FIGURE 13). Once the line is removed you will notice a rubber holder that is molded to the line. This rubber holder will be reused. Using EXTREME CAUTION use a razor blade cut a line directly down the center being careful not to damage the factory line. (SEE FIGURE 14).

Step 6:

We are now ready to start installing the Galfer U.S.A. brake line kit. We will run all the front lines first. Start with lines labeled A/B/C. Just like before the install of all 3 lines as a unit will make routing easier. Route the 3 line though the front fairing and down the right side of the motorcycle and down to the A.B.S. block. (SEE FIGURE 15). Once you have the lines guided to the A.B.S. block you may now use 2 of the provided banjo bolts along with the O.E.M. single 12mm banjo bolt and install the lines with the provided washers. (SEE FIGURE 16). Once the routing to the A.B.S. block has been completed we can now route and install the front left and right brake caliper. Both of the lines will follow the same path around the the steering stem and down. (SEE FIGURE 17). Using the provided clips and the the factory hardware that was taken from this location we will now guide the lines to their respective calipers (SEE FIGURE 18). Route the master cylinder line along the same path as the O.E.M. line followed through the front fairing and up to the front master cylinder. Install the provided banjo bolt. After all the banjo bolts have been installed and torqued to spec, we may now start on the rear brake line kit.

Step 7:

For this step of the install we will use **LINES D/E/F**. In the kit you will also find a small barrel like adapter, this is where the brake light switch will be reused and installed here use D.O.T. safe sealant. **(SEE FIGURE 19)**. Once the brake light switch is installed you will need to know install **LINES D & E** onto the barrel connector. It is very important to position the switch facing up before you apply final torque onto the fitting. **(SEE FIGURE 20)**. Once the brake light switch is installed you may know install **LINES D & E** as an assembly onto the rear brake master cylinder. **(SEE FIGURE 21)**. Place the line down the frame and utilize the factory line holders that are built into the electrical harness clips. **(SEE FIGURE 22)**. Route the line up in front of the swing arm and under the A.B.S. block and install the O.E.M. 12MM banjo bolts. **(SEE FIGURE 23)**. Install **LINE F** onto the rear caliper and route the line along the swing arm using the factory line holders along with provided zip ties for the A.B.S. wire. **(SEE FIGURE 24)**. You will want the brake line to make a loop and route back towards the A.B.S. block. The excess of brake line is there for belt adjustment. Once at the A.B.S. block one of the provided banjo bolts can be installed and torqued to spec. **(SEE FIGURE 25)**. Once all the brake lines have been installed and all the banjo bolts have been torqued to spec you may now add brake fluid and begin to bleed the system. This is a large system with many ups and downs so it is recommended to use a vacuum brake bleeder.

Step 8:

The last line to be installed in the kit is **LINE G**, the clutch line. Start by routing the line through the front of the fairing towards the small opening where the original clutch line had passed through. Route the line up to the clutch master cylinder and install the provided banjo bolt into the master cylinder and torque to spec. Route the clutch line in front of the caliper lines and into the factory holder. **(SEE FIGURE 26)**. Continue to route the line down and next to the frame following the original routing. **(SEE FIGURE 27)**. Using the original metal clips that secured the O.E.M. line reinstall the clips to retain the new Galfer clutch line. At this time you will reinstall a plastic holder the secure both the clutch and brake line. **(SEE FIGURE 28)**. Route the clutch line up toward the slave cylinder. At this point you will reinstall the rubber holder that was cut from the O.E.M. line and thread the line into the slave cylinder.

(SEE FIGURE 29)

Once all of the fittings are torqued to spec you may now begin to bleed the clutch.

Step 9:

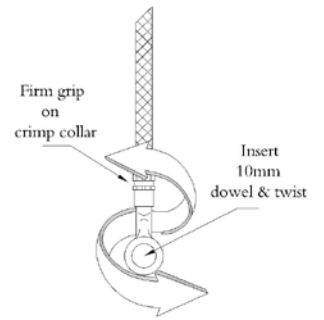
Before continuing, check clearance of your new lines with the suspension fully extended and compressed. Make sure to double check that the lines are traveling correctly and are clear from any obstructions. Using Galfer DOT-4 brake fluid (or equivalent); bleed your brake system according to the owner's manual. Reinstall all of the fairings the same way they were removed and be careful not to damage any of the plastic clips or holders.

Step 10:

Once the system is properly bled, check the brake fluid level in your master cylinders and top off if necessary. Clean any residual fluid from around the banjos and fittings, making sure to keep solvents away from the brake pads and/or rotors. To ensure there are no leaks in the system, apply pressure to the brake lever and pedal for at least 30 minutes. For the front, a zip tie around the bar and lever works well. In the rear use a dumbbell or something similar to apply pressure to the brake pedal. If the lines are not leaking and all else looks good, you are ready to ride.

Please be aware that the newly modified braking system is now much more responsive and will take some getting used to. We recommend riding carefully as you feel out the lever and pedal. Check your brake system periodically for proper torque, leaks, and damage to the lines. If there are any signs of damage, the lines will need to be replaced. All Galfer USA brake lines have a LIFETIME WARRANTY! If you have any problems or questions, do not hesitate to call our tech department - **(800) 685-6633**.

**Please note that although Galfer fittings come pre-positioned from the factory for easy installation, differences in bike setup, bar position, control angle, etc. may require the banjos to be rotated slightly. All Galfer fittings are what we refer to as turn-to-fit and can be rotated to alleviate twist or tension in the lines. To do so, firmly hold the crimped portion of the line; insert a wood dowel, brass punch, or pen into the banjo, and rotate as shown in the diagram below. Just be sure to only apply rotational force and NEVER pry on the connection. If you have any questions, please contact our tech department before attempting this procedure.*



GALFER
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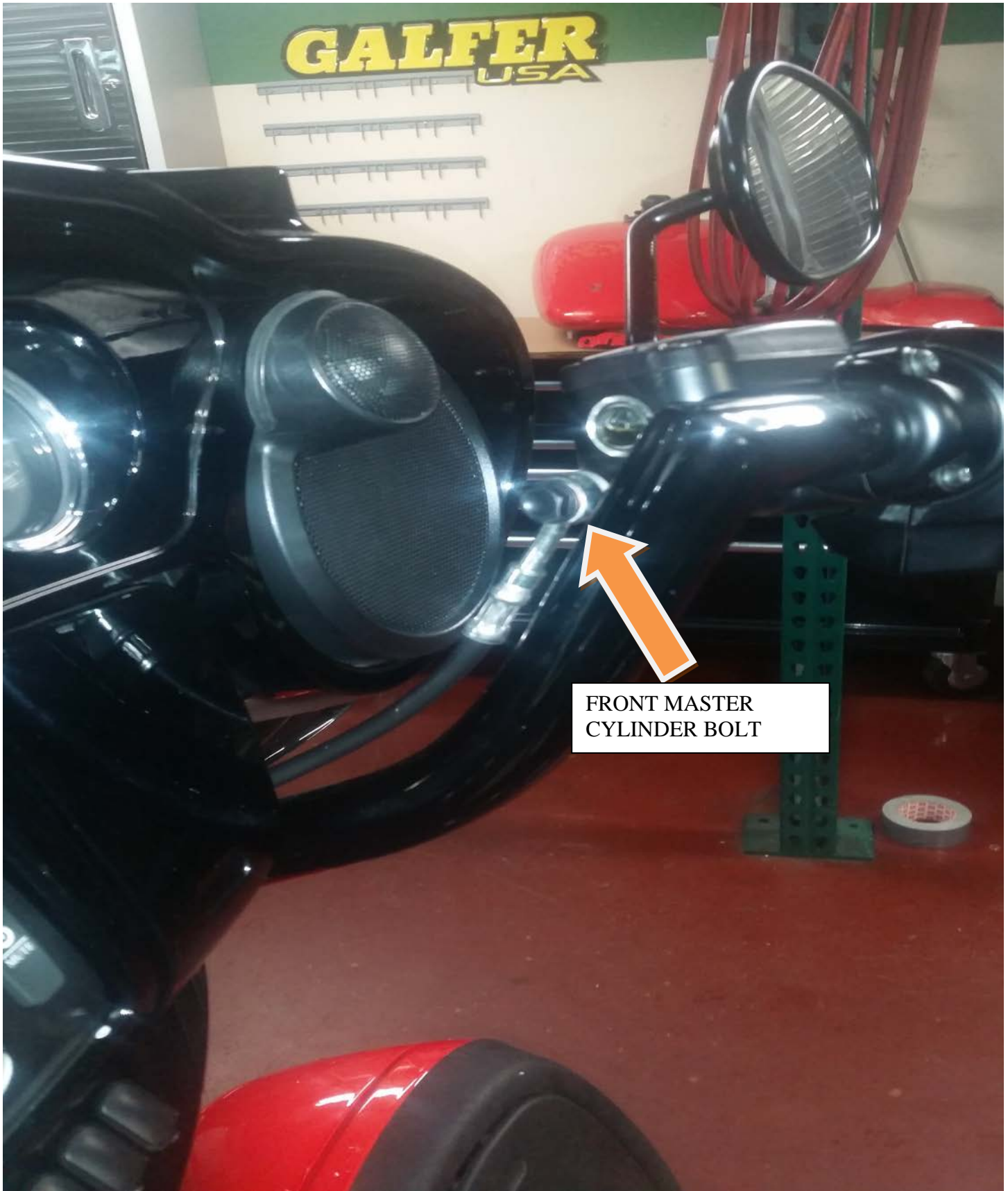


FIGURE 1: MASTER CYLINDER FRONT

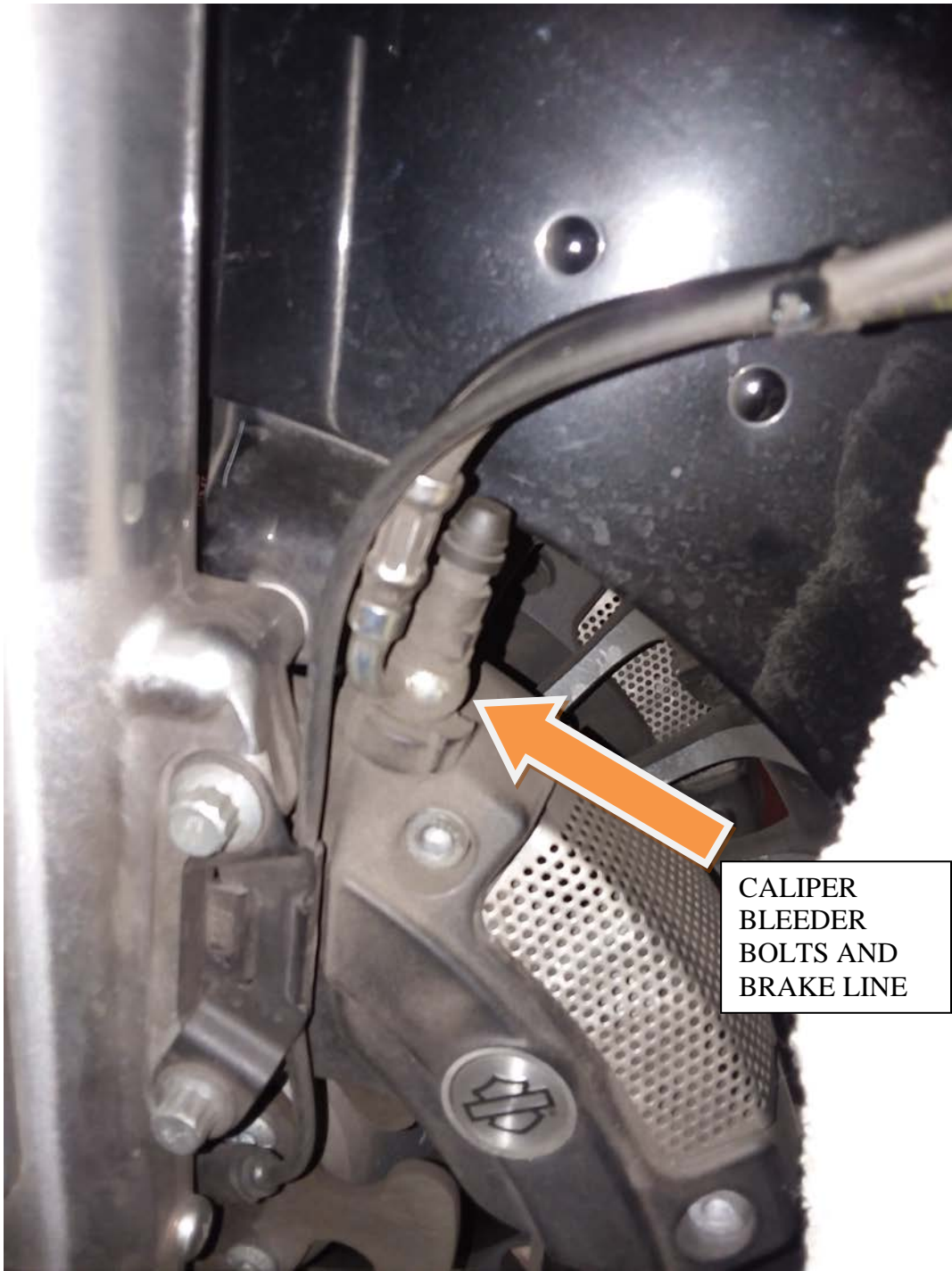


FIGURE 1: CONTINUED



FIGURE 2: FRONT MASTER CYLINDER LINE

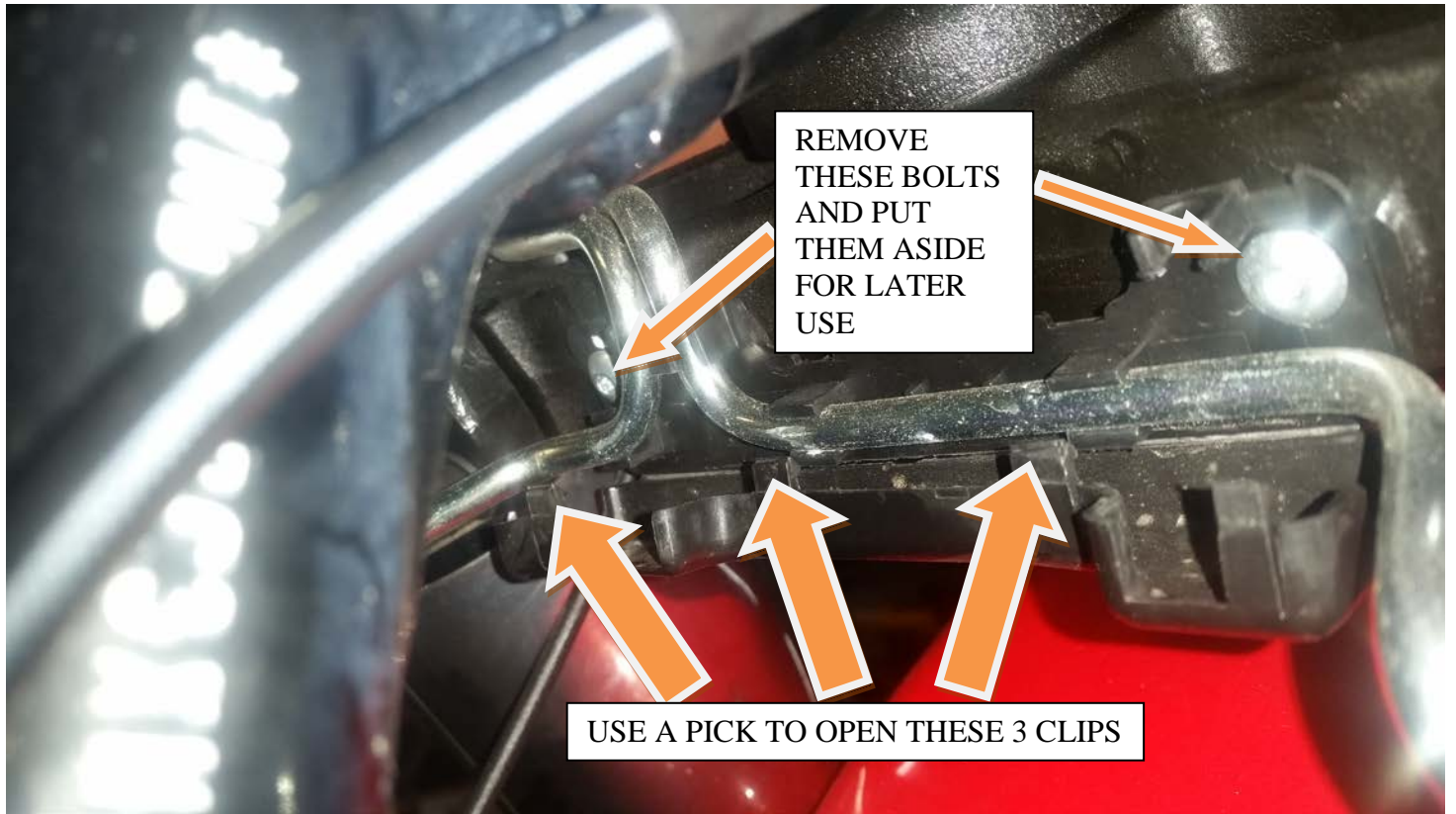


THE FRONT MASTER CYLINDER
LINE WILL BE TUCKED ON THE TOP
TRIPPLE RUNNING THROUGH THE
WIREING HARNESS.

FIGURE 2: CONTINUED



FIGURE 3: FACTORY LINE HOLDER



REMOVE
THESE BOLTS
AND PUT
THEM ASIDE
FOR LATER
USE

USE A PICK TO OPEN THESE 3 CLIPS

FACTORY 3: CONTINUED



FIGURE 4: FRONT BRAKE LINE



FIGURE 5: FACTORY LINE HOLDER



FIGURE 5: CONTINUED FACTORY LINE HOLDER



FIGURE 5: FACTORY LINE HOLDER

THIS LINE HOLDER SITS IN 2 SLOTS
IN THE FRONT AND REAR, TO
REMOVE PULL FROM THE CENTER
AND SLOWLY PULL THE TABS OF
THE SLOTS



FIGURE 5: CONTINUED LINE HOLDER



FIGURE 5: CONTINUED LINE HOLDER

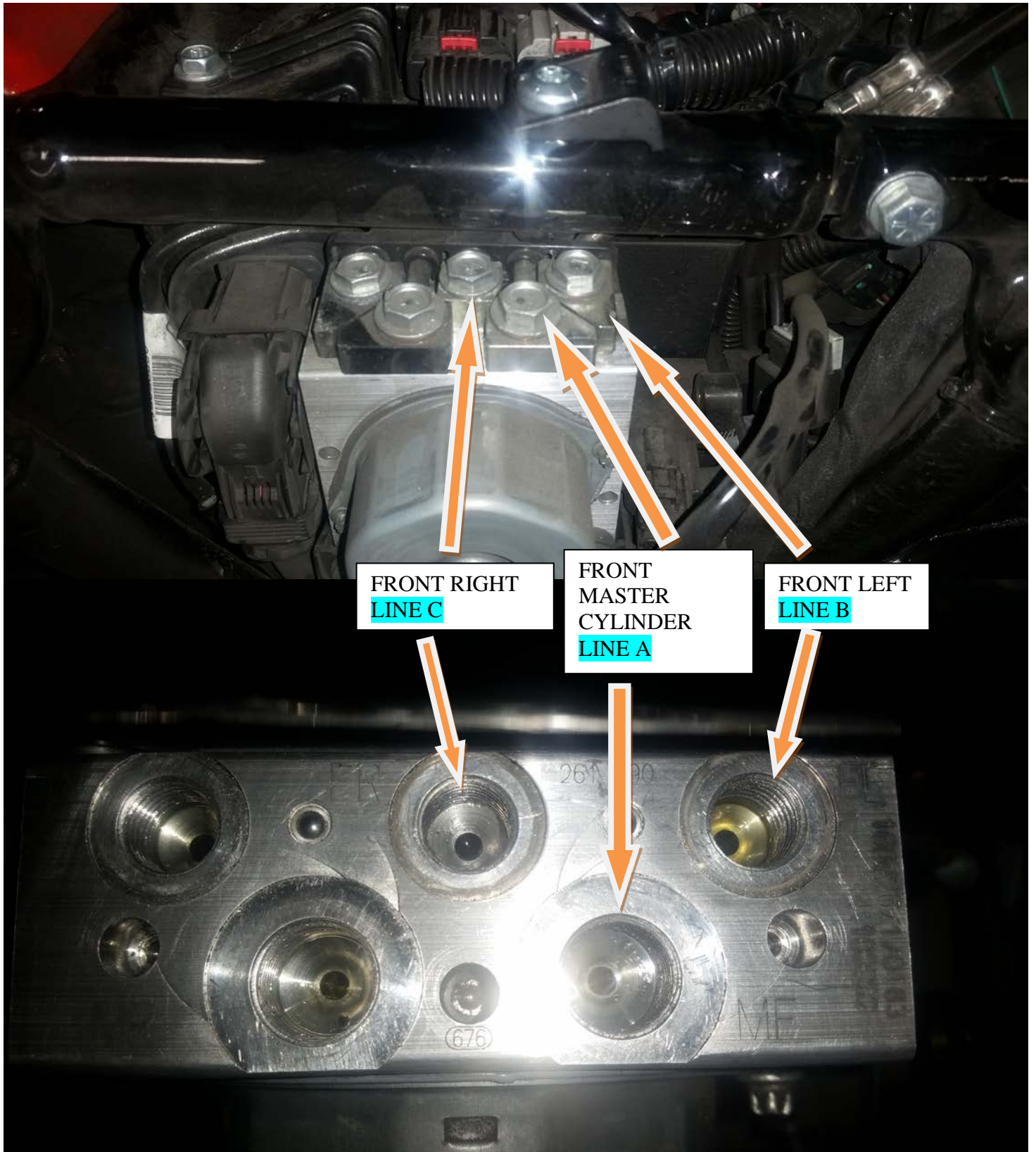
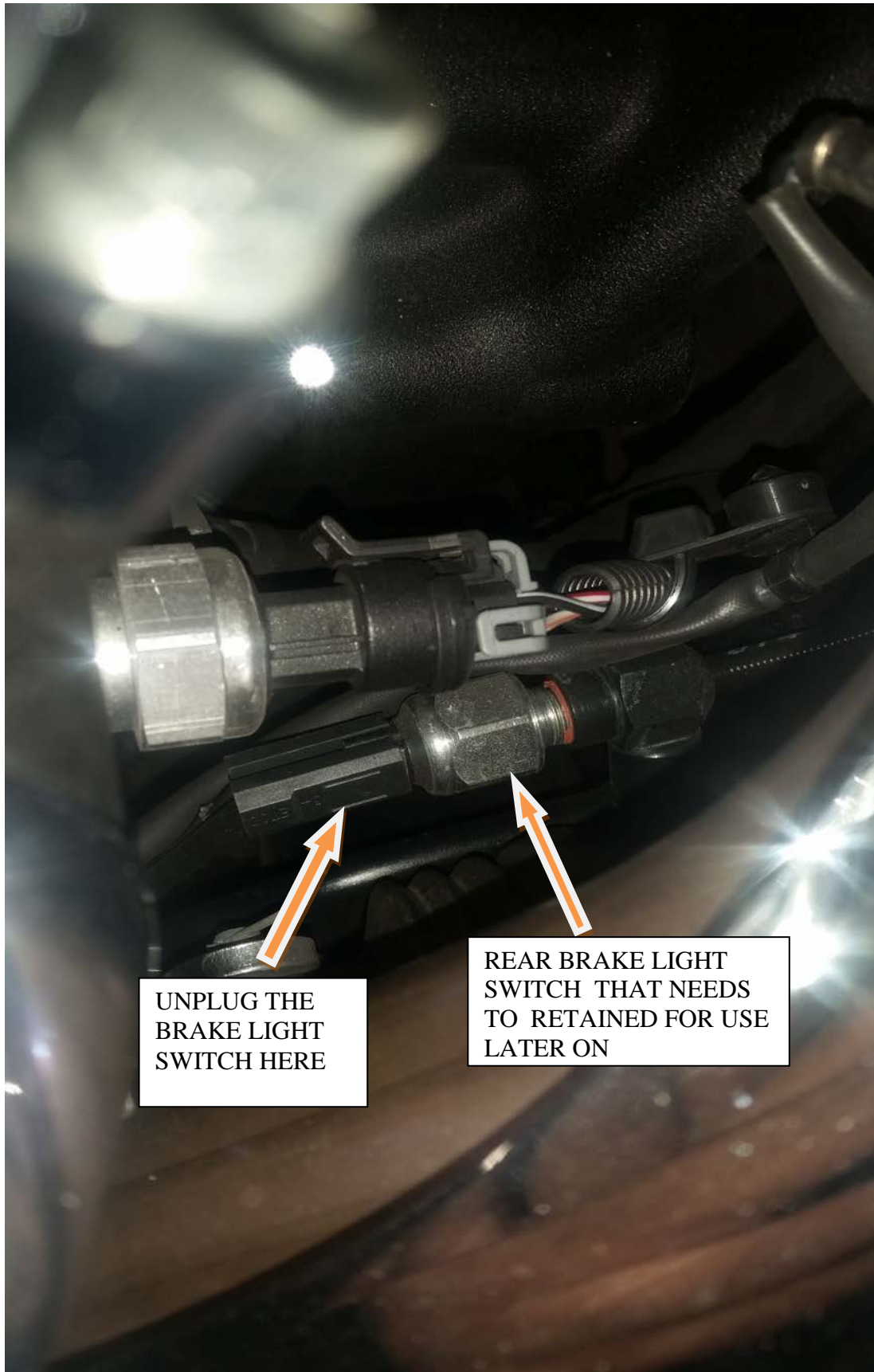


FIGURE 6: A.B.S. BLOCK



FIGURE 7: REAR MASTER CYLINDER



UNPLUG THE
BRAKE LIGHT
SWITCH HERE

REAR BRAKE LIGHT
SWITCH THAT NEEDS
TO RETAINED FOR USE
LATER ON

FIGURE 7: CONTINUED BRAKE LIGHT SWITCH

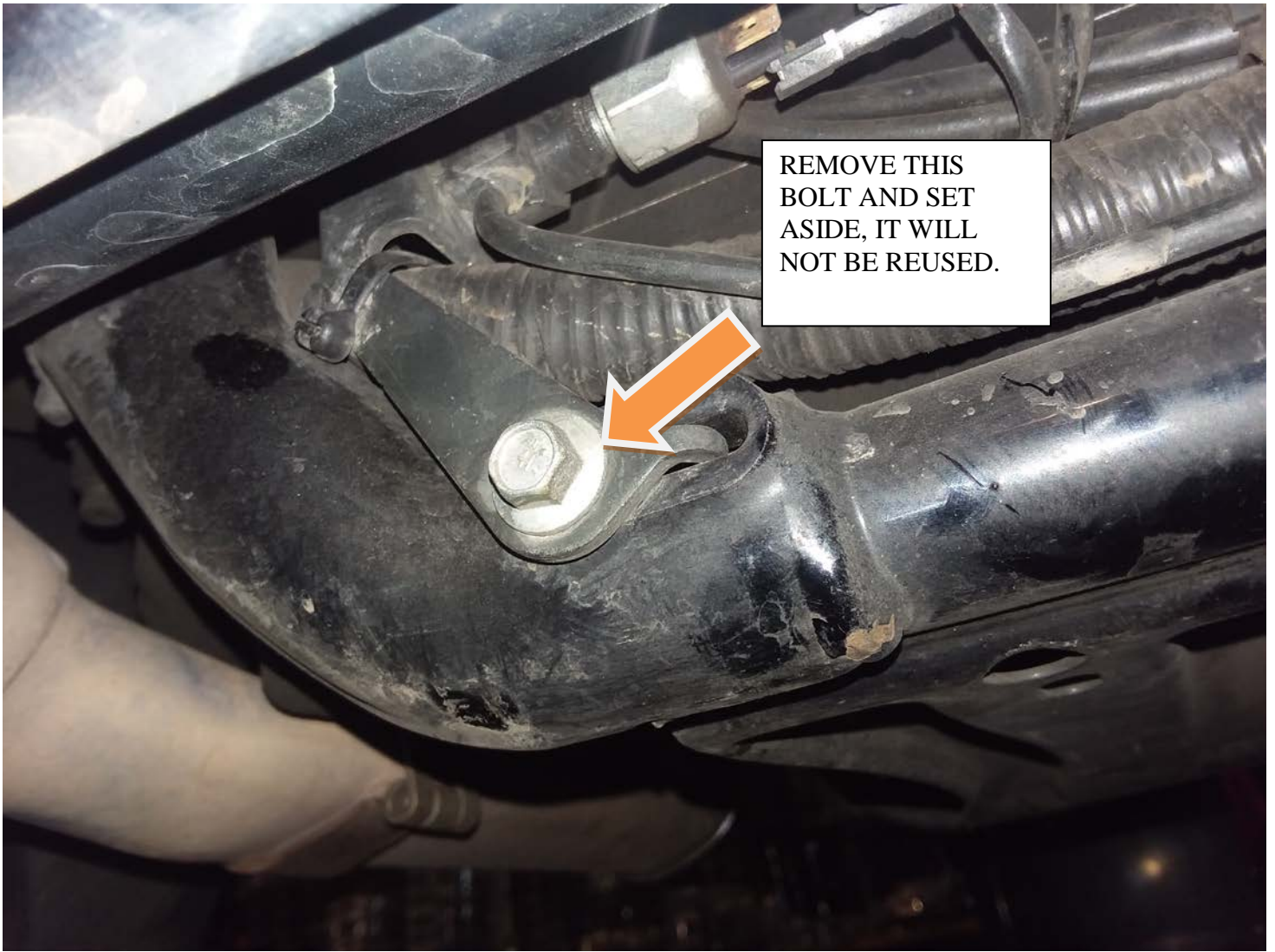


FIGURE 8: CONTINUED

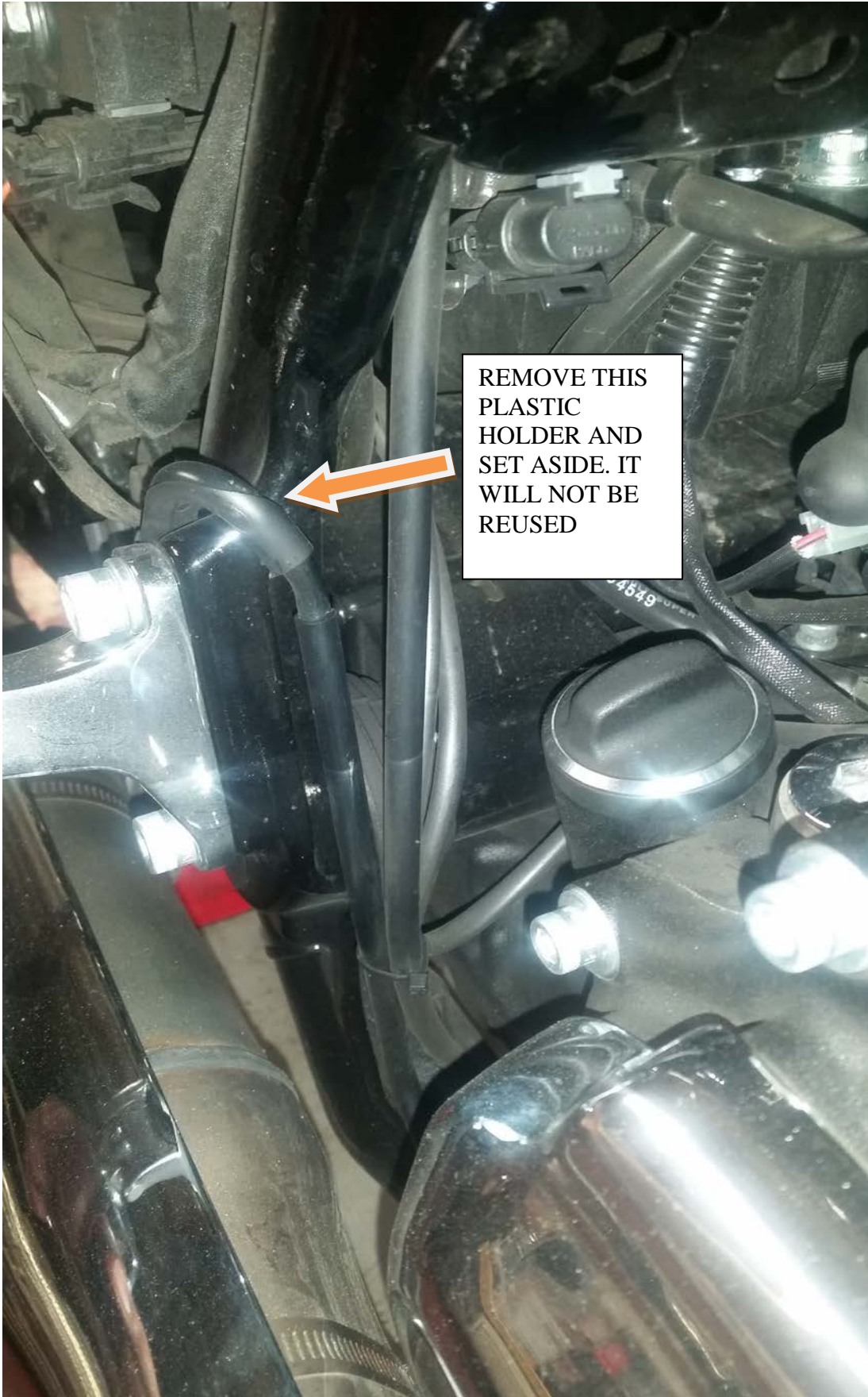


FIGURE 8: PLASTIC HOLDER

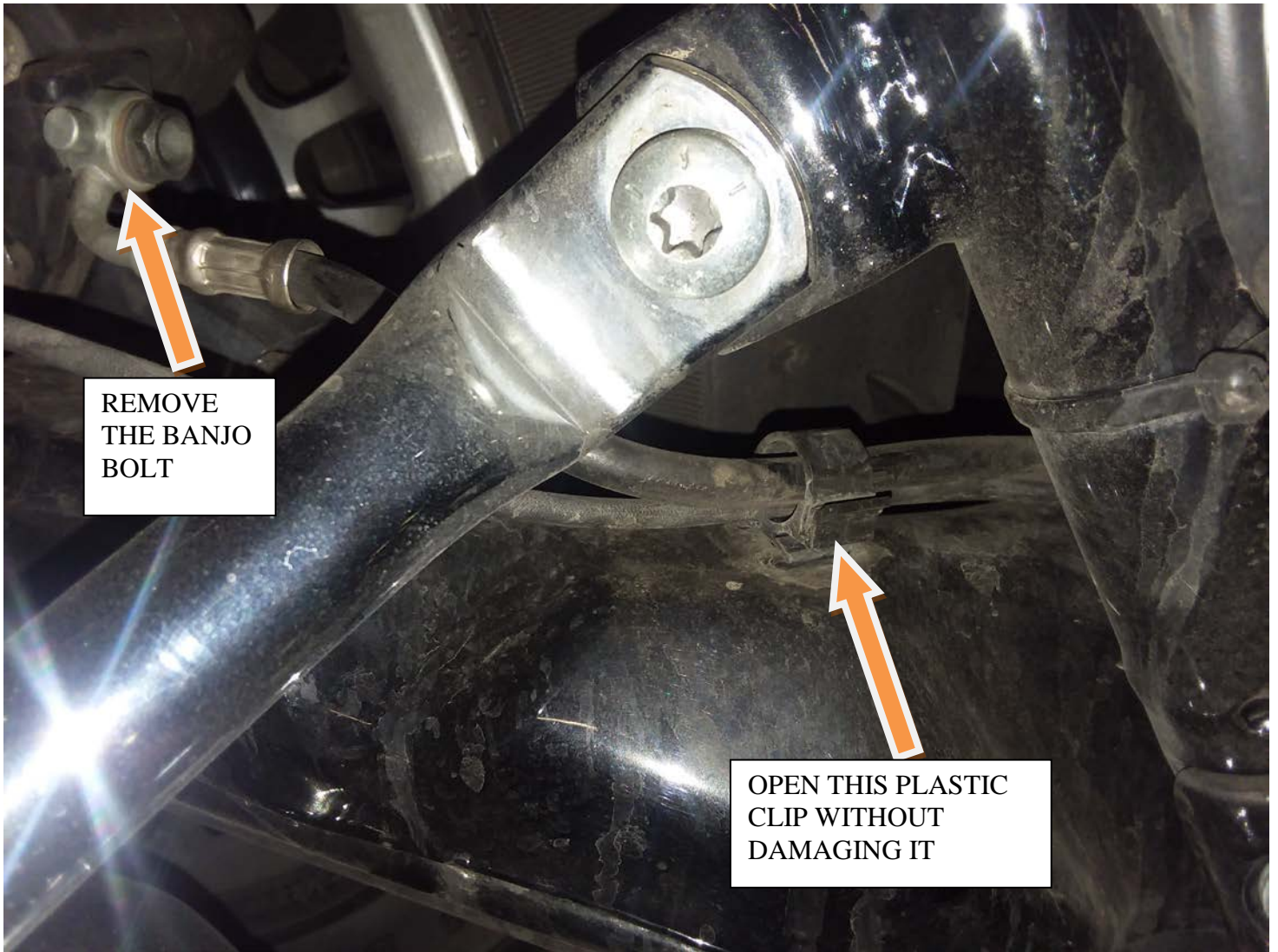


FIGURE 9: REAR BRAK LINE

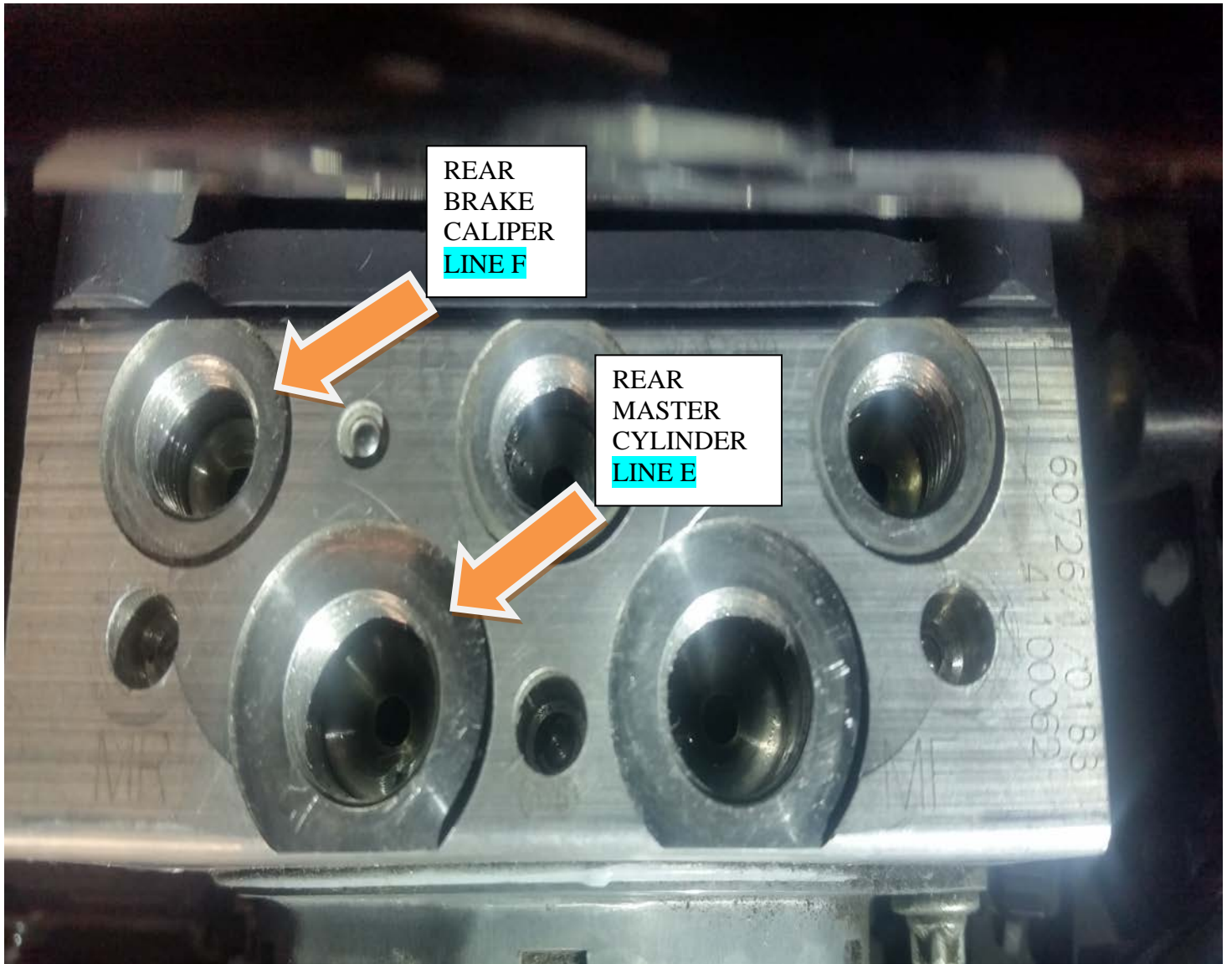


FIGURE 9: CONTINUED A.B.S.

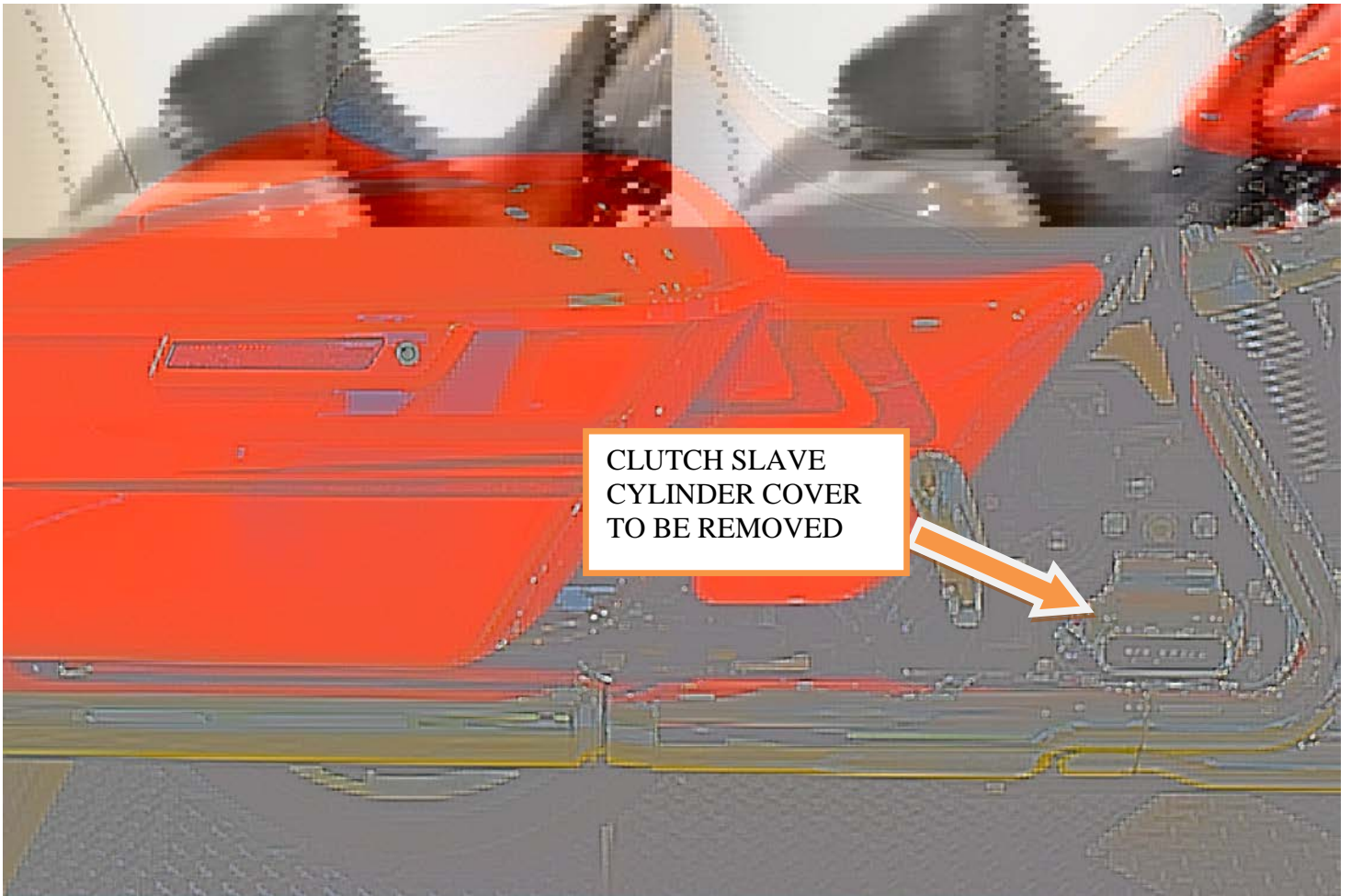


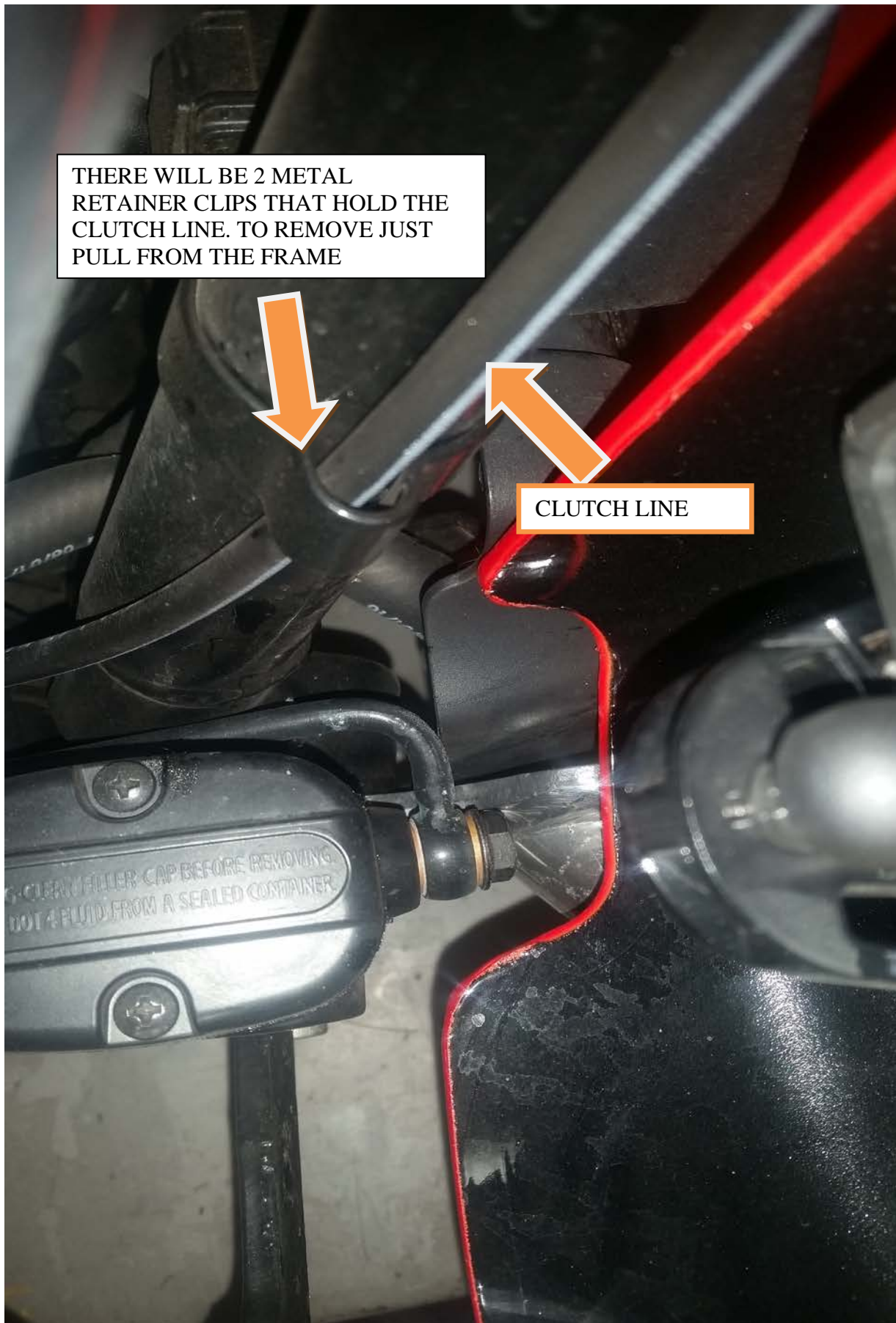
FIGURE 10: CLUTCH SLAVE CYLINDER COVER



FIGURE 10: CONTINUED



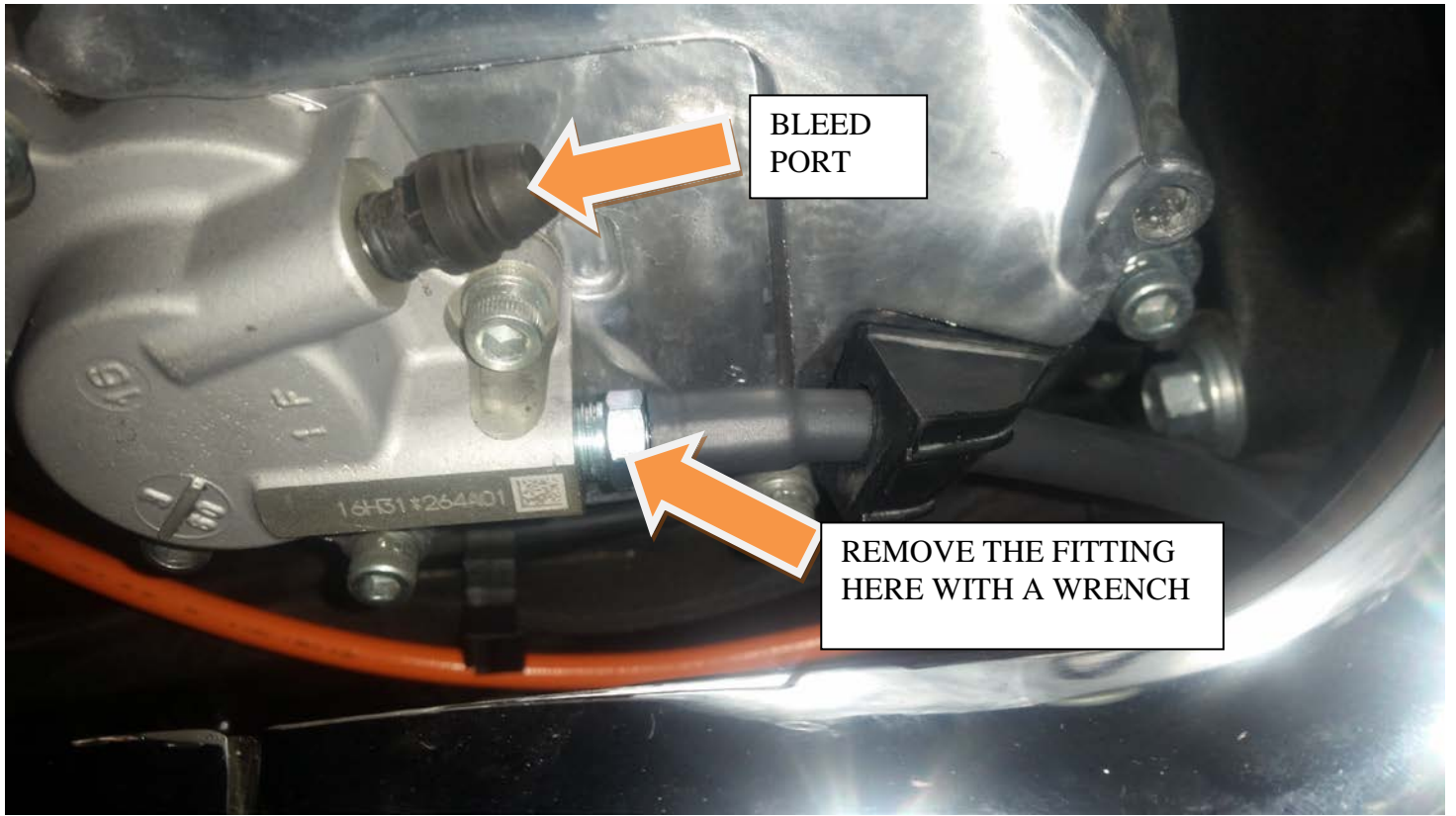
FIGURE 11: LEFT HANDLEBAR



THERE WILL BE 2 METAL RETAINER CLIPS THAT HOLD THE CLUTCH LINE. TO REMOVE JUST PULL FROM THE FRAME

CLUTCH LINE

FIGURE 12: METAL RETAINER CLIPS



BLEED
PORT

REMOVE THE FITTING
HERE WITH A WRENCH

FIGURE 13: CLUTCH LINE REMOVAL



CUT A STRAIGHT
LINE UP THE
RUBBER HOLDER

FIGURE 14: CLUTCH LINE RUBBER HOLDER



FIGURE 14: CONTINUED

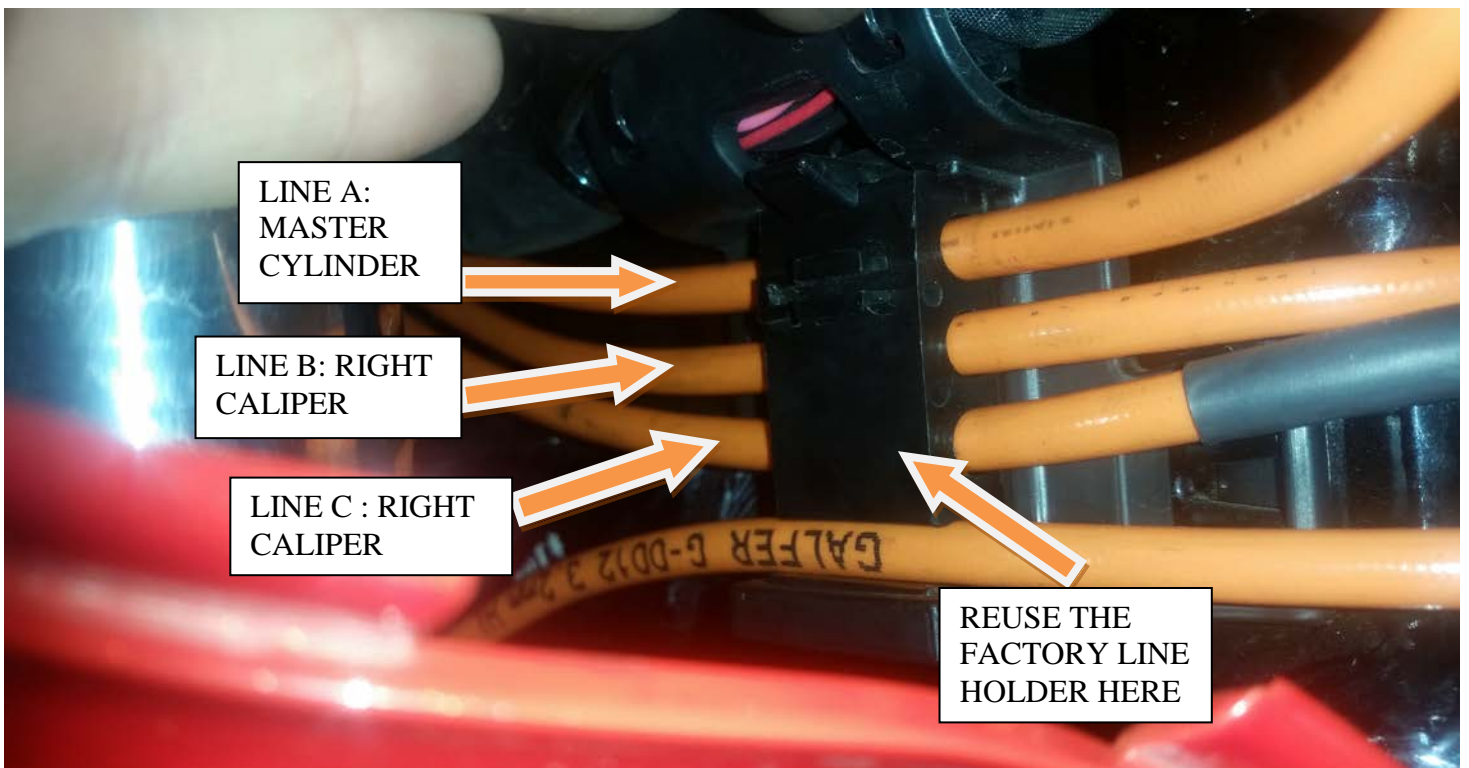


FIGURE 15: LINE ROUTING

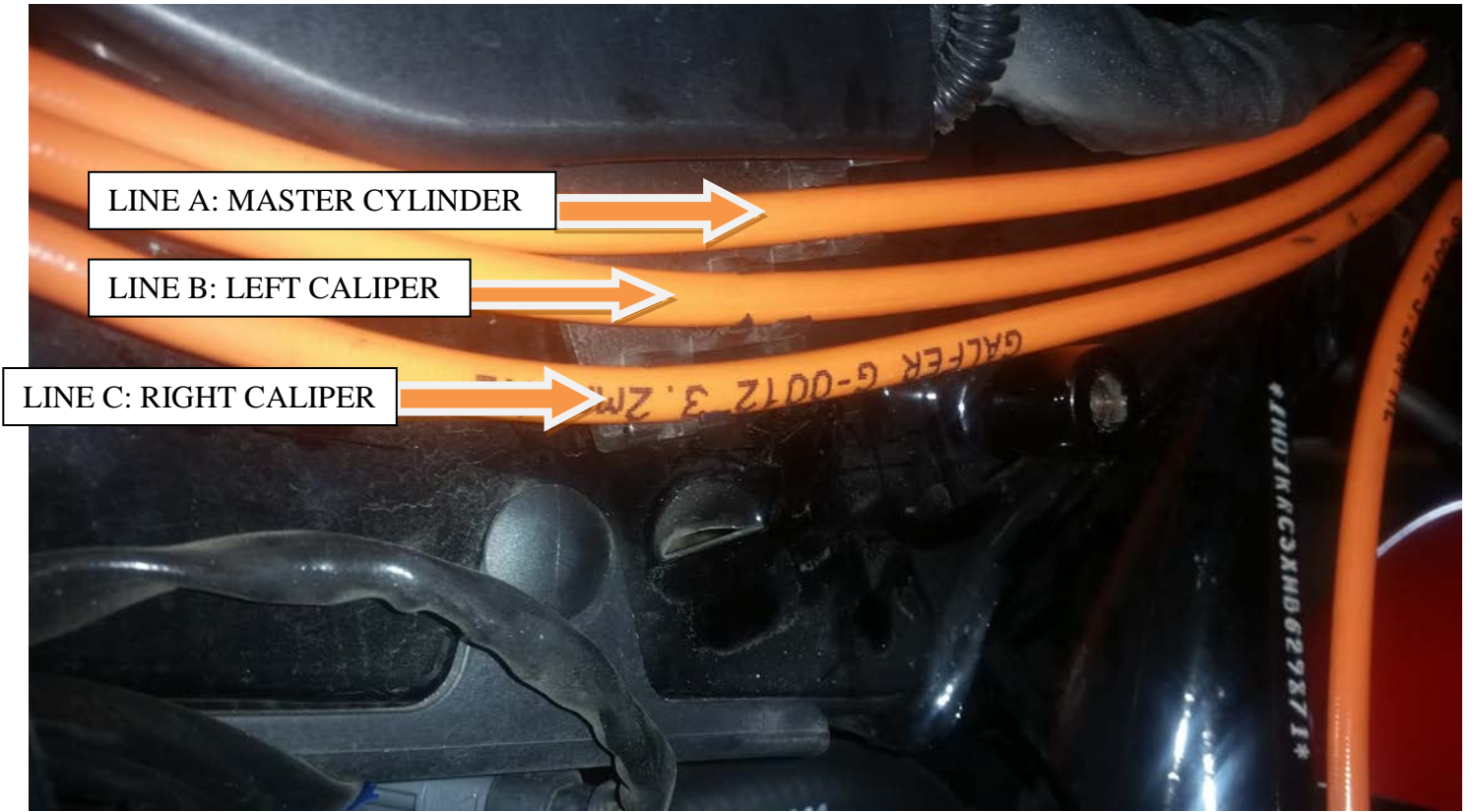


FIGURE 15: CONTINUED LINE ROUTING



FIGURE 15:CONTINUED LINE ROUTING

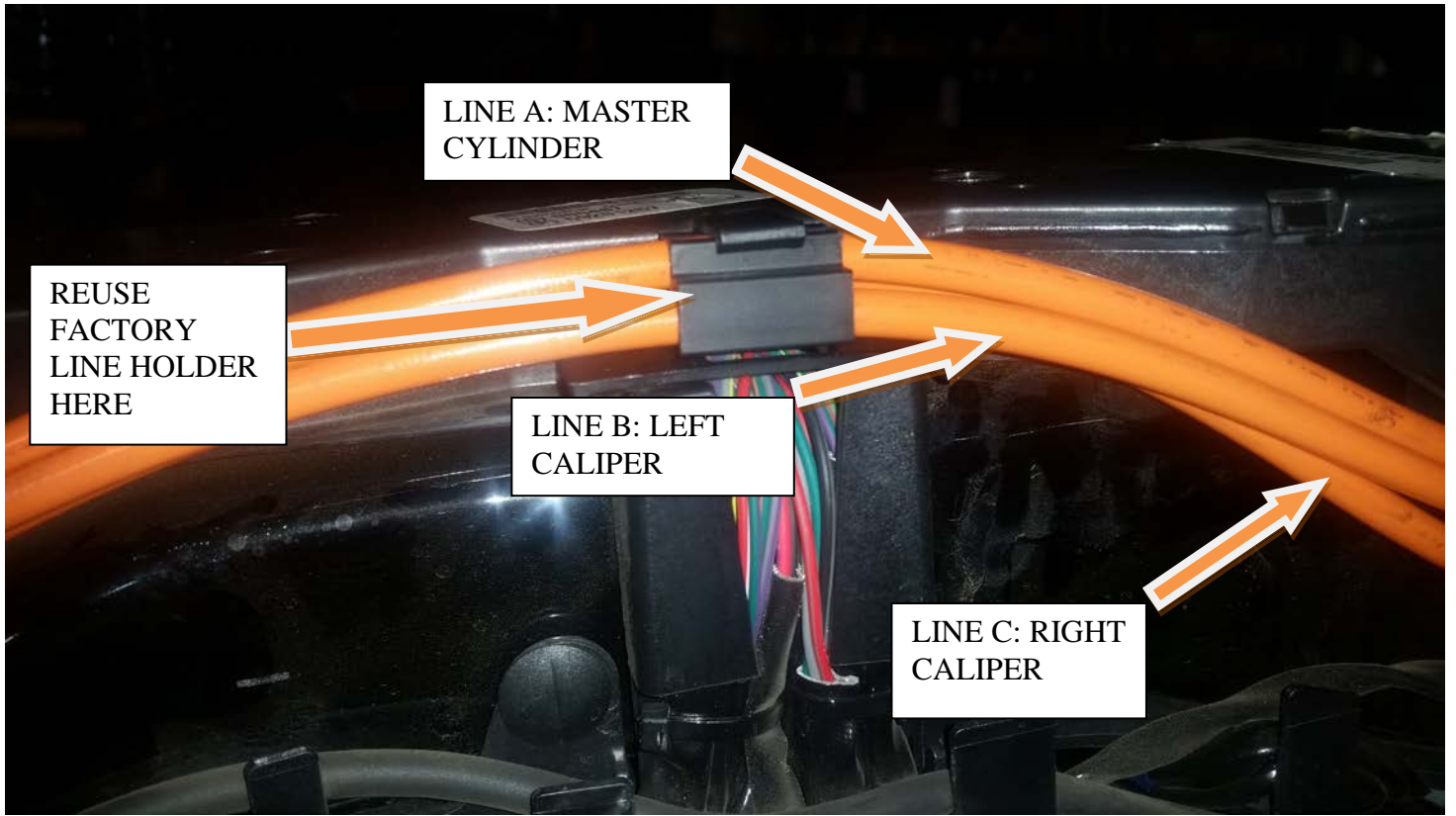


FIGURE 15: LINE ROUTING

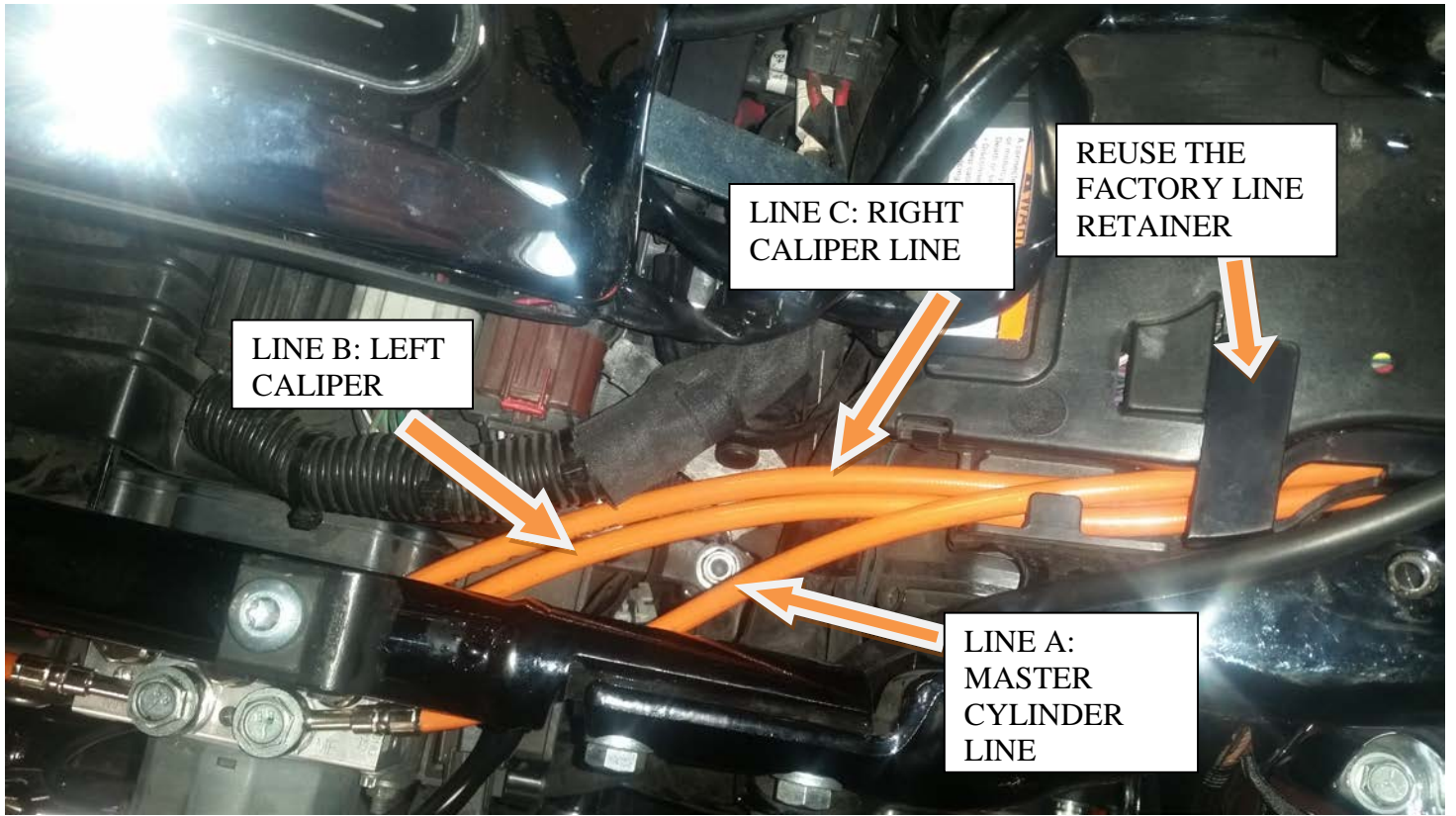


FIGURE 15: CONTINUED LINE ROUTING

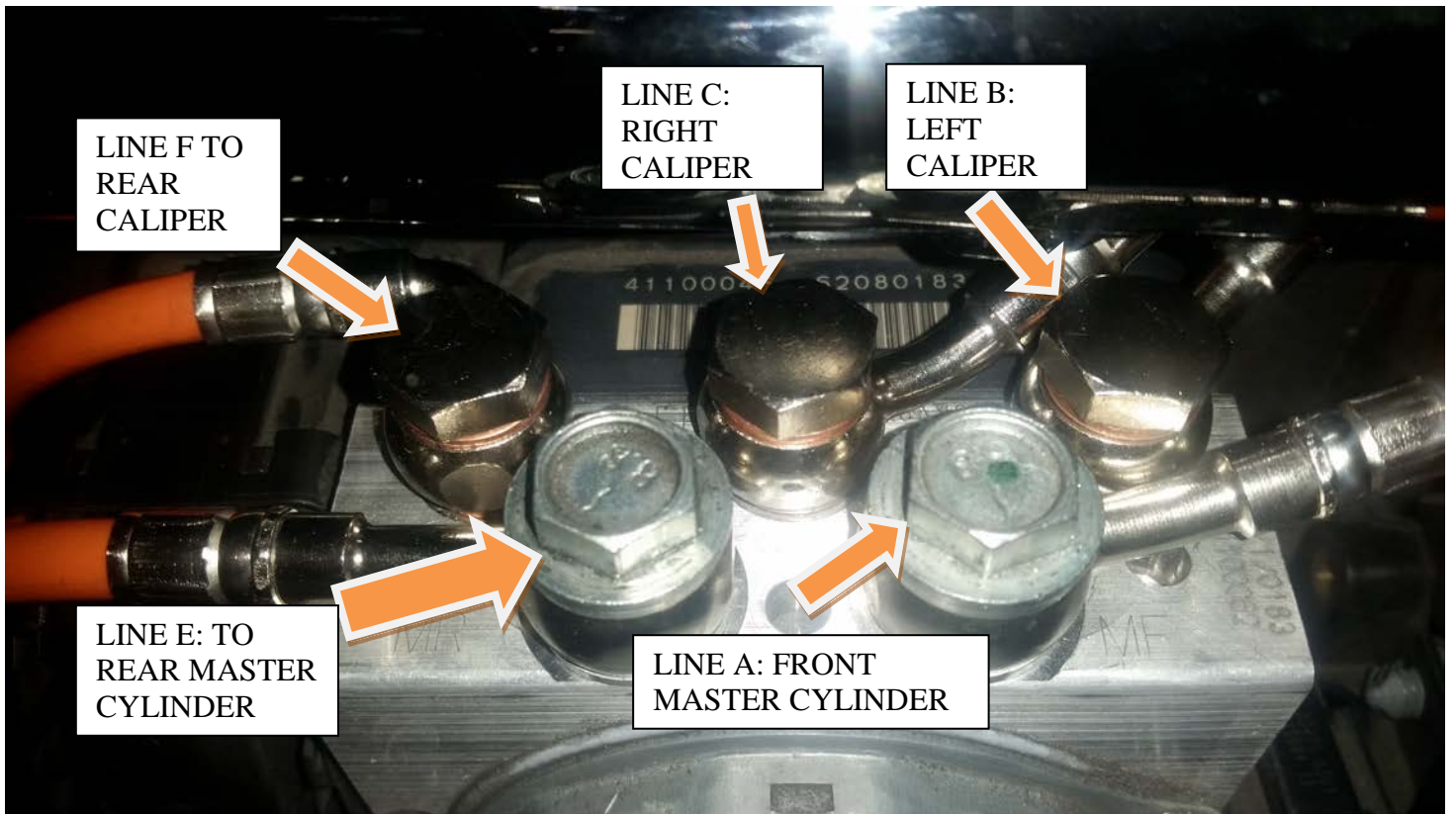


FIGURE 16: A.B.S. BLOCK

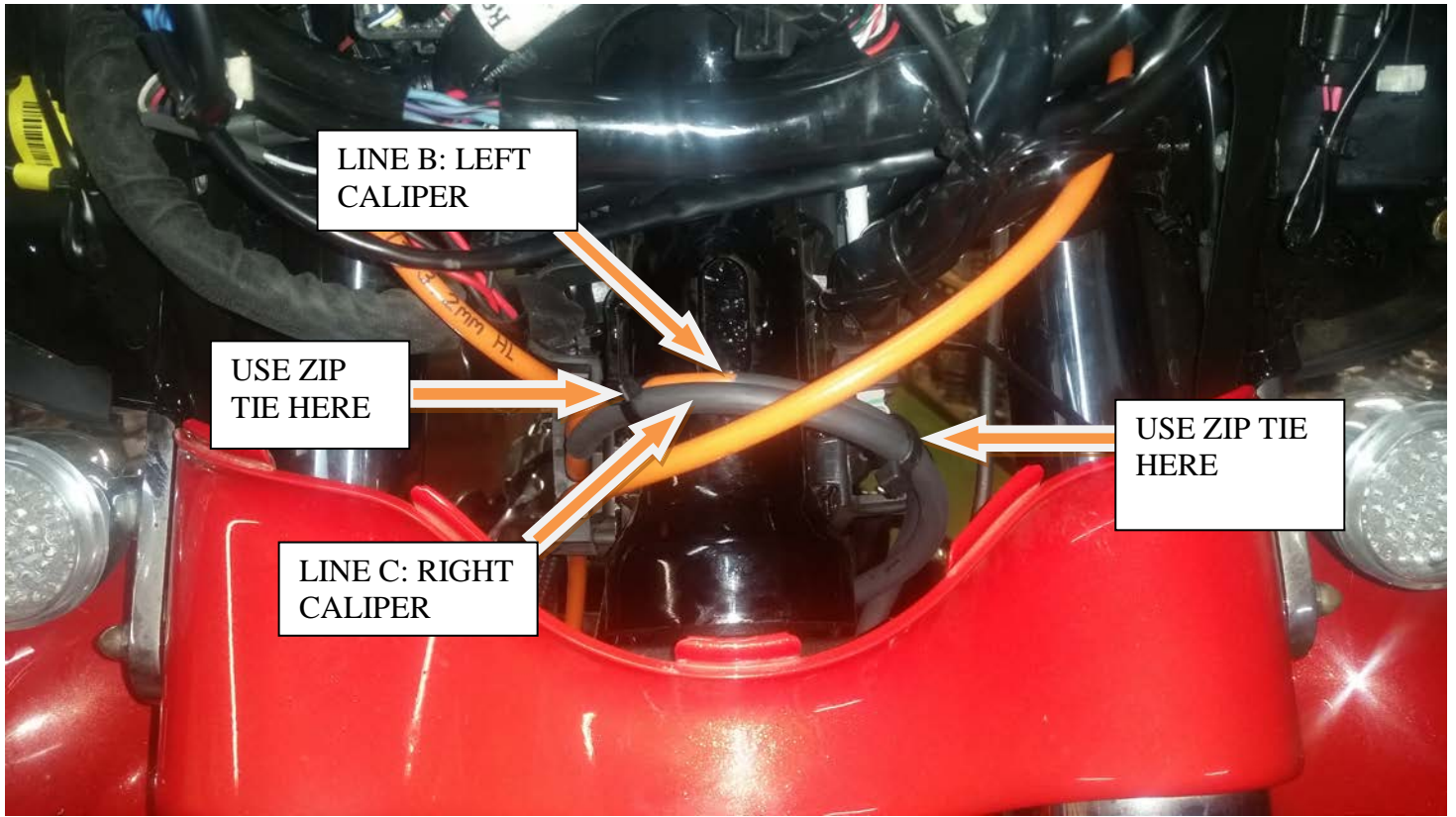


FIGURE 17: FRONT BRAKE LINE ROUTING

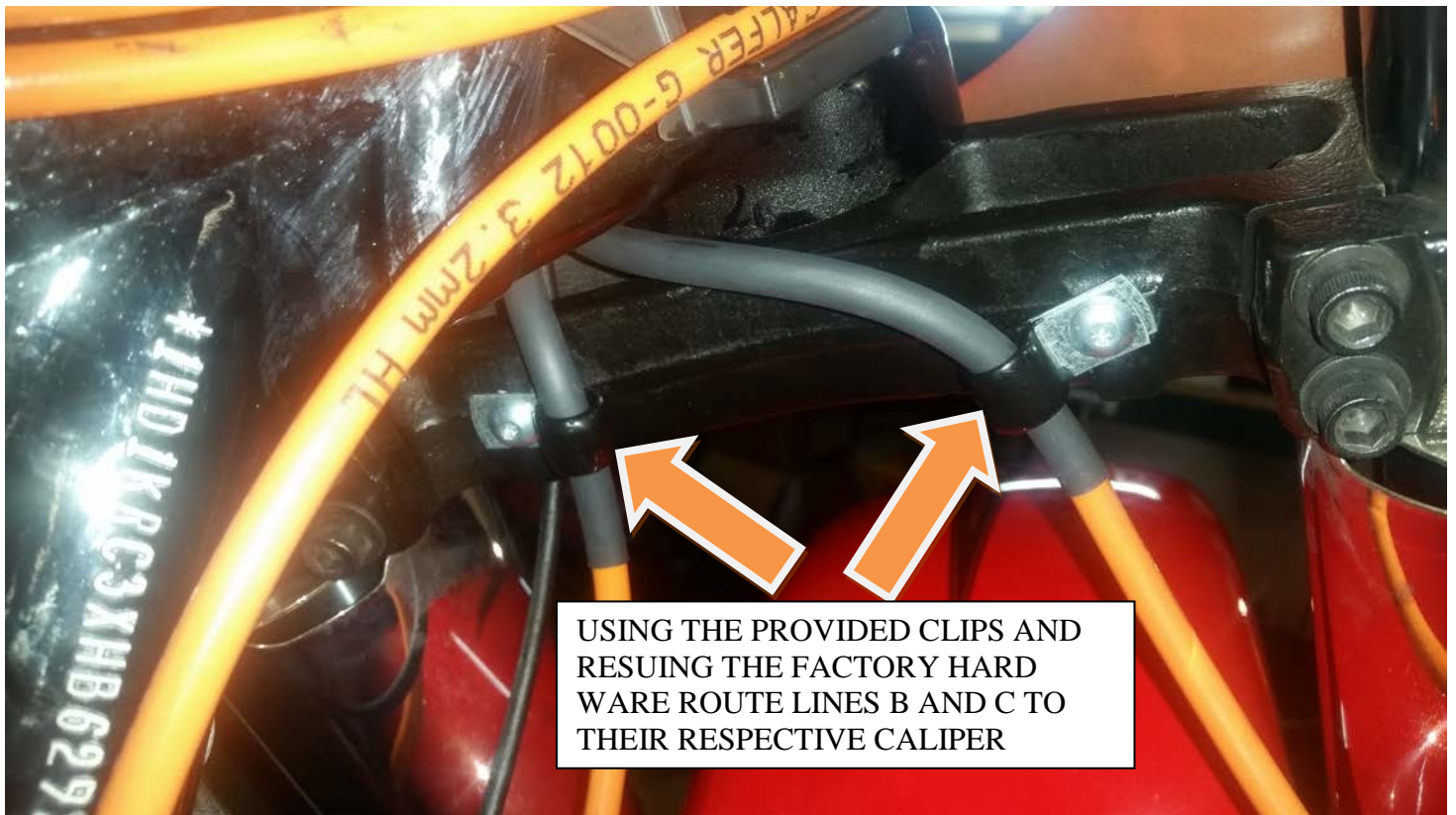
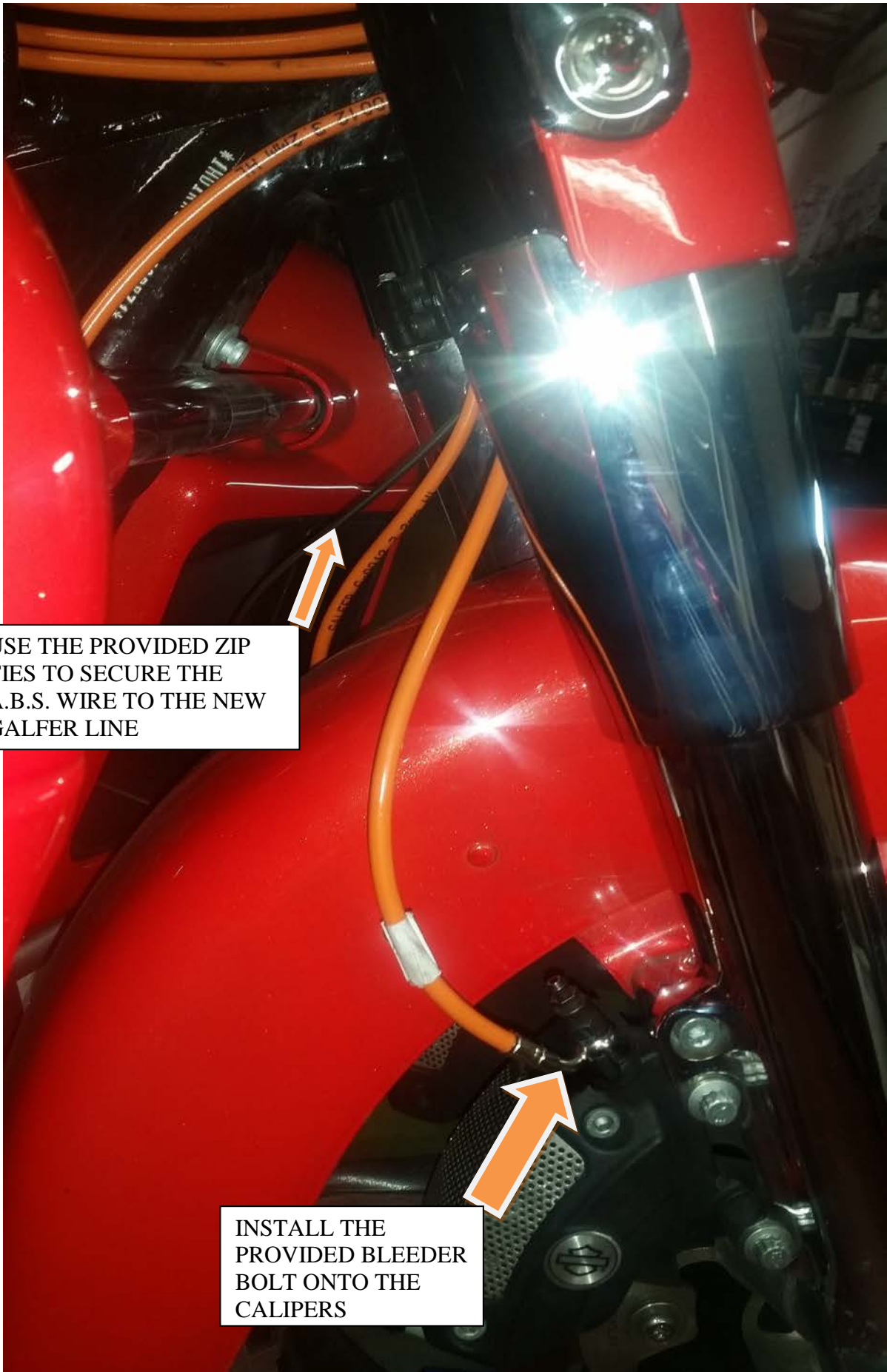


FIGURE 18: FRONT CALIPER LINE ROUTING



USE THE PROVIDED ZIP TIES TO SECURE THE A.B.S. WIRE TO THE NEW GALFER LINE

INSTALL THE PROVIDED BLEEDER BOLT ONTO THE CALIPERS

FIGURE 18: CONTINUED

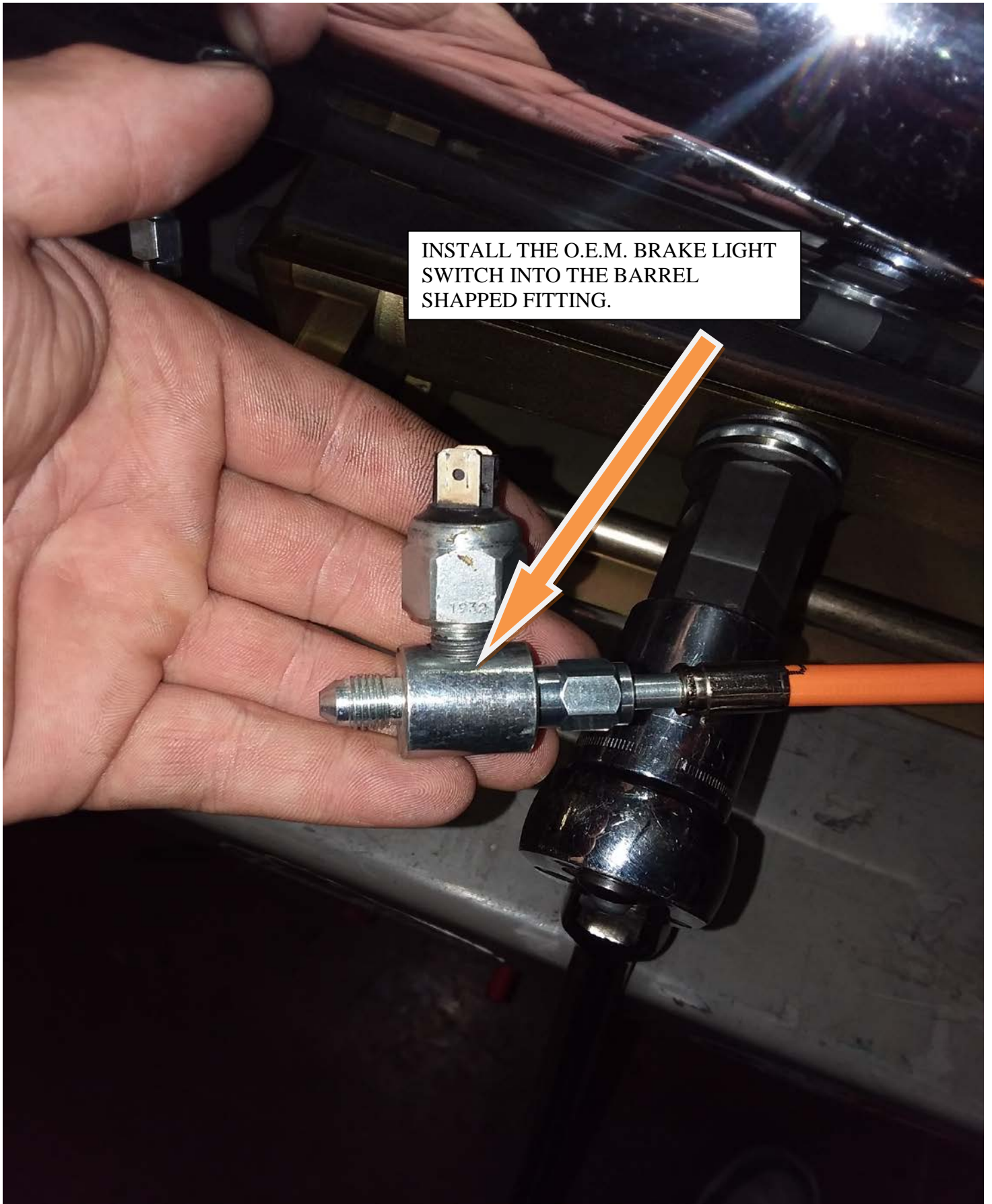


FIGURE 19: BRAKE LIGHT SWITCH INSTALL

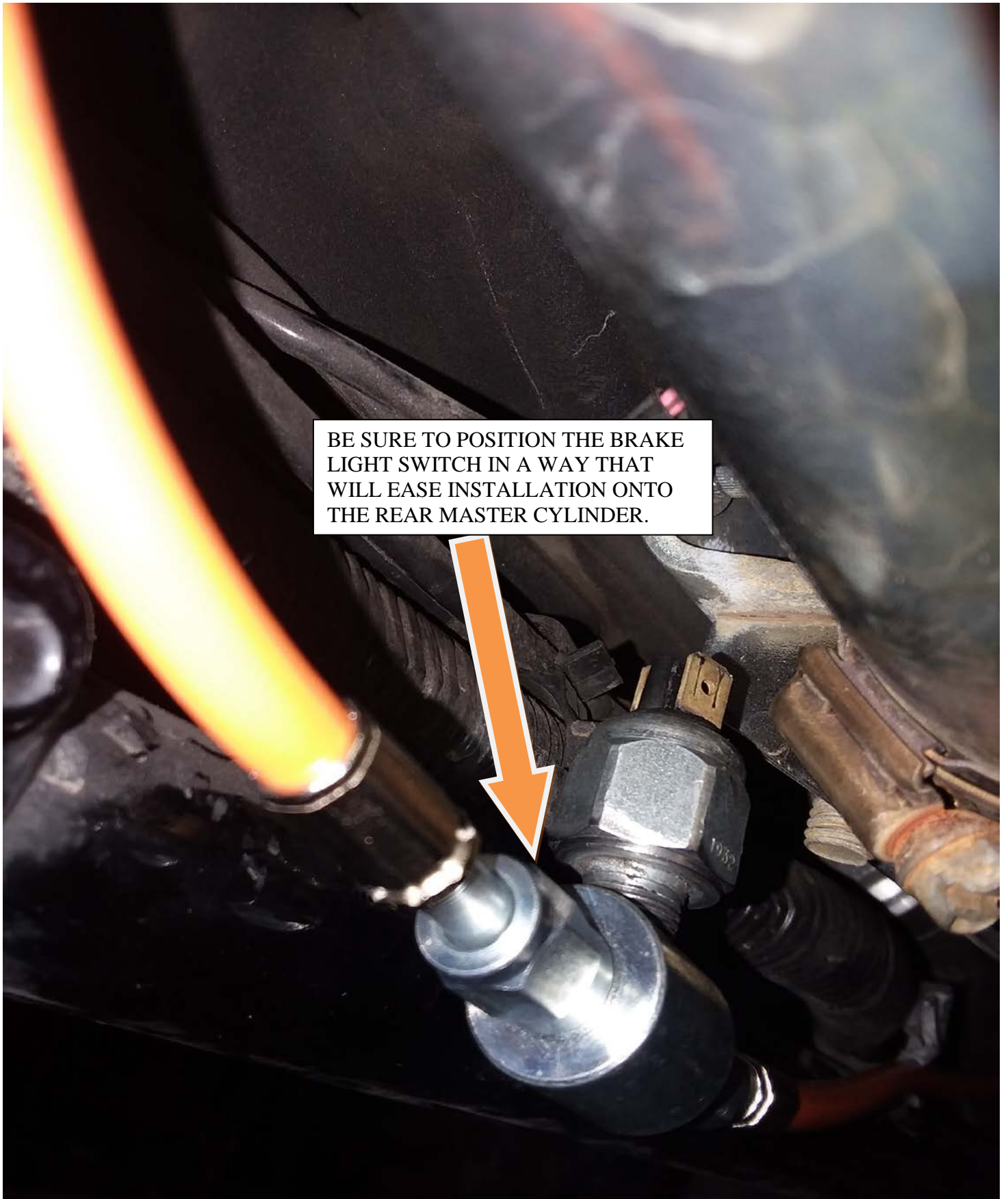


FIGURE 20: BRAKE LIGHT SWITCH INSTALL



FIGURE 21: REAR BRAKE MASTER CYLINDER

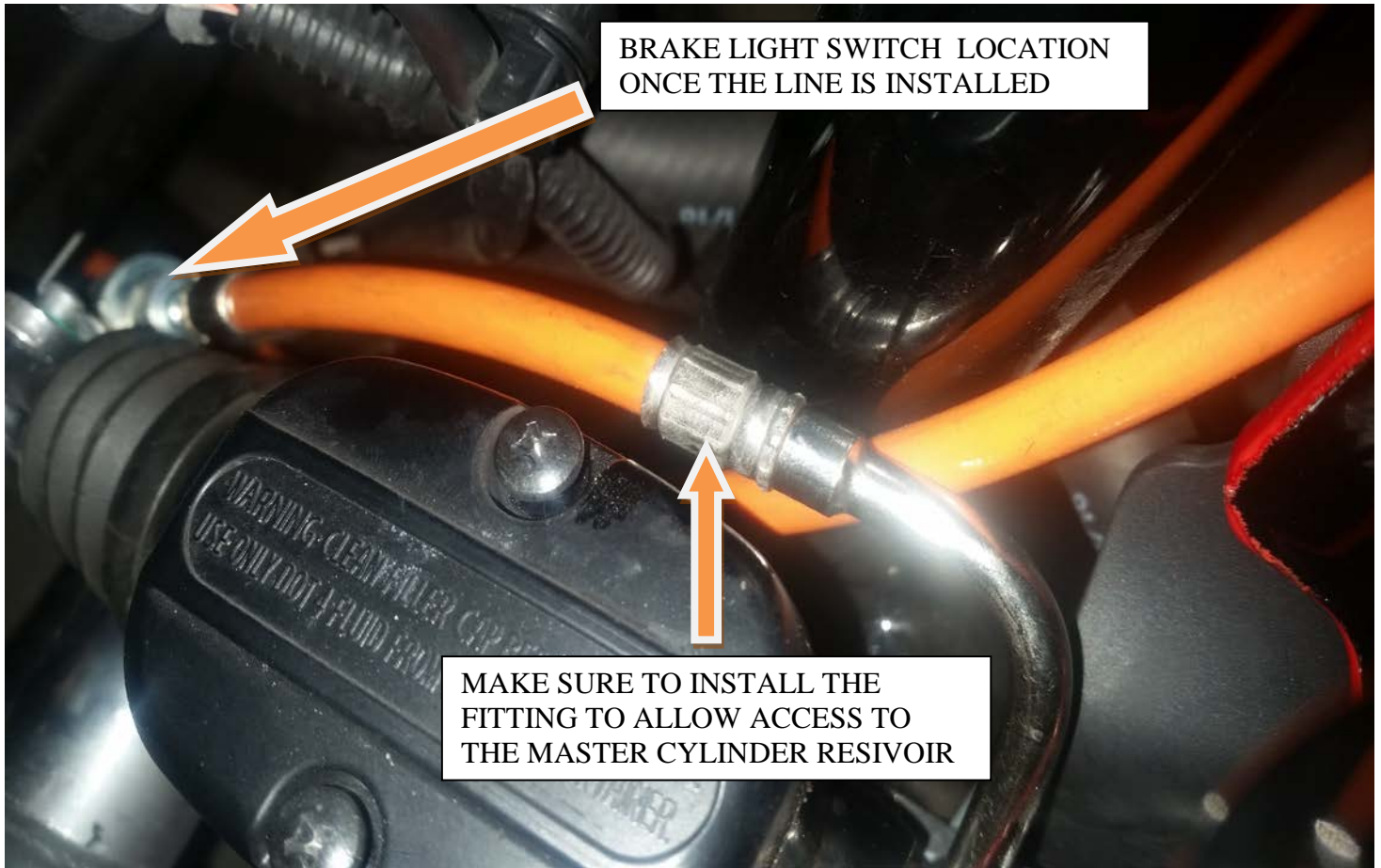


FIGURE 21: CONTINUED

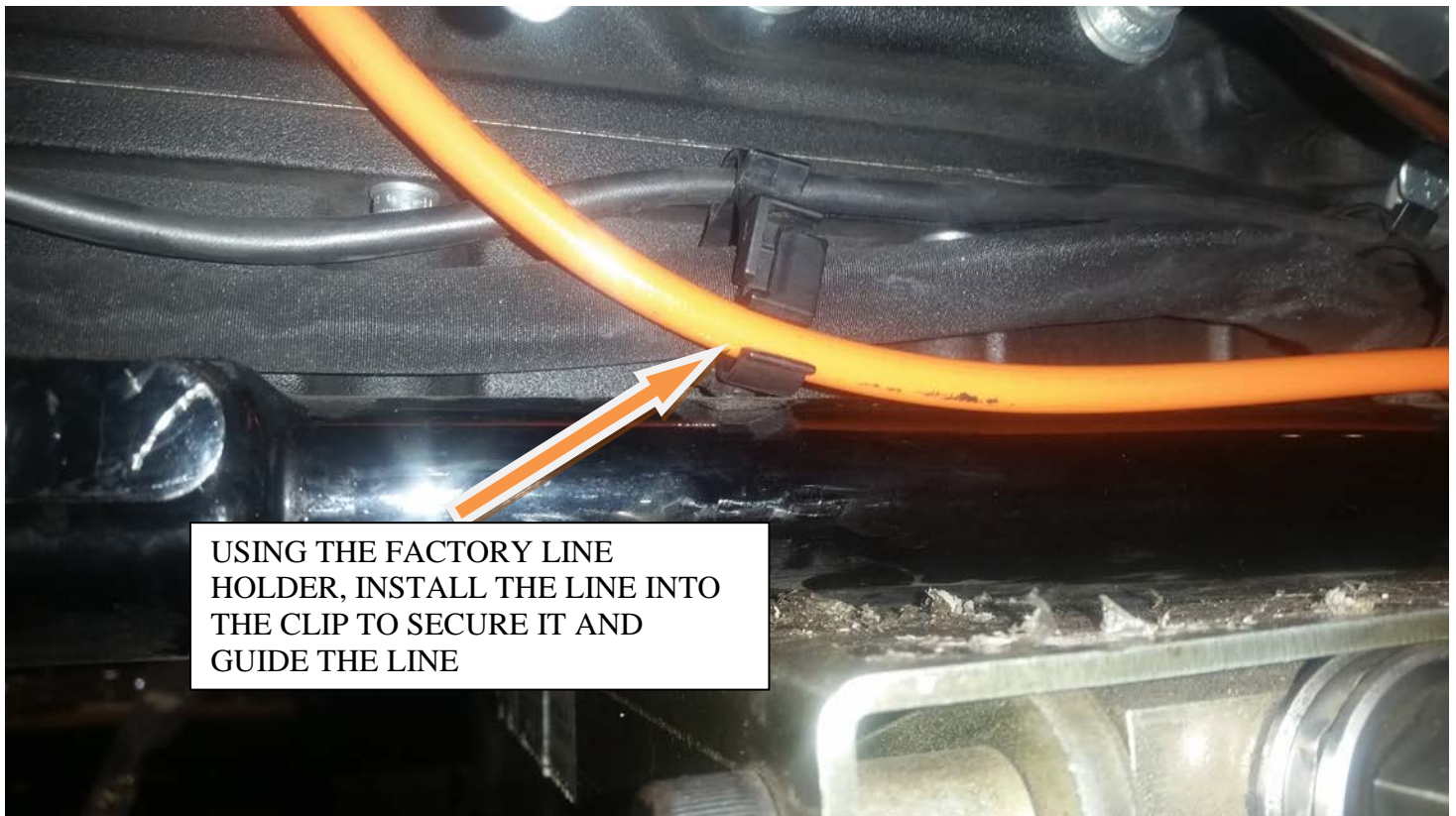


FIGURE 22: FACTORY LINE HOLDER



FIGURE 23: REAR LINE ROUTING

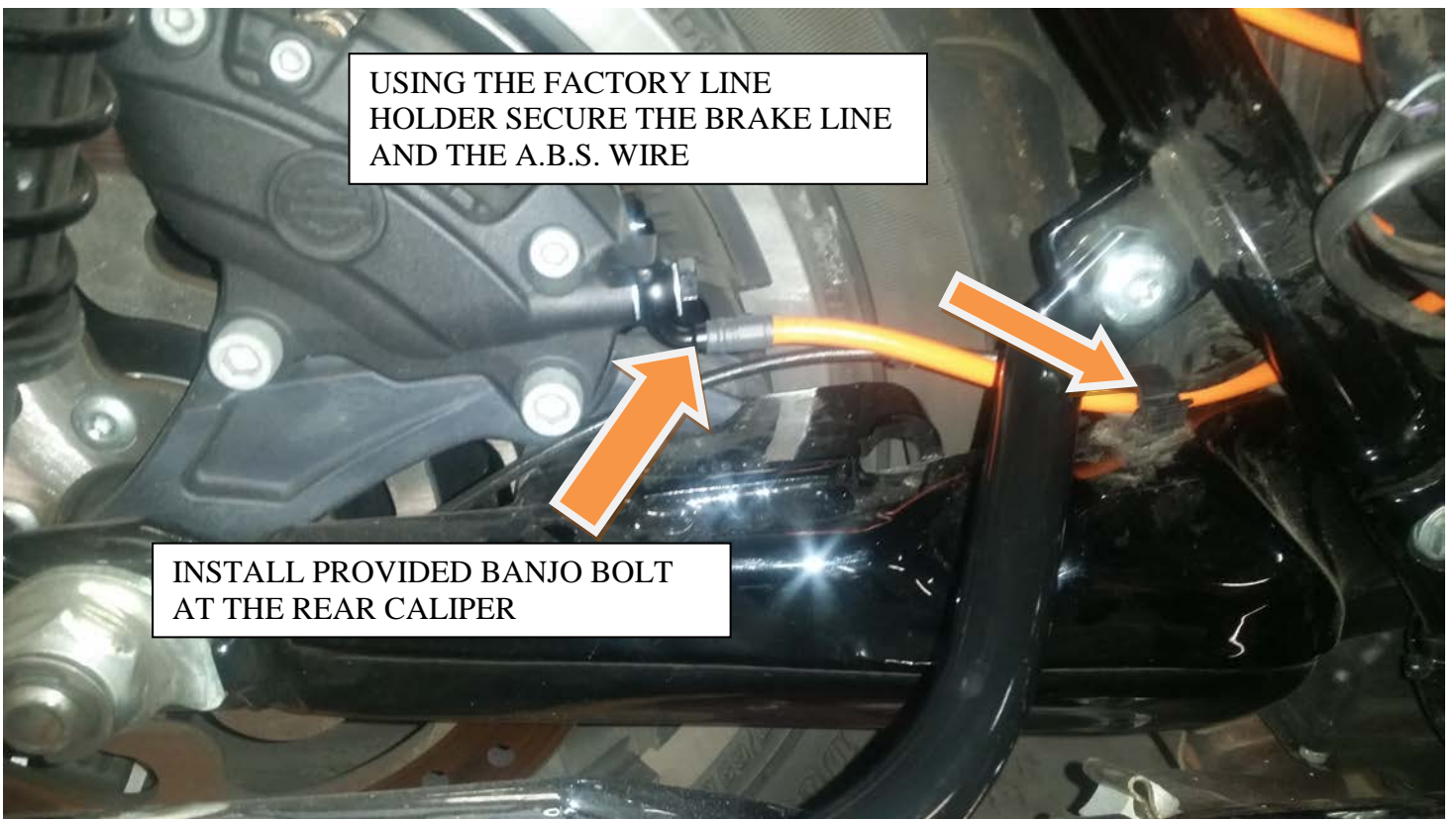


FIGURE 24: REAR LINE CALIPER

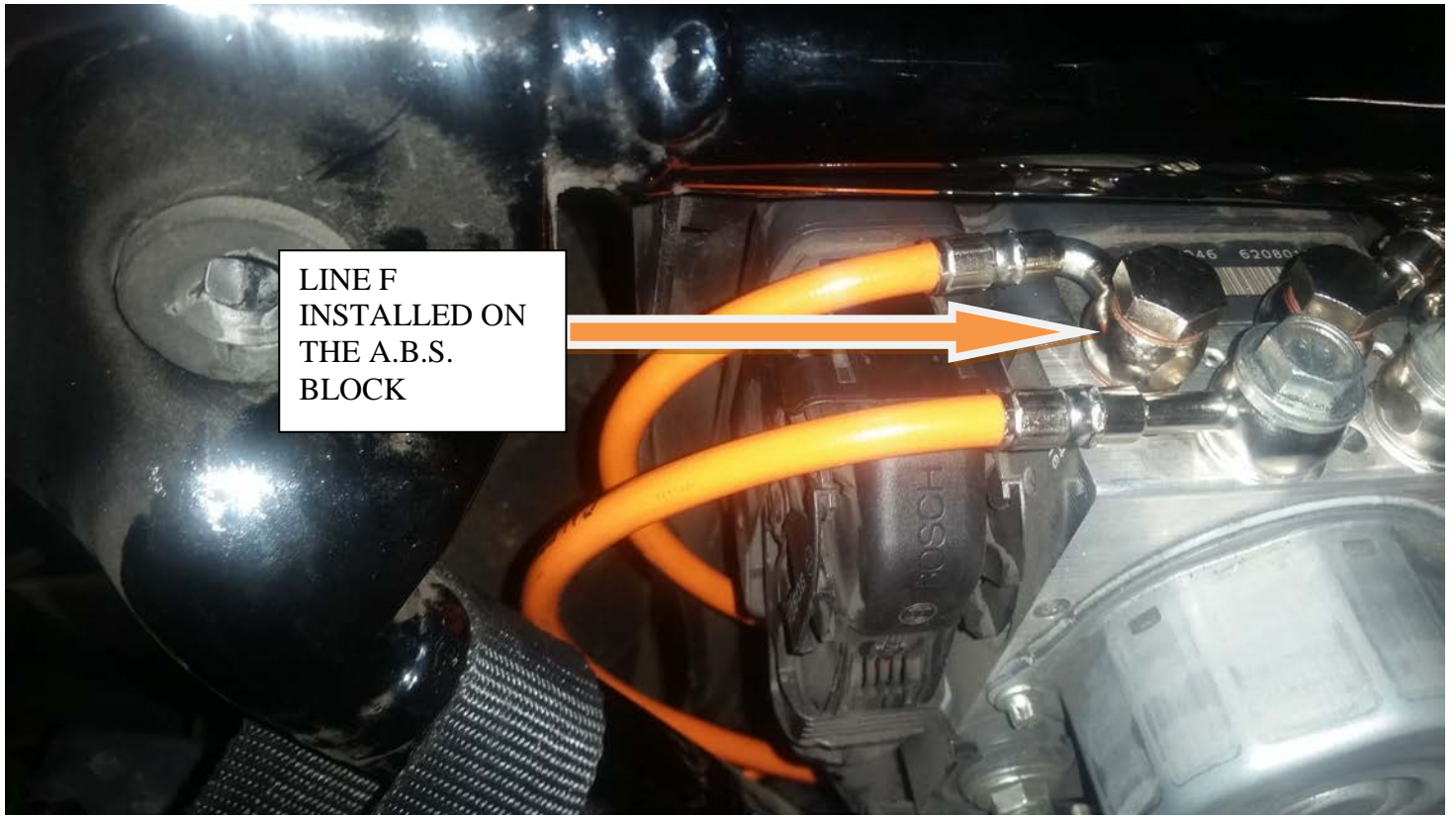


FIGURE 25: A.B.S. BLOCK

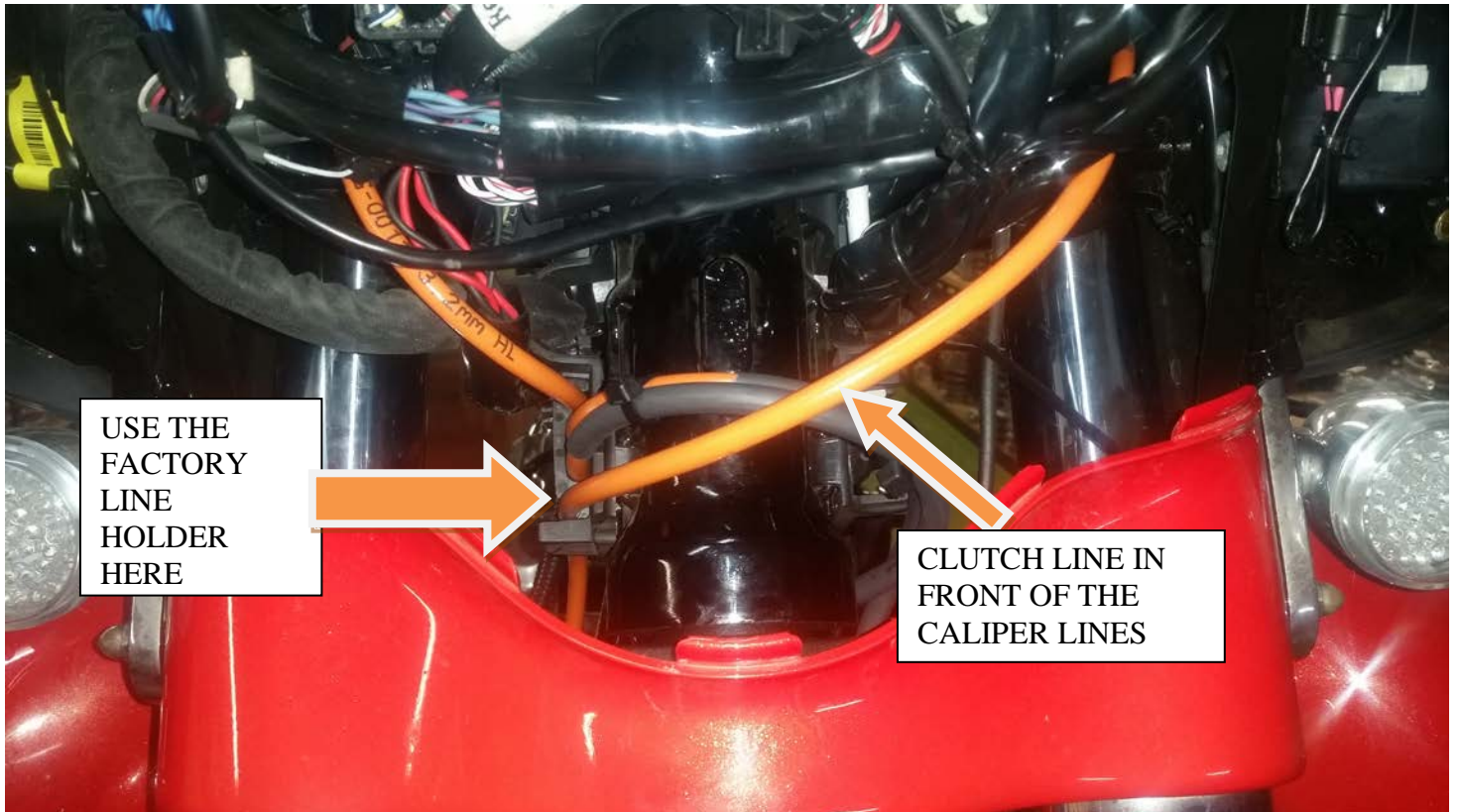


FIGURE 26: CLUTCH LINE ROUTING



FIGURE 27: CLUTCH LINE ROUTING



FIGURE 28: LINE HOLDER CLUTCH/BRAKE

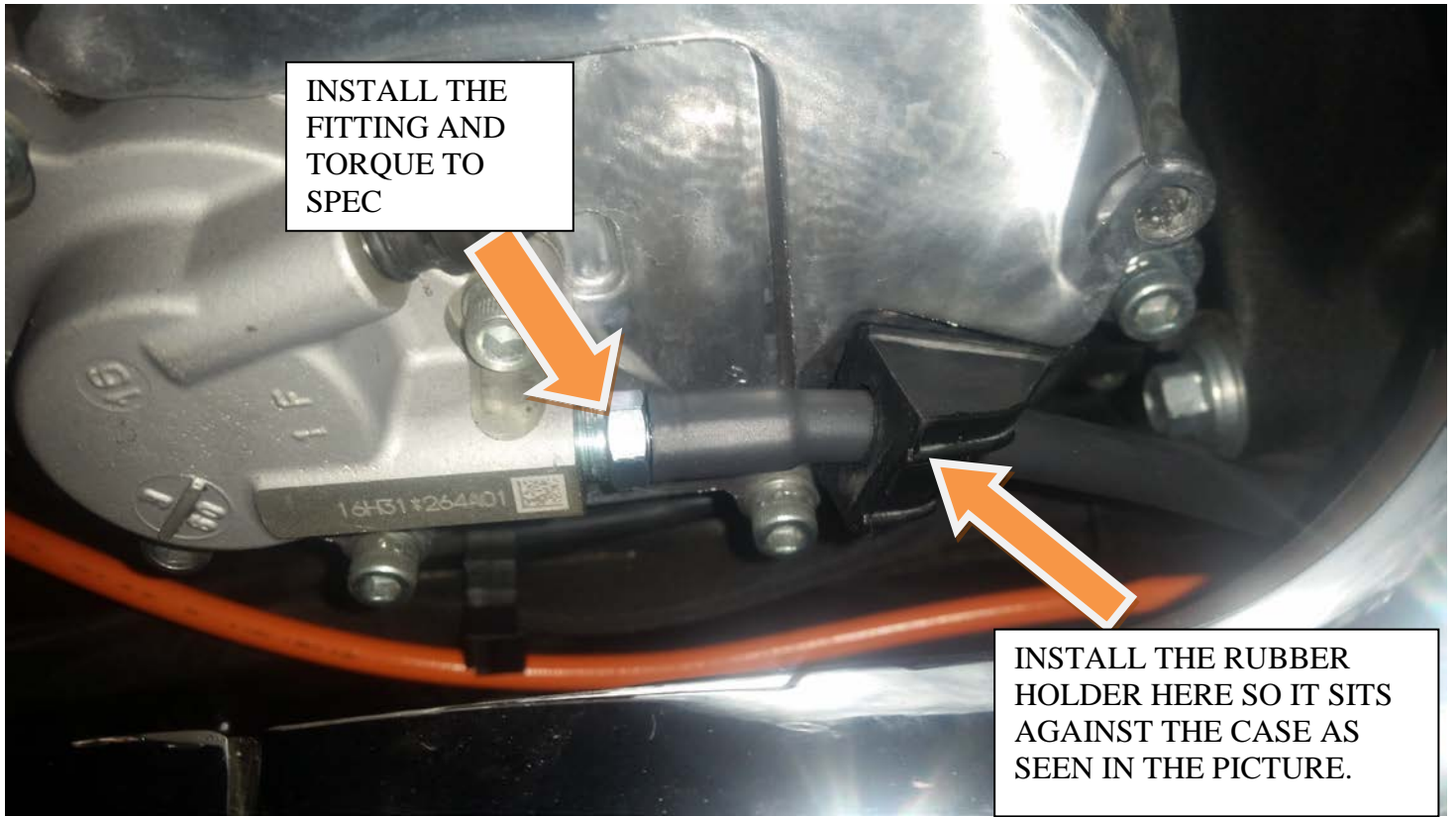


FIGURE 29: CLUTCH SLAVE CYLINDER