



Installation Instructions MAGNUM GRIP PRO STICK SHIFTER

Fits: Vehicles with GM TH-400, 350, 250, 200 700R4
200-4R, 4L80E & 4L85E Transmission
Catalog # 81041

WORK SAFELY! For maximum safety, perform this installation on a clean, level surface and with the engine turned off. Place blocks or wedges in front of and behind both rear wheels to prevent movement in either direction.

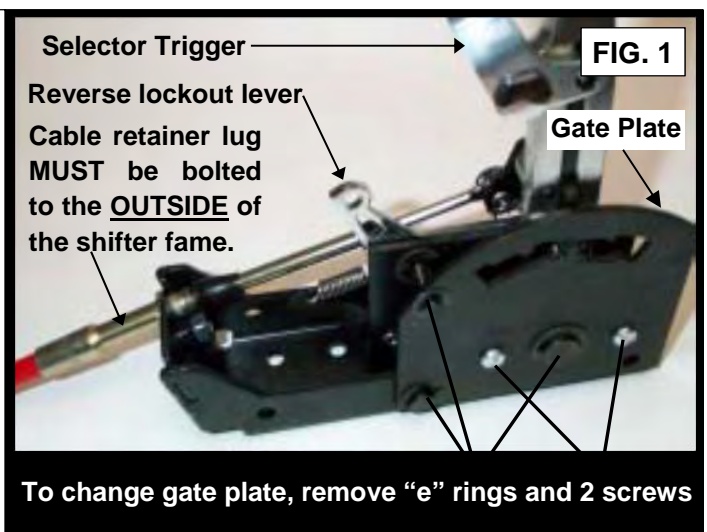
CAUTION: To avoid any possibility of bodily injury or damage to vehicle, do not attempt installation until you are confident that the vehicle is safely secured and will not move.

The Magnum Grip Pro Stick Powerglide Shifter includes the two speed gate plate, cable bracket and the Powerglide special lever without the throttle valve shaft hole. For use with transbrakes and full manual valve bodies only.

An aluminum mounting bracket is available for the **B&M Magnum Grip Pro Stick** shifter with quick release pins to allow the shifter to be removed and replaced quickly, or the shifter can be mounted directly to the floor. The housing can be used either with or without the mounting bracket. The shifter comes equipped with a neutral safety switch, and an optional backup light switch is available. The housing may easily be trimmed and modified to fit.

WARNING: If your vehicle is equipped with a locking steering column, securing the column lock lever in the engine compartment in the full up position will allow the wheel to lock and unlock but will allow the key to lock the wheel if the key is turned to “lock” while moving, or at any time. Securing the lock lever in any other position will prevent the wheel from locking at any time.

If you are going to use a gate plate on the shifter, change it now. Remove the two screws and three “E” rings that hold the gate plate on (See Figure 1). Remove the original gate plate and install the new gate plate. Replace the “E” rings and the screws.



1. Remove the stock shift linkage:

Column Shifters: Remove all rods, levers or cables from the column and the transmission. Place the column shifter lever in the park position. Remove the roll pin holding the shift lever to the column and remove the shift lever assembly.

Console Shifters: Remove the shifter mechanism from the console. Disconnect and remove the rod or cable from the transmission if so equipped.

Note: Shifter installation may require console modification or complete console removal depending on your vehicle and available space.

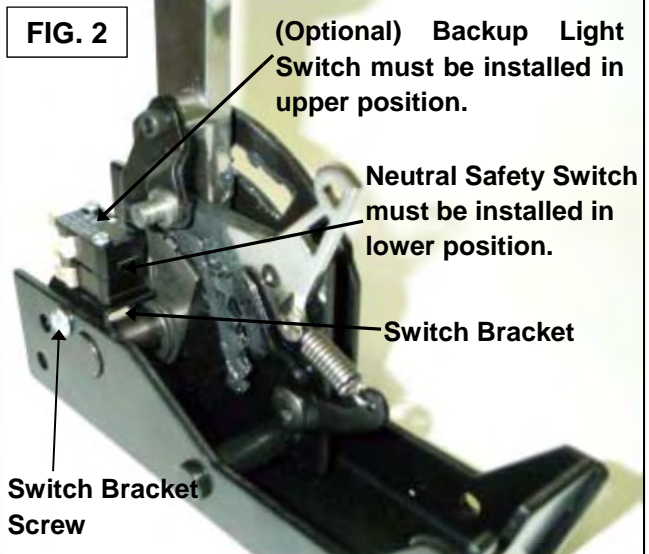
2. If so equipped, pull the carpet away from the floorboard where the shifter is to be mounted. Locate the shifter in the vehicle with the stick shifted to the rearmost gate position and mark the position of the four mounting holes in the floor.

3. Remove the shifter mechanism and drill four mounting holes using a 9/32" drill bit. Mark the position of the shifter cable hole. The cable hole must be 1 inch in diameter. Drill or cut the cable hole in the floorboard.

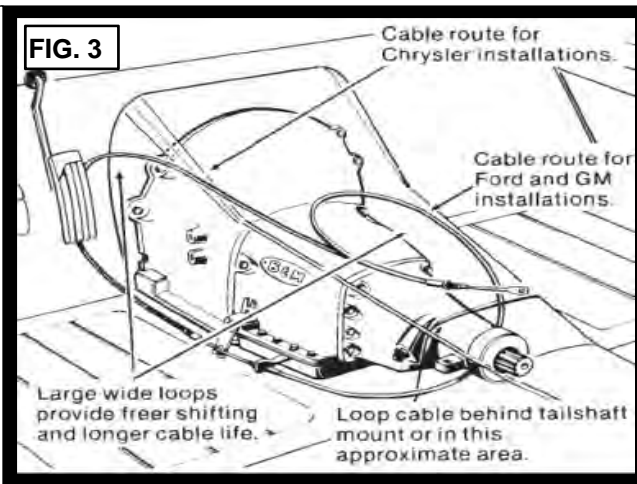
4. Install the carpet back to the original position. Do not secure the carpet at this time. Cut holes in the carpet at the mounting hole position. Cut a 1 inch slit in the carpet at the cable hole position.

5. Install the cable onto the shifter mechanism. One end of the cable has a threaded housing and a threaded cable end. This is the transmission end of the cable. The other end of the cable has a flat cable end with a hole. Fit the cable housing into the U-shaped notch in the shifter mechanism and fasten the retainer lug with the supplied 1/4" - 20x1/2" bolt, lockwasher and nut to the outside of the shifter frame. (See Figure 1 above) Install the "E" ring to retain the cable. Use cable clamps or tie-wraps to secure the cable to avoid contact with hot engine or exhaust system.

6. Install the neutral safety switch in place on the switch bracket (See Figure 2). Install two #4-40 x 5/8" screws through the switch and the bracket. Install a lockwasher and a nut on each screw and tighten snugly. Do not overtighten the nuts as you may crack the switch. Install the switch bracket assembly on the shifter base with a 10-24 x 1/2" pan head screw. If required, you can adjust the switch relative to the switch actuator plate.



7. Install the shifter mechanism into the vehicle. Slide the shifter cable through the carpet and the cable hole in the floor. The shifter mechanism should be level when installed. Make sure the cable is routed according to Figure 3 to avoid sharp bends or damage to the cable. Install the 1/4" -20x1-1/2" bolts, washers, and nuts (supplied) through the shifter and the floorboard and tighten securely.



Note: Some floorboards are extremely thin and will not adequately support the shifter mechanism when bolted to the floor, resulting in excessive shifter wobble. For those vehicles, we recommend you fabricate a stiffener plate for additional strength. Seal the cable hole securely to prevent entry of exhaust gases.

POWERGLIDE

8. Disconnect the throttle to transmission linkage if any and discard. The Powerglide shift lever supplied with this shifter has no provision for a throttle linkage.

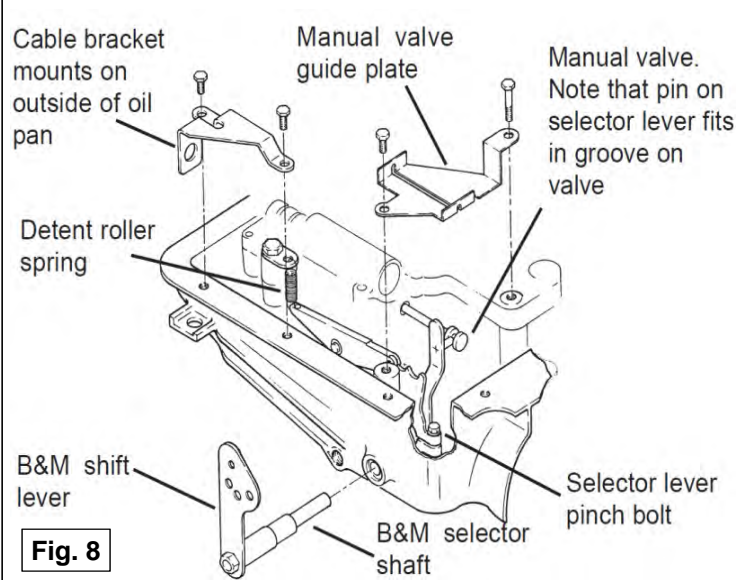
9. Drain the transmission oil pan.

CAUTION: Be sure the transmission is cool before attempting to drain the oil. Place the drain pan under the transmission. Remove the drain plug if so equipped. If your pan does not have a drain plug remove the oil pan bolts one at a time working towards the front. As you loosen the last bolts the oil pan will tilt down and allow the oil to drain.

Note: If your oil pan sticks to the gasket pry it down with a screwdriver before loosening the last two bolts to break it free. Remove the oil pan and set it aside.

10. Remove the manual valve guide plate by removing two bolts (See Figure 8). Unhook and remove the detent roller spring. Allow the detent roller to pivot out of the way. Note how the pin on the manual valve selector engages the groove in the manual valve.

11. If your transmission has a throttle valve lever on the outside of the shift lever loosen the inner pinch bolt on the throttle level. Slide the throttle lever and shaft out of the transmission. Remove the inner throttle valve lever. Discard these parts.



12. Loosen the pinch bolt on the selector lever. This can be either an Allen head bolt or a 12 point bolt head. Do not remove the pinch bolt. Slightly pry the manual valve lever and slide the selector shaft from the transmission. Discard the selector shaft.

13. This transmission includes the B&M Powerglide Prolever shift level which is a two piece lever with separate lever and shaft. Install the B&M selector shaft into the transmission with the lever pointing down. Hold the stock selector lever in position in the case, engage the pin on the selector lever with the manual valve and rotate the B&M shaft until the flat on the shaft engages the serrations on the lever. Push the B&M lever firmly into the transmission until the lever stops on the shoulder of the shaft. Tighten the pinch bolt securely.

14. Install the manual valve guide plate in place. (Make sure that pin on the selector lever is engaged in the groove in the manual valve.) Install the two bolts and tighten to 15ft.lbs. Install the detent roller spring. Hook the spring to the detent roller and tab. The selector lever must travel freely and smoothly from front to back with a positive click in each gear position.

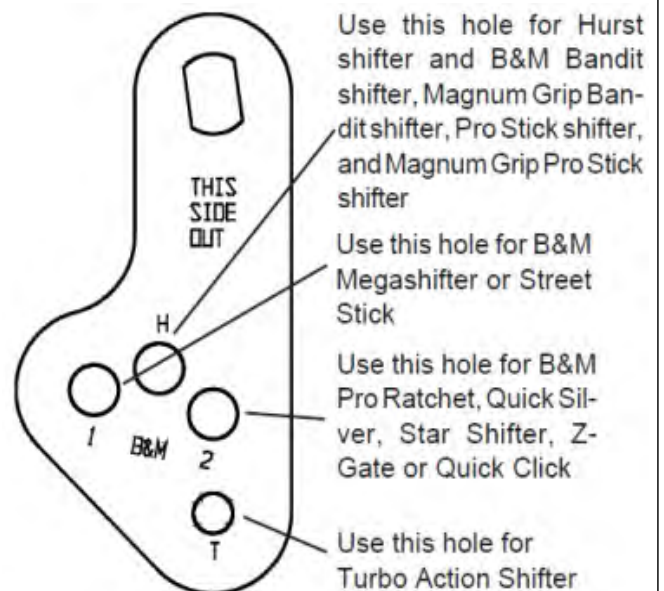
15. Clean the oil pan and scrape the old gasket off of the pan and case. (**NOTE:** If your pan does not have a drain plug, you may wish to install one, at this time.) The old gasket can cause leaks. Install the oil pan with the new gasket. Install the pan bolts except for the two center bolts on the left side of the pan. Tighten the pan bolts to 8ft.lbs. Do not overtighten as this can damage the pan gasket.

16. Install the cable bracket in position with the two remaining pan bolts (See Figure 8). Install the B&M lever onto the shaft with the lever pointing down. If your cable comes from the front (usually a rear engine car), the lever is installed pointing upwards. You will have to make your own cable bracket for this installation.

17. Route the shifter cable according to Figure 3. Avoid kinks and sharp bends and route the cable away from hot engine or exhaust parts. Remove the two rubber boots, one large nut, and a large lockwasher from the threaded end of the shifter cable. Slide the end of the cable into the cable bracket, install the large nut and lockwasher loosely over the end of the cable. Install the two rubber boots onto the end of the cable. Install the swivel on the threaded end of the cable and position it in the center of the threaded portion.

18. Move the transmission selector lever by hand to full rear position (Low). Operate the shifter lever to the Low gear position (all the way back). Adjust the large nuts on the cable so that the swivel will slide into the hole in the selector lever that is labeled "H" (See Figure 9). Tighten the large nuts completely. Be sure that the swivel will slide freely in and out of the hole in the selector lever. **Note:** The shifter will not operate correctly unless the hole marked "H" in the shift lever is used.

Leave the swivel out of the hole and move the selector lever to the Park position (all the way forward). Reinsert the swivel into the hole marked "H" in the selector lever. Check to see that the swivel will slide freely in and out of the hole marked "H" in the selector lever in this position. If it does not slip in freely, adjust the swivel slightly until it will slip into the hole marked "H" in the lever.

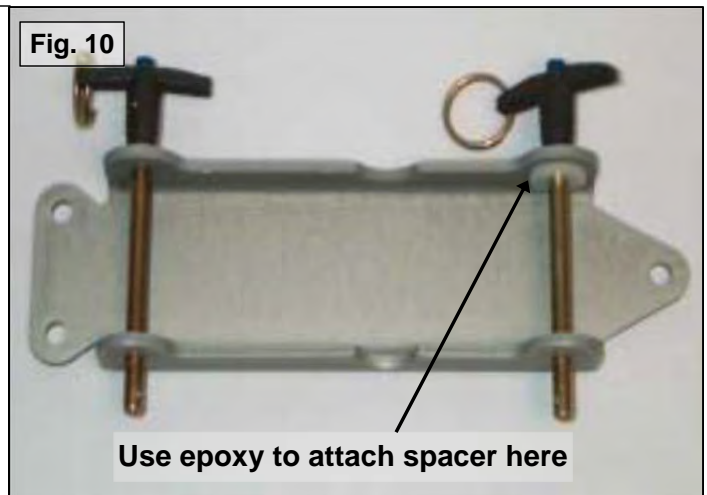


Move the shifter back to the Low gear position and check that the swivel will still slide easily in and out of the hole marked "H" in the selector lever. (If you do not use the hole marked "H" in the lever, it will be impossible to correctly adjust the cable.) Operate the shifter through all the gear positions. Check to make sure the swivel will slide in and out of the hole marked "H" selector lever hole in each gear position. The shift cable is now correctly adjusted. Install the cotter key supplied with the shifter into the swivel and spread the key ends. If you have a problem, **DO NOT FORCE THE SHIFTER**, this will damage the cable, the shifter, or the transmission. Simply start at the beginning and carefully check all your steps.

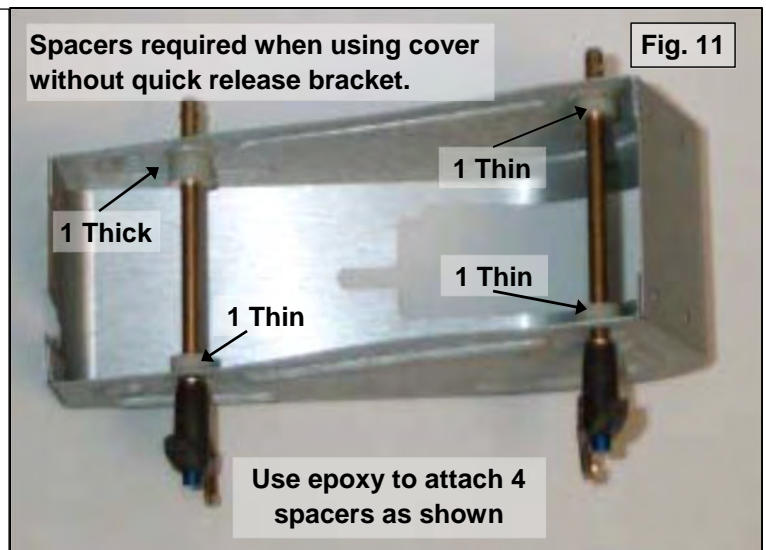
19. Disconnect the battery ground cable to prevent accidental shorts. Identify the neutral safety wires (engine will not crank unless these wires are connected together). Extend the wires to the shifter. Strip 1/4" insulation off the wires and install slip-on terminals supplied in kit. Crimp the terminals onto the wires using a crimping tool or pliers. Connect the neutral safety wires to the LOWER switch and the backup light wires to the UPPER switch (See Figure 1). Tape the terminal connections and all other connections to prevent shorts. Reconnect the battery ground cable, disconnect the coil wire and set the parking brake. Check the switch operation by attempting to start the motor in each shifter position. The starter must crank only when the shifter is in the Park or Neutral position. Check the backup light operation when the shifter is shifted to the Reverse position. Adjust the switches if required. Reconnect the coil wire.

MOUNTING BRACKET AND ALUMINUM HOUSING

If the quick release mounting bracket is being used, it is screwed to the floor with four mounting screws. One spacer washer is required between the mounting bracket and the shifter in the location shown in Figure 10. The shifter is held onto the bracket with the two quick release pins.



The aluminum housing can be used with or without the mounting bracket. If it is used with the mounting bracket, no spacers are required. If it is used without the mounting bracket, four spacer washers are required between the shifter and the cover as shown in Figure 11. The two quick release pins are used to hold the cover to the shifter or the shifter and mounting bracket. A sheet of shift pattern decals is included with the cover. Select the one that fits your shift pattern and press the decal on the top of the housing to line up with the stick.



OPERATION

How to shift Magnum Grip Pro Stick Shifter

Note: The Reverse Lockout Lever (See Figure 1) described in the following instructions ONLY needs to be operated when shifting from Neutral to Reverse.

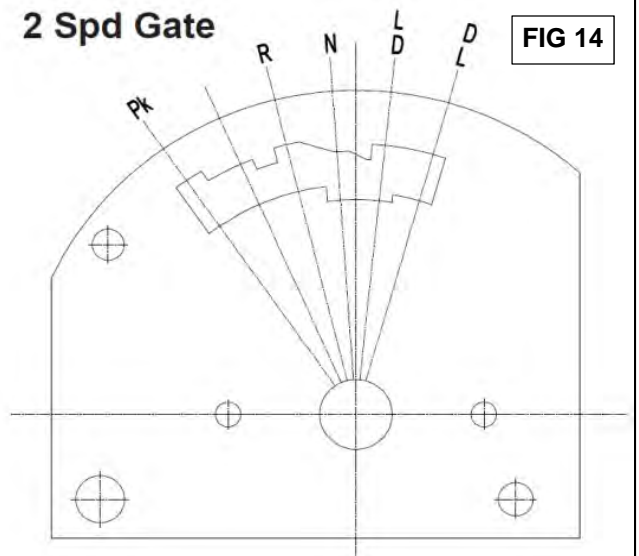
TWO SPEED FORWARD PATTERN (See Figure 14 below)

1. Low: (Starting with the shifter in Park) Pull the trigger lightly until it stops, then while holding pressure on the trigger pull the stick all the way back releasing the trigger at mid travel.
2. Drive: Push the stick forward until it stops.
3. Neutral: Pull the trigger firmly until it stops, then push the stick forward until it stops. Release the trigger.
4. Reverse: Push the Reverse Lockout lever forward, then push the stick forward until it stops.
5. Park: Pull the trigger lightly until it stops, then while holding pressure on the trigger push the stick forward until it stops.

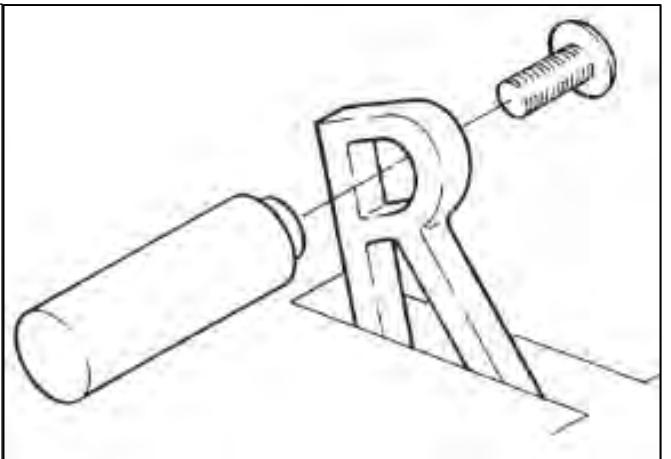
TWO SPEED REVERSE PATTERN

1. Low: (Starting with the shifter in Park) Pull the trigger lightly until it stops, then while holding pressure on the trigger pull the stick rearward slowly until it stops at the "L" position.
2. Drive: Pull the stick rearward until it stops.
3. Neutral: Pull the trigger lightly until it stops, then while holding pressure on the trigger push the trigger forward until it stops at the "N" position. Release the trigger.
4. Reverse: Push the Reverse Lockout lever forward, then push the stick forward until it stops.

2 Spd Gate



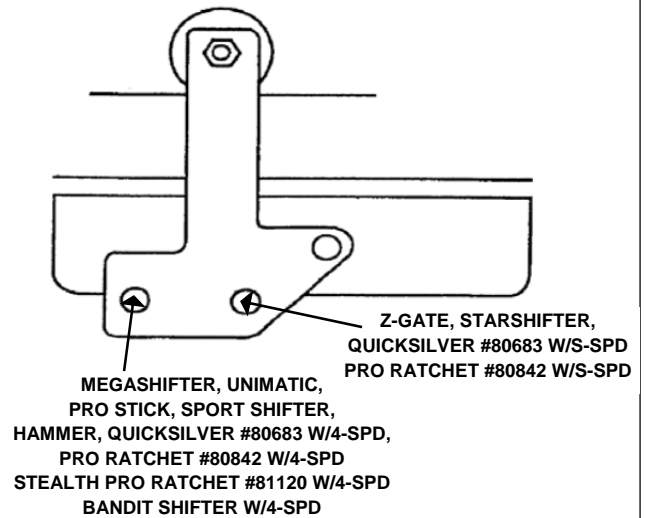
An extender handle for the reverse lockout lever is now included with the Pro Stick shifter. This handle allows easier access to the reverse lockout, particularly in a race car while wearing belts and gloves. If you wish to use this extender handle, insert the handle from the left side of the shifter through the center of the "R" of the reverse lockout lever and secure it with the screw provided. Use Loctite on the threads.



CABLE ADJUSTMENT WARNING

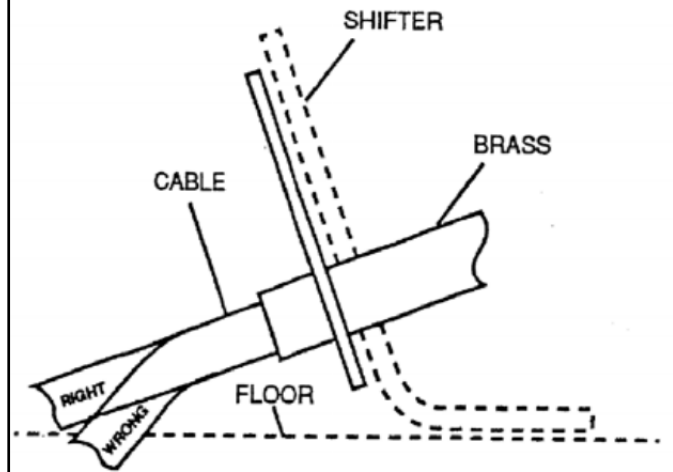
INSTALLATION

NOTE: Be careful. Select the correct hole for your shifter. Wrong hole **will** destroy the cable, shifter and/or transmission in **one** shift! (GM trans. only)



DO NOT KINK CABLE

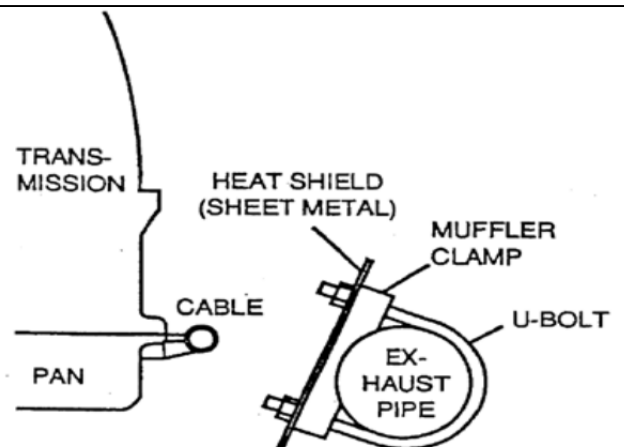
NOTE: Do not kink cable anywhere along its length. If cable has a kink, it will lock up. Cable should be kept straight for 2 inches on each end where it leaves the brass. Any of the above **will** destroy the cable, shifter and/or transmission in **one** shift!



MELTED CABLES

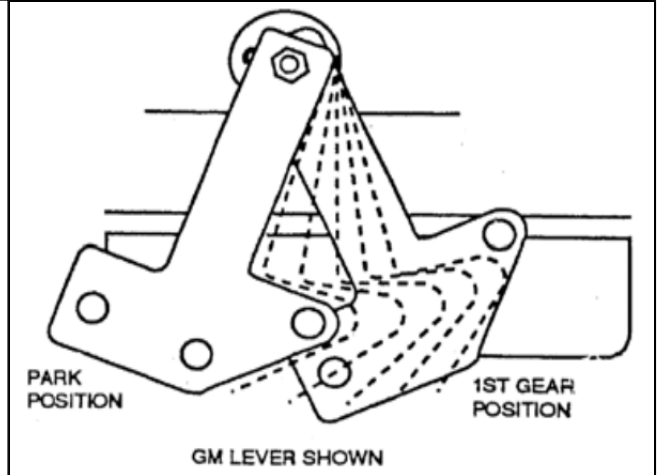
NOTE: If your cable is close to your exhaust it will melt or become brittle. If this is the case, you will need to make a heat shield.

Do not wrap the cable, this retains heat. Heat will destroy the cable!



CABLE ADJUSTMENT

NOTE: If you don't adjust the cable correctly, you **will** destroy the cable, shifter and/or transmission in **one** shift. Put the transmission in low gear and shifter in low gear, set the swivel so it slides in and out of the correct hole freely (See installation picture). Then move the transmission and shifter to park (all the way the other way) then rotate the cable swivel until it slips in and out of the hole freely. Now go back and forth between Park and low gear and fine tune the adjustment. See instructions for further details.



IMPORTANT: RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

Technical Service

A highly trained technical service department is maintained by Hurst Performance to answer your technical questions, provide additional product information and offer various recommendations.

Technical service calls, correspondence, and warranty questions should be directed to:



B&M Racing & Performance Products

(707) 544-4761

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