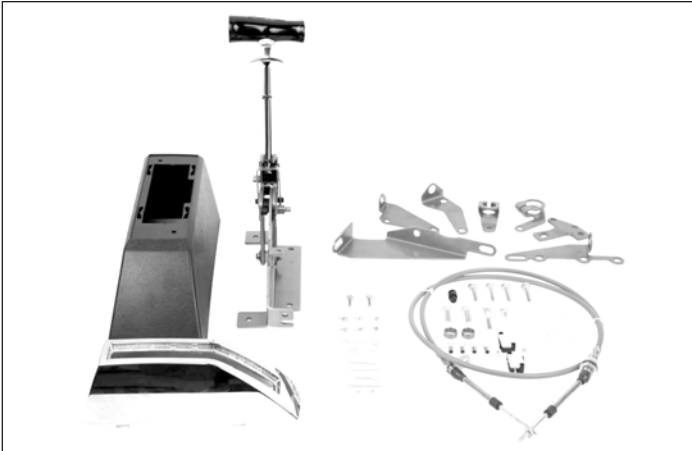




INSTALLATION INSTRUCTIONS
 Part No. 80681 & 81681
Z-GATE™ UNIVERSAL SHIFTER
 for the automatic transmissions listed below



APPLICABLE TRANSMISSIONS

This shifter kit **includes all cable brackets and selector levers** required for use with the following automatic transmissions:

MANUFACTURER	TRANSMISSION
Chrysler (1966+) and AMC (1972+)	A727 / A518 and A904 / A500
Ford	C4 / C5 and C6
GM (Turbo-Hydramatic)	TH200, TH250, TH350, TH400

The shifter can also be used with the following transmissions, **with the applicable B&M install kits** (sold separately; additional instructions included with each kit).

MANUFACTURER	TRANSMISSION	INSTALL KIT
Ford	AOD	40496
Ford	AODE and 4R70W	40504
Ford	E4OD and 4R100	40505

INTRODUCTION

The Z-Gate shifter’s patented Z-shaped gate system eliminates the possibility of missed shifts. With the fewest moving parts of any B&M automatic shifter, the Z-Gate’s simple design means dependability and durability, and its “one-hand” reverse lockout mechanism meets NHRA and IHRA safety requirements.

Before starting, take the time to read and understand these instructions.

Also, use the parts list to verify your kit’s contents. In the unlikely event that any parts are missing, please contact B&M Technical Support for replacements.

NOTE: Some hardware bags are shared by similar B&M shifters. While your bag may include extra items that are used on other shifters, the parts list below shows all the parts required for this shifter.

REQUIRED SUPPLIES

- Medium strength thread-locking fluid (Permatex Blue or equivalent)

NOTES

- Installation requires better-than-average mechanical knowledge and skills. If this job is beyond your abilities, seek the services of a qualified technician.
- The shifter mechanism is precision-assembled at our factory. **Any modification or disassembly of the shifter will void its warranty, and can cause it to malfunction.** Disassemble items **only** where specified in the instructions.
- Installation of this shifter may require modification or complete removal of your vehicle’s console, depending on the space available in your vehicle.
- The shifter cable in this kit is 5 feet long. Different length shifter cables are available separately from B&M, if required.

PARTS LIST

DESCRIPTION	QTY
JAM NUT, 1/2-20	1
T-HANDLE, BLACK PLASTIC	1
SHIFTER ASSEMBLY, Z-GATE	1
MICRO-SWITCH	2
SCREW, 4-40 × 1-1/4", SLOTTED, PAN HEAD	2
WASHER, SPLIT LOCK #4	2
NUT, HEX 4-40	2
WASHER, FLAT 1/4"	12
BOLT, 1/4-20 × 1-1/4"	4
CABLE, SHIFTER, 5'	1
PIN, COTTER, 3/32" × 13/16"	1
BOLT, 1/4-20 × 1/2"	1
NUT, HEX 1/4-20	6
WASHER, SPLIT LOCK 1/4"	5
SELECTOR LEVER, CHRYSLER / AMC	1
CABLE BRACKET, CHRYSLER / AMC	1
SELECTOR LEVER, FORD C4 / C5 and C6	1
CABLE BRACKET, FORD C4 / C5	1
CABLE BRACKET, FORD C6	1
SELECTOR LEVER, GM TH & ELECTRONIC	1
CABLE BRKT, GM TH & ELECTRONIC (NO PRNDL SWITCH)	1
BOLT, 1/4-20 × 1-1/2"	1
BOLT, 5/16-18 × 1"	2
BOLT, M8-1.25 × 25 (FOR FORD 4-SPD TRANSMISSIONS)	2
WASHER, FLAT 5/16"	2
SPACER, 7/16" I.D. × 1/4" L	2
JAM NUT, 10-32 (COMES INSTALLED ON CABLE END)	1
SWIVEL, CABLE	1
PIN, COTTER, 1/16" × 1"	1
WIRE TERMINAL, FEMALE, 1/4", BLUE, 16-14 AWG	4
TOWER, Z-GATE	1
SCREW, PHILLIPS PAN, TAPPING, 10-24 × 3/4"	2
TAPE, SHIFTER POSITION INDICATOR, RED	1
COVER, Z-GATE	1

SAFETY WARNINGS

- **WORK SAFELY!** For maximum safety, perform this installation on a clean, level surface, with the engine turned off. Chock the wheels to prevent vehicle movement. To avoid bodily injury or vehicle damage, do not begin work until you are confident that the vehicle is safely secured and will not move.
- **AVOID SERIOUS INJURY OR DEATH BY CRUSHING!** If you have to raise the vehicle to work under it, securely support it on a lift or jack stands. **NEVER work under a vehicle that is supported only by jacks!**
- **WARNING: This B&M performance shifter uses a cable to shift the transmission only; it is NOT intended or designed to operate a locking steering column! If your vehicle has a locking steering column, it must either be a) MODIFIED, to allow the steering column to lock when the key is**

removed (modification described later); or b) **DISABLED, to prevent the steering column from locking if the ignition switch is turned to LOCK while driving (not described in these instructions).** If you are not comfortable performing this work, or if you don't understand this warning, seek the services of a qualified technician for the safe installation of this shifter.

INSTALLATION

1. Remove the stock shift linkage.

Column Shifters: Remove all rods, levers or cables from the column and the transmission. Place the column shift lever in the PARK position. Remove the pin holding the shift lever in the column and remove the lever assembly. If your vehicle is equipped with a locking steering column, secure the column lock lever in the full up position. **(See WARNING re. locking steering columns, above.)**

Console Shifters: Remove the shifter mechanism from the console. Disconnect the rod or the cable from the transmission. Remove the cable bracket if equipped. If there is a cable or linkage from the console shifter or transmission to the steering column lock, it must be secured in the PARK position as described above.

Switch Wires: While removing the stock shift linkage, look for neutral safety and / or backup light switches and wiring. (These mechanisms vary on different vehicles. **See the installation section for your vehicle for details.**) Label any such wires to simplify installation.

2. Temporarily thread the 1/2-20 jam nut and T-handle onto the shifter lever.

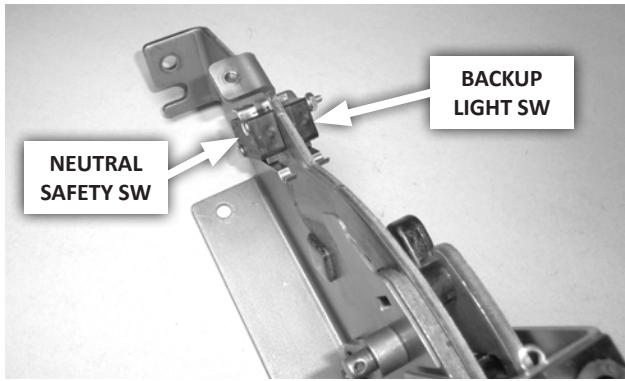
CAUTION: Avoid cross-threading! The T-handle should spin freely onto the stick with no resistance. **If you start to feel any resistance, STOP,** remove the handle, align the threads properly, and try again.

3. Locate the shifter in your vehicle.

Pull the carpet (if any) away from the floorboard where the shifter will be mounted. If the vehicle has a bench seat, move it to the full-forward position. Place the shifter on the floor, locating it for ease and convenience of operation.

For minimum clearance at the tower, the shifter's rear mount hole must be at least 1-3/4" from the seat when the seat is in the full forward position. Make sure the T-handle will clear both the dash and the seat when the lever moves through its full range.

When you are satisfied with the position of the shifter, mark the location of its four mount holes on the floor.



4. Install the micro-switches.

NOTE: Installation of the micro-switches is optional on 1969+ Chryslers and AMCs, as the stock neutral safety and backup light switches on the transmission will continue to function normally.

CAUTION: Tighten the fasteners only until the lock washers are squeezed flat. Over-tightening may crack the switch housings.

Fasten the switches to the shifter mechanism as shown, using the two **#4-40 × 1-1/4" screws** (inserted from the left side), and the two **lock washers and nuts** (on the right side).

While tightening the fasteners, check placement of the switches to verify that:

- the **neutral safety switch (left side)** closes in NEUTRAL and PARK only; and
- the **backup light switch (right side)** closes in REVERSE only.

NOTES

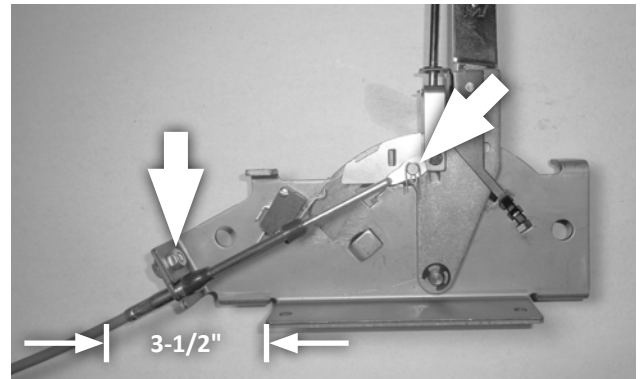
- Refer to the "Operation" section to understand the positions of the shift lever.
- The switch mount holes normally allow the required adjustment for proper actuation. However, the switch arms may be carefully bent, if necessary.

5. Drill four 9/32" mount holes through the floor. Put the shifter in place. Shim it to level (if necessary) using the twelve **1/4" flat washers** between the shifter and the floor, and temporarily hold it in place with the four **1/4-20 × 1-1/4" bolts**.

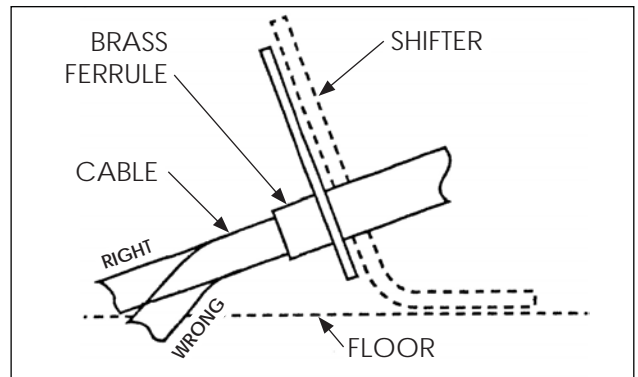
NOTE: If your vehicle's floor is too thin to properly support the shifter mechanism when bolted to it, fabricate a sheet metal stiffener to reinforce it.

6. Drill the shifter cable hole. Mark the center for the shifter cable hole **3-1/2"** forward of the front edge of the left shifter base (**see Step 8 photo and Caution**). Drill or cut a hole that will provide at least **3/16"** clearance around the cable.

7. Return the carpet to its original position (but do not secure it yet). Cut holes in the carpet for the shifter mount holes, and cut a suitable slit for the cable. (**Do not use a drill bit to make the holes in the carpet.**)

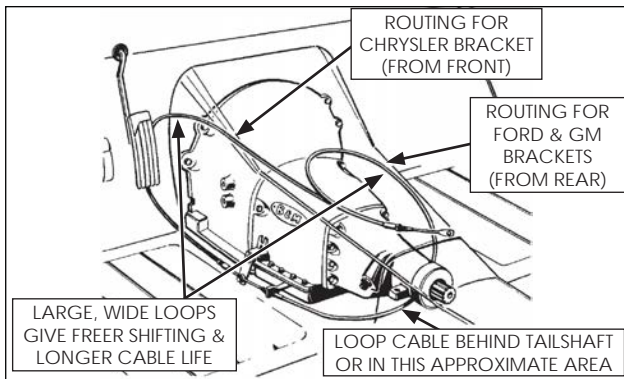


8. Assemble the cable and shifter. Secure the **cable eye** to the shifter pin with the **3/32" (large diameter) cotter pin**. Then secure the cable's mount tab to **the outside surface** of the shifter base with the **1/4-20 × 1/2" bolt and nut** (apply **medium strength thread-locking fluid** to the bolt).

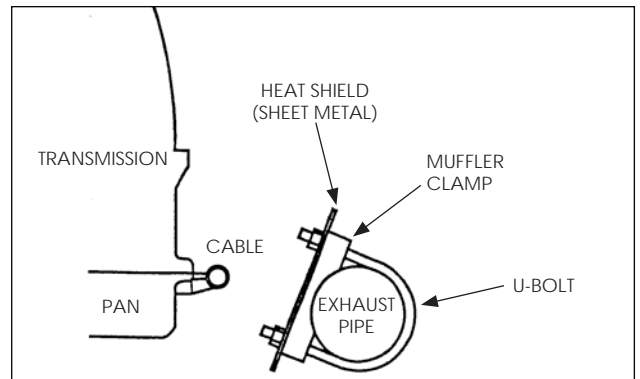


CAUTION: Do not kink the cable anywhere along its length, or it will lock up. The cable should be kept straight for at least 2" after it leaves the brass ferrule at each end.

9. Install the shifter in the vehicle. Slide the cable through the carpet and the hole in the floor. Check for at least **3/16"** clearance between the hole and cable (modify the hole if necessary). Then bolt the shifter to the floor using the four **1/4-20 × 1-1/4" bolts, lock washers and nuts** (and using the twelve **1/4" flat washers** as leveling shims, if required). Do not bend the shifter mount tabs



10. Route the cable approximately as shown, based on your application. **Avoid any sharp bends which may kink or otherwise damage the cable.** Seal the cable hole shut to keep exhaust fumes, water, etc. out of the passenger compartment. Use clamps and / or cable ties (customer supplied) to secure the cable housing in such a way as to prevent contact with the exhaust system, engine, or any moving parts.

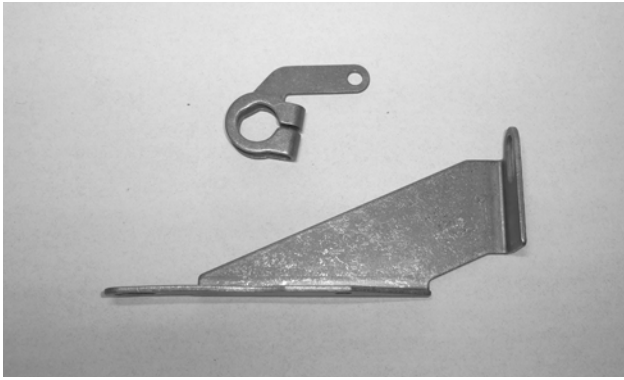


CAUTION: Heat will severely damage the shift cable, causing the housing to melt or become brittle. If the cable must be routed near exhaust system components, fabricate a heat shield. **Do not wrap the cable, as this retains heat.**

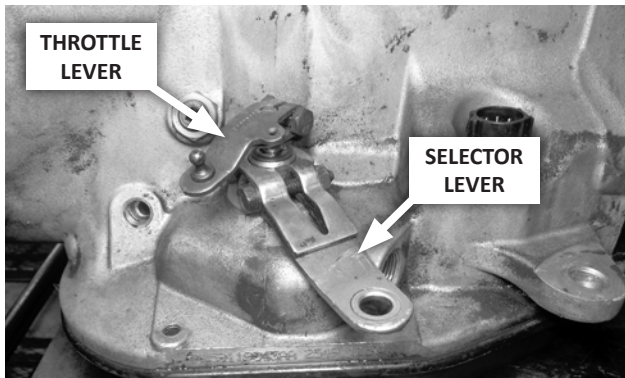
NOTE: The instruction photos show transmissions on a work bench, not installed in vehicles.

- For CHRYSLER / AMC applications, go to STEP 11.
- For FORD applications, go to STEP 24.
- For GM applications, go to STEP 39.

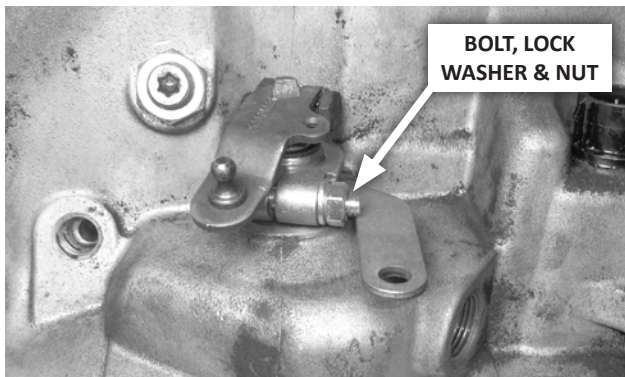
CHRYSLER / AMC



11. Get the Chrysler / AMC selector lever and cable bracket from the parts kit.

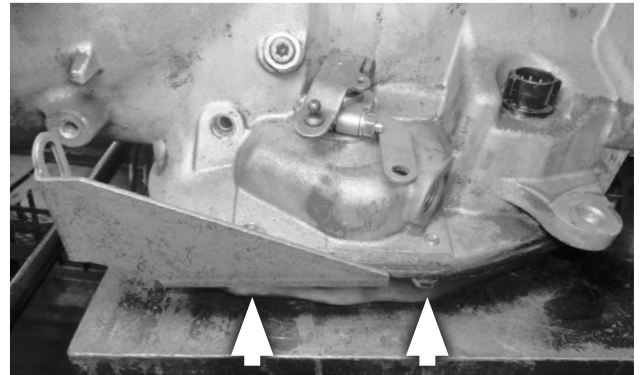


12. **Disconnect stock controls:** Loosen the throttle lever pinch bolt, remove the lever from its shaft, and carefully move the lever and linkage aside, allowing them to hang free. Remove and discard the stock selector lever and shift linkage.



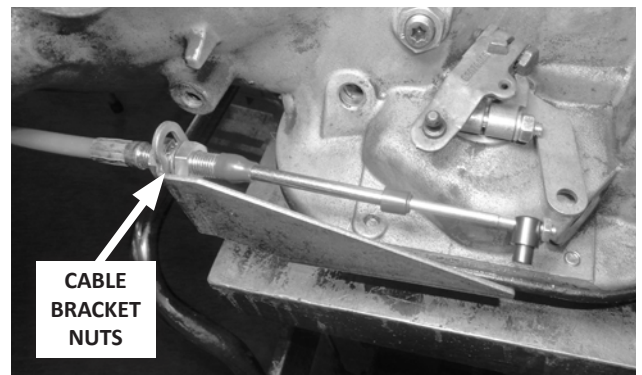
13. Install the B&M selector lever using the $1/4-20 \times 1-1/2$ " bolt, and a $1/4$ " lock washer and nut. Be sure the lever is not pushed down against the transmission case, which could cause binding. The lever should travel smoothly back and forth, with a positive "click" in each detent. Then reinstall the throttle lever and linkage, tighten its pinch bolt securely, and check for smooth operation.

CAUTION: To avoid stripping out your transmission's bolt holes, use the correct bracket bolts. This kit includes both SAE and metric bracket bolts. The metric bolts have finer threads. To verify the correct kit bolts for your transmission, compare them to the stock bolts you removed.

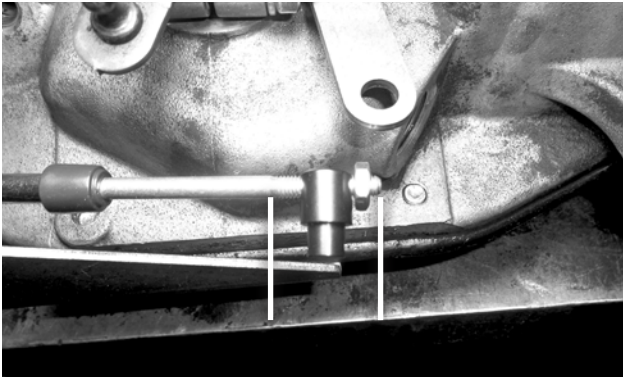


14. Install the cable bracket at the two pan bolt holes directly below the selector lever, using the two $5/16-18 \times 1$ " bolts and flat washers. For stamped sheet-metal (stock) pans, use the two spacers between the pan and bracket. (Spacers are not used with cast aluminum pans.) Tighten the bolts to 12-13 ft-lbs torque.

CAUTION: Do not over-tighten the bolts, as this can damage the pan gasket.

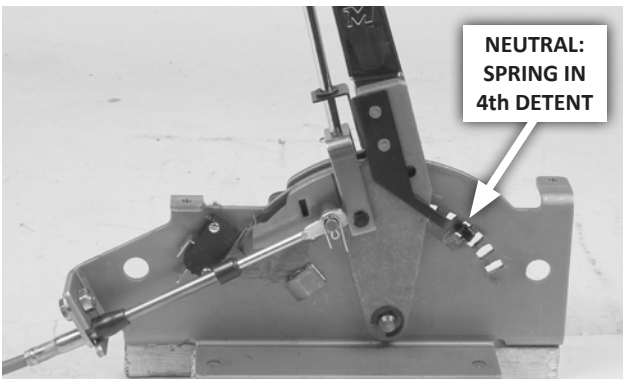


15. **Attach the shifter cable to the cable bracket:** First remove the small jam nut, both plastic dust boots, and one large nut and lock washer, from the cable. Then insert the cable through the cable bracket, reinstall the lock washer and nut (loosely, to allow room for adjustment), and reinstall the dust boots.

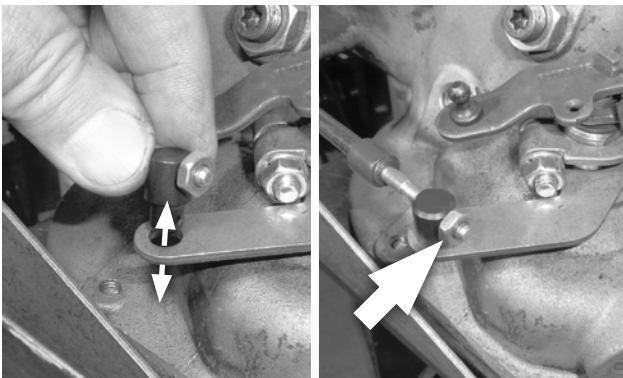


16. Thread the swivel onto the cable to about the middle of the threaded section, then reinstall (but do not yet tighten) the jam nut.

17. Adjust the shifter cable as described below. (See "OPERATION" to understand the shifter's positions.)



A. Manually move the selector lever to the NEUTRAL detent (3 clicks back from full-forward), and move the shifter to the NEUTRAL position (spring in 4th detent). Adjust cable bracket nuts (and the swivel, if necessary) until the swivel slips freely in and out of the selector lever hole.



B. Gradually tighten the cable nuts against the bracket while continuing to check the fit of the swivel in the selector lever. Then with the swivel inserted in the selector lever, lightly snug the jam nut.

C. With the swivel still in the selector lever, move the shifter to DRIVE, and check the fit of the swivel in the

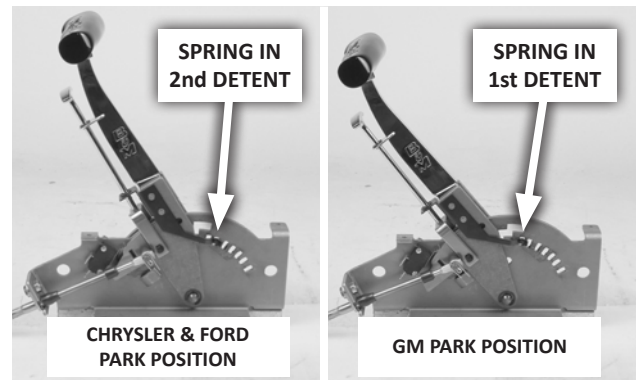
selector lever. The swivel should slip freely in and out of the hole. If not, adjust the cable bracket nuts (and swivel, if necessary) per Step B.

D. Repeat for both SECOND and REVERSE gears.

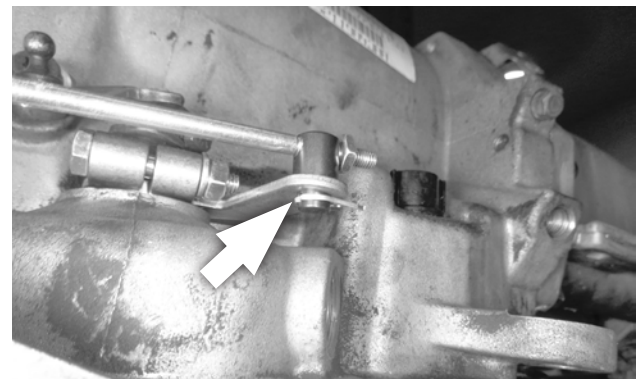
E. Move the shifter to FIRST, and check the fit of the swivel. There may be a slight drag in FIRST. This is normal; do not adjust the cable.

CAUTION: If you encounter restricted movement or any other problem during this process, DO NOT FORCE THE SHIFTER. Doing so may damage the cable, the shifter and / or the transmission. Simply return to Step A and re-check each step.

18. The cable is correctly adjusted when the swivel slips freely in and out of the lever in REVERSE through SECOND gears, and has a slight drag in FIRST. Verify that the two cable bracket nuts, and the cable swivel jam nut, are tight. Also verify that the vehicle does not roll with the transmission in PARK.



CAUTION: The shifter has two PARK positions — the first (lever full-forward) is for GM transmissions; and the second (one position back) is for Chryslers and Fords. To avoid stretching the shifter cable when shifting into PARK, NEVER force the shifter past the second (rear) PARK position (which corresponds to your transmission selector lever's PARK detent).



19. Secure the swivel to the selector lever with the 1/16" (small diameter) cotter pin. Operate the shifter through all the gear positions, verifying that it operates correctly.

20. Check the operation of the throttle linkage again. The linkage must operate smoothly with no binding.

CAUTION: The throttle linkage must be connected and operating on all transmissions using automatic valve bodies, or transmission damage will result.

NEUTRAL SAFETY AND BACKUP LIGHT SWITCHES

1966-68 VEHICLES: The stock neutral safety switch will continue to function normally. Therefore, only the backup light switch on the shifter will be used.

21. Reroute the backup light switch wires: Disconnect the battery ground cable. Then disconnect the wires from the stock backup light switch (located on either the steering column, or the console shifter). Route the wires to the B&M shifter.

22. Wire the switch: Strip 1/4" of insulation off the wires and crimp a **terminal** to each wire, **using an appropriate crimping tool.**

CAUTION: Failure to use an appropriate tool to crimp the terminals may result in defective, unreliable connections.

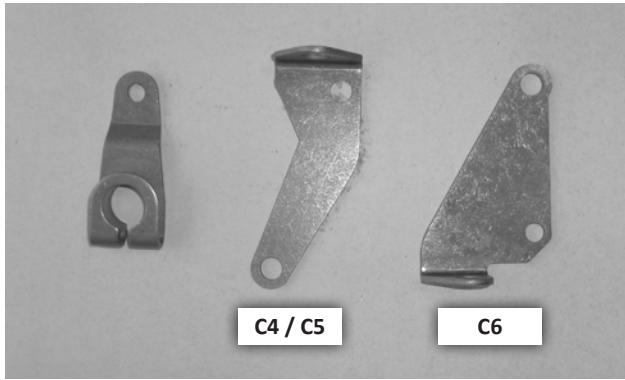
Tape or heat-shrink the terminal-wire connections for added protection of the crimps. Connect the backup light wires to the RIGHT switch (see **Step 4**).

23. Verify switch function: Reconnect the battery ground cable. Check the backup light switch by verifying the backup light is on only when the shifter is in REVERSE. If required, adjust the backup light switch as described at **Step 4**.

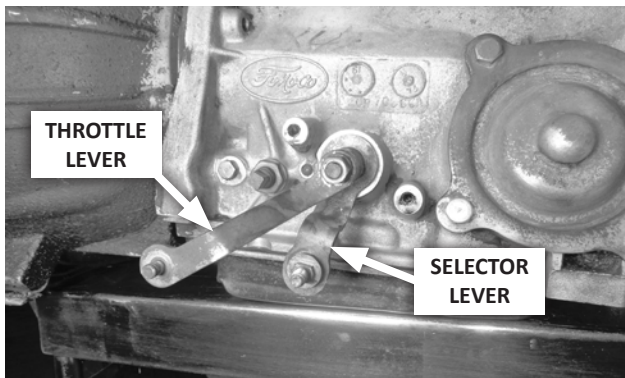
1969+ VEHICLES: The stock neutral safety and backup light switches are located on the transmission, and will continue to function normally. Therefore, use of the B&M micro-switches is optional.

Proceed to "Finish Installation," Step 54.

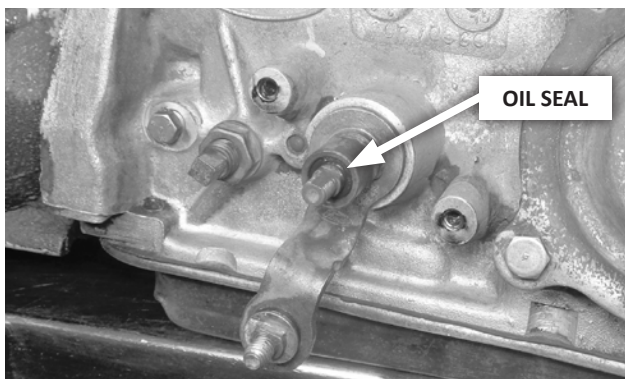
FORD



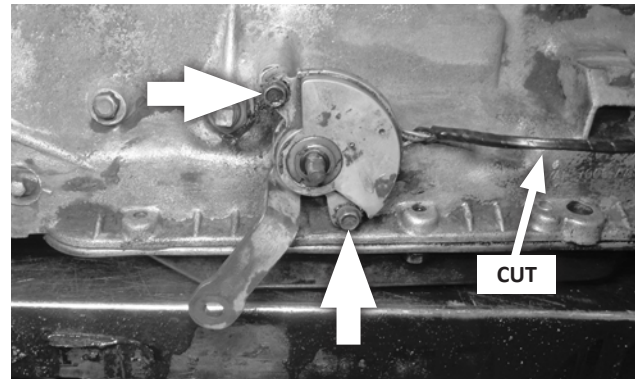
24. Get the Ford selector lever and appropriate cable bracket from the parts kit.



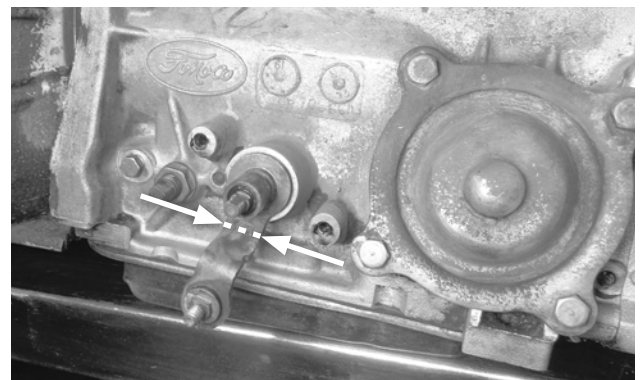
25. **Disconnect stock controls:** Remove and retain the nut and lock washer holding the throttle lever on its shaft. Carefully remove the throttle lever, and move it and its linkage aside, allowing them to hang free. Remove and discard the stock shift linkage.



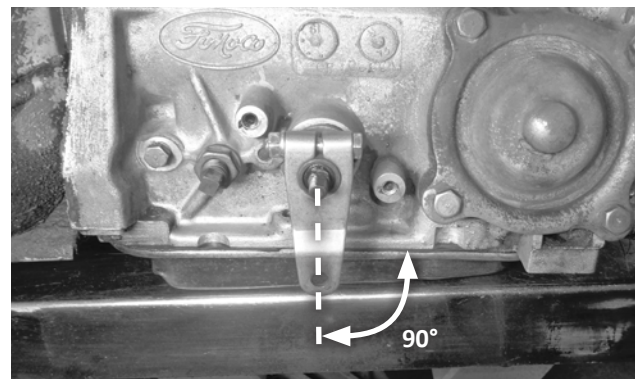
CAUTION: Ensure that the oil seal remains in place between the selector and throttle shafts. If the seal comes out, replace it before continuing.



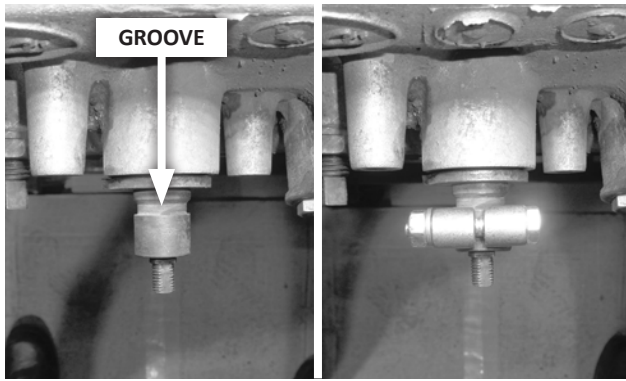
26. If your transmission is equipped with a neutral safety / backup light switch: Remove the two mount bolts and slide the switch off the selector shaft. Cut the wiring harness between the switch and its connector, and discard the switch. (The wires from the connector will be routed to the B&M switches later.)



27. **Move the selector lever to NEUTRAL (2 clicks from PARK).** If the selector lever points downward, cut it off at the inboard bend, to allow correct positioning of the B&M lever.



28. **Install the B&M selector lever** using the 1/4-20 × 1-1/2" bolt, lock washer and nut. (See **NOTE** on next page.) With the selector shaft still in NEUTRAL, align the selector lever perpendicular to the oil pan split-line, then tighten the fasteners.

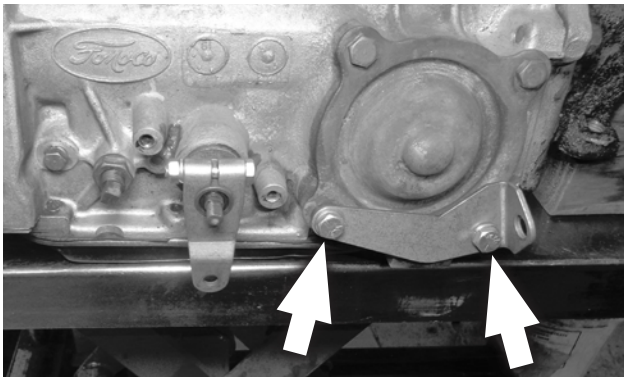


NOTE: If the selector shaft is grooved as shown, center the lever between the groove and the end of the shaft, so that the lever's inboard clamping surface does not land in the groove.

The lever should travel smoothly back and forth, with a positive "click" in each detent.

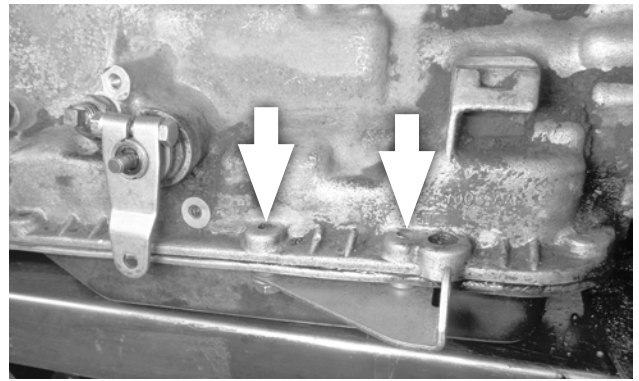
29. Install the cable bracket:

CAUTION: To avoid stripping out your transmission's bolt holes, use the correct bracket bolts. This kit includes both SAE and metric bracket bolts. The metric bolts have finer threads. To verify the correct kit bolts for your transmission, compare them to the stock bolts you removed.



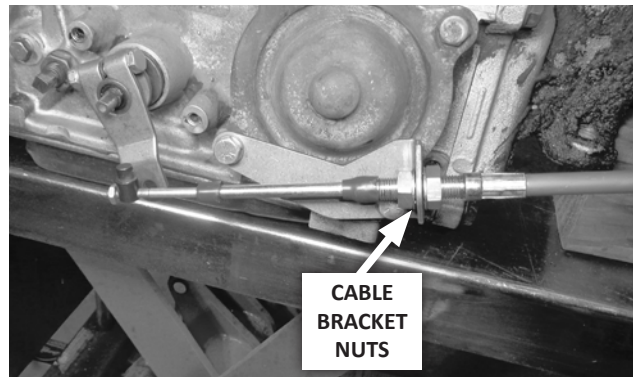
A. C4 / C5 transmissions: Install the cable bracket at the two lower servo cover bolt holes, using the two **5/16-18 x 1" bolts, flat washers and spacers**. Tighten the bolts to 12-13 ft-lbs torque.

CAUTION: Do not over-tighten the bolts, as this can distort the servo cover.



B. C6 transmissions: Install the cable bracket at the two left rear oil pan bolt holes, using the two **5/16-18 x 1" bolts and flat washers**. For stamped sheet-metal (stock) pans, use the two **spacers** between the pan and bracket. (Spacers are not used with cast aluminum pans.) Tighten the bolts to 12-13 ft-lbs torque.

CAUTION: Do not over-tighten the bolts, as this can damage the pan gasket.

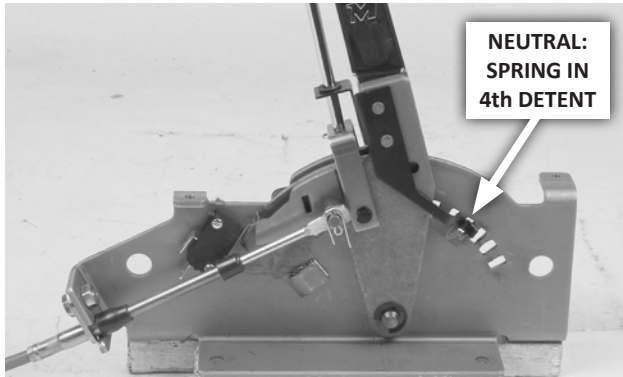


30. Attach the shifter cable to the cable bracket: First remove the small jam nut, both plastic dust boots, and one large nut and lock washer, from the cable. Then insert the cable through the cable bracket, reinstall the lock washer and nut (loosely, to allow room for adjustment), and reinstall the dust boots.

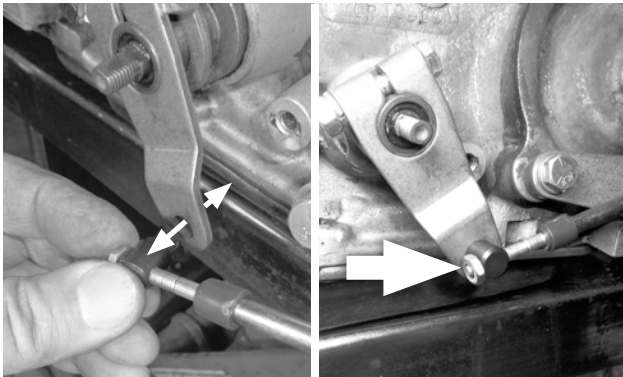


31. Thread the swivel onto the cable to about the middle of the threaded section, then reinstall (but do not yet tighten) the jam nut.

32. Adjust the shifter cable as described below. (See "OPERATION" to understand the shifter's positions.)



A. With the selector lever still in NEUTRAL (2 clicks from PARK) and the shifter in the NEUTRAL position (shown), adjust the cable bracket nuts (and swivel, if necessary) until the swivel slips freely in and out of the selector lever hole.



B. Gradually tighten the cable nuts against the bracket while continuing to check the fit of the swivel in the selector lever. Then with the swivel inserted in the selector lever, lightly snug the jam nut.

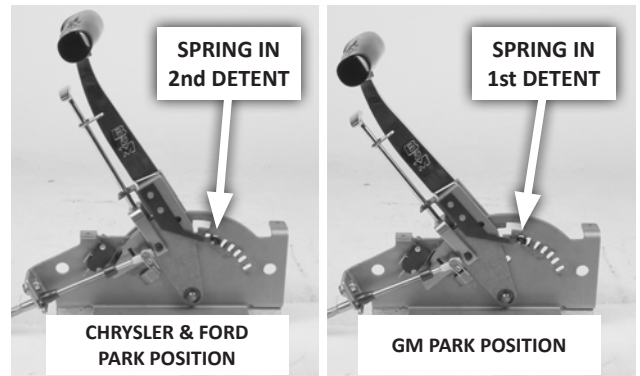
C. With the swivel still in the selector lever, move the shifter to DRIVE, and check the fit of the swivel in the selector lever. The swivel should slip freely in and out of the hole. If not, adjust the cable bracket nuts (and swivel, if necessary) per Step B.

D. Repeat for both SECOND and REVERSE gears.

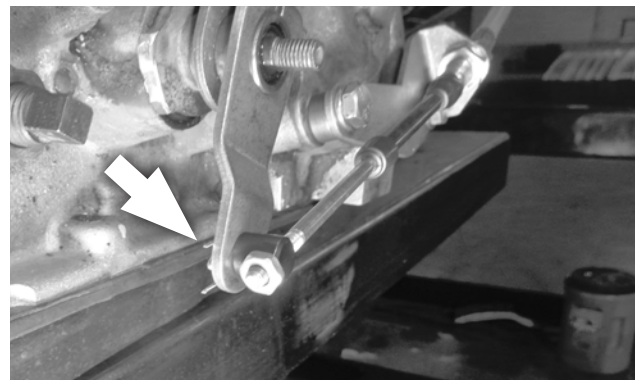
E. Move the shifter to FIRST, and check the fit of the swivel. There may be a slight drag in FIRST. This is normal; do not adjust the cable.

CAUTION: If you encounter restricted movement or any other problem during this process, DO NOT FORCE THE SHIFTER. Doing so may damage the cable, the shifter and / or the transmission. Simply return to Step A and re-check each step.

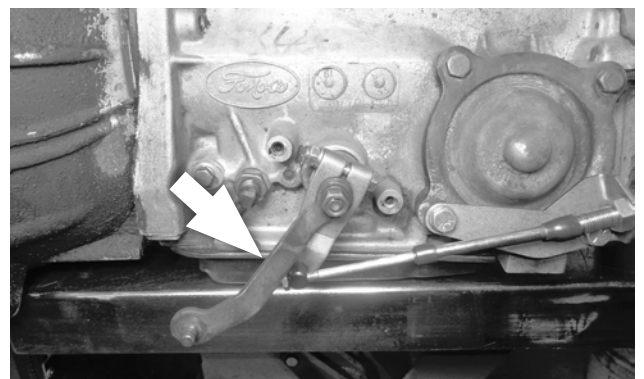
33. The cable is correctly adjusted when the swivel slips freely in and out of the lever in REVERSE through SECOND gears, and has a slight drag in FIRST. Verify that the two cable bracket nuts, and the cable swivel jam nut, are tight. Also verify that the vehicle does not roll with the transmission in PARK.



CAUTION: The shifter has two PARK positions — the first (lever full-forward) is for GM transmissions; and the second (one position back) is for Chryslers and Fords. To avoid stretching the shifter cable when shifting into PARK, NEVER force the shifter past the second (rear) PARK position (which corresponds to your transmission selector lever's PARK detent).



34. Secure the swivel to the selector lever with the 1/16" (small-diameter) cotter pin. Operate the shifter through all the gear positions, verifying that it operates correctly.



35. Reinstall the throttle lever, lock washer and nut on the throttle shaft and tighten securely. The throttle lever must operate smoothly with no binding.

CAUTION: The throttle linkage must be connected and operating on all transmissions using automatic valve bodies, or transmission damage will result.

Tape or heat-shrink the terminal-wire connections. Connect the backup light wires to the RIGHT switch, and connect the neutral safety wires to the LEFT switch (see **Step 4**).

NEUTRAL SAFETY AND BACKUP LIGHT SWITCHES

36. Reroute the switch wires: Use an applicable electrical schematic to locate and identify the two neutral safety circuit wires (which prevent cranking unless the transmission is in NEUTRAL or PARK), and the two backup light wires. Disconnect the battery ground cable. Route both pairs of wires to the B&M shifter.

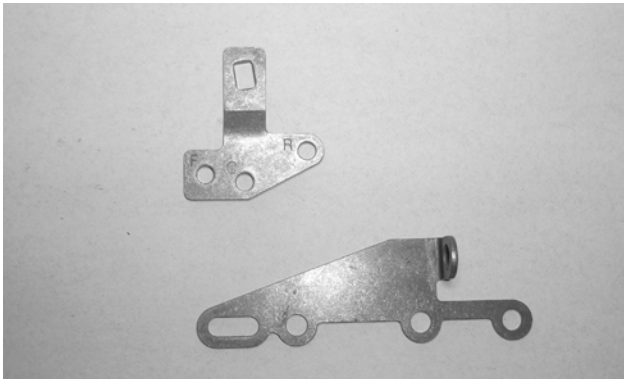
37. Wire the switches: Strip 1/4" of insulation off the wires and crimp a **terminal** to each wire, **using an appropriate crimping tool**.

CAUTION: Failure to use an appropriate tool to crimp the terminals may result in defective, unreliable connections.

38. Verify switch function: Reconnect the battery ground cable, disconnect the coil wire and set the parking brake. Check the neutral safety switch by attempting to crank the engine in each shifter position. The starter must crank only when the shifter is in either PARK or NEUTRAL. Check backup light operation with the shifter in REVERSE. If required, adjust the switches as described at **Step 4**. After verifying correct switch operation, reconnect the coil wire.

Proceed to "Finish Installation," Step 54.

GENERAL MOTORS



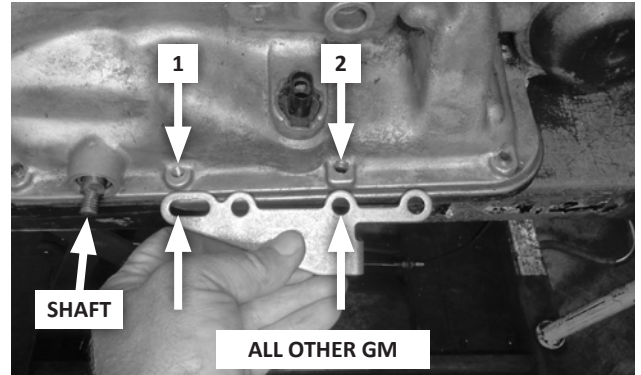
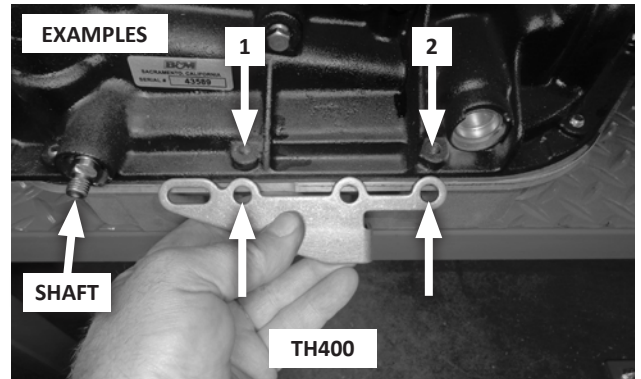
39. Get the GM selector lever and cable bracket from the parts kit.



40. **Disconnect stock controls:** Remove and retain the selector lever nut. Remove and discard the selector lever and shift linkage.



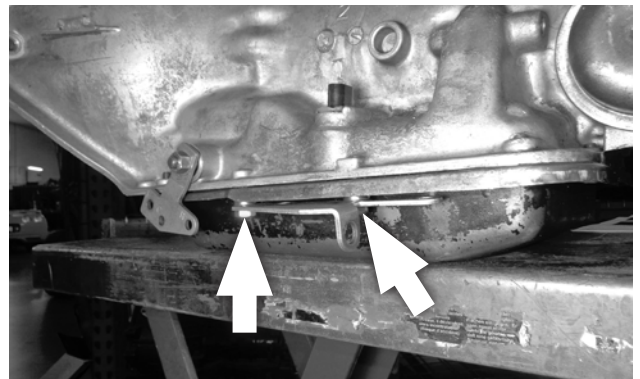
41. **Install the B&M selector lever** using the stock selector lever nut, and tighten the nut to 23 ft-lbs torque. The lever should travel smoothly back and forth, with a positive “click” in each detent.



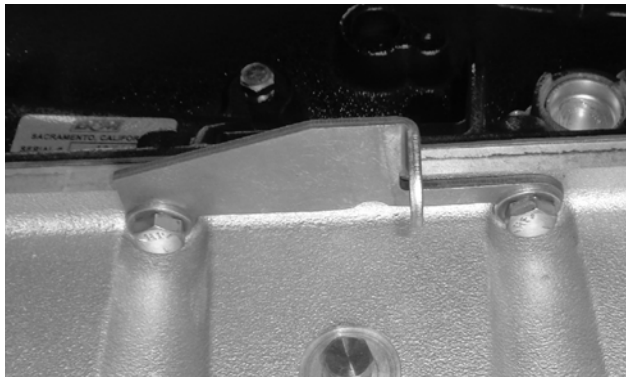
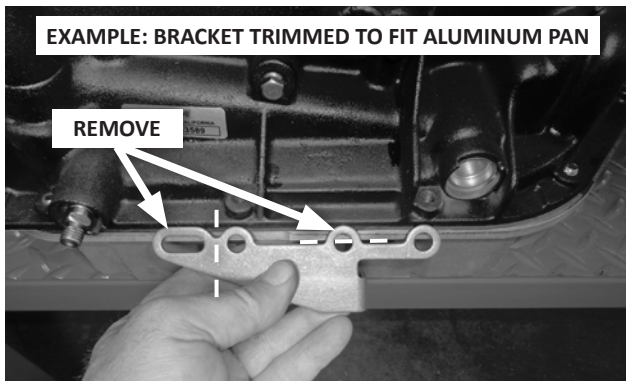
42. **Check cable bracket fit:** Remove the two oil pan bolts to the rear of the selector shaft. Determine which cable bracket holes will be used on your transmission.

CAUTION: To avoid stripping out your transmission's bolt holes, use the correct bracket bolts. This kit includes both SAE and metric bracket bolts. The metric bolts have finer threads. To verify the correct kit bolts for your transmission, compare them to the stock bolts you removed.

43. **Install the cable bracket** using the two 5/16-18 × 1" bolts, and two flat washers at the bracket holes that fit your transmission.



- A. **For stamped sheet-metal (stock) pans,** use the two spacers between the pan and bracket.

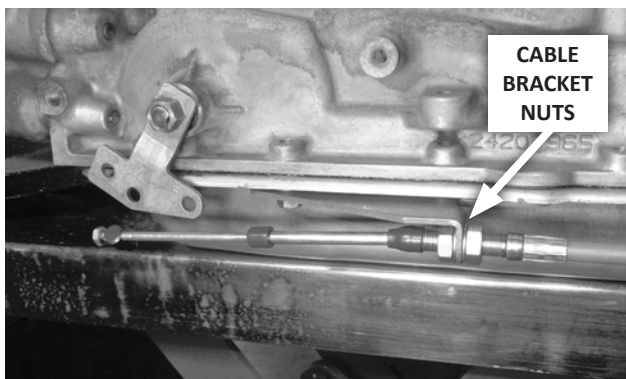


B. For cast aluminum pans:

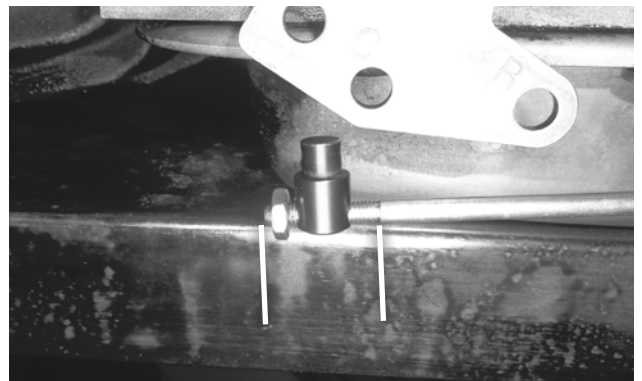
- the bracket may need to be trimmed to fit; and
- the spacers are not used.

Tighten the bolts to 12-13 ft-lbs torque.

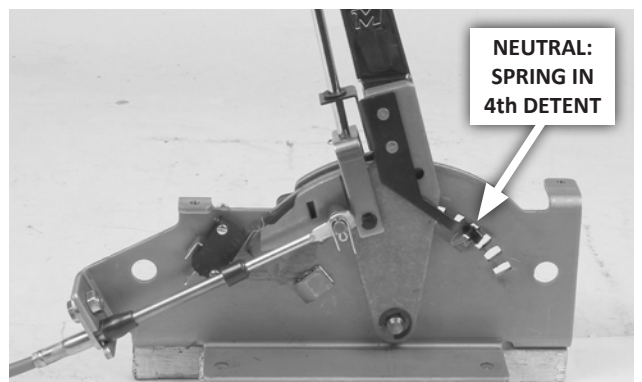
CAUTION: Do not over-tighten the bolts, as this can damage the pan gasket.



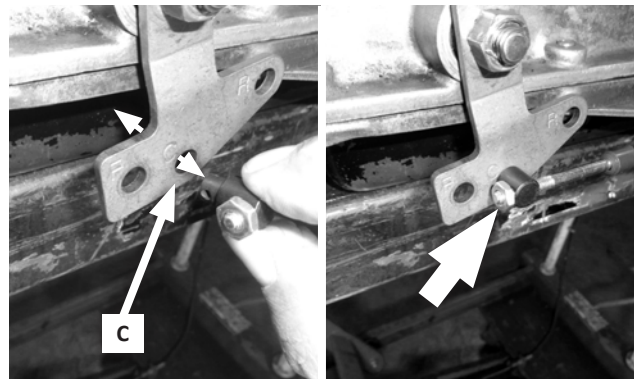
- 44. Attach the shifter cable to the cable bracket:** First remove the small jam nut, both plastic dust boots, and one large nut and lock washer, from the cable. Then insert the cable through the cable bracket, reinstall the lock washer and nut (loosely, to allow room for adjustment), and reinstall the dust boots.



- 45. Thread the swivel onto the cable to about the middle of the threaded section, then reinstall (but do not yet tighten) the jam nut.**
- 46. Adjust the shifter cable as described below. (See "OPERATION" to understand the shifter's positions.)**



- A. Manually move the selector lever to the NEUTRAL detent (2 clicks back from full-forward), and move the shifter to the NEUTRAL position. Adjust cable bracket nuts (and the swivel, if necessary) until the swivel slips freely in and out of the selector lever hole.**



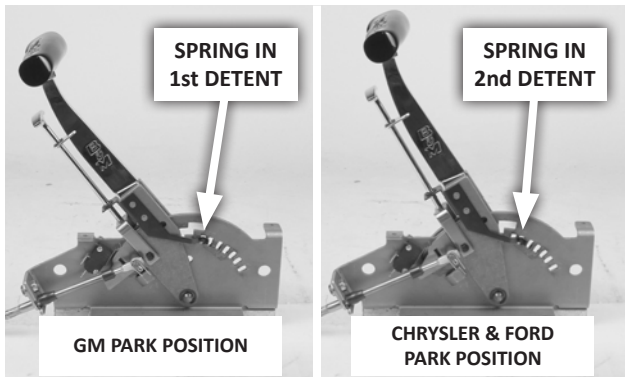
- B. Gradually tighten the cable nuts against the bracket while continuing to check the fit of the swivel in hole "C" in the selector lever. Then with the swivel inserted in the selector lever, lightly snug the jam nut.**

CAUTION: The shifter will not operate properly unless hole "C" in the selector lever is used.

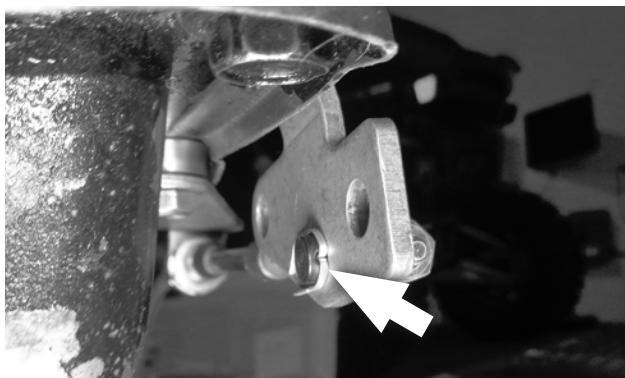
- C. With the swivel still in the selector lever, move the shifter to **DRIVE**, and check the fit of the swivel in the selector lever. The swivel should slip freely in and out of hole "C". If not, adjust the cable bracket nuts (and swivel, if necessary) per **Step B**.
- D. Repeat for both **SECOND** and **REVERSE** gears.
- E. Move the shifter to **FIRST**, and check the fit of the swivel. There may be a slight drag in **FIRST**. This is normal; do not adjust the cable.

CAUTION: If you encounter restricted movement or any other problem during this process, **DO NOT FORCE THE SHIFTER**. Doing so may damage the cable, the shifter and / or the transmission. Simply return to **Step A** and re-check each step.

- 47. The cable is correctly adjusted when the swivel slips freely in and out of the lever in **REVERSE** through **SECOND** gears, and has a slight drag in **FIRST**. Verify that the two cable bracket nuts, and the cable swivel jam nut, are tight. Also verify that the vehicle does not roll with the transmission in **PARK**.



CAUTION: The shifter has two **PARK** positions — the first (lever full-forward) is for **GM** transmissions; and the second (one position back) is for **Chryslers** and **Fords**. Once shifter installation is completed, always push the lever **FULLY FORWARD** to put the transmission into **PARK**. Otherwise the transmission's park pawl will not engage, which will allow the vehicle to roll.



- 48. Secure the swivel to the selector lever with the **1/16"** (small-diameter) cotter pin. Operate the shifter through all the gear positions, verifying that it operates correctly.

NEUTRAL SAFETY AND BACKUP LIGHT SWITCHES

- 49. Determine the type of neutral safety mechanism in your vehicle. It may be either:

- a **switch** on the stock shifter (whether on the steering column or a console); or
- a **mechanical interlock** in the steering column that only allows the key to turn to **START** when the shifter is in **PARK** or **NEUTRAL**.

- 50. Reroute the switch wires: Disconnect the battery ground cable.

- A. **Neutral safety switch:** Use an applicable electrical schematic to locate and identify the two neutral safety circuit wires (which prevent cranking unless the transmission is in **NEUTRAL** or **PARK**). Route both wires to the **B&M** shifter.
- B. **Mechanical interlock:** Use an applicable electrical schematic to locate and identify the wire that runs between the **START** pole on the ignition switch and the starter relay or solenoid. (This is usually a purple, 10 or 12 AWG wire.) Cut the wire, and route both ends to the **B&M** shifter.

- 51. **Backup light switch:** Use an applicable electrical schematic to locate and identify the two backup light wires (usually located on the steering column behind the instrument panel). Route these wires to the **B&M** shifter.

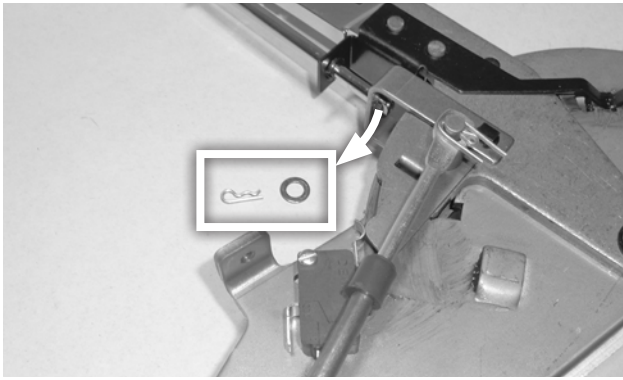
- 52. **Wire the switches:** Strip **1/4"** of insulation off the wires and crimp a **terminal** to each wire, using an appropriate crimping tool.

CAUTION: Failure to use an appropriate tool to crimp the terminals may result in defective, unreliable connections.

Tape or heat-shrink the terminal-wire connections. Connect the backup light wires to the **RIGHT** switch, and connect the neutral safety wires to the **LEFT** switch (see **Step 4**).

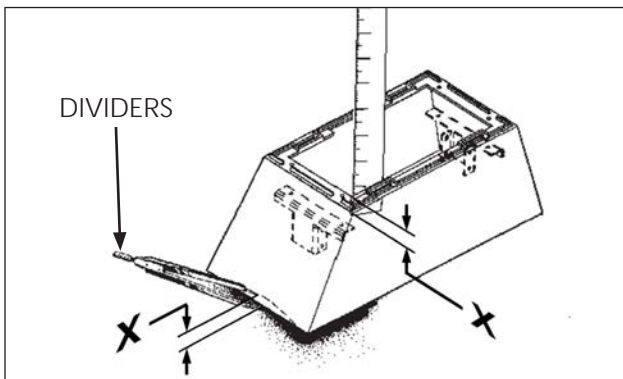
- 53. **Verify switch function:** Reconnect the battery ground cable, disconnect the coil wire and set the parking brake. Check the neutral safety switch by attempting to crank the engine in each shifter position. The starter must crank only when the shifter is in either **PARK** or **NEUTRAL**. Check backup light operation with the shifter in **REVERSE**. If required, adjust the switches as described at **Step 4**. After verifying correct switch operation, reconnect the coil wire.

FINISH INSTALLATION

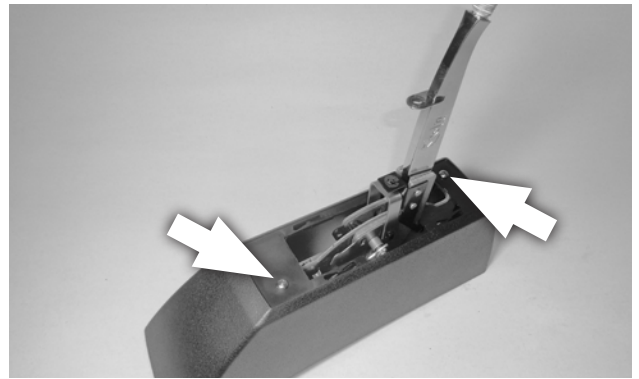


54. Remove the T-handle and jam nut from the shifter, then remove the lockout trigger by removing both the spring clip and the brass washer from the bottom end of the rod.

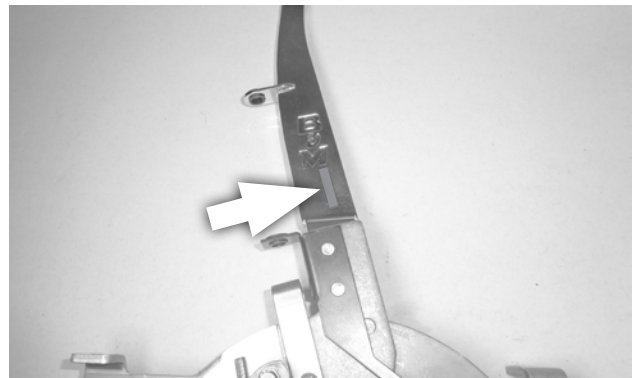
CAUTION: Do not lose the brass washer that is installed between the spring clip and the lockout yoke.



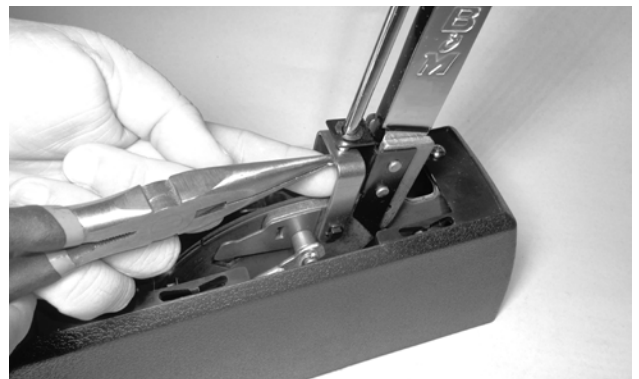
55. Place the tower over the shifter. Hold the tower level, with its bottom edge resting on the highest point on the floor that it will touch. Use a ruler to measure the dimension "X" — the distance from the shifter's tower mount tabs to the underside of the tower. Set a pair of dividers at dimension "X." While holding the tower in position, use the dividers to scribe a line on the tower to match the floor's contour. Remove the tower and use snips to remove material below the scribed line. Make small cuts, gradually working closer to the line, and continuing to check the tower's fit to the floor and shifter as you go.



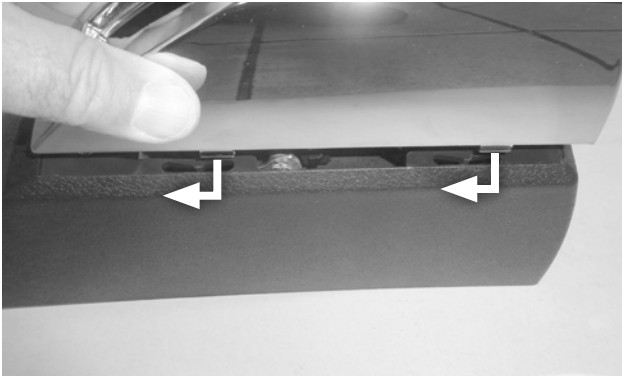
56. Once the tower is trimmed to fit, verify the shifter mechanism is free of any debris and loose hardware. Then install the tower using the two #10 self-tapping screws.



57. Install the red position indicator tape on the left side of the shift lever, as shown — just below the rear leg of the letter "M," and parallel to the rear edge of the lever.



58. Slip the chrome cover over the shift lever, but temporarily support it as far upward and rearward as possible. Then reinstall the trigger assembly, the brass washer, and the spring clip.



59. Align the cover's four tabs with the rear of the matching slots in the tower, and carefully insert the tabs in the slots. Then push the cover forward to align it with the tower.

60. Apply medium strength thread locking fluid to the threads at the top of the shifter lever.

CAUTION: If thread locking fluid is not used, the T-handle's threads may gall, making it impossible to remove it from the stick in the future.



61. Carefully thread the jam nut all the way onto the stick, followed by the T-handle.

CAUTION: Avoid cross-threading! The T-handle should spin freely onto the stick with no resistance. **If you start to feel any resistance, STOP,** remove the handle, align the threads properly, and try again.

Align the T-handle as desired, then tighten the jam nut.

62. Fasten the carpet to the vehicle floor.

Congratulations! Your B&M Z-Gate™ shifter is now installed and ready to use.

INSTALLATION CHECKLIST

- Locking steering column lever is permanently fastened in the full up position (Step 1).
- Shifter is convenient to reach and has ample room for driver's hand throughout its range of motion (Step 3).
- Carpet covers floorboard holes (Step 7).
- Cable is connected to the shifter pin, and cable housing is securely fastened to the shifter base (Step 8).
- Cable hole provides 3/16" clearance minimum, and shifter is securely mounted to floorboard (Step 9).
- Cable is routed clear of exhaust system, engine, and any moving parts (Step 10).
- Selector lever is securely installed on the transmission (Step 13, 28, or 41).
- Cable bracket bolts are tightened to 12-13 ft-lbs torque (Step 14, 29, or 43).
- Shifter is properly adjusted; vehicle does not roll with transmission in PARK; cable boots are installed; cable nuts are tightened; swivel is secured with jam nut and cotter key (Steps 17-19; 32-34; or 46-48).
- The neutral safety switch is connected and properly adjusted to prevent engine start in FORWARD and REVERSE drive gears (Steps 36-38; or 49-53).
- There is no debris in the shifter mechanism (Step 56).
- Cover is installed (Step 59).
- Shifter moves freely into and out of all positions, as described in Operation.

CAUTION: If your shifter is not working properly do not attempt to drive your car! Verify you have followed all instructions. If the shifter is broken or defective, return it to your B&M dealer.

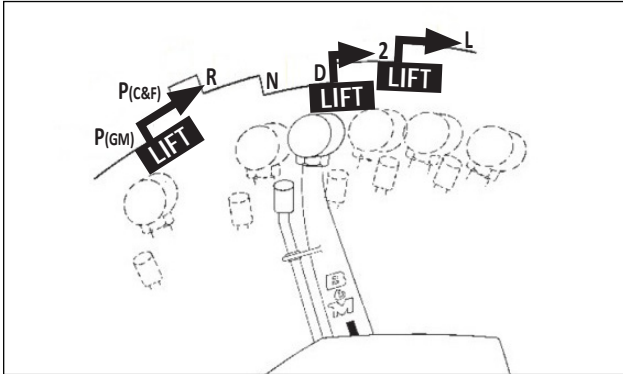
OPERATION

Before starting installation, become familiar with the shifter, and learn how to move it to its various positions.

The illustrations below show the shifter positions that correspond to the transmission's gear positions. When assembled, the red position indicator decal points to the current gear selection on the chrome cover.

If the instructions seem complicated at first, not to worry — the Z-Gate shifter is easy to operate after just a brief time of familiarization.

SHIFTING FROM PARK TO LOW

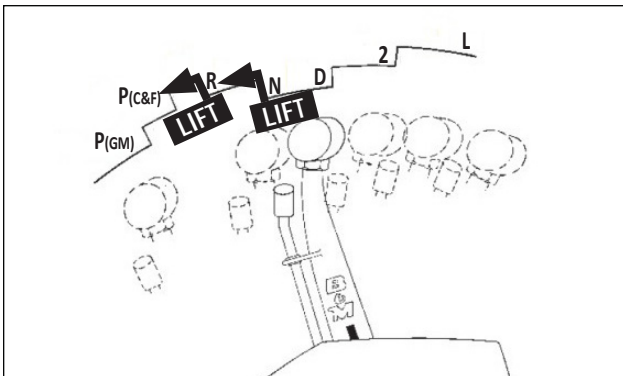


The lockout trigger must be lifted to move:

- from PARK to REVERSE;
- from DRIVE to SECOND; and
- from SECOND to LOW.

It is not necessary to lift the trigger to move from REVERSE to NEUTRAL, or back and forth between NEUTRAL and DRIVE.

SHIFTING FROM LOW TO PARK



The lockout trigger must be lifted to move:

- from NEUTRAL to REVERSE; and
- from REVERSE to PARK.

It is not necessary to lift the trigger to move from LOW to SECOND, from SECOND to DRIVE, or back and forth between DRIVE and NEUTRAL.

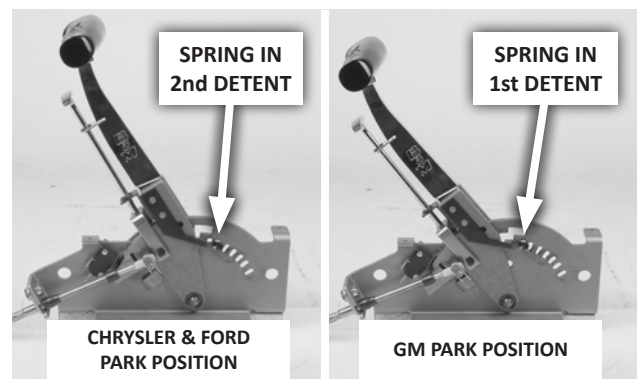
When upshifting (from LOW to SECOND, or from SECOND to DRIVE), pushing the lever forward with a quick, firm "tap" will cause the trigger to stop the lever at the next gear position, then drop. But moving the lever forward more slowly will allow the trigger to slide through the gears without stopping.

To move from NEUTRAL to REVERSE, lift the trigger slightly and push the lever forward.

To move to PARK from REVERSE or NEUTRAL, lift the trigger fully and push the lever forward until it stops, then release the trigger. The shifter will stop at PARK.

THE SHIFTER'S TWO PARK POSITIONS

The Z-Gate shifter has two PARK positions. The first (full-forward) is for use on GM transmissions; and the second (one position back) is for Chryslers and Fords. **Note the correct shifter position for putting your transmission in PARK:**



- **CHRYSLER and FORD:** To avoid stretching the shifter cable, **NEVER force the shifter past the second PARK detent**, which corresponds to your transmission selector lever's PARK position.
- **GM:** The shifter lever must be **pushed FULLY FORWARD** to put the transmission into PARK. Otherwise the transmission's park pawl will not engage, which will **allow the vehicle to roll**.

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE

B&M Performance & Off-Road maintains a highly-trained technical service department to answer your technical questions, provide additional product information and offer various recommendations.

