

Installation Instructions

Street Rod Automatic Shifter for GM TH-350 Transmission

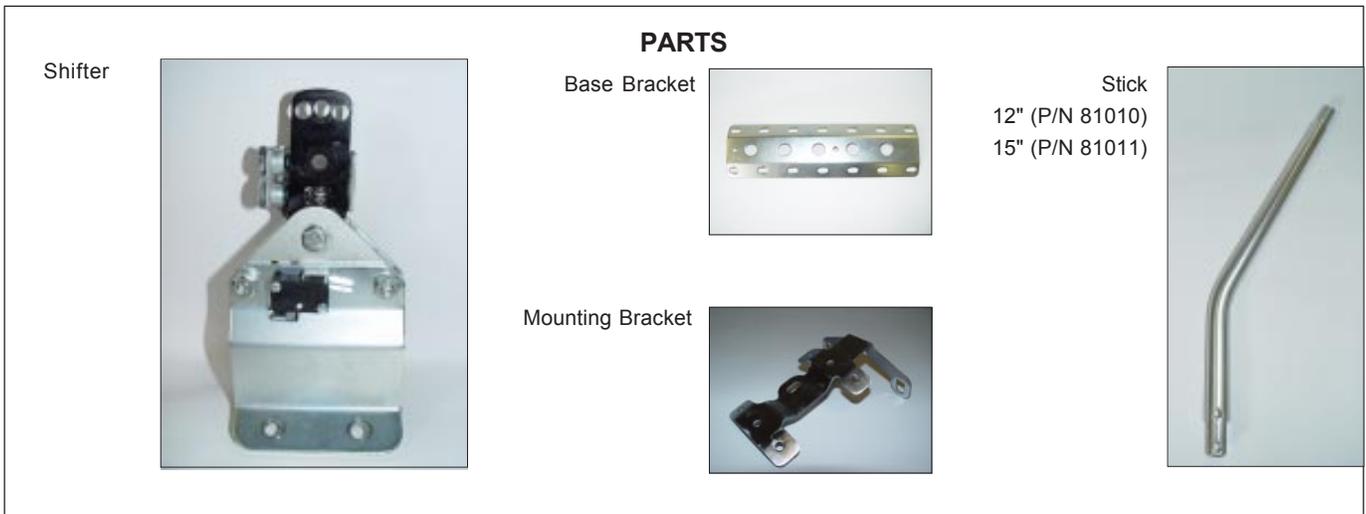
Part Number 81010 & 81011

©2004, 2003 by B&M Racing and Performance Products

The **B&M Street Rod** automatic shifter is a detent shifter that is designed to fit most GM TH-350 automatic transmissions in a street rod application. Unlike other street rod shifters, this shifter not only detents between all gears but also has a unique gate pattern that allows positive Park to Reverse then First to Drive position stops. It has a semi-lockout, controlled by the spring loaded detent engaged by pushing down on the stick, to keep from unintended shifts into Reverse or Park. This shifter is designed to work with the supplied bracketry and direct shift linkage for solid direct shifter to transmission shift operation. Also included is a neutral safety switch that prevents your vehicle from being started while in gear.

INTRODUCTION

Please read the instructions and review the illustrations thoroughly before beginning the installation. The mechanical components of this shifter are precision made and assembled at our factory. Any modification or disassembly of these parts can cause the shifter to malfunction and will void the warranty. You should disassemble only those items outlined in these instructions. Also, please note that thread lock has been included and should be used on all screws that you do not wish to vibrate loose during vehicle operation. However, this thread lock is permanent and should be used sparingly (heat will be required to remove screws installed with this thread lock). Avoid excessive application and minimize dripping this adhesive into any moving parts of the shifter mechanism and linkage. For illustrative purposes these instructions are pictured on a transmission that is separate from a chassis. There are many possible variations in vehicles and the **B&M Street Rod** automatic shifter does have some flexibility in mounting adjustment and position. Check the parts list to ensure that all of the below pictured parts have been included with the shifter.



PARTS (continued)

Transmission Lever



Threaded Rod



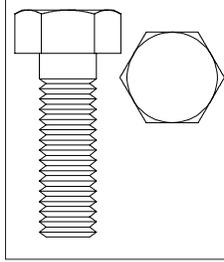
Rod Ends(2)



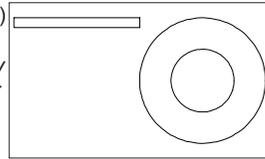
Selector Lever



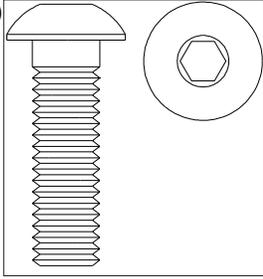
Screw, 5/16-18x1"
(actual size)



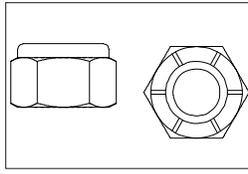
Flat Washer, 5/16"(3)
(actual size)
- 2 pcs are already installed on stick -



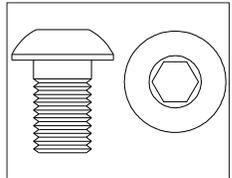
Screw, 3/8-16X1-1/4"(2)
(actual size)



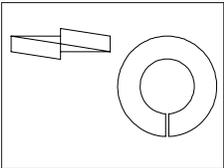
Lock Nut, 5/16-18"
(actual size)



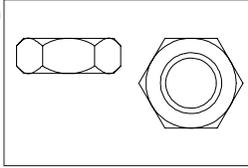
Screw, 5/16-24X1/2"(8)
(actual size)



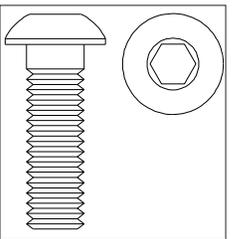
Lockwasher, 5/16" (6)
(actual size)
- 2 pcs are already installed on stick -



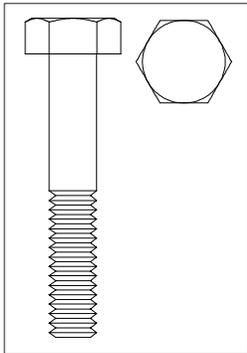
Jam Nut, 5/16-24"(4)
(actual size)



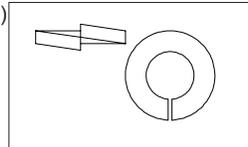
Screw, 5/16-18x1" (2)
(actual size)
- already installed on stick -



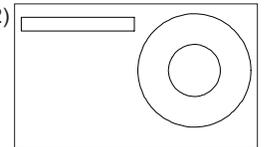
Screw, 1/4-20X1-1/2"
(actual size)



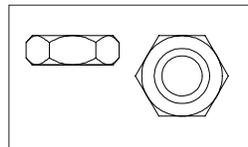
Lockwasher, 1/4" (3)
(actual size)



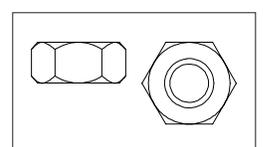
Flat Washer, 1/4" (2)
(actual size)



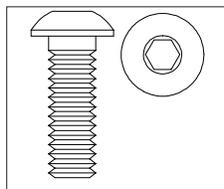
Jam Nut, 1/4-28" (2)
(actual size)



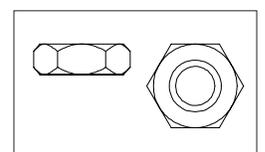
Nut, 1/4-20"
(actual size)



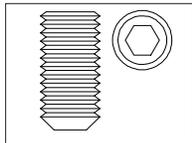
Screw, 1/4-20x3/4" (2)
(actual size)



Jam Nut, 1/4-20" (2)
(actual size)



Set Screw, 5/16-24x5/8" (3)
(actual size)



Thread Lock



Terminal(2)



Knob



O-Ring



Knob Insert



ASSEMBLY

STEP 1. Thoroughly clean the manufacture's fixture hole on top of the transmsion.



STEP 2. Carefully remove the top two tail housing bolts.



STEP 3. Attach the Mounting Bracket using the supplied 5/16-18 x1" screw, flat washer, lock nut, and 3/8-16 x 1-1/4" screws (2).

Note: the original tail housing bolts may be used in place of the two 3/8-16 x 1-1/4" screws if so desired.



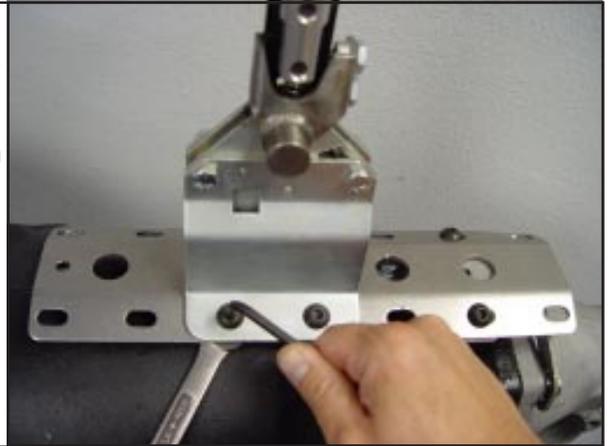
STEP 4. Optional: The pitch of the Mounting Bracket can be changed by loosening the previously installed mounting hardware and affixing different set screw lengths (one 5/16-24x5/8" set screw is provided) into either or both of the indicated tension holes.



STEP 5. Attach the Base Bracket onto the Mounting Bracket using the supplied 5/16-24x1/2" screws (4) at the most optimal location (note: the Base Bracket can be in stalled fully forward or rearward, but may require additional support to prevent unwanted shifter movement, if the shifter is mounted at these extreme locations).



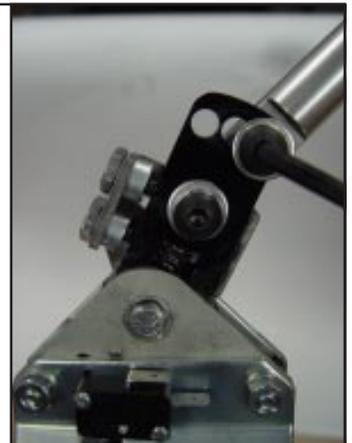
STEP 6. Attach the Shifter in the most suitable location on the Base Bracket using the supplied 5/16-24x1/2" screws (4), 5/16" lockwashers (4), & 5/16" jam nuts (4). If the Shifter happens to be located on top of the Mounting Bracket, then remove the interfering screws and then reinstall them on top of the shifter side plates but do not use the washers or nuts.



STEP 7. Install the supplied 5/16-24x5/8" set screws (2) into the tesion holes of the Base Bracket and tighten. This will help to anchor the shifter and associated bracketry preventing any unwanted flex and shifter movement.



STEP 8. Attach and adjust the upper stick portion of the Shifter to the desired angle. NOTE: The stick should be attached with the supplied 5/16-18x1" screws (2), 5/16" lockwasher (2), and 5/16" flat washers (2).



STEP 9. Install the supplied Transmission Lever onto the transmission selector shaft (the lever should be pointing up and towards the rear of the transmission when in park). Also note that the Transmission Lever should be installed angled in towards the transmission.



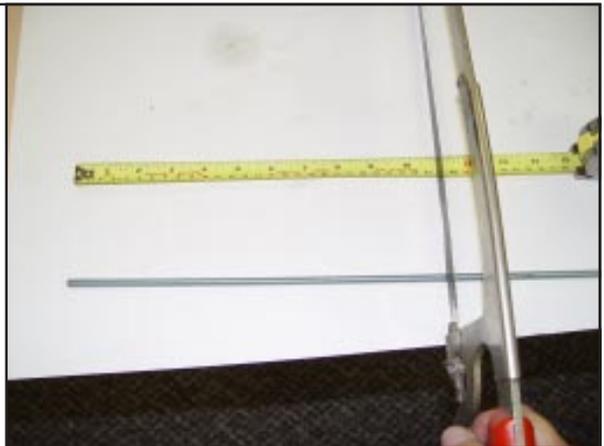
STEP 10. Install the Selector Lever onto the Shifter pivot at a position of approximately 4:30 in the "PARK" position (shifter stick moved all the way forward). Use the 1/4-20x1-1/2" screw, 1/4" flat washers (2), 1/4" lock washer, and 1/4-20" nut to secure the Selector Lever.



STEP 11. Measure the distance between the small hole in the Selector Lever and the small hole in the Transmission Lever and subtract 1-3/4". NOTE: Make sure the Shifter is in the "PARK" position (all the way forward) and the transmission lever is in the "PARK" position as well (all the way back).



STEP 12. Cut the supplied Threaded Rod to resulting length in the previous step.



STEP 13. Install the supplied 1/4-28" jam nuts (2) and rod ends (2) to each end of the threaded rod.



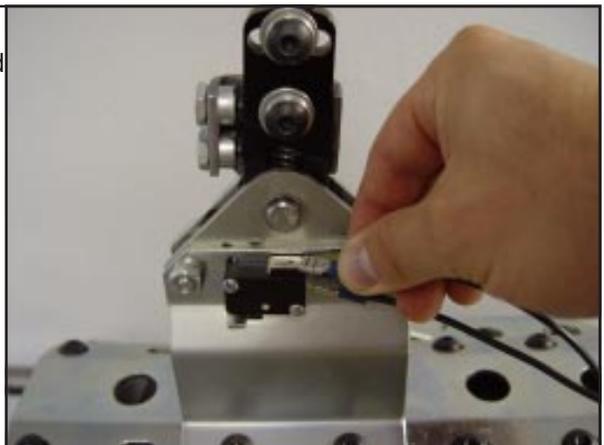
STEP 14. Attach the threaded rod and rod ends to the Selector Lever and Transmission Lever using the supplied 1/4-20x3/4" screws (2), 1/4" lockwashers (2), and 1/4-20" jam nuts (2). NOTE: as the shifter assembly moves further forward on the Base Bracket the shifter Selector Lever may need to be moved to an earlier (higher) position than 4:30, in order not to over-center the transmission.



STEP 15. Check the adjustment of the shifter by placing it in the "NEUTRAL" position. The rod ends should be adjusted to where they slide easily onto the lever mounting screws. Also ensure that each position on the shifter and transmission coincide and function properly and that the neutral/park safety switch fully actuates in "NEUTRAL" and "PARK". Make sure to tighten the jam nuts on the threaded rod against the rod ends after the final adjustments.



STEP 16. Using the supplied terminals, wire the neutral safety switch, making certain that the vehicle can only be started in the "neutral" or "park" position. Adjustments can be made by slightly loosening the screws on the switch and sliding it into position. CAUTION: DO NOT fully remove the screws as it will be very difficult to replace them.



STEP 17. Screw the Knob onto the stick of the Shifter.



STEP 18. Install the supplied O-Ring onto the Knob Insert.



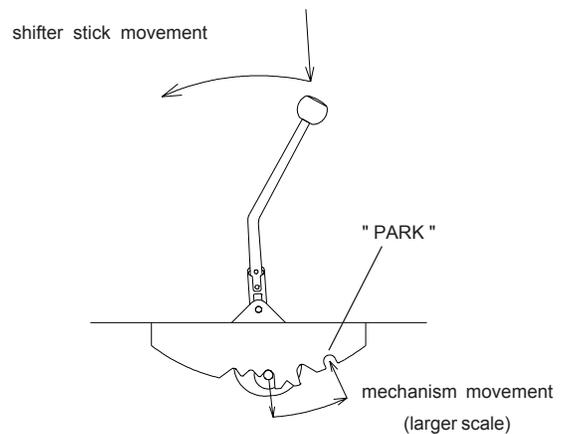
STEP 19. Push the Knob Insert into the top of the Knob.



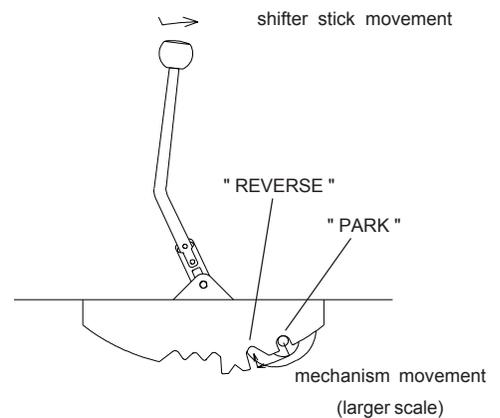
SHIFTER OPERATION

The **B&M Street Rod** automatic shifter has been designed to operate a GM TH-350 transmission through an intuitive sequence of motions that allow the driver to know exactly which gear or position the transmission is in at all times. However this shifter has not been designed as a "race shifter" and cannot be substituted as one (B&M does make many fine race shifters - see www.bmracing.com). Please read and familiarize yourself with these operating instructions and be able to explain them to anyone else who will be operating the vehicle as there is no visual indication of what gear or position the transmission may be in.

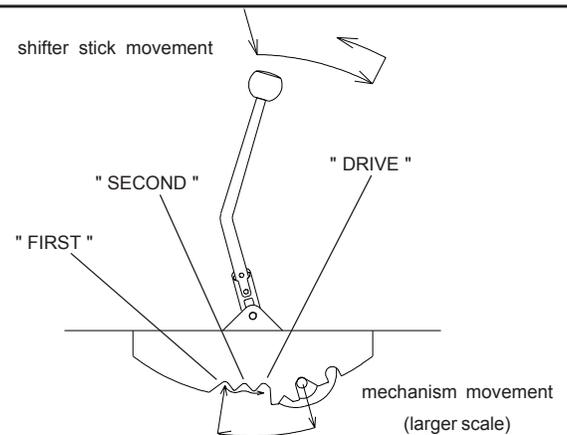
STEP 1. PARK - from any position or gear push the shift knob forcefully down and then forward as far as it will travel.
NOTE: if the engine does not start in this position than a slight forward push or slight upward tug on the knob may be required.



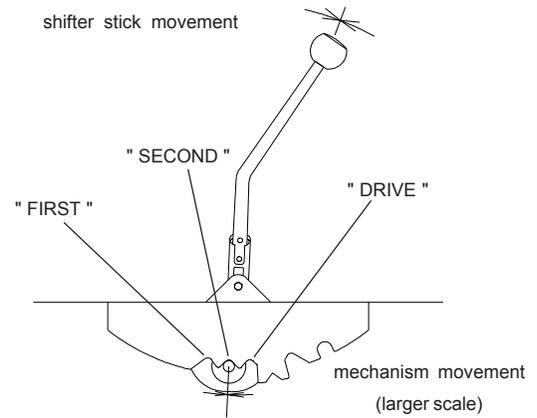
STEP 2. REVERSE - from the "PARK" position, apply light downward pressure on the shifter knob while pulling back until the shifter stops.



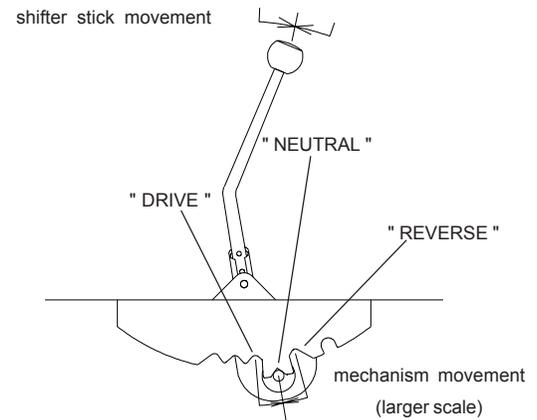
STEP 3. FIRST / DRIVE - from any position push the knob forcefully down while pulling back, as far as it will travel (this is "FIRST"). Without pushing the knob down, push the knob forward. The shifter and transmission will click through "SECOND" and then hard stop at "DRIVE".



STEP 4. SECOND - From "FIRST" gently push the shifter one position forward. From "DRIVE" gently pull the shifter one position backward. NOTE: there is no positive stop for "SECOND" thus "SECOND" must be accessed carefully or it will be skipped over.



STEP 5. NEUTRAL - From "DRIVE" firmly push the shift knob downward and gently pull the shifter back one position. From "REVERSE" firmly push the shift knob downward and gently push the shifter forward one position.



ADJUSTMENT AND MAINTENANCE

The **B&M Street Rod** automatic shifter is virtually adjustment and maintenance free and should provide years of service provided it is installed and operated correctly. The shifter mechanism has been assembled, lubricated, and adjusted from the factory to provide the optimal shifting action and should not be disassembled nor adjusted other than that which is outlined below. Only lubricate the shifter mechanism if rough mechanism movement occurs and use only a high quality moly-graph grease.

ADJUSTMENT - If excessive fore-aft stick free play occurs over time, there are two adjustment screws locked in place with jam nuts (both metric) that can be adjusted to reduce this free play. A slight amount of fore-aft free play is required for proper shifter operation. NOTE: there is also a small amount of side to side free play that is normal.

