



BMW E9x Hydro E-Brake Installation Instructions



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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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

Turner Motorsport 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.

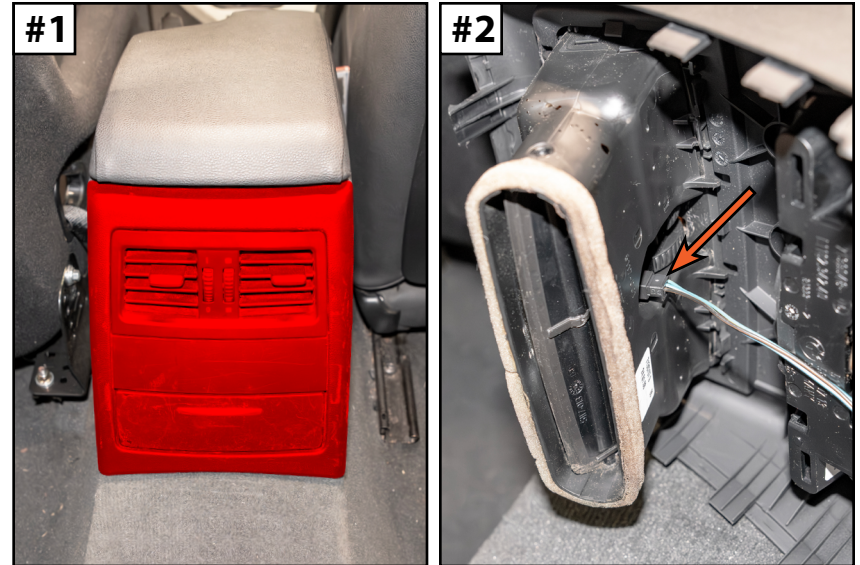


NEVER get underneath a vehicle that is supported only by a jack, and **ALWAYS** make sure that the vehicle is securely supported on jack stands.

REMOVING THE CENTER CONSOLE

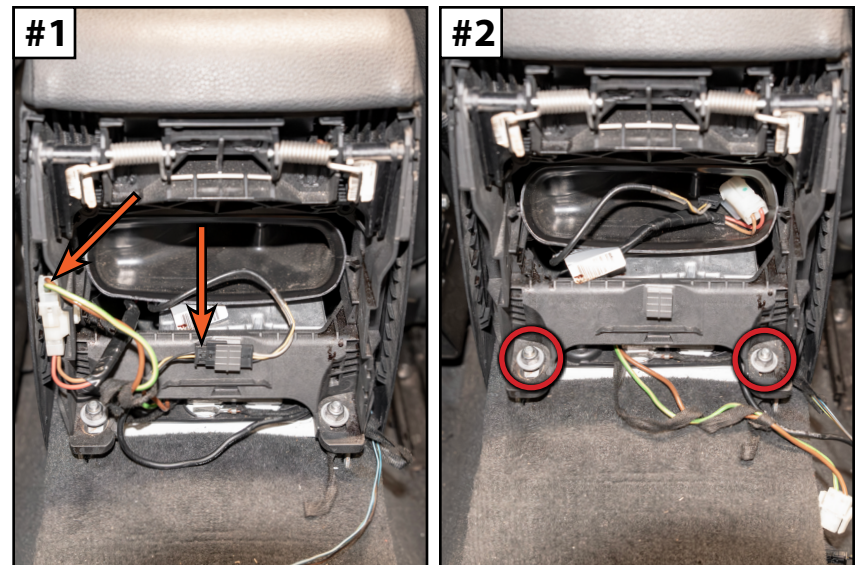
Step 1: Trim Removal Tool

Pull the rear center console vent panel (highlighted in **RED** in **Photo #1**) free from the center console, then disconnect the connector (arrow in **Photo #2**).



Step 2: 10mm Socket & Ratchet

Disconnect the connectors (arrows in **Photo #1**), then remove the two rear center console nuts (circled in **RED** in **Photo #2**) and set them aside.



REMOVING THE CENTER CONSOLE

Step 3: Trim Removal Tool

Lift up to pop the shift boot free from the shifter trim panel.

Optional: Remove the shift knob and shift boot from the shift lever.



Step 4: Trim Removal Tool

Lift up to pop the shifter trim panel (highlighted in **RED**) free from the center console.



REMOVING THE CENTER CONSOLE

Step 5: 10mm Socket & Ratchet

Remove the two front center console screws (circled in **RED**).



Step 6: Trim Removal Tool

Lift up to pop the shift boot free from the center console, then remove the E-brake handle and boot.



REMOVING THE CENTER CONSOLE

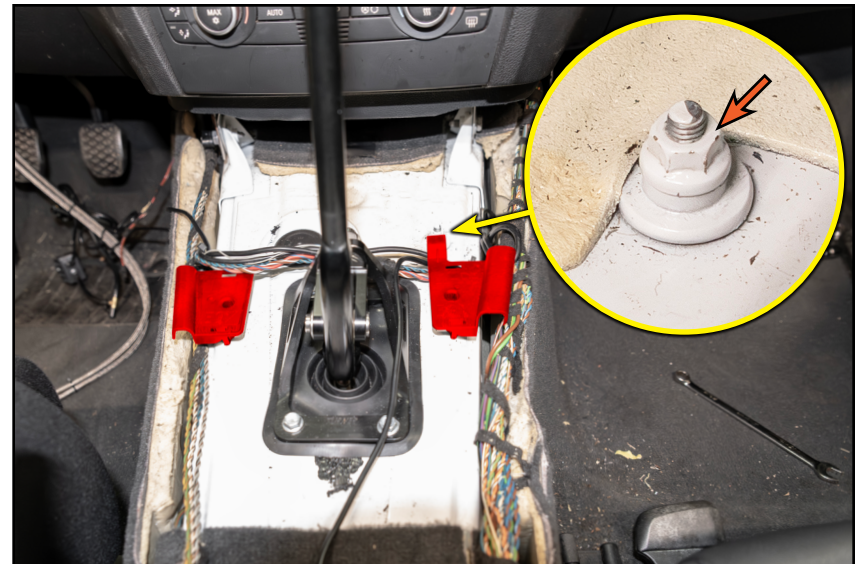
Step 7:

Lift up on the rear of the center console, disconnect any connectors or clips, and carefully guide the center console free from the vehicle.



Step 8: 10mm Socket & Ratchet

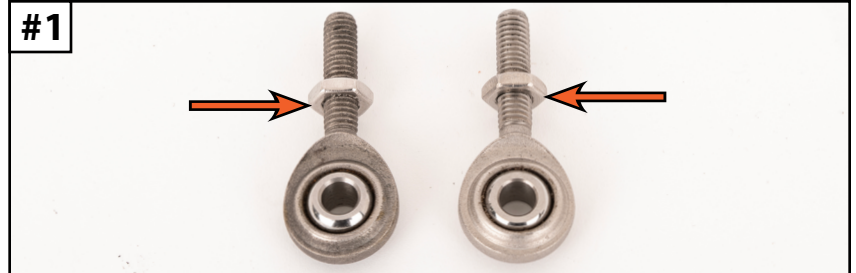
Remove the two plastic center console mounts (highlighted in **RED**), then remove the nut (arrow in inset photo) from the stud on the body and set it aside.



ASSEMBLING THE HYDRO E-BRAKE

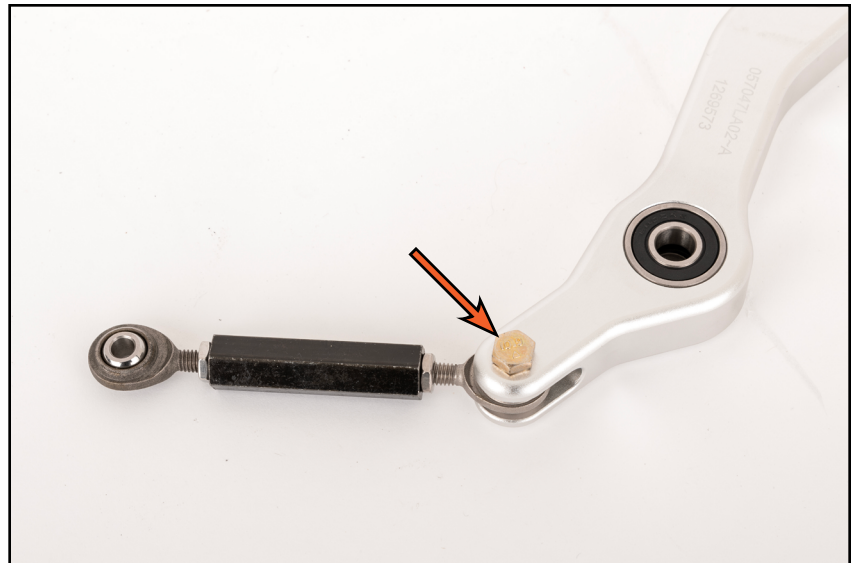
Step 1: 10mm Wrench

Thread the jam nuts (arrows in **Photo #1**) onto the rod ends, then thread the ends into the rod (as shown in **Photo #2**).



Step 2: 10mm Socket & Ratchet

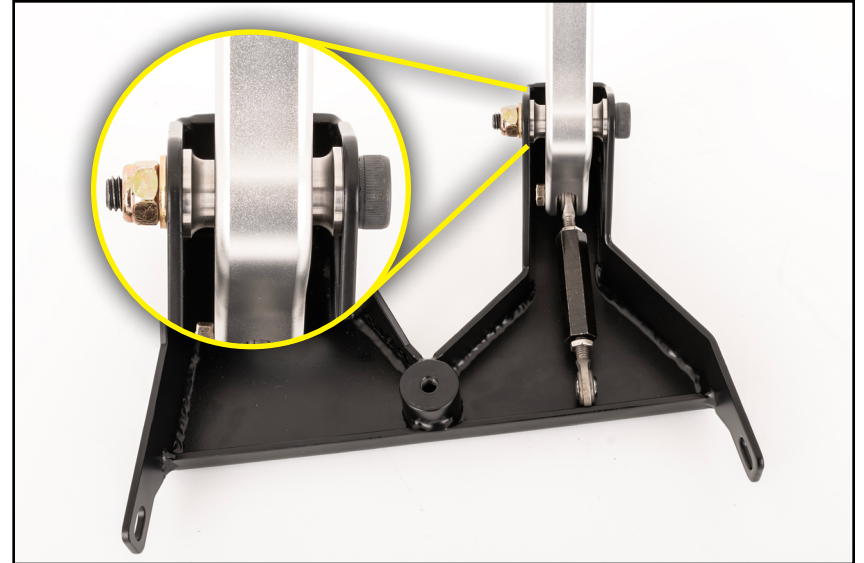
Slide the assembled rod into the opening in the base of the new brake handle and secure it in place with the provided M6 x 20mm screw (arrow).



ASSEMBLING THE HYDRO E-BRAKE

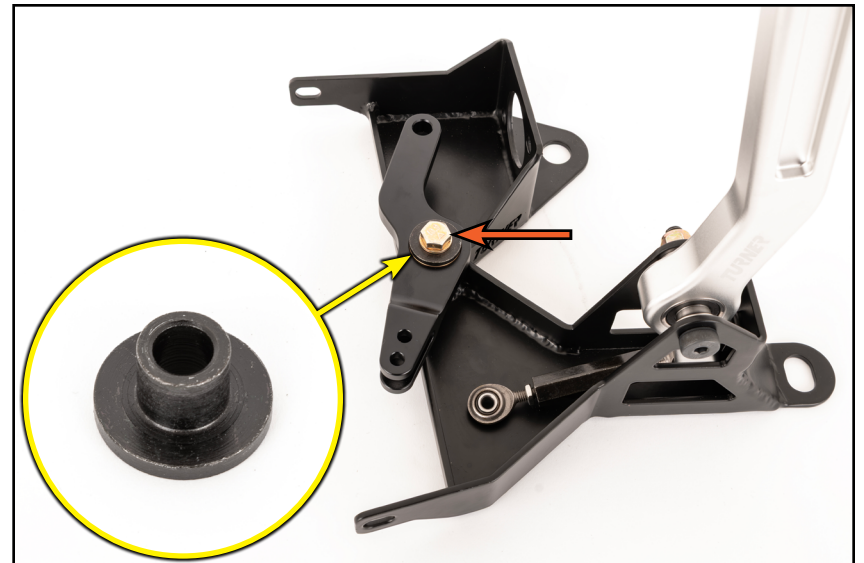
Step 3: 13mm Wrench, 5mm Hex (Allen) Socket & Ratchet

Install the brake handle into the base bracket, securing it with the M8 shoulder bolt, spacers, washer, and M8 nut (as shown in inset photo).



Step 4: 13mm Socket & Ratchet

Slide the spacer (inset photo) into the relay lever, then install the relay lever onto the base bracket and secure it in place with the M8 x 25mm screw and washer (arrow).



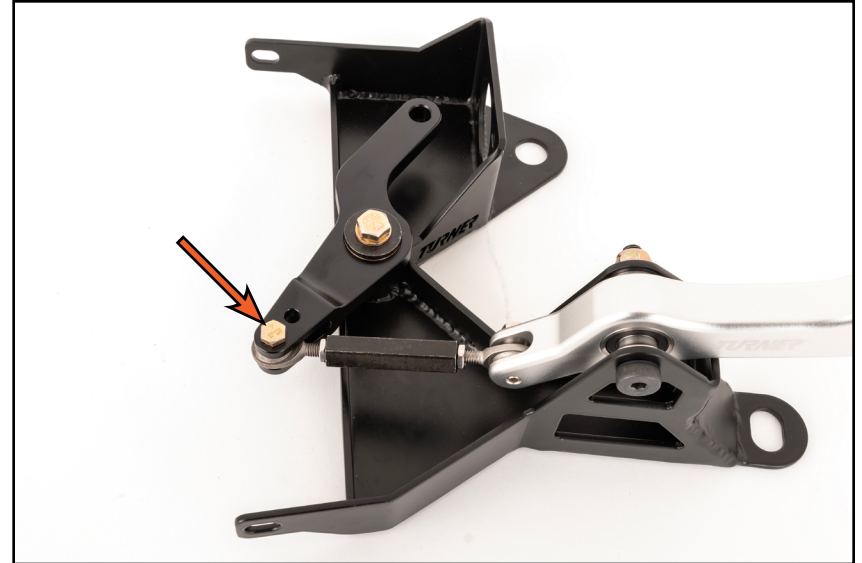
ASSEMBLING THE HYDRO E-BRAKE

Step 5: 10mm Socket & Ratchet

Install the rod end into one of the two holes in the lever arm and secure it with the M6 x 20mm screw (arrow).

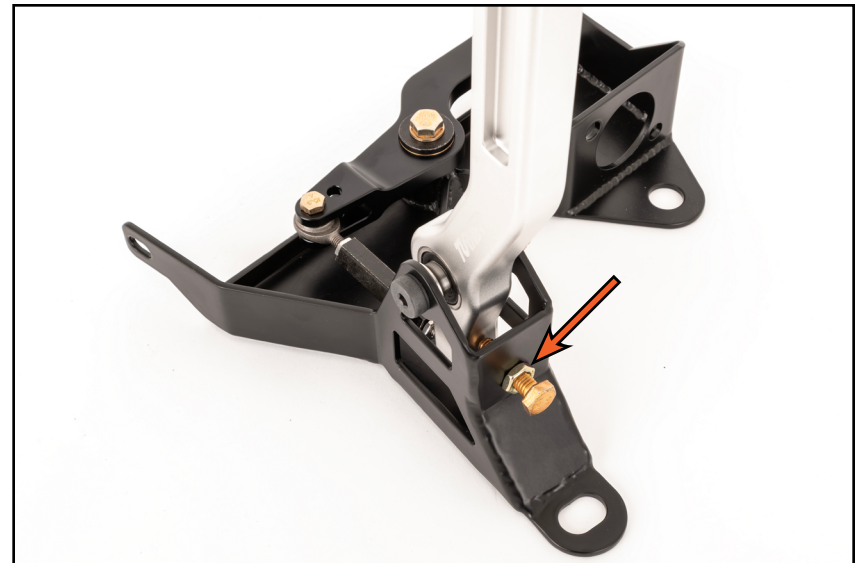
Selecting the outer hole (as shown in the photo on the right) results in a longer throw with less input force needed to operate the brake.

Selecting the inner hole results in a shorter throw with more input force needed to operate the brake.



Step 6: 13mm Socket & Ratchet

Thread the jam nut (arrow) onto the M8 x 30mm screw and thread the screw into the hole in the back of the base bracket.



ASSEMBLING THE HYDRO E-BRAKE

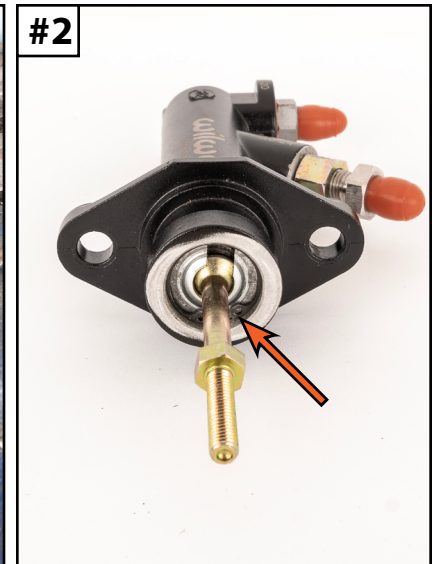
Step 7: Snap Ring Pliers, Die Grinder w/ Cutoff Wheel

Place the new master cylinder into a bench vise, remove the snap ring (arrow in **Photo #1**) from the groove, and remove the factory pushrod and washer. Secure the washer in a vise and cut a 6mm slot in the washer (as shown in **Photo #2**).



Step 8: Snap Ring Pliers

Slide the washer over the new provided pushrod (as shown in **Photo #1**), then install the new pushrod and slotted washer back into the master cylinder and secure it into place with the snap ring (arrow in **Photo #2**).



ASSEMBLING THE HYDRO E-BRAKE

Step 9:

Thread the jam nut (arrow in **Photo #1**) onto the pushrod, then thread the clevis (arrow in **Photo #2**) onto the pushrod.

#1

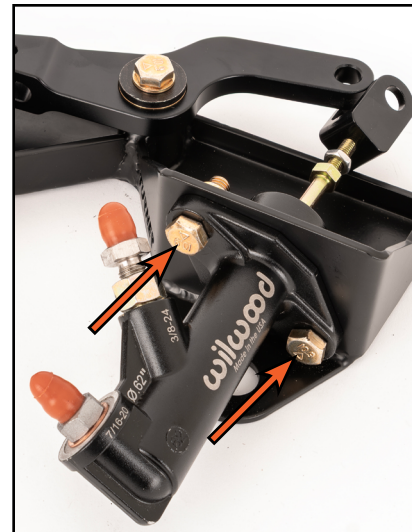


#2

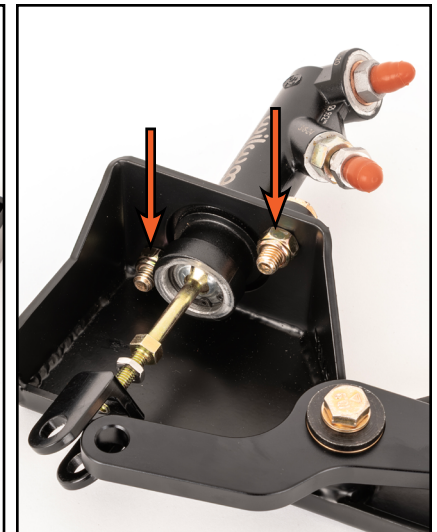


Step 10: 13mm Wrench, 13mm Socket & Ratchet

Slide the master cylinder into the base bracket and secure it in place with the M8 x 25mm screws and M8 nuts (arrows).



Rear View

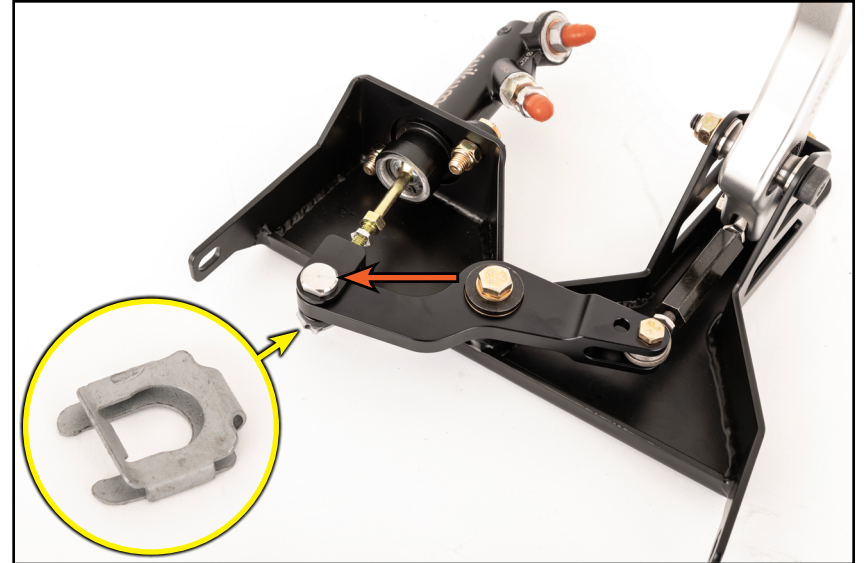


Front View

ASSEMBLING THE HYDRO E-BRAKE

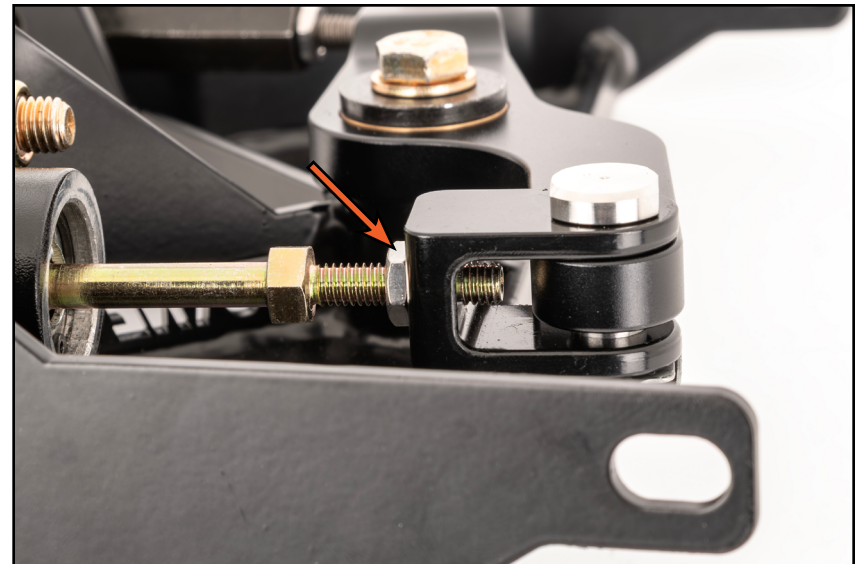
Step 11:

Connect the clevis to the relay lever with the provided pin (arrow) and clip (inset photo).



Step 12: 10mm Wrench

Thread the pushrod in or out of the clevis to adjust the length. Ensure there is adequate clearance between the end of the pushrod and the relay lever, then tighten the jam nut (arrow).



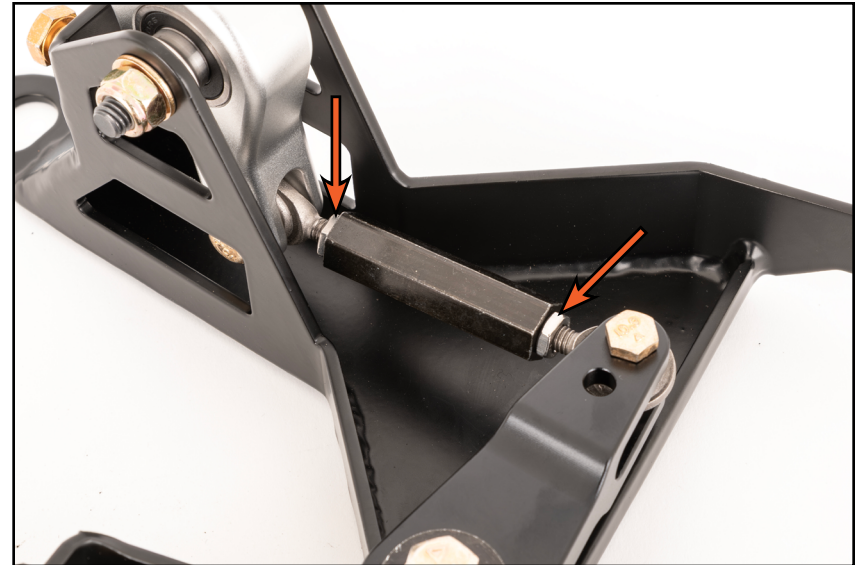
ASSEMBLING THE HYDRO E-BRAKE

Step 13: 10mm, 13mm Wrench

Rotate the brake handle rod to lengthen or shorten it, adjusting the brake handle position, then tighten the jam nuts (arrows).

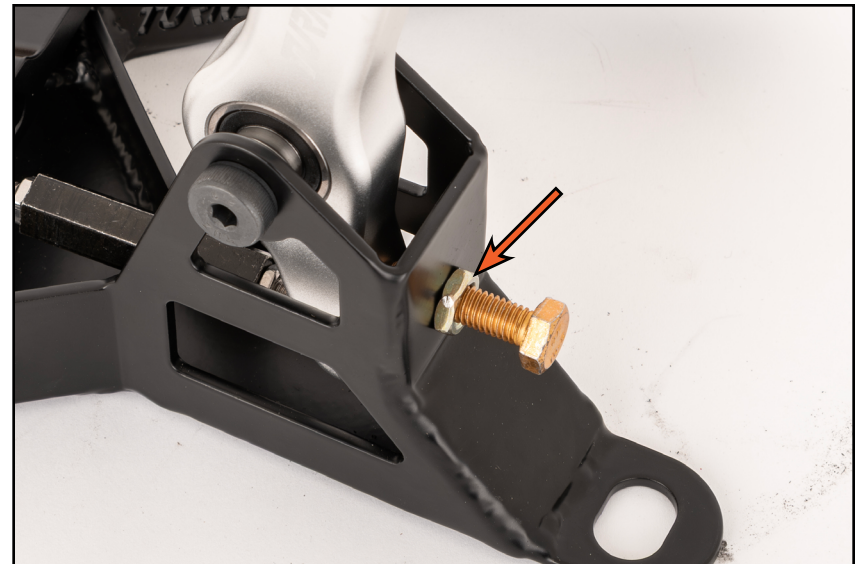


It may be required to go back and adjust the master cylinder pushrod length to ensure the master cylinder piston is not compressed with the handle in its home position.



Step 14: 13mm Wrench, 13mm Socket & Ratchet

Tighten the M8 bolt against the back of the brake handle to eliminate any remaining excessive play in the handle, then tighten the jam nut (arrow).



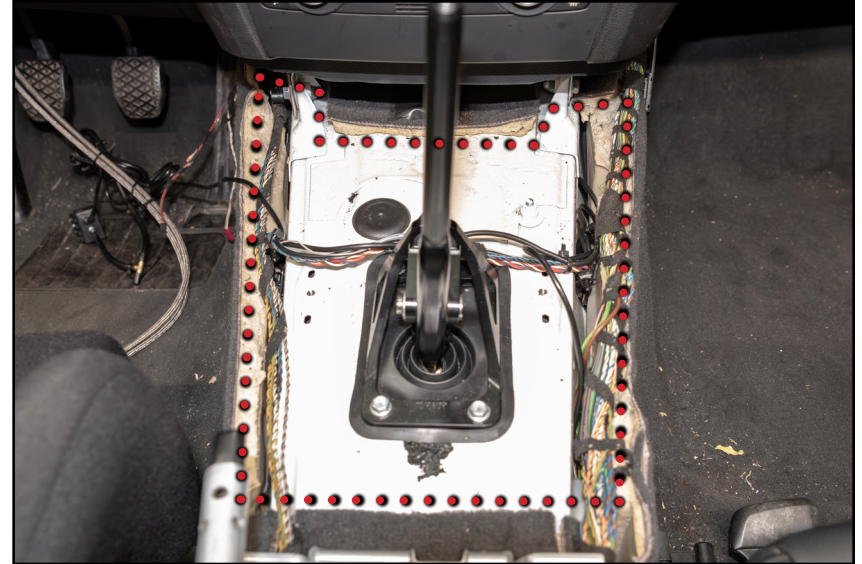
INSTALLING THE NEW HYDRO E-BRAKE

Step 1: Razor Blade

Trim back the carpet panels as shown (**RED** dotted line) so that they do not interfere with the new E-brake assembly.



Be careful not to cut or damage the wiring harnesses routed beneath the carpet panels.



Step 2: 13mm Socket & Ratchet

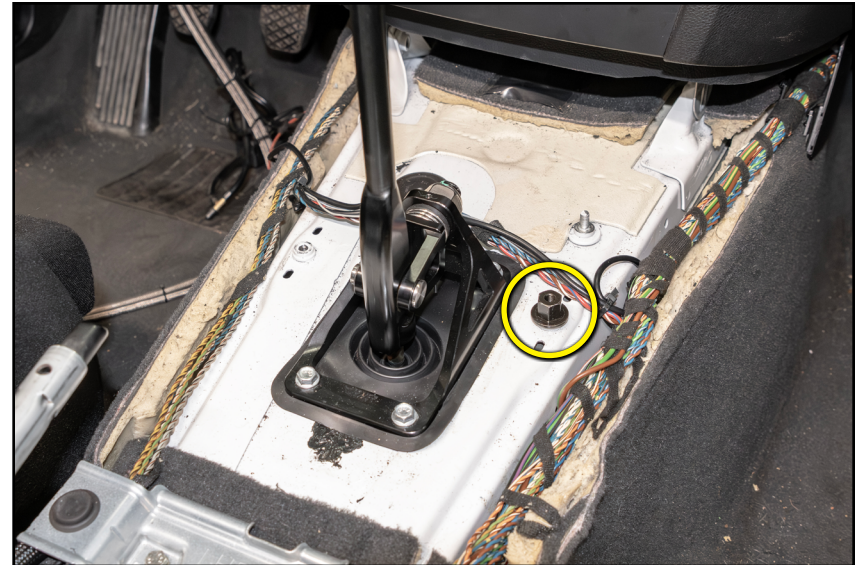
Remove the two screws (arrows) that secure the dashboard to the body in the center console area and set them aside.



INSTALLING THE NEW HYDRO E-BRAKE

Step 3: 13mm Socket & Ratchet

Install one of the new provided center console mounts (circled in **YELLOW**) into the threads on the RH side of the shifter.



Step 4:

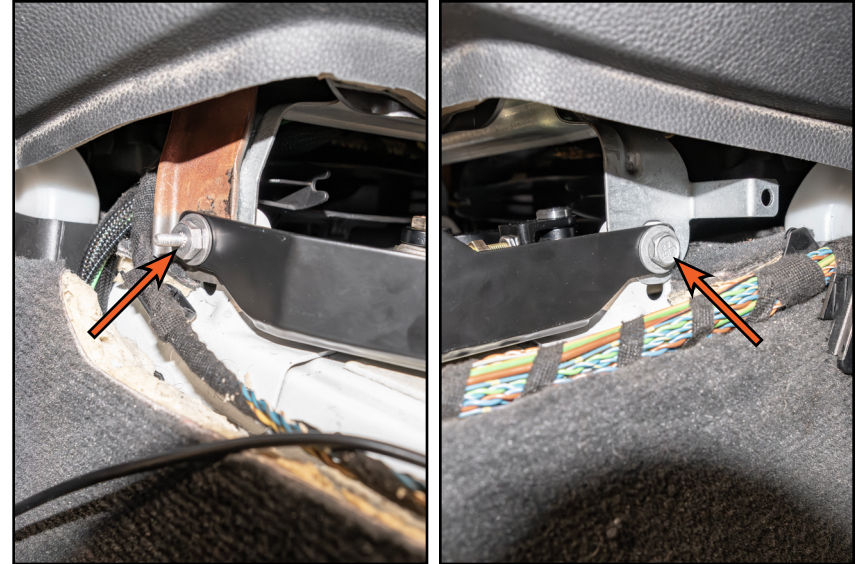
Carefully lower the E-brake assembly down into place as shown.



INSTALLING THE NEW HYDRO E-BRAKE

Step 5: 13mm Socket & Ratchet

Loosely reinstall the two dashboard screws (arrows).



Step 6: 10mm Wrench, 13mm Socket and Ratchet

Adjust the assembly and install the LH center console mount (arrow), then reinstall the M6 nut with the provided oversized washer (inset photo). Go back and tighten the dashboard screws until snug.



At this point, connect and route your new brake fluid lines from the master cylinder inlet & outlet.



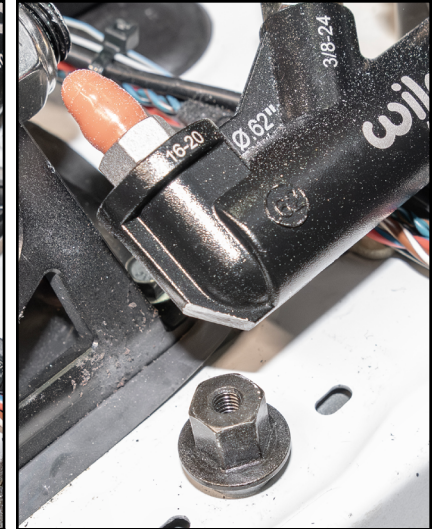
INSTALLING THE NEW HYDRO E-BRAKE

Step 7: Metal File

The casting on the master cylinder may need to be filed down slightly as shown to allow clearance for the RH center console mount screw to be installed.



Before Cutting



After Cutting

Step 8: Die Grinder w/ Cutoff Wheel

Trim the center console as shown (**RED** dotted line) to allow clearance for the new E-brake assembly.



Bottom View



Top View

INSTALLING THE NEW HYDRO E-BRAKE

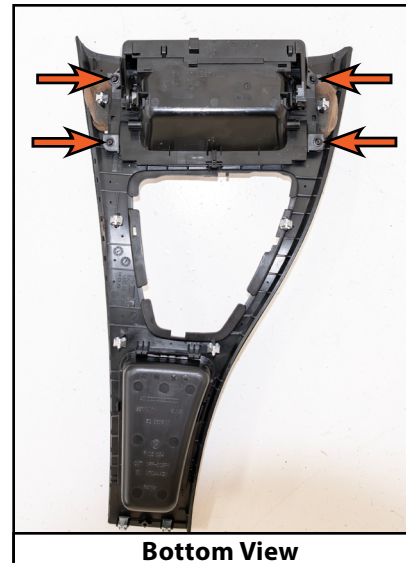
Step 9: 10mm Socket & Ratchet

Reinstall the center console and install the provided M6 x 12mm screws (arrows) to secure it to the new mounts.



Step 10: T10 Torx Socket & Ratchet

Remove the screws (arrows) and remove the storage tray from the shifter trim panel.



Bottom View



Top View

INSTALLING THE NEW HYDRO E-BRAKE

Step 11:

Carefully guide the shifter trim panel into place as shown.



Step 12:

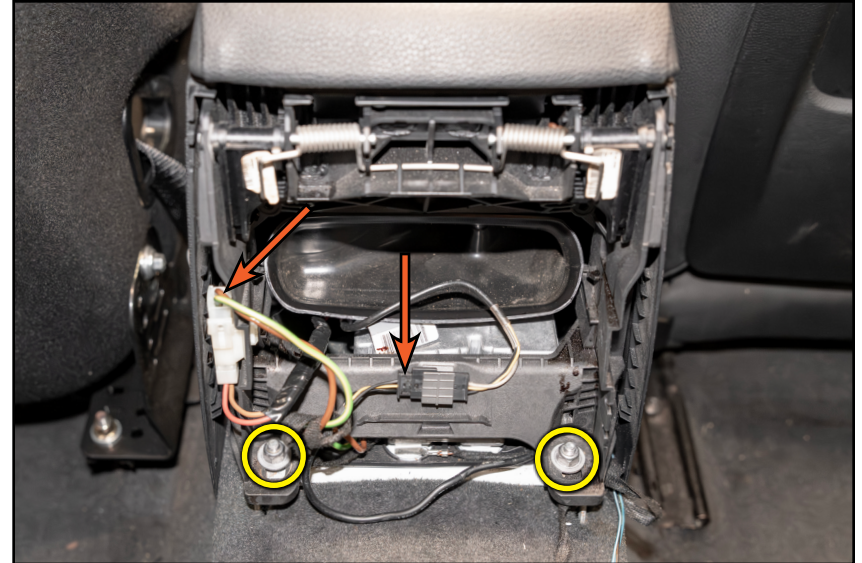
Reinstall the shifter and boot, then reinstall the E-brake handle and boot.



INSTALLING THE NEW HYDRO E-BRAKE

Step 13: 10mm Socket & Ratchet

Reinstall the rear center console nuts (circled in **YELLOW**), then reconnect the connectors (arrows).



Step 14:

Reconnect the connector and reinstall the rear vent panel.



Congratulations, Your installation is complete!

Your Hydro E-Brake installation is complete!



These instructions are provided as a courtesy by Turner Motorsport

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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