



PART NO.  
#383 8505

# PRO/MATIC 2™

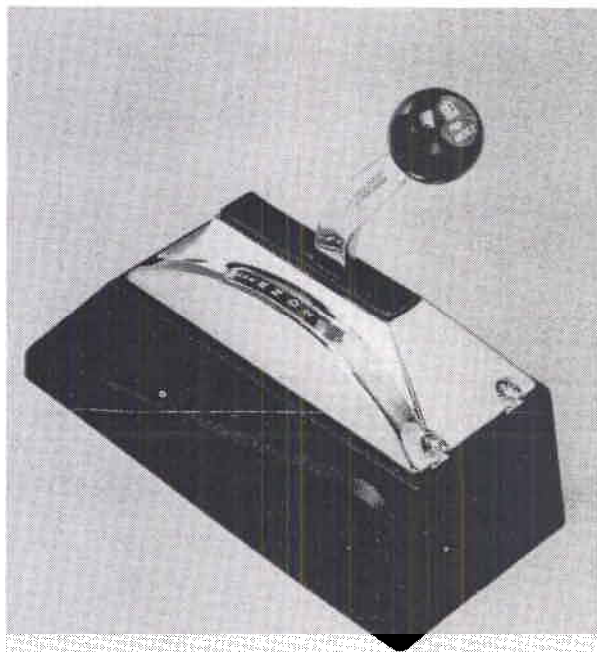
Ratchet Shifter

## FOR POWERGLIDE TRANSMISSIONS

Congratulations on your purchase of the . . . **PRO/MATIC 2™**.

The finest ratchet action shifter on the market today. Whether it be strictly street or all out racing, the **PRO/MATIC 2™** has what it takes. Consider these features:

- Full forward and reverse ratchet action, permits use with standard or reverse pattern valve bodies.
- A positive reverse lock-out, as required by NHRA rules.
- Included with **PRO/MATIC 2™** is a heavy-duty shifter cable, renown for its superb quality and used by the most respected racers.
- Engineered for years of precise, trouble-free shifting.
- The **PRO/MATIC 2™** is easy to install and is complete with all necessary parts and hardware for simple, hassle-free installation.



Before you begin installation of the **PRO/MATIC 2™** please take a few minutes to read this instruction booklet. It took a lot of time and effort to write and will make your installation of the **PRO/MATIC 2™** relatively easy. Please be sure to read these instructions thoroughly.

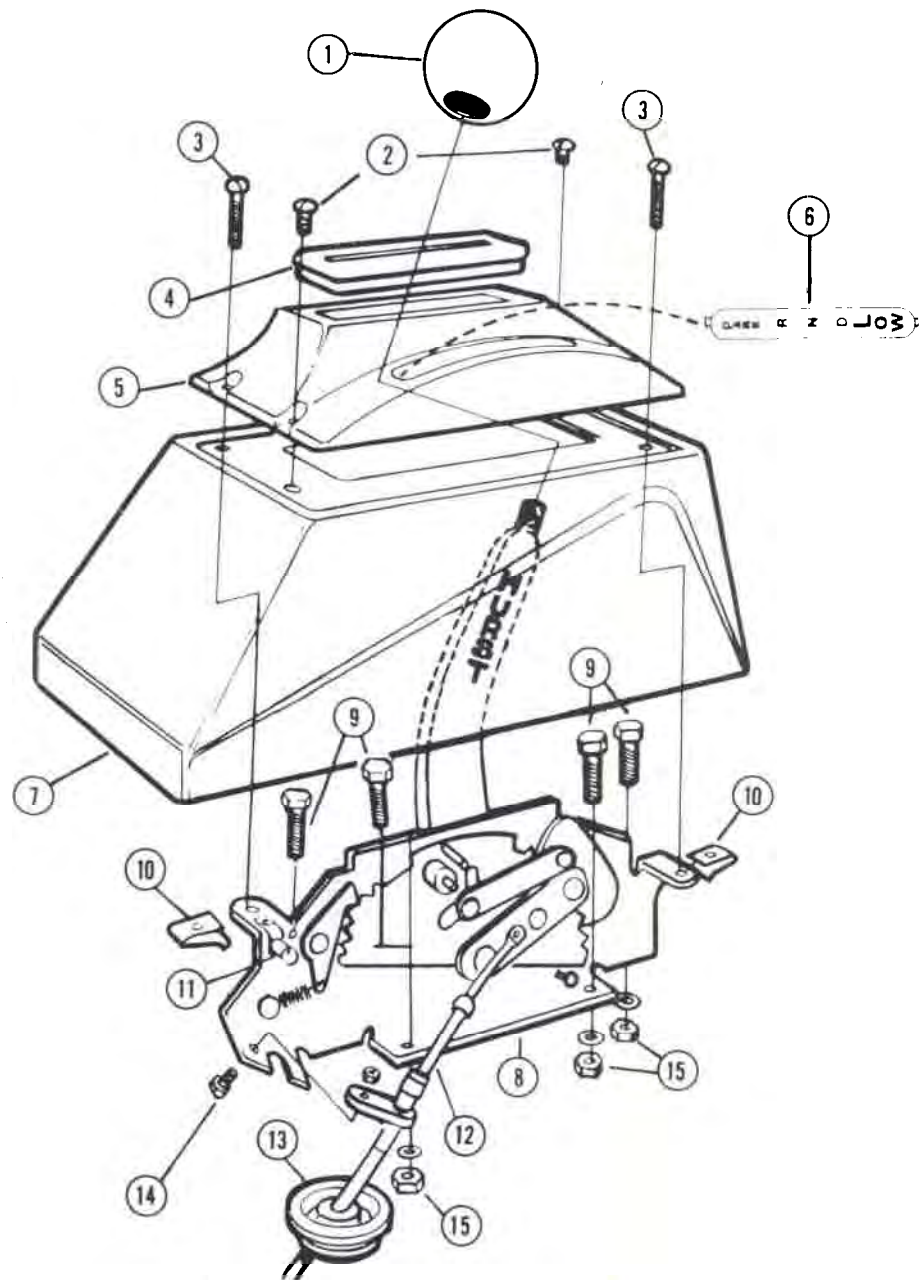
## PARTS LIST

|                                         | ORDER<br>NO. |
|-----------------------------------------|--------------|
| 1. Shifter Knob .....                   | 1630064      |
| 2. Self-Tapping Screw, #8 x 3/4 .....   | 97093105     |
| 3. Self-Tapping Screw, #8 x 1 3/4 ..... | 97093106     |
| 4. Rubber Boot .....                    | 1148550      |
| 5. Console Cover .....                  | 1958551      |
| 6. Indicator Lens .....                 | 2418553      |
| 7. Console .....                        | 1298554      |
| 8. Shifter Mechanism .....              | 3830500      |
| 9. Hex Bolt, 1/4" x 1" .....            | 97080969     |
| 10. Speed Nut .....                     | 97093081     |
| 11. Lamp Socket Assembly .....          | 1660004      |
| 12. Shifter Cable .....                 | 5008555      |
| 13. Grommet (Floorboard Cable) .....    | 97093109     |
| 14. Hex Bolt, 1/4" x 3/4" .....         | 97090029     |
| 15. Nut, 1/4" .....                     | 97000910     |
| 16. Flat Washer, 3/16" .....            | 97000905     |
| 17. Cotter Pin, 1/16" x 1" .....        | 97093086     |
| 18. Cable Pivot .....                   | 97X93089     |
| 19. Trans Arm and Shaft Assembly .....  | 1058566      |
| 20. Cable Bracket .....                 | 1178565      |
| 21. Light Bulb .....                    | 97093104     |
| 22. Plug 7/16" .....                    | 97094006     |

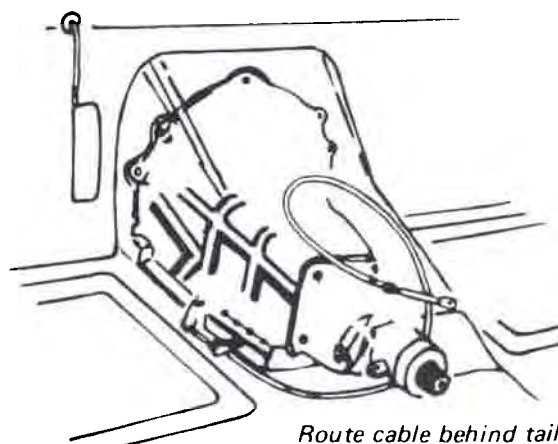
## TOOLS REQUIRED FOR INSTALLATION

|                                 |                               |
|---------------------------------|-------------------------------|
| 2 or 4 Jack Stands              | Pliers                        |
| Drill Motor                     | Phillips Screwdriver          |
| 1 1/2" Hole Saw                 | 1/4" 12 Pt. Socket—1/4" Drive |
| 9/32" Drill Bit                 | 3/16" Allen Socket            |
| Tape Rule                       | 3/8" Ratchet                  |
| Electrical Tape                 | 3/8" Universal                |
| Hammer                          | 3/8" Extension 10" Long       |
| File                            | 7/16" Socket—3/8" Drive       |
| Center Punch                    | 1/2" Socket—3/8" Drive        |
| Wire Strippers                  | 3/8" Wrench                   |
| Wire Crimping Tool              | 7/16" Wrench                  |
| 1/8" Drift Punch                | 1 1/16" Wrench                |
| 12-Volt Test Light or Voltmeter |                               |

**FIG. 1**



**FIG.2**



*Route cable behind tailshaft mount*

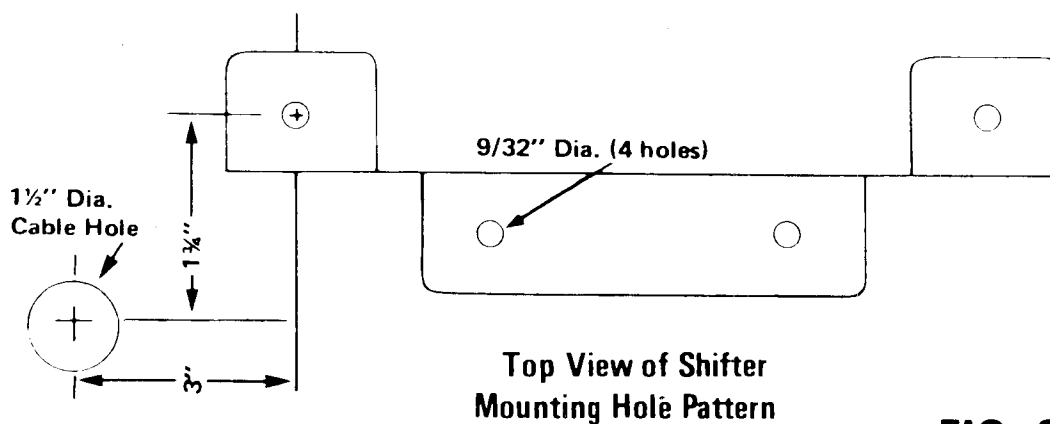
## SHIFTER INSTALLATION

The vehicle should be raised off the ground and firmly supported with jack stands or ramps before starting installation.

1. Place the column shift lever in the Park position. Remove the drive pin that holds the lever to the column, then remove this lever from the column. **For factory console shifters:** Remove shifting mechanism and any cables, cable bracket or rods that are attached to the shifter and/or transmission. **Note: Console modification or console removal may be necessary depending on the vehicle and space available.** Use a metal plate to cover the hole in the floor that was left from the factory floor shifter.

For vehicles equipped with a steering column lock: Place the column shift into the Park position and secure the shift lever linkage (which is located in the engine compartment or under the instrument panel) to a rigid frame member or support to prevent movement. This will allow the steering wheel to lock in the Park position as it should when the key is removed. **Caution: If this lever is secured too tight the ignition will be hard to operate.**

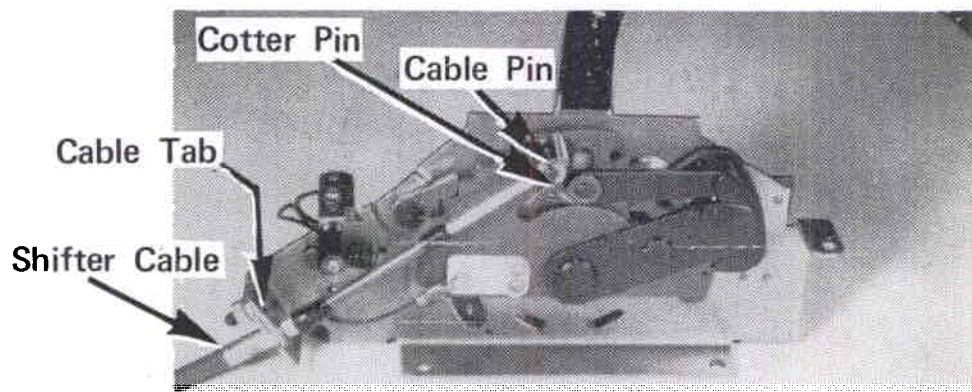
2. Remove the knob and console assembly from the shifter mechanism.
3. Determine a comfortable position for the shifter assembly on the centerline of the transmission tunnel allowing clearance for seat travel and shift lever travel between dashboard when shifting into Park position. Cut a small section of the carpet where the shifter mechanism will mount to the transmission tunnel. Make sure there are no wires under the carpet. After the carpet is cut, position shifter in desired location. Mark and drill four mounting holes using a  $\frac{9}{32}$ " drill bit.
4. If necessary, mark and cut a slit in the carpet to accommodate the shifter cable. Using a hole saw or other suitable tool, make a  $1\frac{1}{2}$ " diameter hole in the floor to accommodate the cable, 3" to the front of the forward mounting hole and  $1\frac{3}{4}$ " to the left of the forward mounting hole. For some vehicles the 3" dimension may have to be less (See Figure 3).



**FIG. 3**

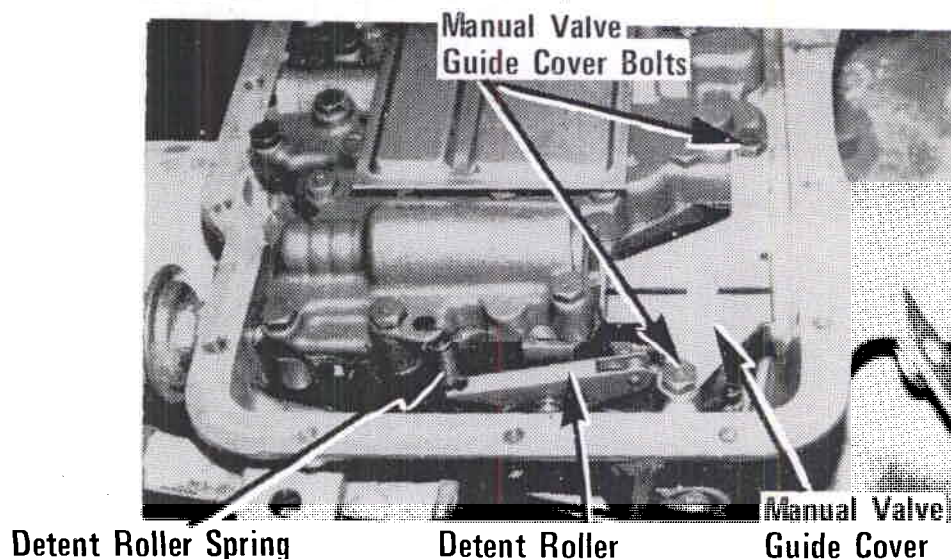
5. Install the rubber grommet # 13 (supplied) in the  $1\frac{1}{2}$ " cable hole located in the floor.

6. Install the shifter mechanism into the vehicle using the four 1/4" x 1" bolts, nuts and washers supplied.
7. Remove two rubber boots **A**, two nuts **B**, and two flat washers from the end of the shifter cable and set them aside. Tape the sections of the cable these rubber boots were covering so that dirt or grease will not build up on it which could cause the cable to scuff and bind. Route the cable so there are no sharp bends which would make the shifter hard to operate (See Figure 2). **Be sure that the cable clears all exhaust pipes by at least 1 1/2".** The end of the cable that has the tab attached to it must be installed into the slot to the inside of the shifter mechanism using a 1/4" x 3/4" bolt and nut supplied (See Figure 4). Slip the flattened end of the cable over the pin attached to the shifter and secure it with a flat washer and a cotter pin (See Figure 4).



**FIG. 4**

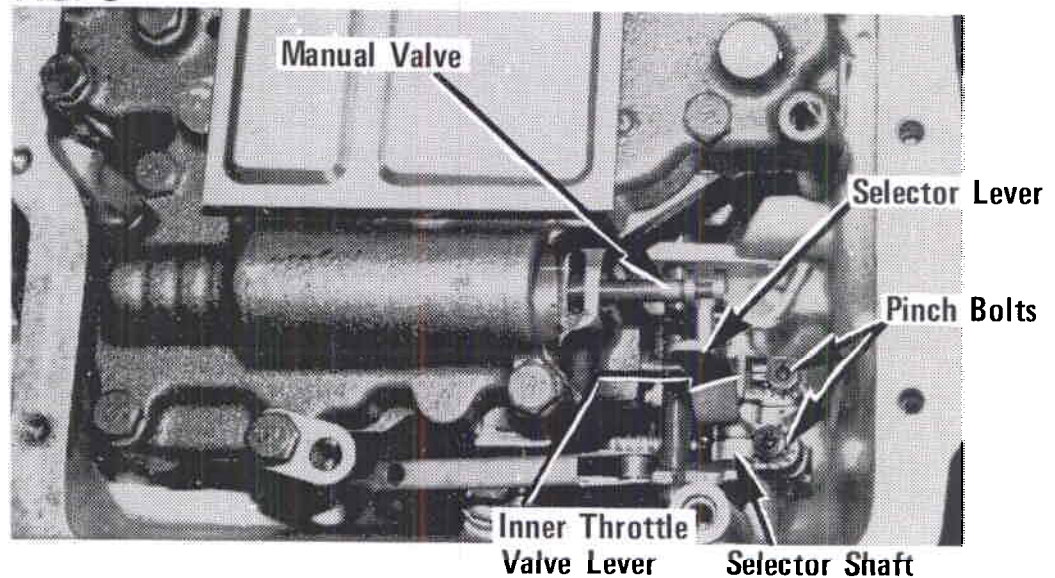
8. Remove throttle linkage rod ends which attach to the carburetor and to the arm on the transmission allowing it to hang free. Remove the factory shifter linkage. This linkage will not be used with your **PRO/MATIC 2™**
9. Using a drain pan, drain the oil from transmission. **Caution: The transmission oil should be cool before draining. If your oil pan doesn't have a drain plug, remove all oil pan bolts except the two at the front corners.** Loosen the last two bolts but do not remove at this point. Let the oil pan tilt down so the oil will drain from the pan. It may be necessary to pry the oil pan loose with a screwdriver. Remove the last two bolts and the oil pan and set them aside.



**FIG. 5**

10. Remove the two manual valve guide plate bolts and plate (See Figure 5). Remove the detent roller spring by unhooking it from the detent roller and the tap attached to the housing (See Figure 5).
11. Loosen the pinch bolt on the inner throttle valve lever with either a  $\frac{1}{4}$ " 12 pt. socket or a  $\frac{3}{16}$ " allen socket (See Figure 6). **Do not remove pinch bolt.** Pry this lever at the opening and slide outer throttle shaft from the transmission. Set the inner throttle shaft from the transmission. Set the inner throttle valve lever aside. Make sure O-ring seal remains on the shaft.
12. Loosen the pinch bolt on the selector lever with either a  $\frac{1}{4}$ " 12 pt. socket or a  $\frac{3}{16}$ " allen socket (See Figure 6). Do not remove pinch bolt. Pry this lever at the opening and slide the selector shaft from the transmission. This selector shaft will not be used again.

**FIG. 6**



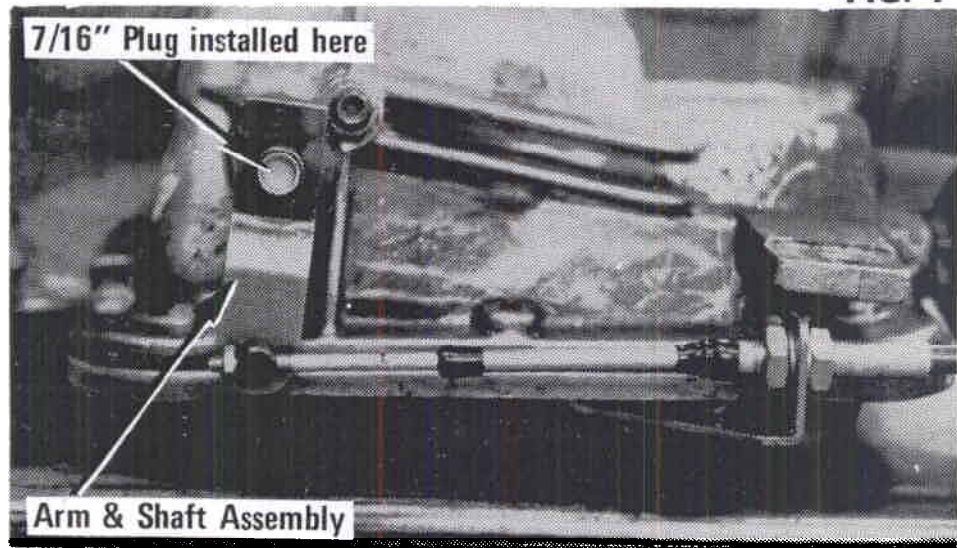
13. **FOR RACING APPLICATIONS:** The outer throttle shaft can be omitted. The  $\frac{7}{16}$ " plug (supplied) must be pressed into the outer end of the transmission arm and shaft assembly to prevent any oil leakage (See Figure 7). Use a gasket sealer on the plug before installing it. Slide the HURST selector shaft into the transmission with the lever pointing down. Make sure the factory selector lever is engaged into the manual valve (See Figure 6). Rotate the HURST selector shaft until the flat on the shaft aligns with the serrations on the lever then slide the shaft through the lever until the lever stops on the shoulder of the shaft. Tighten pinch bolt.

#### 14. THROTTLE SHAFT INSTALLATION:

**FOR AUTOMATIC VALVE BODIES:** Vehicles with automatic valve bodies must use throttle linkage for proper transmission operation. Re-indexing of the other throttle shaft is necessary to clear the HURST selector lever. Use a belt sander or grinder to make a flat approximately  $\frac{1}{4}$ " wide that will extend through the first spline on the throttle shaft (See Figure 8). Make sure this shaft slides easily into the throttle valve lever. Before installing throttle shaft make sure O-ring is on the shaft then slide the shaft into the transmission part way. Hold inner throttle lever in position in transmission, and with the throttle shaft at the maximum clockwise position, slide the shaft thru the serrations in the lever. Tighten pinch bolt.

**FOR MANUAL VALVE BODIES:** Transmissions with manual valve bodies can operate without the throttle valve linkage. To prevent oil from leaking out the  $\frac{7}{16}$ " plug (supplied in kit) must be pressed into the trans arm assembly from the outer end (See Figure 7).

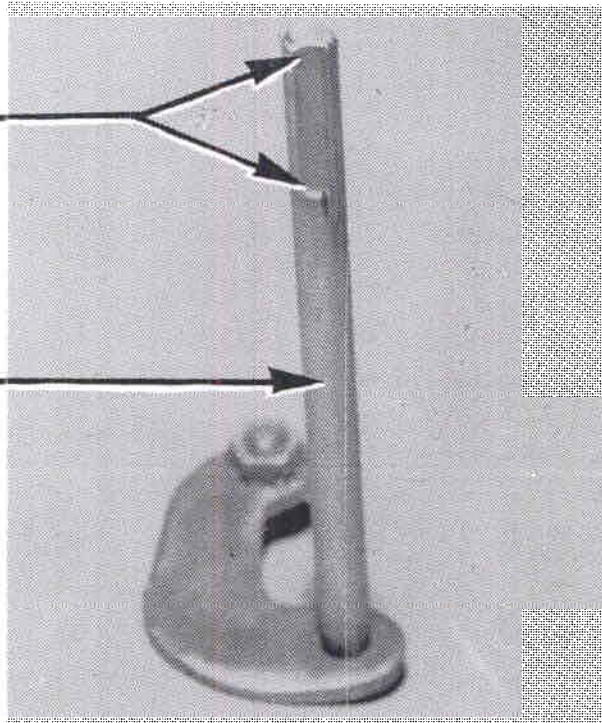
FIG. 7



15. Make sure the pin on the selector lever is located in the groove on the manual valve then install the manual valve guide plate in place (See Figure 5). Tighten the two bolts to 15 ft. lbs. Install the detent roller spring by hooking it to the roller assembly and tab bolted to the valve body (See Figure 5). Check the assembly by moving the selector lever to each detent position forward and backward. The selector lever should engage each position firmly. The throttle lever should rotate easily with a spring type action. **Note: If there are any binds in the throttle lever the inner throttle lever may have to be moved away from the inner selector lever to eliminate binding. Loosen the pinch bolt, move lever and retighten pinch bolt. The throttle linkage rod may have to be adjusted so the transmission will shift properly.**

Grind a  
flat on  
this surface

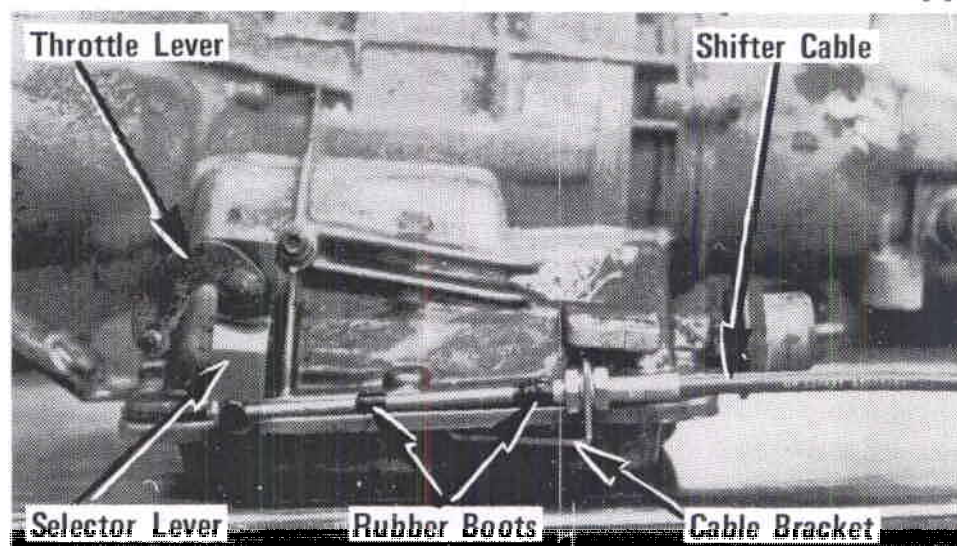
Throttle  
Shaft



**FIG. 8**

16. Prepare oil pan and case by scraping off the old gasket. Install the oil pan with new gasket supplied in kit. Install all oil pan bolts except for the two center bolts on the left side. Tighten bolts to 8 ft. lbs. Be careful not to over-tighten as oil pan can distort causing gasket damage.
17. Using the two  $\frac{5}{16}$ -18 x  $\frac{3}{4}$  bolts supplied, install cable bracket (See Figure 9).

**FIG. 9**



18. Remove the tape from the cable and install one nut and flat washer B on the shifter cable. Route the shifter cable through the bracket and reinstall the other flat washer, nut B, and two rubber boots A (See Figure 2 and 9). **Important: Use tie straps or clamps to secure the cable away from the exhaust pipes and engine.**
  19. The trans arm must be moved to the far rear position and the shifter must be moved to the first gear position (See Figure 11). Adjust the pivot #18 on the end of the cable until it falls freely into the hole in the trans arm. Attach the cotter pin. **It may be necessary to make a fine adjustment of the pivot before the shifter will engage all gears properly.**
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## **CONNECTION OF NEUTRAL SAFETY AND BACK-UP LIGHT SWITCHES AND WIRING**

20. The **PRO/MATIC 2™** shifter has an integrated electrical switch which replaces the original equipment neutral safety switch and back-up light switch on some installations. Use No. 18 AWG or larger stranded wire when splicing into the shifter.
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## **NEUTRAL/PARK START SWITCH WIRING CONNECTION**

The following paragraphs describe the procedure to locate the neutral safety switch and back-up light switch on most vehicles and how to identify the wires needed to connect to the **PRO/MATIC 2™** shifter. These instructions must be carefully read and understood prior to proceeding to page 10.

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## **TEST OPERATION OF SHIFTER**

With the shifter in the PARK position and your foot holding the brakes, start the engine. Turn the engine off and test for starter operation in every position of the shifting pattern. The starter must operate in the PARK and NEUTRAL positions ONLY. If the starter operates in any other position, re-check step #20 to be sure the wire connections are correct.

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## **CONSOLE INSTALLATION**

21. Install the indicator insert into the console cover (See Figure 1). The indicator insert supplied with the shifter is designed for a standard shift pattern automatic valve body.

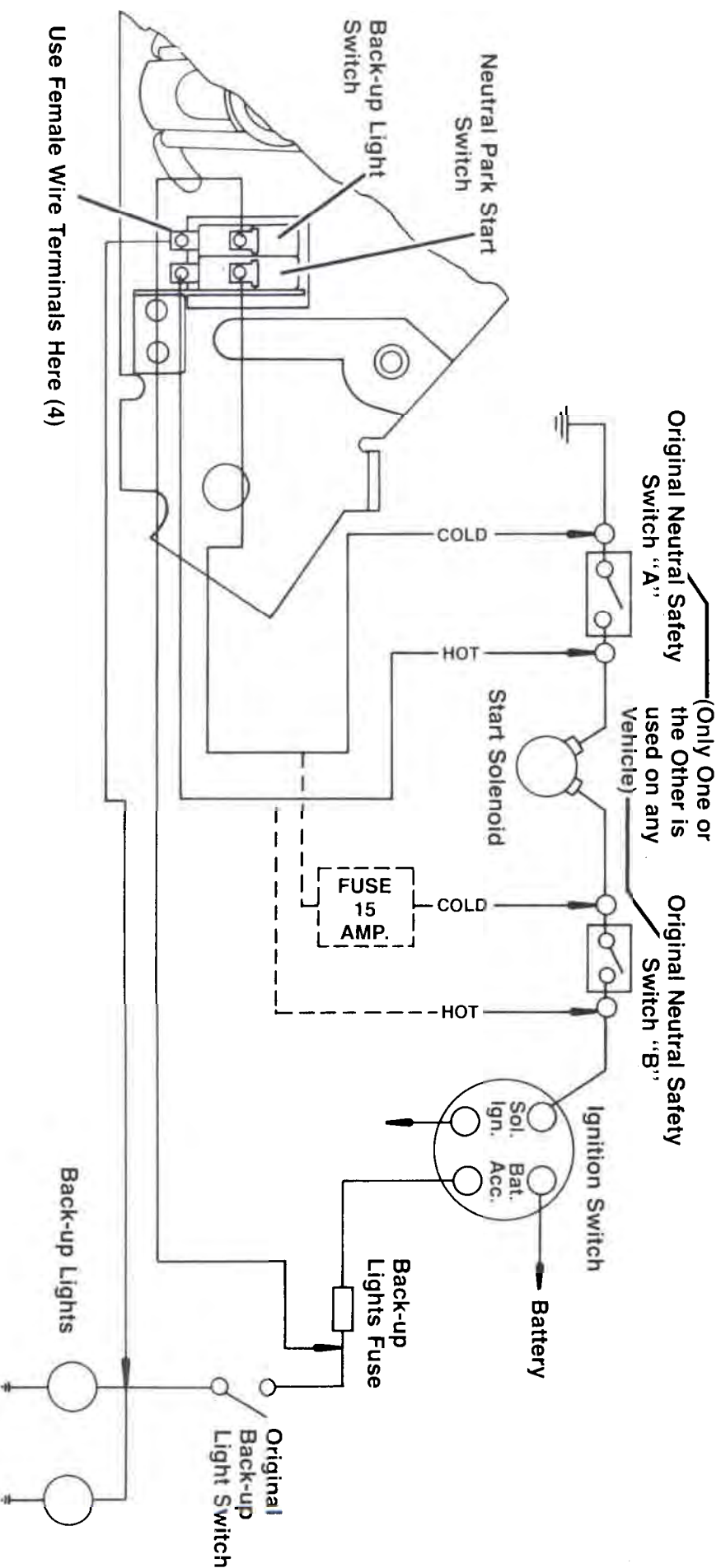
**FIG. 11**

**PRO-MATIC 2 NEUTRAL/PARK START SAFETY SWITCH AND BACK-UP LIGHT SWITCH WIRING INSTALLATION**

Original neutral safety switch wiring diagram shown in most vehicles.

Refer to this diagram when wiring and connecting Hurst neutral/park start safety switch and back-up light switch.

**ORIGINAL NEUTRAL SAFETY SWITCH**



22. The bottom of the console must be trimmed to match the contour of the floor. The inside of the console top flange must rest on the two mounting ears of the shifter mechanism (See Figure 12). Place the console over the shifter mechanism and hold it level with the shifter. Measure the distance A (See Figure 12) from the underside of the console to the console mounting surface on the shifter mechanism. Using a pair of dividers set to the dimension of distance A, touch one end of the dividers to the console and the other to the floor. Scribe a line on the console to match the floor contour by keeping the dividers perpendicular to the floor, dragging the dividers along the floor and against the console. Using a utility knife, score a firm cut over the line, just scribed in the console. With a pair of pliers, placed near the scored line, bend the excess material back and forth until it breaks away. Remove any burrs or rough edges with the utility knife. To prevent any unnecessary cracking, it is recommended that the console #7 be at room temperature before breaking the excess material away.
23. Install the console and console cover in position over the shifter mechanism and secure them with two #8 x 1 $\frac{3}{4}$  and two #8 x  $\frac{3}{4}$  self tapping screws. Slip the rubber boot over the handle and work it into the console cover. Reinstall shifter knob.

## SHIFTER OPERATION

### STRAIGHT GATE MODE:

The upper position of the shifter operates the straight gate mode of Park, Reverse, and Neutral. The handle moves straight backward from Park to Neutral but must be lifted to clear the safety stop between Park and Reverse. Once in Reverse the handle drops and the shifter is ready for a straight pull back to Neutral. When Neutral is engaged the handle will drop again and will be engaged in the ratchet mode.

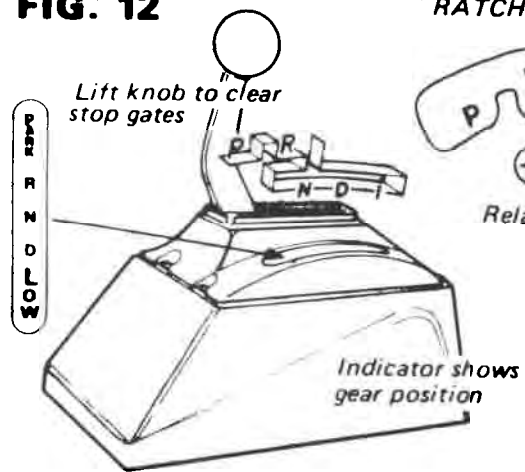
### RATCHET SHIFT MODE:

**For automatic valve body transmission,  
the shift pattern is as follows:**

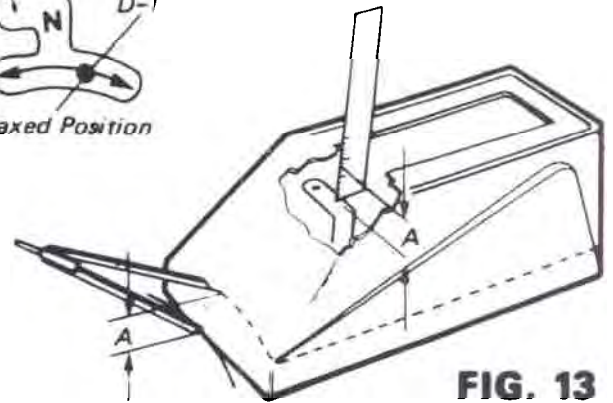
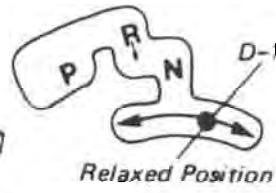
Start from the Neutral position and engage Drive by pulling the handle straight back until it stops. Release the handle and the shifter will return to a relaxed position. From this position, 1st gear can be engaged by another pull back until it stops. To upshift, push the handle forward until it stops and release. This procedure must be followed for each gear. **For full manual valve body transmissions, the shift pattern is usually reversed.**

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**FIG. 12**



**RATCHET MODE**



**FIG. 13**