



## Installation Instructions Competition Plus Installation Kit

Fits: Muncie M21 Transmission (451) GM Cars and Trucks  
For Specific Vehicles see Application Guide  
Catalog# 3733163

**WORK SAFELY:** Perform this on a good clean level surface for maximum safety and with the engine turned “off”. Apply parking brake and 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 disconnect or installation until you are confident that the vehicle is safely secured and will not move.

### WARNING

This transmission does not have an Interlock to prevent engagement of the Reverse gear when any of the forward gears are engaged. Severe damage to the transmission will result if this should occur. Double check the linkage before starting the engine or moving the car. Insert the Neutral Alignment Rod through levers and check positions of the transmission shifting arms. 1-2 and 3-4 transmission control arms must be at Neutral positions of their travel. Reverse gear control arm must be at the Forward end of its travel (Dis-engaged).

**ATTENTION:** Due to variations in the auto manufacturing tolerances, the transmission rods supplied with this kit may require slight bending to clear any obstructions, etc. Protect the threads while bending. **BEND RODS COLD! – DO NOT APPLY HEAT!**

1. Remove stock shifter and linkage.
2. Install the mounting plate on tailshaft. Tighten all bolts securely. Install the shifter onto mounting plate. Tighten mounting bolts. Insert the nylon bushings into arms. Assemble the hooked ends of the rods into arms and secure with spring clips. Check Assembly View for proper combination of parts.
3. Thread the rod, adjusting buttons onto rods. Spin the buttons onto the middle of thread length.
4. Install the arm-rod-button assemblies onto transmission shafts. Refer to the Assembly View for proper part combinations. Fasten the arms onto shafts with stock flat-washers, lockwashers and bolts.
5. Insert the nylon bushings into holes in levers – refer to Assembly View. Align the levers with shifter frame and insert neutral alignment rod through the notches in the frame and holes in levers.
6. Rotate the transmission arms backward and forward. The neutral position for each arm can be felt at the mid-position of full travel. Reverse arm must be moved to the end of its travel toward the front (dis-engage position).

7. Adjust the position of button on each rod to permit easy slip-in fit of button into the nylon bushings in the proper lever. TRANSMISSION ARMS MUST REMAIN IN NEUTRAL POSITIONS WHILE ALIGNMENT IS ACCOMPLISHED. Fasten buttons in levers with spring clips.

8. Remove the neutral alignment rod. Test the shifter. Stick should move freely from side to side at neutral (between 1-2 and 3-4 shifting paths). An increased pull toward the operator should engage the reverse lever. If shifter functions properly, proceed to paragraph 9.

If the stick CANNOT be moved freely between 1-2 to 3-4 or reverse path, one or more of the rod button adjustments must be corrected. Move stick forward to 3<sup>rd</sup>, then back to 4<sup>th</sup>, then into neutral. Insert neutral alignment rod. If rod CANNOT be inserted freely, the 3-4 button is incorrectly adjusted. Similar testing of 1-2 shift will prove alignment of 1-2 rod adjustment.

To check reverse rod button adjustment, place stick at neutral. Disconnect reverse rod adjusting button from reverse lever. Grasp rod and push toward front of car. (Reverse arm is dis-engaged when at end of forward travel). Adjust rod button for easy slip-in fit in bushing. Re-assemble and fasten with spring clip.

9. Adjust shifter stop bolts. Back both bolts out of shifter frame until only a few threads remain engaged. Push stick firmly into 3<sup>rd</sup> gear and hold. Screw 3<sup>rd</sup> gear stop bolt in until contact is felt. Back bolt out one turn and tighten lock nut. Pull stick firmly back into 4<sup>th</sup> gear, screw 4<sup>th</sup> gear stop bolt in until contact is made, then back stop bolt out one turn and tighten lock-nut



