

**1978 - 1988
GM A/G-Body
Pedal
Installation
Instructions**



You are about to embark upon a fairly intensive conversion process that will turn your car into a badass machine.

Before taking apart your car:

1. **Read through the entire instructions.** If something doesn't make sense, it probably will once you actually take your car apart, but in any case don't hesitate to call or email for clarification.
2. **Ensure you've received each part.** Review your packing list to ensure you have received all necessary parts. If anything is missing or looks wrong, please contact us.
3. **Recruit a friend.** Unless you're a professional mechanic working with a lift and a transmission jack, you'll probably really appreciate a second set of hands for certain steps.

Get your car in position, get your tools out, and let's get going.

We are available by phone or email to help you with any questions you may have along the way.

Table of Contents

PACKING LIST..... 4

BEFORE WE START..... 7

PEDALS..... 7

PEDAL REMOVAL..... 7

PEDAL INSTALLATION..... 15

HYDRAULICS..... 31

ADJUSTMENT..... 33

Packing List

Your pedal assembly is ready to install, with the brake and clutch pedal arms pre-tested to ensure smooth operation.

The following items are installed on the pedal assembly:

- Master cylinder mount: 2" Shoulder bolt, two black spacers, Nord-lock washer, 1/4"-20 nut



- Neutral safety switch mount: Bracket, two 1/4" bolts, two 1/8" thick spacers

The following parts are bagged:

- Clutch master pushrod

4" Turnbuckle, rod end with left hand threads, left hand jam nut, 1/2" shoulder bolt, serrated flange nut



'78 – '88 GM A/G-Body Pedal Installation Instructions

- Flange nuts

Four flange lock nuts

Replace original nuts holding brake pedal to brake booster (or brake master cylinder if you've got manual brakes)



- Bracket to Lower Dash

M8 Socket head bolt and washer

Replace original bolt securing pedal assembly to the lower dash



'78 – '88 GM A/G-Body Pedal Installation Instructions

- Firewall Drilling Template

Paper template showing where to drill holes in your firewall

After stock pedal is removed this hangs on the brake booster studs (or brake master cylinder if you've got manual brakes)



- Firewall seals

Upper firewall seal has a 1/2" hole through the seal and has one side notched

Lower firewall seal has a 1/4" hole through the seal and has two sides notched

- Firewall seal screws

Eight stainless steel screws

#2 square driver



Before We Start

Our pedal assembly is a direct replacement for the stock brake pedal assembly found in 1978 – 1988 GM A/G-Body vehicles. There are numerous vehicle models covered, including the Chevrolet Monte Carlo, Chevrolet Malibu, Chevrolet El Camino, Buick Regal, Oldsmobile Cutlass, Pontiac Grand Prix, and more.

We've created these instructions based on our hands-on experience which includes:

- 1978 Chevrolet Malibu (the Car Craft Magazine Malibu!)
- 1988 Oldsmobile Cutlass
- 1987 Chevrolet Monte Carlo

We have not tried all possible variations. If your vehicle looks different than what you see in our photos, or what you understand from our words, please don't hesitate to contact us by phone or email.

Pedals

Pedal Removal

To access the brake pedal assembly the steering column must be removed, and to access the steering column a trim panel must be removed. To get the column out, a bunch of wiring harnesses must be disconnected.

1. Remove the driver's seat. Removing the driver's seat is not required, but it does give you more space to access everything. With a power or manual seat, the easiest way we know is to first move the seat all the way back and then remove the two 13mm nuts securing the front of the seat rails to the floor. Next, move the seat all the way forward and remove the four 13mm nuts securing the rear of the seat rails to the floor.
2. Disconnect the negative battery terminal.
3. Turn the steering wheel so that the front wheels are straight.

'78 – '88 GM A/G-Body Pedal Installation Instructions

4. Remove the trim panel below the steering column - 4 screws retain it.



5. If you have a tilt steering column, adjust so that the steering column is straight.
6. Support the column while you loosen the two 15mm nuts that hold the column to the dash. Back the nuts out until they reach the end of the threads. Gently lower the steering column so that it rests on the nuts.







7. Now it's time to explore the many wiring harnesses that attach to your steering column. Each one surprises with its own release tab location.

The list below is in the order we see the connectors, starting under the steering column. The tables on the following pages contain pictures of each connector, release instructions, and wire colors.






Note that your car probably has at least one zip tie holding things in place under there, so have your snippers handy.

- a. Windshield wipers: Large grey connector going into a white receptacle. Pull back the tab in the middle while pulling the connector out.
- b. Cruise control (optional): Black connector with blue inserts. Use your finger or small regular screw driver to lift the tab as you pull the connector out.
- c. High beams: Located on the driver's side of the column, black connector into brown receptacle.
- d. Turn signals: Mounted to the underside of the steering column, a large black connector. Squeeze the tab in the middle as you pull the connector out.
- e. Cornering lamps (certain models): Small black connector next to the turn signal connector. Pull back the tab in the middle while pulling the connector out.
- f. Ignition switch: Black and a blue connectors side-by-side; the black connector must be removed first by squeezing the two tabs. Then remove the blue connector by squeezing its two tabs.
- g. At the base of the steering column, on the top side of the column, there is a white plastic housing with 2 connectors – disconnect both. Working from driver side to passenger side:
 - i. Park neutral position: Use a small regular screwdriver or similar tool to lift the tab as you pull the connector.
 - ii. Reverse lights: Wiggle the connector while you pull it.

'78 – '88 GM A/G-Body Pedal Installation Instructions

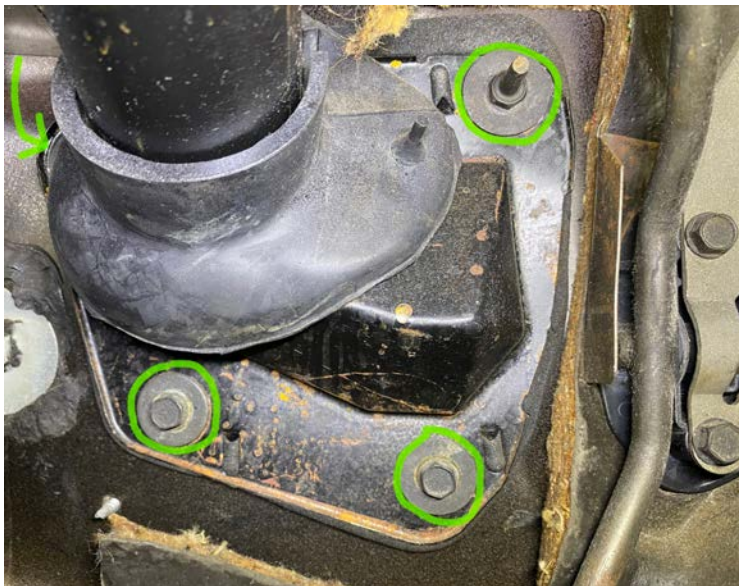
Step	Connector Location	Connector Color	Function	Wire Colors	Removal	Picture
a	Under steering column	Grey	Windshield wipers	Pink, purple, green, grey, white	Pull back the tab in the middle while pulling the connector out	
b	Under steering column	Black with blue insert	Cruise control (steering column)	Green, brown, blue, grey	Use your finger or small regular screw driver to lift the tab as you pull the connector out	
c	Driver side of steering column	Black	High beams	Tan, yellow, green, green	Squeeze the two tabs on the black connector as you pull the connector out	
d	Under steering column	Black	Turn Signals	Tan, light green, black, light blue, blue, brown, 2 purple, yellow, green, white	Squeeze the tab in the middle as you pull the connector out	

'78 – '88 GM A/G-Body Pedal Installation Instructions

Step	Connector Location	Connector Color	Function	Wire Colors	Removal	Picture
e	Under steering column	Black	Cornering lamps	Black, orange, grey/black	Pull back the tab in the middle while pulling the connector out	
f	Top of steering column	Black and Blue	Ignition	<u>Black</u> : 12 ga orange, red; thin purple, green <u>Blue</u> : 12 ga brown, red, pink, yellow	The black connector must be removed first by squeezing the two tabs; then remove the blue connector by squeezing its two tabs	 
g.i	Base of steering column, on top	Black into white switch	Park neutral position	Orange, black	Use a small regular screwdriver or similar tool to lift the tab as you pull the connector	
g.ii	Base of steering column, on top	Black into white switch	Reverse lights	Green, blue	Wiggle the connector while you pull it	

'78 – '88 GM A/G-Body Pedal Installation Instructions

11. Column shift cars: disconnect the metal clip under the column for the shift location indicator wire.
12. Back to hardware. Under the hood, the steering column passes through the firewall and is then bolted to the joint at the top of the upper intermediate shaft. Remove the nut with a 15mm socket or wrench. The bolt is retained by a square shoulder so does not need a tool; remove the bolt.
13. The steering column is a friction fit into the upper intermediate shaft and they must be separated. The intermediate shaft collapses like a telescope to shorten, and to separate the joint you need to collapse the shaft about 1 ½". At the top of the upper intermediate shaft is what the factory service manual calls a "pot joint", but whatever it is, you can grab onto this to get a good grip as you try to move it towards the front of the vehicle. On some cars it can be done by hand but it's slow. Alternatively, you can tap on the end of the shaft but there is not a lot of room between it and the firewall. If going this route, use a brass faced hammer and go slowly so as not to damage your steering components and periodically rotate the shaft in order to keep the joint moving evenly
14. For column shift cars, disconnect the transmission linkage at the base of the steering column by removing the spring clip. From underneath the car, remove the rest of the linkage.
15. Back inside the car: where the column meets the firewall, peel back the insulation covering the column.
16. With a 10mm socket remove the four bolts holding the black steering column plate to the floor. Note that one of these bolts has an extension to retain insulation – note the location of this special bolt.



'78 – '88 GM A/G-Body Pedal Installation Instructions

17. Before you yank your steering column find a space to store it. We like to place it face down on the steering wheel, so that the steering column is sticking straight up. And try to keep the wheel where it is, which would be keeping the front tires straight if it were installed in the car.
18. The steering column can now be removed by removing the two 15mm nuts under the steering column that you loosened previously. Be careful not to snag a wire as you remove the column.

If this is the first time your car's column has been removed you will have to overcome the light adhesive between the black steering column plate and the firewall, you can gently rock the column back and forth to ease it out.

19. Remove the steering column shroud, the formed piece of steel directly over where the steering column mounts. It is held in place with one 13mm bolt; replace the bolt in the hole loosely. The shroud will be cut in a future step.
20. At the brake pedal disconnect the wiring harnesses that feed into the switch, or switches, mounted on the pedal. Each connector can be disconnected with a small regular screwdriver or similar tool.

Note: There are variations in these connectors so if yours do not match what is pictured below please contact us with any questions you have.

- a. Brake lights: Orange, blue, and white wires
- b. Torque converter: Pink and purple wires. Not re-used of course. Pink wire is powered.
- c. Cruise control interrupt: Grey connector with brown and brown/white wires, we will tap into this during a later step.



21. Remove the spring clip retaining the brake master cylinder pushrod – a small hook tip tool works well, or needle nose pliers. Note that the pushrod has more

'78 – '88 GM A/G-Body Pedal Installation Instructions

material on the lower side when installed properly. Remove the washer, pushrod, and second washer from the brake pedal – all parts will be re-used. The second washer is a wave washer, note the orientation as it will be re-installed the same orientation. The pushrod may require a little encouragement to get off; take your time and be sure not to bend the pushrod; use a nylon pry stick if you need some leverage.

22. Remove the 13mm bolt holding the brake pedal to the dashboard (bolt points straight up). This bolt will be replaced with a socket cap screw and washer provided with your pedal.
23. Remove the four 15mm nuts holding the brake pedal to the brake booster.
24. Remove your factory brake pedal.

Pedal Installation

1. Prior to installing your new clutch and brake pedal assembly:
 - a. Ensure both pedal arms rotate freely and do not bind.
 - b. The neutral safety switch bracket comes pre-installed to the pedal bracket. We strongly recommend the use of a neutral safety switch, and offer the factory switch and wiring harness. If installing the neutral safety switch, install the switch to the bracket – note the position in the photo below. Once the switch is on the bracket, remove the bracket as this will be re-installed in a later step.



- c. The clutch pedal stop screw is pre-installed at the approximate right height. Ensure the nut is tight against the pedal arm. This can be adjusted at a later point if needed.

'78 – '88 GM A/G-Body Pedal Installation Instructions

- d. Master cylinder pre-assembly: Our pedals work with the Tilton Series 78 line of master cylinders, which we can provide. Before installing fittings, ensure the master cylinder is clean and grease-free. Brake parts cleaner works well; dry with compressed air if you've got it. Clean the fittings and hoses with brake cleaner as well.
- i. The low pressure fitting is Earl's Performance Plumbing pn 785056ERL. This fitting must be cut down before installation – cut off the tube just below the flare in the tube. After cutting, file the edge to remove any sharp edges. Clean the fitting, install the o-ring and put a little bit of brake fluid on the o-ring before installing in the master cylinder. Do not overtighten – if the o-ring starts squishing out, you've overtightened.



- ii. The high pressure fitting is a steel -3AN coupler, Tilton pn 73-820. Install this fitting tight!
- iii. The low pressure hose gets attached to the low pressure fitting, and is secured with a hose clamp. We offer a Wilwood fluid reservoir which includes a 1/4" ID EPDM hose and hose clamps, and this hose works perfectly. To ease installation over the fitting put use a small amount of brake fluid as a lubricant.

Note: Be sure to use EPDM hose for the low pressure hose. Regular rubber hose is usually not rated to handle brake fluid and will break down very quickly, contaminating the fluid.

'78 – '88 GM A/G-Body Pedal Installation Instructions

- iv. The supplied high pressure stainless steel braided hose is then installed on the high pressure outlet, and this needs some serious tightening as well. If your hose has a 90 degree fitting on one end, install the straight end to the high pressure outlet.
 - v. Cover the open end of the high pressure hose to keep dirt out while you route it through your firewall. Painter's tape works well.
 - vi. Install the supplied 3/8" nut on the master cylinder pushrod, and turn the nut until it's all the way down the threads.
2. Cut away the insulation on your firewall, leaving bare metal underneath your new pedal assembly. The supplied firewall drilling template can be used to trace a cut line on the insulation, ensuring that the template can sit on bare metal.

3. Loosen fuse panel ...

4. Installing the pedal requires drilling several holes. The supplied template makes locating the holes very straight forward, and here's the step by step:

- a. Place the template over the 4 brake booster studs, just as your original brake pedal mounted, with the lettering on the template facing the driver seat. The holes to drill should be below and to the left as you face the firewall.

If you have wires running through the existing hole on the firewall, cut the template; loosen fuse block; areas of fuse block that may need trimming; alternate wiring harnesses

- b. Use tape to hold the template in place firmly against the firewall.
- c. Using a center punch, mark 10 spots as laid out below. A spring loaded center punch makes quick work of this step.
 - i. Center of two 7/8" circles
 - ii. Four holes surrounding each 7/8" circle
- d. You can also mark the dashed circle outlines with a Sharpie or similar marker to help visually guide you with the hole saw cuts.
- e. Remove the template.
- f. Drill the holes in the order you center punched them: 7/8" hole saw, followed by the 7/64" drill bit for the eight small holes. As you cut though

'78 – '88 GM A/G-Body Pedal Installation Instructions

the firewall keep your drill from continuing to run into stuff like your brake booster.

- g. Coating the exposed metal with suitable primer and paint is a good idea – there's no easier time than now!
5. Install the provided firewall seals. Each is held in place with four stainless steel screws provided. See photo below for positioning.
- a. The upper seal has a 1/2" hole punched in it. The notched side sits at the bottom.
 - b. The lower seal has a 1/4" hole punched in it. The notched sides are at top and to the right.
 - c. Tighten all eight of the firewall screws snugly – monkey tight, not gorilla tight.

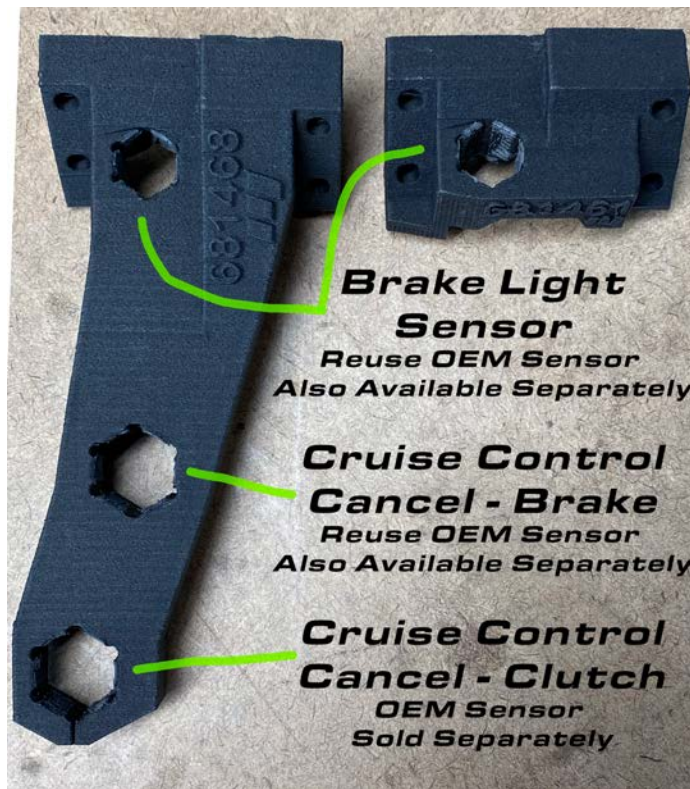


'78 – '88 GM A/G-Body Pedal Installation Instructions

6. On some vehicles, the fuse block mounted to the firewall to the left of the pedal assembly interferes
7. Install the pedal assembly in the vehicle, without the master cylinder installed.
 - a. Once the pedal bracket is over the four mounting studs, install the wave washer on the brake pedal peg, and slide the brake master cylinder pushrod over the peg. The upper peg is for manual brakes and the lower peg is for power brakes.
 - b. Once the pushrod is on the peg, install your original washer and clip to secure the pushrod.
 - c. Install two of the provided flange nuts loosely on studs.
 - d. Install the provided M8 socket cap lower dash bolt and washer through the slot at the top of the pedal bracket and into the threaded retainer in the lower dash.
 - e. While pushing the pedal assembly upwards into the lower dash, tighten then lower dash bolt hand tight.
 - f. While continuing to push the pedal assembly upwards, tighten one of the flange nuts.
 - g. Install and tighten the remaining flange nuts. Tighten the flange nuts to 18 lb/ft.
 - h. Tighten the lower dash bolt to 15 lb/ft.

'78 – '88 GM A/G-Body Pedal Installation Instructions

8. Install the provided 3D printed electric sensor mount to your pedal assembly with the provided bolts and washers. These take a 9/64" hex tool.
 - a. Screw your brake light sensor into the threaded hole. The sensor is threaded in until the plunger tip is fully depressed against the metal tab on the brake pedal.
 - b. If you have cruise control:
 - i. Screw your original brake cruise control cancel sensor into the middle hole. Just like the brake light sensor, it is threaded in until the plunger tip is fully depressed.
 - ii. Screw your clutch cruise control cancel sensor into the slotted hole. We offer the factory switch and tip does not have the threads fully cut, and that is why the sensor mount is slotted. While threading it in place the slot will open up, and once threaded so that the tip is all the way through the sensor mount, the slot will close back up. Final threading is done once the clutch pedal master cylinder pushrod is installed.
 - c. Each sensor may need to be clocked slightly to fit the wiring harness back in place.



'78 – '88 GM A/G-Body Pedal Installation Instructions

9. Install master cylinder assembly to the pedal bracket.
 - a. Remove the installed 2" shoulder bolt from the pedal bracket, and keep the two spacers, lock washer, and nut handy.
 - b. Carefully route the high and low pressure hoses through the billet pedal bracket and through their corresponding firewall seals. The low pressure hose is routed towards the outside of the car and up. The high pressure hose is routed towards the inside of the car and down.

Be sure not to kink the high pressure hose - it is possible to kink the hose and create a small hole in the plastic liner inside the hose, and then you will have a difficult time bleeding the system because you won't see any fluid leak but something just won't work right and you'll try bleeding again and again without success. We're not saying we've ever kinked the hose like that, we're just saying that, you know, it's possible. The tape over the open high pressure hose will keep dirt and grease from entering the hose as you route it to the transmission.

In the photo below, the low pressure hose is red. And yes the Olds is dirty!



'78 – '88 GM A/G-Body Pedal Installation Instructions

- c. To install the master cylinder in the bracket, place one of the included spacers on each side of the spherical bearing at the base of the master cylinder, and pinch the 2 spacers against the master. While pinching, slide the master cylinder and spacers into the bracket. Align the master cylinder and spacers with the hole through the bracket and feed the shoulder bolt through.

Light tapping on the shoulder bolt is OK, but it should not require much force – if it does, reposition the master cylinder until the bolt aligns. If you have trouble with the alignment, use a tapered punch and slowly insert it until the master is aligned.



- d. Once the shoulder bolt is in place, install the supplied lock washer and nut. Tighten the nut to 45 in/lb – in other words, not very tight at all.
10. Included with your pedals is a rod end, turnbuckle, and jam nut, pre-assembled. Install this assembly to the master cylinder, as far as it will go. Be sure the supplied 3/8" nut is on the master cylinder threads beforehand.
11. The supplied 3/8" shoulder bolt gets a dab of grease on the smooth portion and is then installed through the rod end and into the clutch pedal arm. If the shoulder bolt can't pass through the rod end and into the threads in the clutch pedal arm, extend the length of the turnbuckle assembly by unscrewing it from both the master cylinder and rod end. The rod end has left hand threads so

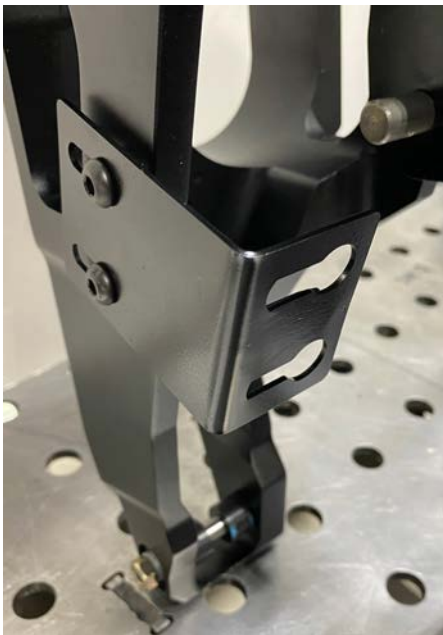
'78 – '88 GM A/G-Body Pedal Installation Instructions

unscrewing the turnbuckle from the master cylinder will extend the length, and screwing it towards the master cylinder will shorten it.

12. As the shoulder bolt passes through the other side of the pedal arm, place the included serrated flange nut over the threads and fully tighten the shoulder bolt. Then tighten the nut firmly against the pedal arm while holding the shoulder bolt securely.
13. Adjust the turnbuckle so that your clutch pedal is about 1/4" higher than the brake pedal, in other words the clutch pedal should be closer to the driver than the brake pedal. Adjust the clutch pushrod turnbuckle to get to this height.
14. Ensure both jam nuts are tight against the turnbuckle:
 - a. Left hand thread nut on rod end
 - b. Right hand (normal) thread on master cylinder pushrod
15. If you're using a neutral safety switch, install the switch and bracket now. The wiring will be completed in a later step.

The supplied screws go through the bracket and then through the supplied 1/8" spacers, and then thread into the aluminum pedal bracket. If you're setting up your clutch pedal to be level with your brake pedal, install this bracket at it's lowest position, in other words with the switch as close the aluminum bracket as possible.

The photo below shows the bracket mounted in the lowest position.



16. Time for some wiring.

- a. Brake lights: Connect your factory brake light harness to your brake light sensor.
- b. If you're running cruise control: When cruise control is engaged, depressing the brake pedal turns the cruise control off. Your new pedal assembly retains this feature and adds a switch so that moving your clutch pedal does the same thing.
 - i. Choose either of the two leads going into the grey cruise control connector on the top switch of your brake pedal, they are brown and brown/white. It doesn't matter which you choose.
 - ii. Cut this wire, peel back some insulation, and using a butt connector splice in one of the leads from the cruise control interrupt harness. It doesn't matter which wires are connected to which.
 - iii. Connect harness and sensor

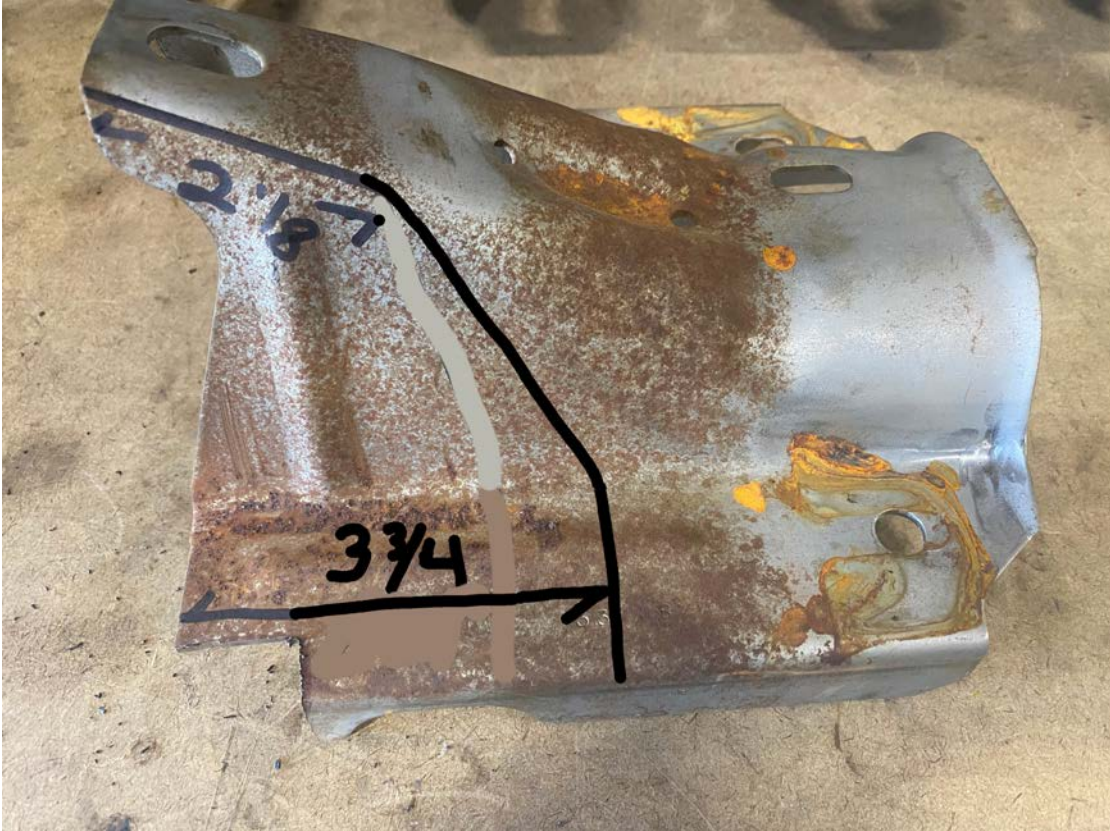
The following two connectors are plugged into the white switch at the base of the steering column.

- c. Park neutral position: There are two black wires with a white stripe going to the same lead, and an orange wire going to the other lead. Cut the plastic connector off and splice the black/white wires with the orange wire.
- d. Reverse lights: The blue is powered when the car is running, and the green wire sends power to the reverse lights. Most manual transmissions have a reverse light sender that provides continuity when reverse is engaged. Cut the plastic connector off and splice one of the wires from the transmission harness to the green wire and the other to the blue wire, it doesn't matter which lead from the harness is used for which side. The original connector for these wires can be removed from the car.

'78 – '88 GM A/G-Body Pedal Installation Instructions

17. The steering column shroud must be trimmed before being re-installed. See the photos below for guidance.

It is important to have no rough edges where you cut as they will cut wiring and hands indiscriminately.



After cutting it will look like this:



18. Install the steering column shroud, torquing the bolt to 18 lb/ft.

19. Steering column modifications to consider prior to reinstallation:

- a. If you've got a column shifter, remove the column shift lever by punching out the pivot pin from below. Leave the shifter bowl in the park position.
- b. Cut auto shifter stub
- c. PNP switch removal

d. xxx

20. Installing the steering column is mostly the reverse of removal. Here it is summarized:

- a. Install the column by passing the end through the firewall and then sliding the column up over the two mounting studs. Thread the nuts on just enough to fully engage the threads in each nut, and let the column rest there.
- b. Install the 4 steering column jacket to floor bolts, torquing to 58 lb/in.
- c. Reconnect all the wiring harnesses.

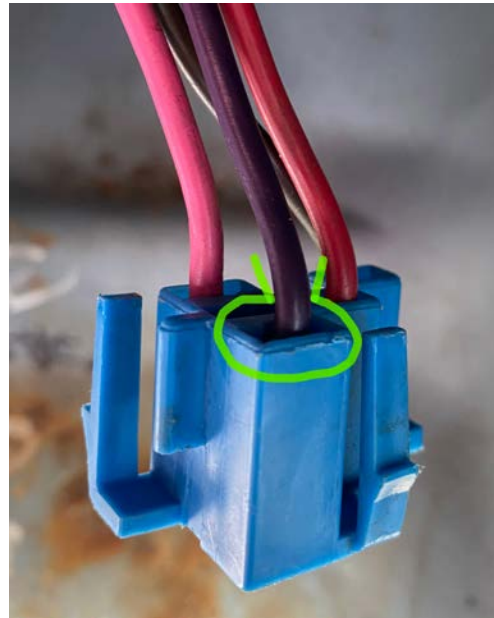
Note: Ensure no wires are being pulled taut, or are in the way of the steering column settling into its final position.

- d. Tighten the two 15mm nuts holding the column in place, torquing to 20 lb/ft.
- e. Hope you've kept your steering wheel straight! Under the hood, slide the upper intermediate shaft back over the end of the steering column. Install the bolt and nut, torquing to 40 lb/ft.

21. If you're running a neutral safety switch it's time to wire it in. This switch provides continuity when the clutch pedal is depressed. The switch interrupts the starter solenoid circuit. The factory wiring harness we offer is pre-wired with 12 gauge leads. To connect it to your starter circuit:

'78 – '88 GM A/G-Body Pedal Installation Instructions

- a. Locate the 12 gauge purple wire that into the blue ignition switch harness. Cut the wire where you have the most purple wire visible. See picture below to identify the connector and wire.



- b. Cut two lengths of 12 gauge wire from the cut purple line to the neutral safety switch harness. Route the wiring where it is safely out of the way of moving pedal arms and any metal.
- c. Splice the new lengths of 12 gauge wire to each purple wire lead.
- d. We suggest insulating the lengths of 12 gauge wire and we offer braided sleeving for this. Slide the insulation over the 12 gauge wire and route it to the harness leads.
- e. Splice eachg 12 gauge wire to the harness leads. It doesn't matter which lead is connected to which.

Note: The harness comes with two heat shrink butt connectors - you can use these or alternatively you can solder the connections. Note that the butt connectors must first be crimped on; once crimped, give the wires a tug – a real tug - and if they come out then re-do them. Once crimped tightly, use a butane torch to melt the connector. If soldering, be sure to use heat shrink tubing or electrical tape to insulate the connections.

- f. Slip the supplied black braided insulation over the wiring leads, taking it all the way to the harness. Back the insulation away from the harness

'78 – '88 GM A/G-Body Pedal Installation Instructions

approximately ¼” and use electrical tape to secure the insulation to the wires.

g. Secure the wiring.

h. With the neutral safety switch installed in the mounting bracket, connect the harness. Ensure that when the clutch pedal is fully depressed it hits the switch at least a tiny bit, and that the switch doesn't prevent the clutch pedal from hitting the clutch pedal stop.

22. We recommend leaving the remaining interior panels off until you've successfully tested and adjusted everything.

23. Re-install the front seat.

Hydraulics

1. We offer a clutch fluid reservoir mounting bracket and often use a Wilwood plastic fluid reservoir. Whichever reservoir you choose, install it now.
2. If using our clutch fluid reservoir bracket, remove the 2 nuts holding your brake master cylinder to your brake booster. Slide the bracket over the 2 studs and re-install the nuts with medium thread locker. Torque to 18 lb/ft.
3. The low pressure hose from the clutch master cylinder gets connected to the reservoir outlet with a hose clamp, provided in the Wilwood kit.
4. From underneath the car, we suggest heat shielding the stainless braided high pressure hose. We offer insulation for this, and now's the time to slide it over the hose.
5. Route the high pressure hose towards your slave cylinder or hydraulic release bearing, being careful to keep the hose off of, and away from, heat sources like the exhaust and catalytic converter.
6. Remove the cover you put on the high pressure hose end, and ensure the fitting is clean. Also ensure what you're connecting it to is clean. Attach the high pressure hose to the high pressure fitting for your slave cylinder or hydraulic release bearing. Tighten the high pressure fitting.
7. Secure the high pressure hose to ensure it doesn't rub anything, and ensuring it doesn't touch the exhaust.
8. To bleed the hydraulic system a second person is incredibly helpful.
 - a. Fill the clutch fluid reservoir with DOT3 / DOT4 brake fluid.
 - b. Undo the high pressure hose to the slave cylinder or hydraulic release bearing. One person holds their finger over the hose outlet. The other person cycles the clutch pedal up and down, slowly, and on the way back up pulls the pedal all the way up. Do this until fluid comes out of the high pressure hose, this bleeds the master cylinder. 3 – 7 pumps usually does it.
 - c. Hook the high pressure line up to the slave cylinder or hydraulic release bearing, and make this nice and tight.

'78 – '88 GM A/G-Body Pedal Installation Instructions

- d. Ensure the reservoir has sufficient fluid. If you have a handheld vacuum pump, insert a rubber tip into the base of the reservoir and suck out any air bubbles present.
- e. Slave cylinder:
 - i. Remove the slave cylinder from the bellhousing and remove the nylon strap from the pushrod.
 - ii. Compress the slave cylinder push rod slowly, repeating until no bubbles appear in the reservoir. This will take 10 – 20 repetitions.
 - iii. Re-install the nylon strap over the pushrod, and slide in the ends on each side.
 - iv. Attach the slave cylinder to the transmission, tightening the nuts to 15 lb./ft.
- f. Hydraulic release bearing: We offer remote bleeder kits to make this work doable without getting under the car.
 - i. The upper hose is your bleed hose. This hose usually has a fitting in it with a bleeder valve, as well as Teflon tape or paste on the threads. The Teflon seals the threads while fluid exits the bleeder valve.
 - ii. Similar to bleeding your brakes, one person depresses the clutch pedal and holds it down. Once the pedal is down, the other person opens the bleeder valve and tightens it once fluid and air have passed out. This needs to be done quite a few times for a full bleed, approximately 10 – 20 cycles.
- g. Ensure the reservoir fluid is topped up.
- h. The clutch pedal should now have a normal feel to it – some resistance, but not an overwhelming amount of resistance.

Adjustment

Adjusting your clutch pedal travel is critical to do before driving the vehicle. Incorrect travel can lead to premature clutch wear, premature transmission wear, and premature master cylinder wear.

Adjustment is checked with the engine off, and is finalized with the engine on.

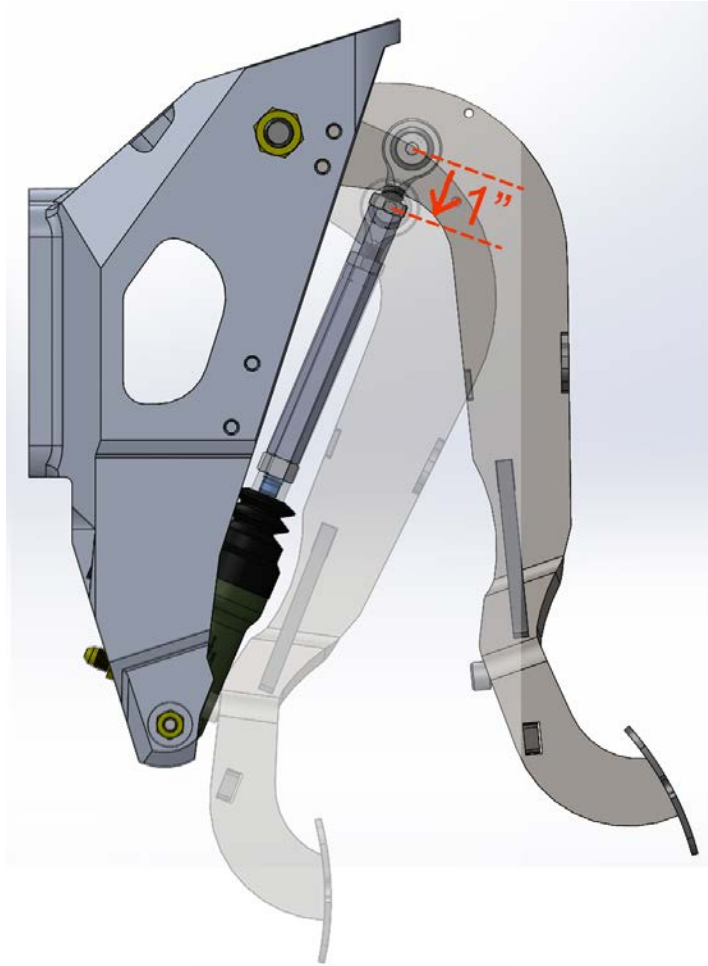
If you have trouble with this step, DO NOT DRIVE THE CAR, please call us at 517.707.4140 or email us at info@threepedals.com and we will help you diagnose and fix the issue.

1. With the rear wheels off the ground, ensure the vehicle is stable. If you're not working on a lift, use 2 jack stands and chock the front wheels, or use 4 jack stands and have all the wheels off the ground.
2. Clutch pedal travel: Ensure your clutch pedal foot pad about 1/4" higher than the brake pedal (See [Pedal Installation](#) Step 13). Now there are two adjustments to check.
 - a. When the clutch pedal is depressed, the master cylinder pushrod should move 1" (see diagram below). This can be measured by holding a ruler up to the billet pedal bracket and lining it up with one end of the turnbuckle. Note that this is different than the amount of travel at the pedal foot pad.
 - b. The clutch pedal motion should be stopped by the adjustable stop bolt threaded into the clutch pedal arm striking the billet aluminum bracket.

If you're not getting the full 1" of master cylinder pushrod travel, either the clutch pedal needs to be raised, or the stop bolt needs to be turned in, or both.

3. Hydraulic release bearing travel: If you're using a hydraulic release bearing mounted around the transmission input shaft, you can likely see the release bearing through an opening in your bellhousing and this is one way to help ensure proper function before engine start up. With a friend depressing the clutch pedal, see how much release bearing movement you're getting. Usually total travel is about 0.4".

If you do not see 0.4" of travel, ensure the clutch hydraulic line is properly bled and ensure that the clutch pedal travel adjustments are properly set.



4. Do not start your engine yet. Confirm the vehicle is in neutral, we recommend checking both ways:
 - a. With the parking brake off and the shifter in neutral, try to rotate the rear wheels. If wheels do not rotate, double check your shifter installation.
 - b. With the parking brake off, the shifter in gear, and the clutch pedal depressed, try to rotate the rear wheels - you'll need a helper here. If wheels do not rotate, re-bleed the hydraulic clutch line, and check the clutch pedal adjustment.
5. Connect the negative battery cable.
6. With the rear wheels still off the ground, start the car. With the clutch pedal down, put the transmission in 1st gear. The rear wheels should not rotate.

'78 – '88 GM A/G-Body Pedal Installation Instructions

- a. If they do rotate, and if you're comfortable hydraulics are fully bled and the clutch pedal adjustments are roughly set, either raise the height of the clutch pedal, or turn in the clutch stop bolt, or both. When turning the clutch stop bolt go in increments of 1 full revolution of the screw and check for tire rotation again. Once the rear tires do not rotate any more, you can go an additional turn or two and then secure the clutch stop screw with the supplied jam nut.
7. Put your car down on all 4 wheels.
8. Install the steering column trim panel.
9. Enjoy!