



**INSTALLATION INSTRUCTIONS FOR
PRO GATE™ SHIFTER
Part No. 80905**
Rear cable exit; Chrysler & Ford 3- and 4-speed
automatics w/forward shift pattern

INTRODUCTION

The B&M Pro Gate™ shifter is an externally-gated race shifter. This model features a rear-exit cable, and is suitable for Chrysler & Ford three- and four-speed automatic transmissions with forward-pattern valve bodies.

The compact and lightweight design is constructed with 304 stainless steel, 1018 steel, rugged nylon side covers and other high-grade materials.

The result is a hard-core race shifter that provides short, positive, dependable shifts, with little to no maintenance required — which makes the Pro Gate especially suited for off-road racing.

NOTE: This shifter is not recommended as-is for street use, as it does not include neutral safety or back-up light switches. Add B&M 80850 Pro Gate Switch Kit for street use.

Before starting, please 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.

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

The shifter can also be used with the following transmissions, **with the applicable B&M bracket and selector lever kits** (sold separately):

MANUFACTURER	TRANSMISSION	INSTALL KIT
Ford	AOD	40509
Ford	AODE and 4R70W	40507
Ford	E40D and 4R100	40508

Additional instructions for these transmissions are included with their install kits.

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.
- If you do not understand any part of these instructions, please call **B&M Technical Support** at **(866) 464-6553** for assistance.
- 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
SHIFTER ASSEMBLY, PRO GATE	1
CABLE, SHIFTER, 5'	1
E-CLIP, 1/4" ID	1
BOLT, 1/4-20 x 5/8"	1
NUT, NYLOCK 1/4-20	1
BOLT, 1/4-20 x 1-1/4"	4
WASHER, SPLIT LOCK 1/4"	5
NUT, 1/4-20	5
SELECTOR LEVER, CHRYSLER / AMC	1
CABLE BRACKET, CHRYSLER / AMC, REAR EXIT	1
SELECTOR LEVER, FORD C4 / C5 and C6	1
CABLE BRACKET, FORD C4 / C5, REAR EXIT	1
CABLE BRACKET, FORD C6, REAR EXIT	1
BOLT, 1/4-20 x 1-1/2"	1
BOLT, 5/16-18 x 1"	2
WASHER, FLAT 5/16"	2
SPACER, 7/16" I.D. x 1/4" L	2
SWIVEL, CABLE	1
JAM NUT, 10-32	1
PIN, COTTER 1/16" x 1"	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 be modified or disabled to prevent the steering from unintentionally locking up while

driving. If you are not comfortable making this modification, or if you don't understand this warning, seek the services of a qualified technician for the safe installation of this shifter.

INSTALLATION

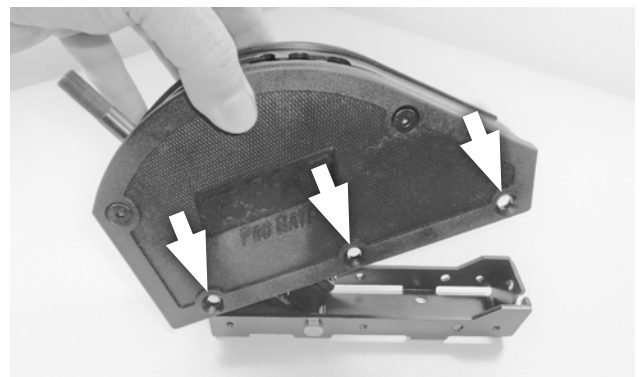
1. Remove the stock shift linkage.

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.**)

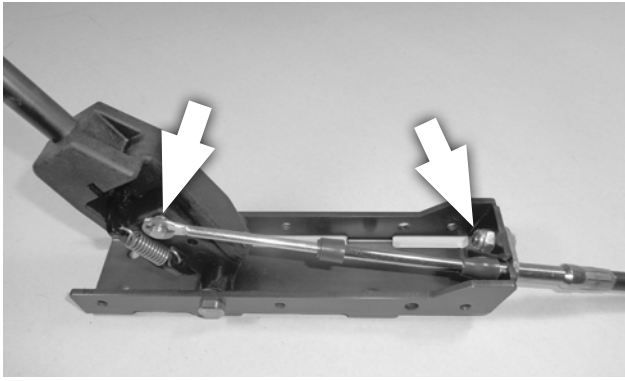
Console Shifters: Remove the shifter mechanism from the console. Disconnect the rod or cable, and the selector lever, from the transmission. Remove the cable bracket if equipped. If there is a cable or linkage from the console shifter or transmission to the steering column lock, it must be blocked in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

Switch Wires: While removing the stock shift linkage, look for either Neutral Safety and / or Backup Light switches and wiring. (Mechanism and wiring varies on different vehicles.) Label any such wires to simplify installation of optional B&M 80850 Pro Gate Switch Kit.

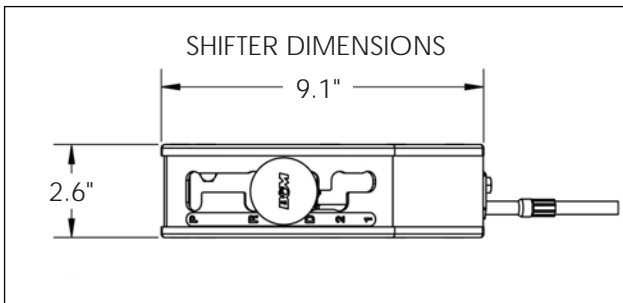
CAUTION: The shifter and cable must be assembled before positioning the shifter in your vehicle. This is to ensure proper cable clearance at the rear of the shifter before permanently mounting it in the vehicle. Mounting the shifter without the cable attached can cause interference with the interior vehicle components, poor cable routing, and cable binding, resulting in poor shifter operation or cable damage.



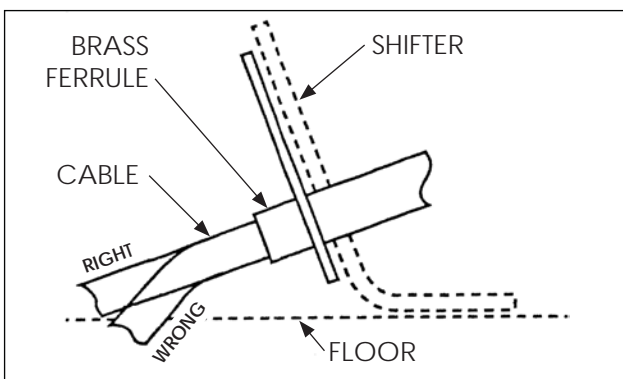
2. **Disassemble the shifter:** Remove the knob and jam nut from the shift lever. Remove the 6 countersunk screws from the **bottom** of the shifter (**3 on each side**). Then remove the gate plate and side cover assembly from the shifter base.



3. **Assemble the shifter and cable.** At the front (eye-end) of the cable, pull the two plastic dust boots all the way forward. Insert the cable through the notch in the shifter base. Secure the cable eye to the shifter pin with the **E-clip**. Then secure the cable housing tab to the shifter base with the **1/4-20 x 5/8" bolt and lock nut**. Finally, push both plastic dust boots back over their respective joints.

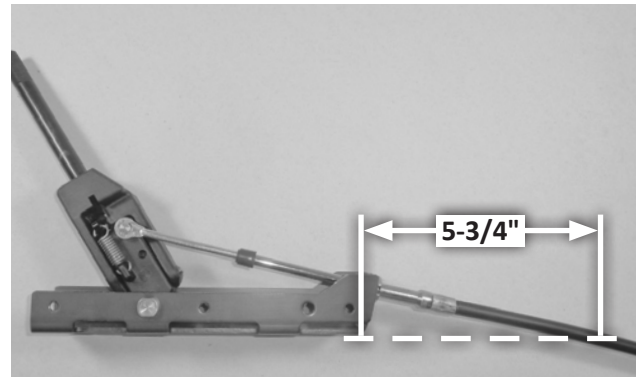


4. **Locate the B&M shifter in your vehicle.** Pull the carpet (if any) away from the floorboard where the shifter will be mounted. If the vehicle has a bench type seat, move the seat to the full forward position. Place the assembled shifter base and cable on the floor, locating it for ease and convenience of operation. (Note the shifter dimensions, above.) The shifter cable must clear the front of the seat when the seat is in the full forward position, and the shifter grip must clear the dash and seat when the lever is moved through its range. When you are satisfied with the position of the shifter, mark the location of its four mount holes on the floor.



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.

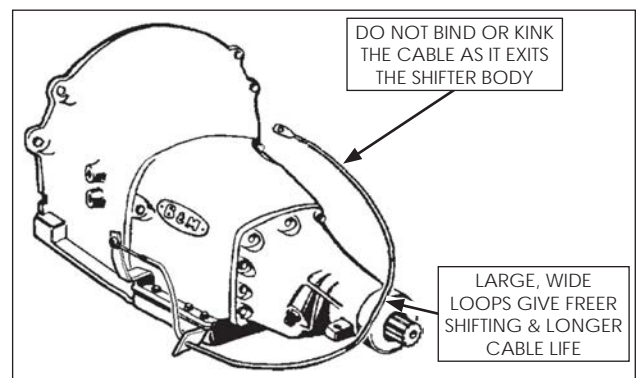
5. **Drill the mount holes.** Drill four 9/32" mount holes through the floor. Put the shifter in place, and temporarily hold it in place with the four **1/4-20 x 1-1/4" bolts**.



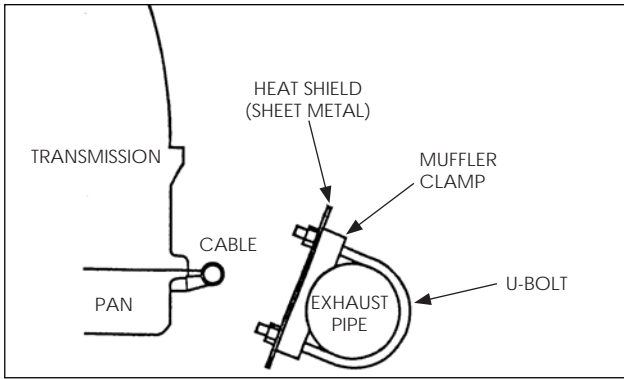
6. **Drill the cable hole.** Mark the center for the shifter cable hole 5-3/4" from the rear bend of the left shifter base. Move the shifter and cable out of the way, and drill or cut a 2" diameter cable hole through the floor.

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.

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 2" slit for the cable. (**Do not use a drill bit to make the holes in the carpet.**)
8. **Install the shifter in the vehicle.** Slide the cable through the carpet and the hole in the floor, then bolt the shifter to the floor using the four **1/4-20 x 1-1/4" bolts, lock washers and nuts**.



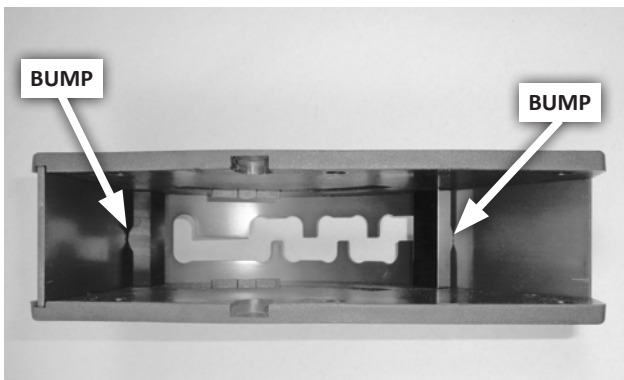
9. **Route the cable** approximately as shown. **Avoid any sharp bends which may kink or otherwise damage the cable.** Seal the cable hole shut to keep exhaust fumes, water, etc. out of the passenger compartment. Use clamps and/or cable ties (customer supplied) to secure the cable housing in such a way 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.**



10. Ensure there is no debris in the shifter mechanism, then reinstall the assembled gate plate and side covers on the shifter base (3 screws on each side).



CAUTION: It may be necessary to loosen the top screws about a half turn, to allow the side covers to slip over the shifter base. If so, **ensure that the two spacers remain oriented correctly**, with the bumps touching the inside of the gate plate.

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

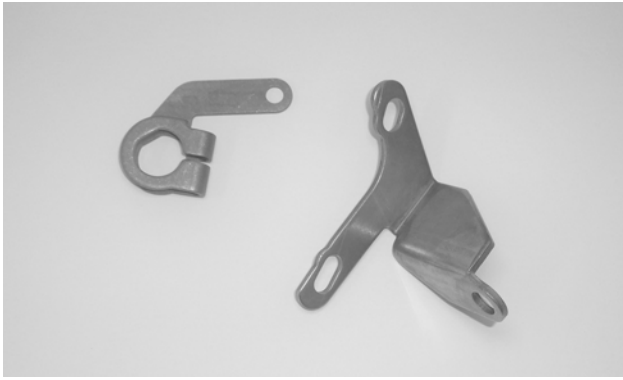


11. Reinstall the jam nut (flats down) and shift knob. Orient the knob as desired, then tighten the jam nut.

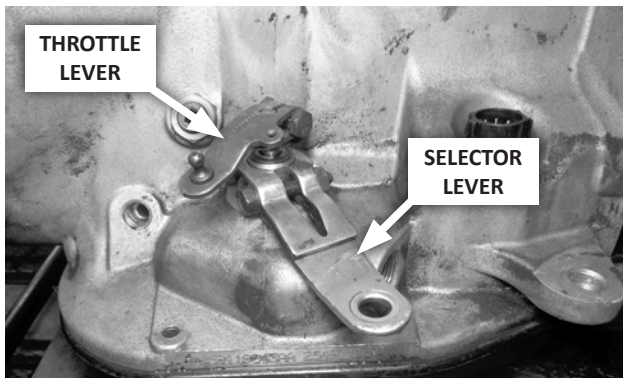
For CHRYSLER / AMC applications, go to STEP 12.

For FORD applications, go to STEP 22.

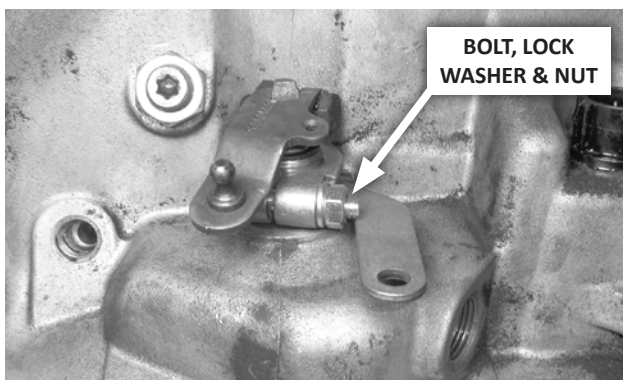
CHRYSLER / AMC



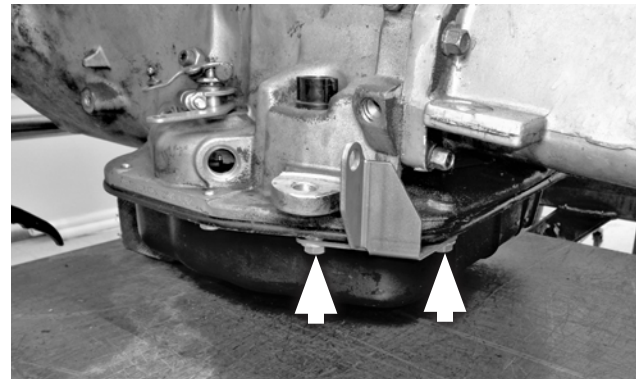
12. Get the Chrysler / AMC selector lever and cable bracket from the parts kit.



13. **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.

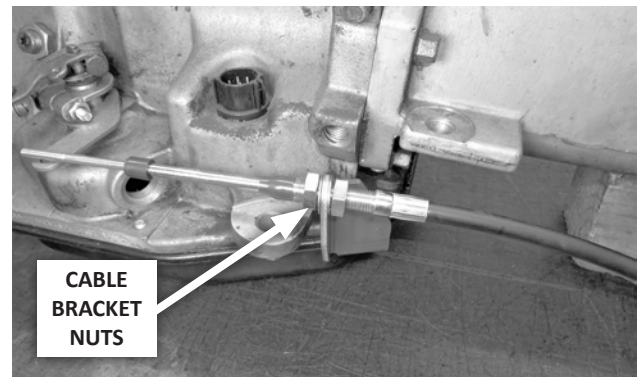


14. Install the B&M selector lever using the $1/4-20 \times 1-1/2$ " bolt, and a $1/4$ " lock washer and nut. Be sure the lever is not pushed down against the transmission case, which could cause binding. The lever should travel smoothly back and forth, with a positive "click" in each detent. Then reinstall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

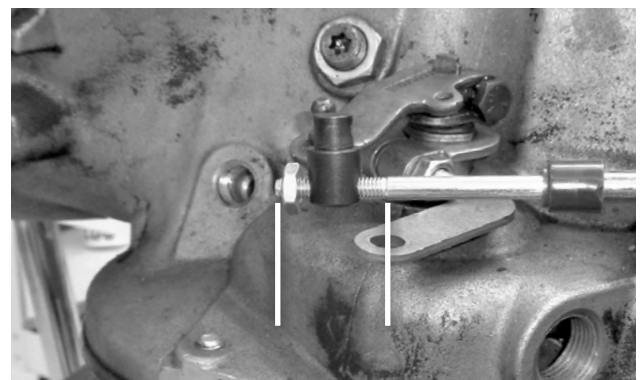


15. Install the cable bracket at the two pan bolt holes directly below the selector lever, using the two $5/16-18 \times 1$ " bolts and flat washers. For stamped sheet-metal (stock) pans, use the two spacers between the pan and bracket. (Spacers are not used with cast aluminum pans.) Tighten the bolts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

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

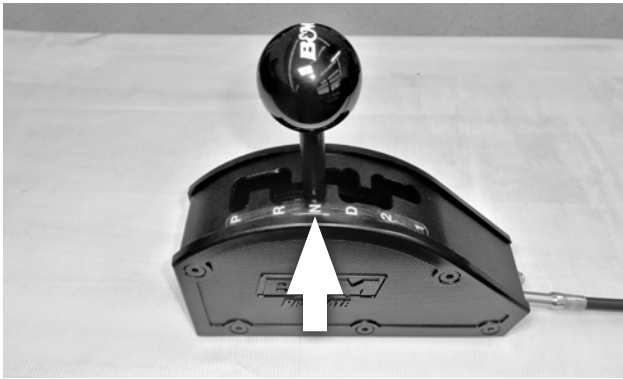


16. **Attach the shifter cable to the cable bracket:** First remove the small jam nut, both plastic dust boots, and one large nut and lock washer, from the cable. Then insert the cable through the cable bracket, reinstall the lock washer and nut (loosely, to allow room for adjustment), and reinstall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

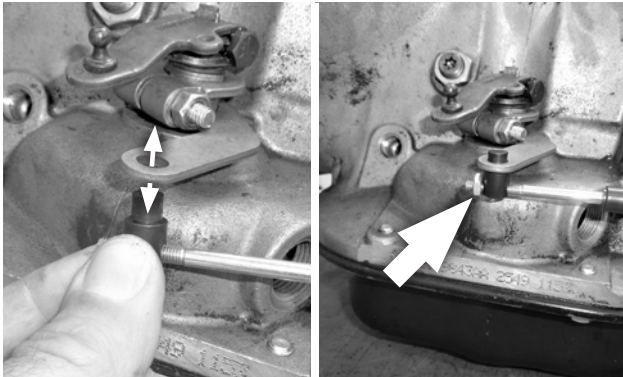


17. Thread the swivel onto the cable to about the middle of the threaded section, then reinstall (but do not yet tighten) the jam nut.

18. Adjust the shifter cable as described below:



A. At the transmission, manually move the selector lever to the **NEUTRAL** detent (3 clicks back from full-forward, or **FIRST**). Then in the vehicle, move the shifter handle to **NEUTRAL**. Adjust the large cable bracket nuts 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.

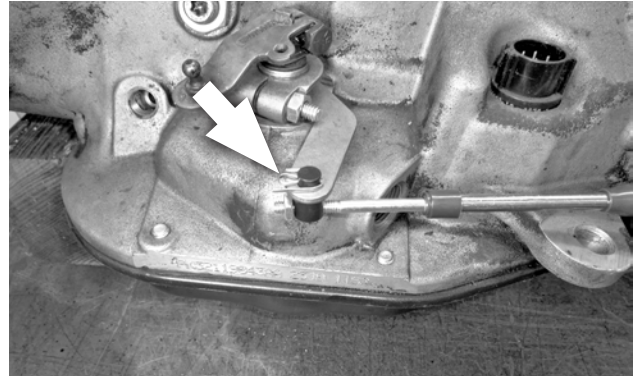
C. With the swivel still in the selector lever, move the shifter to **DRIVE**, and check the fit of the swivel in the selector lever. The swivel should slip freely in and out of the hole. If not, adjust the cable bracket nuts (and swivel, if necessary) per **Step B**.

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.

19. The cable is correctly adjusted when the swivel slips freely in and out of the lever in **REVERSE** through **SECOND** gears, with a possible 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**.



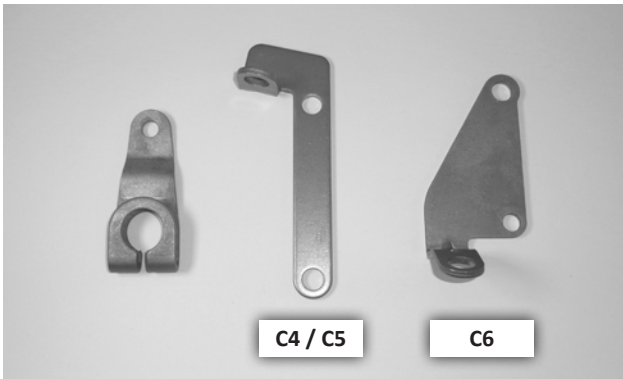
20. Secure the swivel to the selector lever with the cotter pin. Operate the shifter through all the gear positions, verifying that it operates correctly.

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

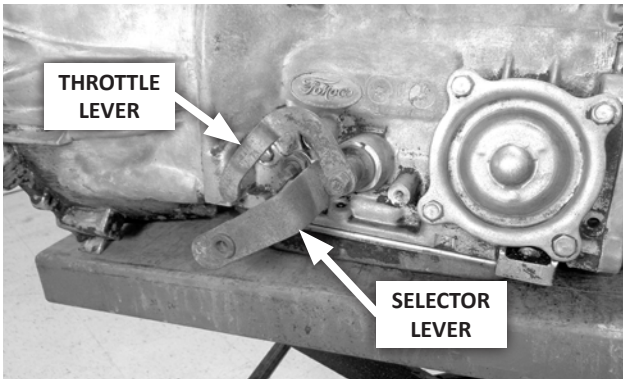
CAUTION: The throttle linkage must be connected and operating on all transmissions using automatic valve bodies, or transmission damage will result.

Proceed to "Finish Installation," Step 34.

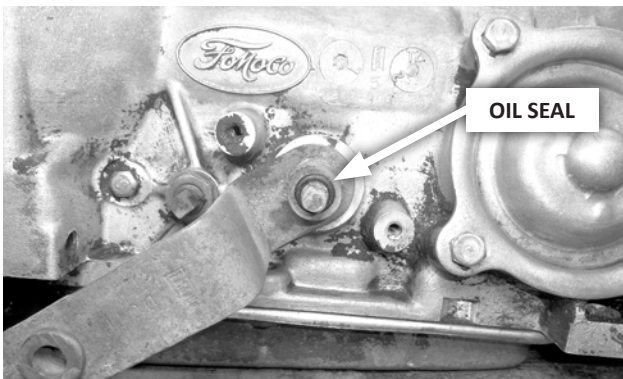
FORD



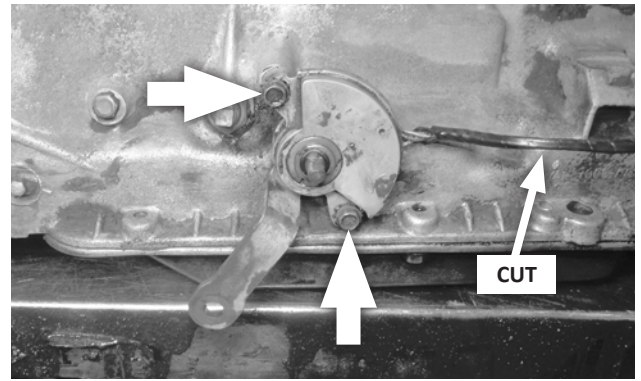
22. Get the Ford selector lever and appropriate cable bracket for your transmission from the parts kit.



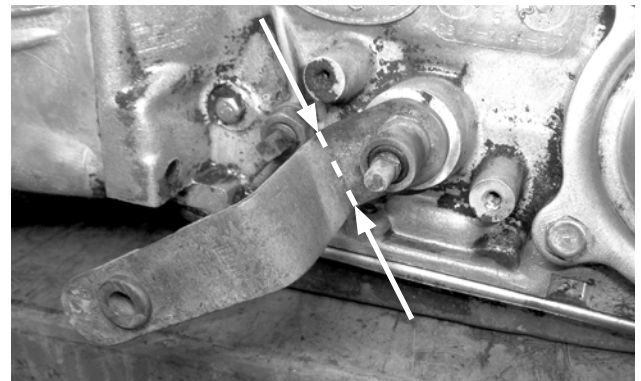
23. **Disconnect stock controls:** Remove and retain the nut and lock washer holding the throttle lever on its shaft. Carefully remove the throttle lever, and move it and its linkage aside, allowing them to hang free. Remove and discard the stock shift linkage.



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

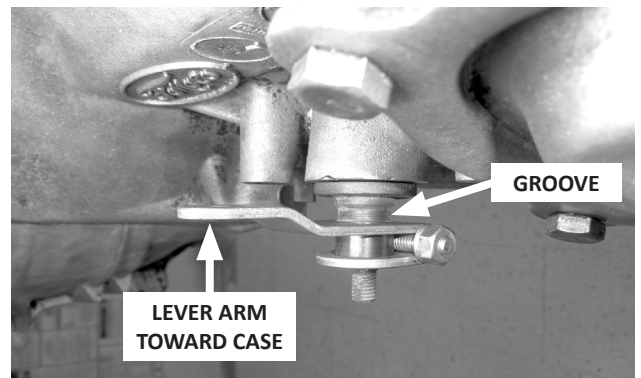


24. If your transmission is equipped with a neutral safety / backup light switch: Remove the two mount bolts and slide the switch off the selector shaft. Cut the wiring harness between the switch and its connector, and discard the switch. (If you install the **B&M 80850 Pro Gate Switch Kit**, the wires from the connector will be routed to the switches later.)

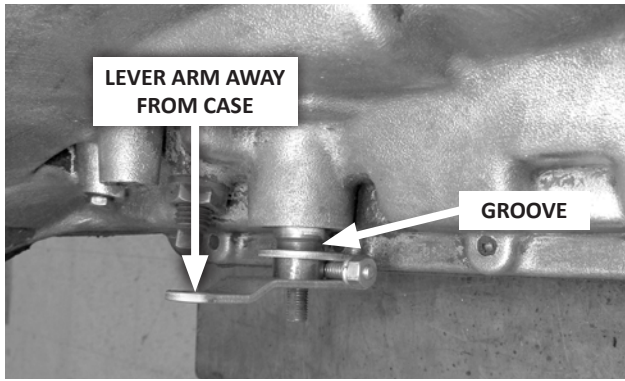


25. **Cut the selector off at the inboard bend** to allow for correct positioning of B&M lever. Move the selector shaft to PARK (fully clockwise), then move it to DRIVE (3 clicks back).

26. Install the B&M selector lever using the 1/4-20 x 1-1/2" bolt, lock washer and nut.

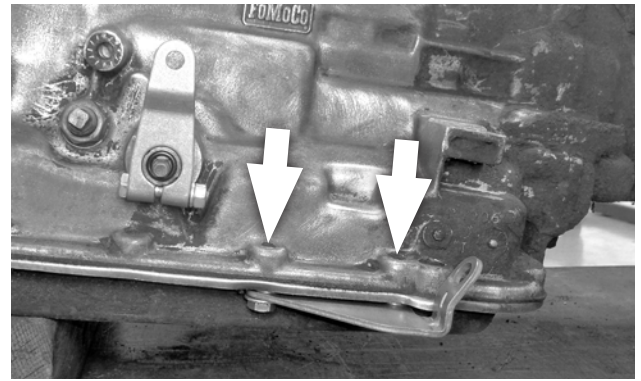


A. **C4 / C5 transmissions:** Install the selector lever with the lever arm toward the transmission case.



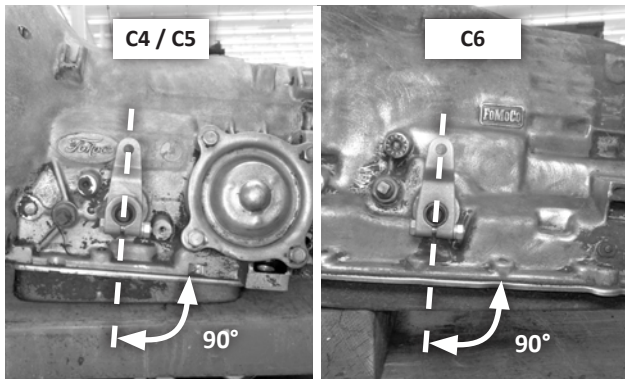
B. **C6 transmissions:** Install the selector lever with the lever arm **away from** the transmission case.

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.

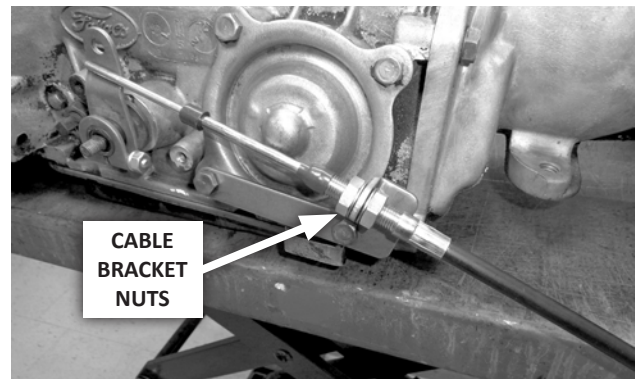


B. **C6 transmissions:** Install the **cable bracket** at the two left rear oil pan bolt holes, using the two **5/16-18 x 1" bolts** and **flat washers**. For stamped sheet-metal (stock) pans, use the two **spacers** between the pan and bracket. (Spacers are not used with cast aluminum pans.) Tighten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

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

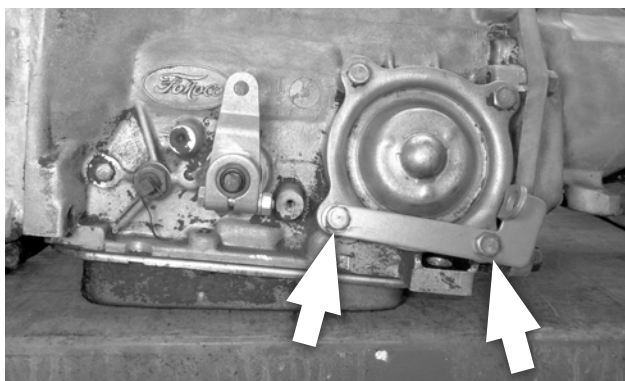


With the selector shaft still in DRIVE, align the selector lever perpendicular to the oil pan split-line, then tighten the fasteners. The lever should travel smoothly back and forth, with a positive "click" in each detent.



28. **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.

27. **Install the cable bracket:**



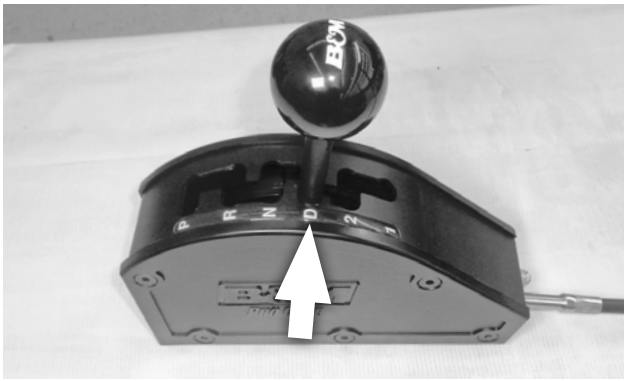
A. **C4 / C5 transmissions:** Install the **cable bracket** at the two lower servo cover bolt holes, using the two stock bolts. Tighten the bolts to 12-13 ft-lbs torque.

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

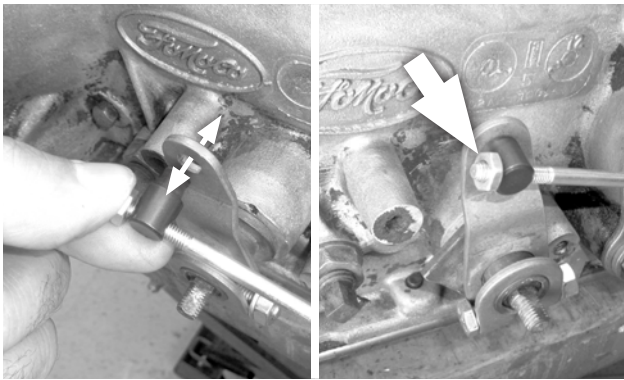


29. **Thread the swivel onto the cable** to about the middle of the threaded section, then reinstall (but do not yet tighten) the jam nut.

30. Adjust the shifter cable as described below.



A. With the selector lever still in DRIVE (from Steps 25 and 26) and the shifter in the DRIVE 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.

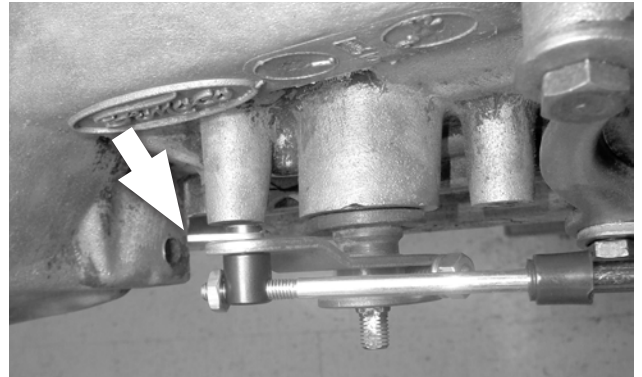
C. With the swivel still in the selector lever, move the shifter to NEUTRAL, and check the fit of the swivel in the selector lever. The swivel should slip freely in and out of the hole. If not, adjust the cable bracket nuts (and swivel, if necessary) per Step B.

D. Repeat for both SECOND and REVERSE gears.

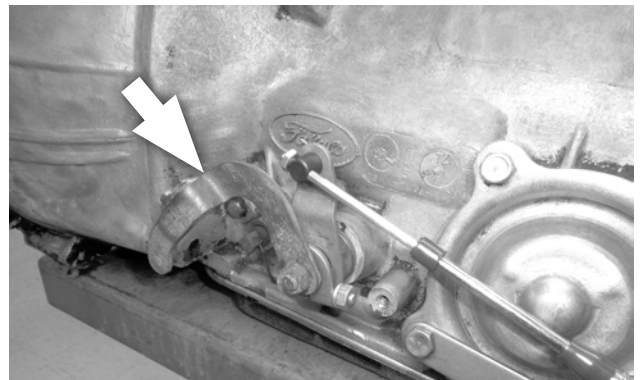
E. Move the shifter to FIRST, and check the fit of the swivel. There may be a slight drag in FIRST. This is normal; do not adjust the cable.

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.

31. The cable is correctly adjusted when the swivel slips freely in and out of the lever in REVERSE through SECOND gears, with a possible 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.



32. Secure the swivel to the selector lever with the cotter pin. Operate the shifter through all the gear positions, verifying that it operates correctly.



33. 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.

Proceed to "Finish Installation," Step 34.

FINISH INSTALLATION

34. Fasten the carpet to the vehicle floor.

Congratulations! Your B&M Pro 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).
- Cable is connected to the shifter pin, and cable housing is securely fastened to the shifter base (Step 3).
- Shifter is convenient to reach and has ample room for driver's hand throughout its range of motion (Step 4).
- Carpet covers floorboard holes (Step 7).
- Shifter is securely mounted to floorboard (Step 8).
- Cable is routed clear of exhaust system, engine, and any moving parts (Step 9).
- There is no debris in the shifter mechanism and the cover is installed (Step 10).
- Selector lever is securely installed on the transmission (Step 14 or 26).
- Cable bracket bolts are tightened to 12-13 ft-lbs torque (Step 15 or 27).
- Shifter is properly adjusted; cable boots are installed; cable nuts are tightened; swivel is secured with jam nut and cotter key (Steps 18-20 or 30-32).

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.

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.

B&M TECHNICAL SUPPORT: (866) 464-6553

