



**PART NO.
#383 8520**

V-MATIC 2™

Automatic Transmission Shifter

APPLICATIONS: For 3-Speed Automatic Transmissions

General Motors	Buick, Chevy, Olds, and Pontiac using Turbo 250, 350, and 400
Ford-Mercury	All models using C-4, and C-6
Mopar	All models using A-904 and A-727 Torqueflites (except for pushbutton models)
AMC	All models using A-904 and A-727 Torque Command

Congratulations on your purchase of the . . . **V-MATIC 2™** . . . the ultimate shifter.

The finest dual action shifter on the market today, with the look of a 4-speed.

V-MATIC 2™ operates as a stock unit, or when you need precise transmission control push down into neutral and pull back to enter the ratched mode, for a true racing shifter.

Consider these features:

- Top choice for street or strip.
- Brushed aluminum Hurst "T" Handle.
- Neutral safety/back-up switch assembly.
- Progressively illuminated gear indicator.
- Race proven shifter cable.
- Trigger operated reverse lock-out built for racing.
- All necessary installation hardware is included with every **V-MATIC 2™**.

Before you begin installation of the **V-MATIC 2™** please take a few minutes to read this instruction booklet . . . it will make your installation of the **V-MATIC 2™** much easier.

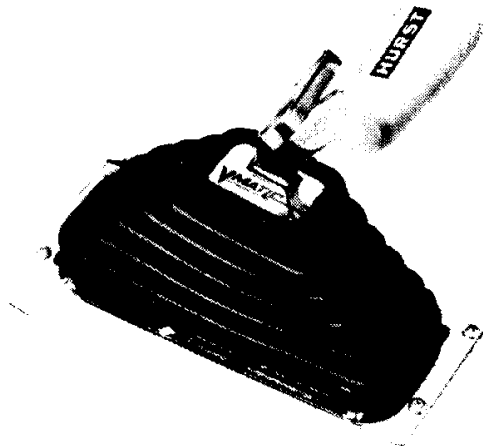
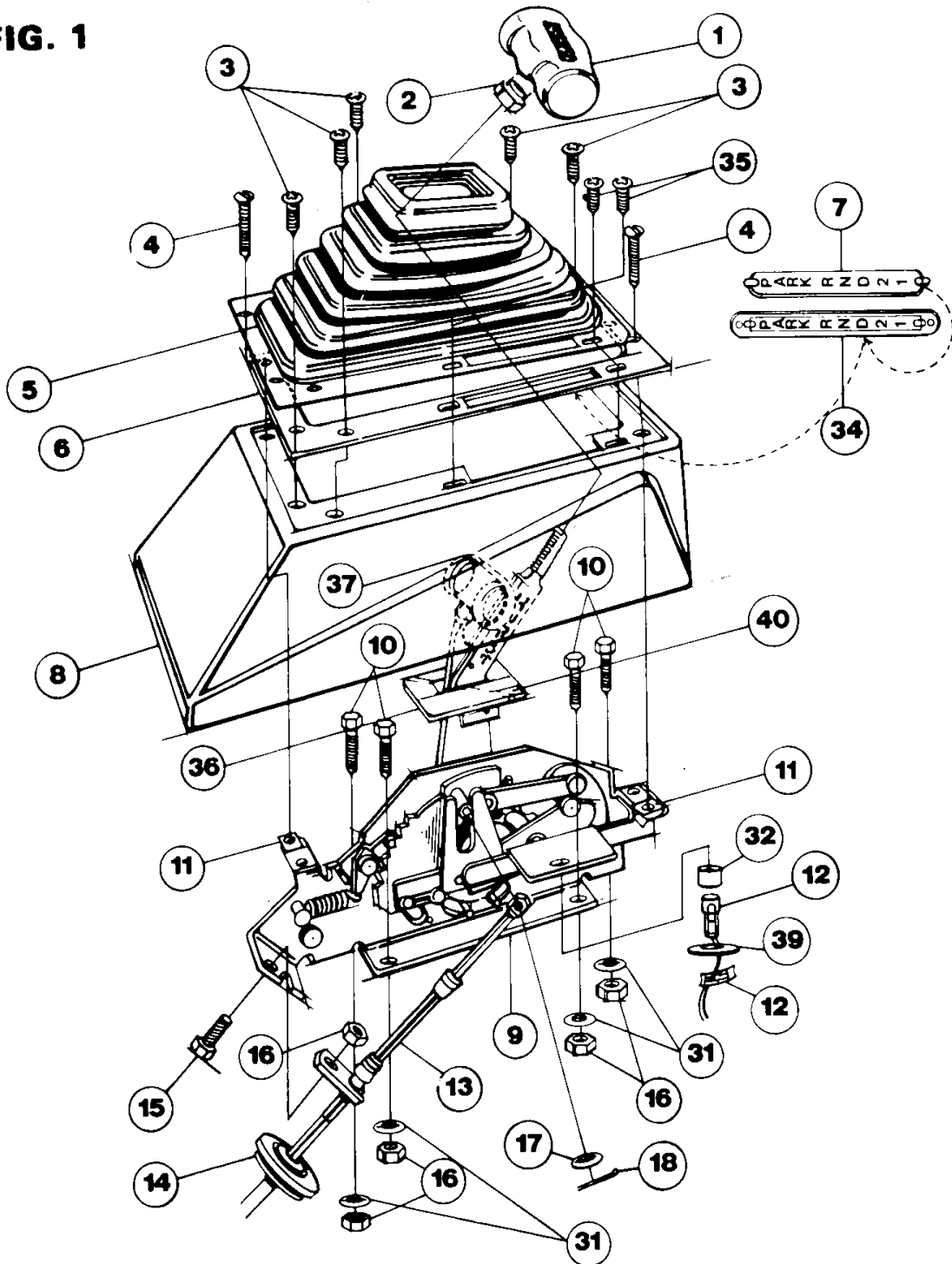
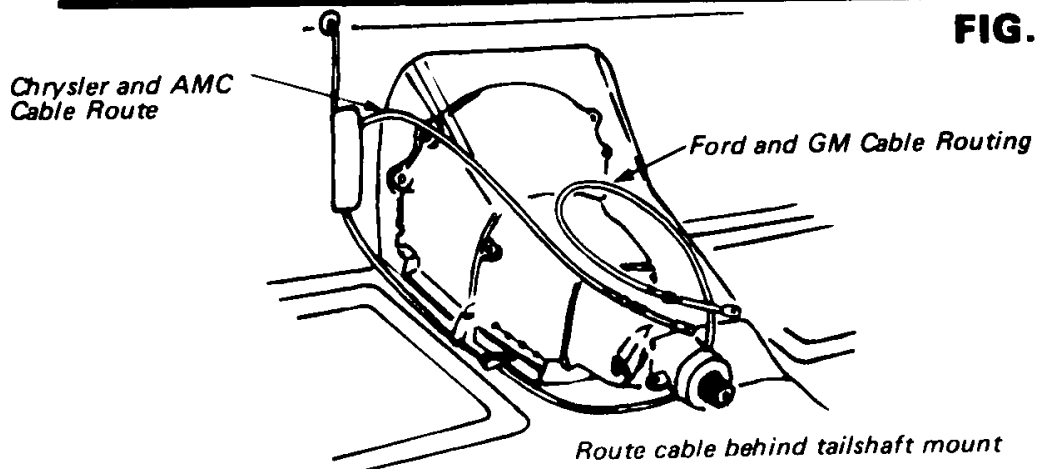


FIG. 1



365-6520 M6635

FIG. 2



*Chrysler and AMC
Cable Route*

Ford and GM Cable Routing

Route cable behind tailshaft mount

PARTS LIST

ORDER NO.

1. T-Handle	1634810
2. Jam Nut	1754719
3. Self-Tapping Screw, #8 x 3/4	87083108
4. Self-Tapping Screw, #8 x 1-3/4	87083109
5. Rubber Boot	1148872
6. Chrome Retainer Plate	1898874
7. Indicator Lens	2418870
8. Console	1288884
9. Shifter Mechanism	2828880
10. Hex Bolt, 1/4" x 1"	87083088
11. Speed Nut	87083081
12. Indicator Light	87083223
13. Shifter Cable	8208389
14. Grommet (Floorboard Cable)	87083108
15. Hex Bolt, 1/4" x 3/4"	87083088
16. Nut 1/4"	87083081
17. Flat Washer, 3/16"	87083088
18. Cotter Pin, 1/16" x 1"	87083088
19. Cable Fivel	87083088
20. Cable Bracket, C-8	1178867
21. Cable Bracket, C-4	1178868
22. Trans Arm, Ford	1088888
23. Hex Bolt, 1/4" x 1-1/2"	87083013
24. Cable Bracket, TH-400	1178880
25. Trans Arm, GM	1088881
26. Cable Bracket, TH-350 and 350	1178882
27. Cable Bracket, Torqueflite	1178883
28. Trans Arm, Torqueflite	1088884
29. Spacers, Cable Bracket	87083082
30. Bolt, 5/16" x 3/4"	87083010
31. Flat Washer, 1/4"	87083010
32. Lens Broom	87083049
33. Floor Cover Plate	87083080
34. Lens Clamp	87083218
35. 10-32 x 3/8" Machine Screw	87083036
36. Boot Plate	87083004
37. Trigger	3878878
38. Reverse Pattern Indicator Lens	2418888
39. Flatwasher 1/4"	87083028
40. V-MATIC Decal	87083234

TOOLS REQUIRED FOR INSTALLATION

2 or 4 Jack Stands	Tape Rule	Wire Crimping Tool
Drill Motor	Electrical Tape	1/8" Drift Punch
1-1/2" Hole Saw	Files	12-Volt Test Light or Voltmeter
5/32" Drill Bit	Phillips Screwdriver	3/8" End Wrench
Tin Snips	3/8" Ratchet	7/16" End Wrench
Hacksaw (Ford only)	3/8" Universal	11/16" End Wrench
Hammer	3/8" Extension 10" Long	Scissors
File	7/16" Socket—3/8" Drive	Utility Knife
Center Punch	1/2" Socket—3/8" Drive	
Wire Strippers	9/16" Socket—3/8" Drive	

SHIFTER INSTALLATION

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

1. If car has a factory column shift, place it 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 of 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. 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 9/32" drill bit.
3. 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 1½" diameter hole in the floor to accommodate the cable, 3" to the front and 1¾" to the left of the forward mounting hole. For some vehicles the 3" dimension may have to be less, depending on floor tunnel configuration (See Fig. 3).

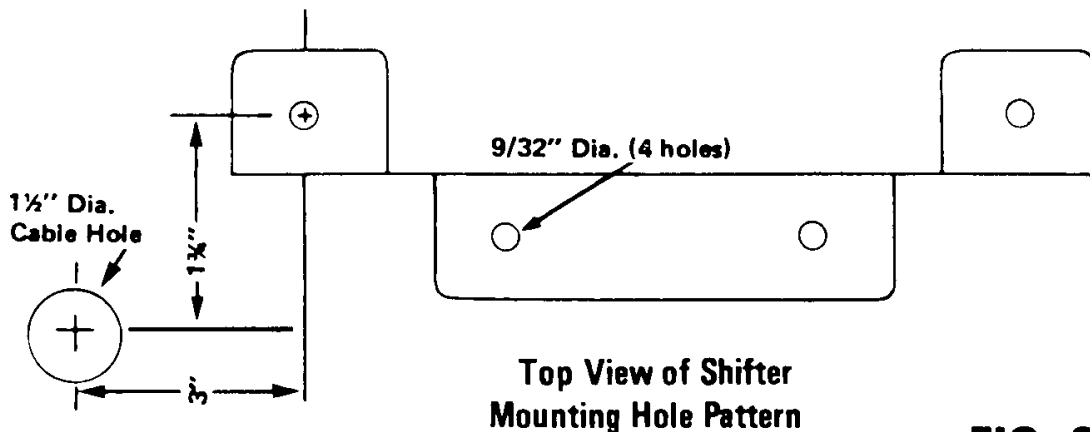
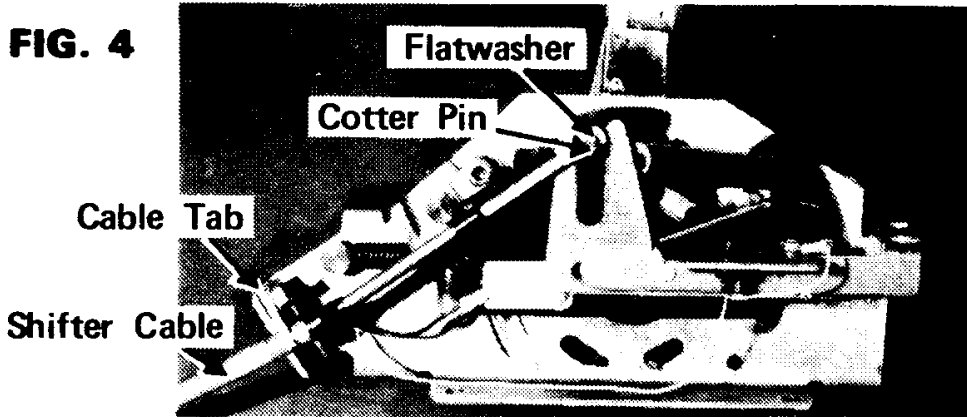


FIG. 3

4. Install the rubber grommet #14 (supplied) in the 1½" cable hole.
5. Install the shifter mechanism into the vehicle using the four ¼" x 1" bolts, nuts, and washers supplied.

6. 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 that these rubber boots were covering so that dirt or grease will not build up on them 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 1½"**. 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 ¼" x ¾" 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).



383-8520 MG636

GENERAL MOTORS

Turbo 250, 350, & 400

7. Replace the factory trans arm with the Hurst trans arm #25. This arm should be installed pointing down so that it has an equal amount of travel from the center in both directions (See Figure 6). **In certain cases, the back drive system may be retained, depending on the factory trans arm configuration. One side of the factory trans arm must have a flat, unobstructed surface. Disconnect the back-drive linkage and remove the trans arm from the transmission. Carefully position the HURST trans arm #25 on top of or behind the factory trans arm as illustrated. The alignment of the slots of both arms is very important. With the slots aligned, clamp the arms together and weld as shown (See Figure 5). Allow the arms to cool, then install the welded arm unit on the transmission and reinstall the back drive linkage.**

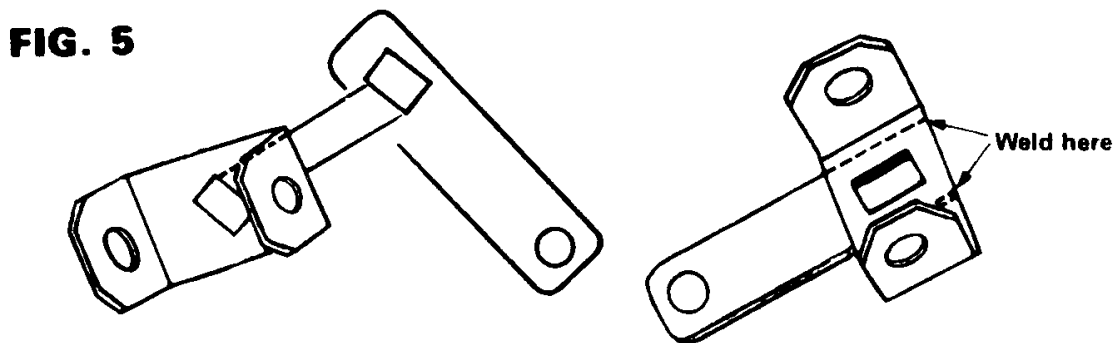
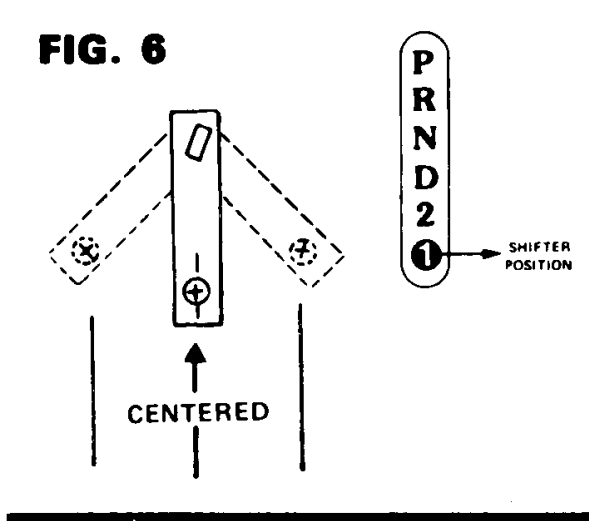
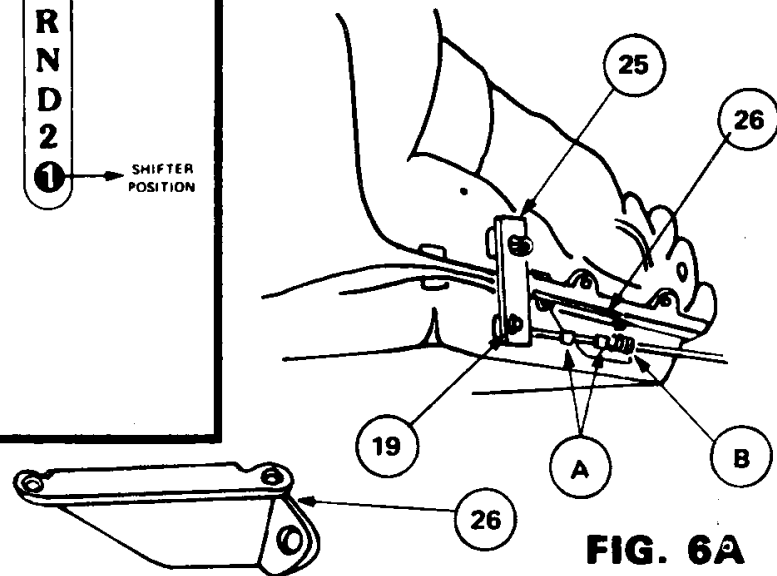
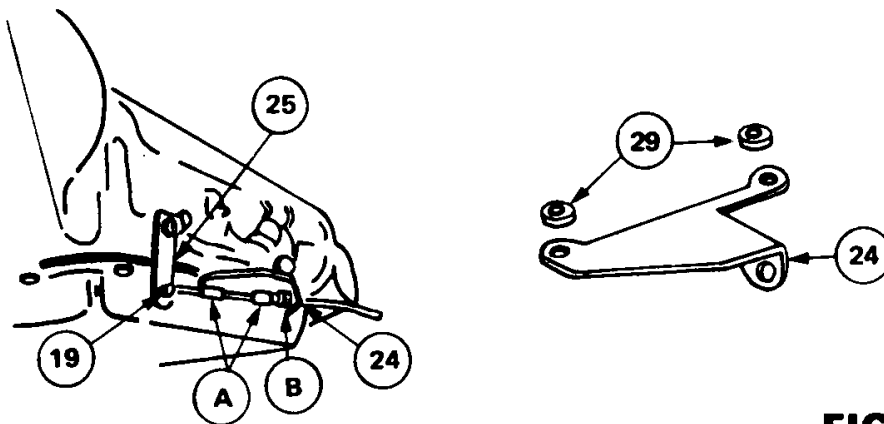


FIG. 6**250 & 350****FIG. 6A**

8. Remove the two center oil pan bolts from the left side of the transmission and install a cable bracket #24 or #26 (See Figure 6A or 6B). The bracket for the TH-400 must be used with two spacers #29 between the bracket and oil pan (See Figure 6B). In some cases it may be necessary to use the two spacers for the TH-350 for better positioning of the cable bracket. If the transmission has a cast aluminum oil pan the spacers may not be necessary. Use the two 5/16" x 3/4" bolts supplied to secure the bracket to the pan. Do not overtighten.

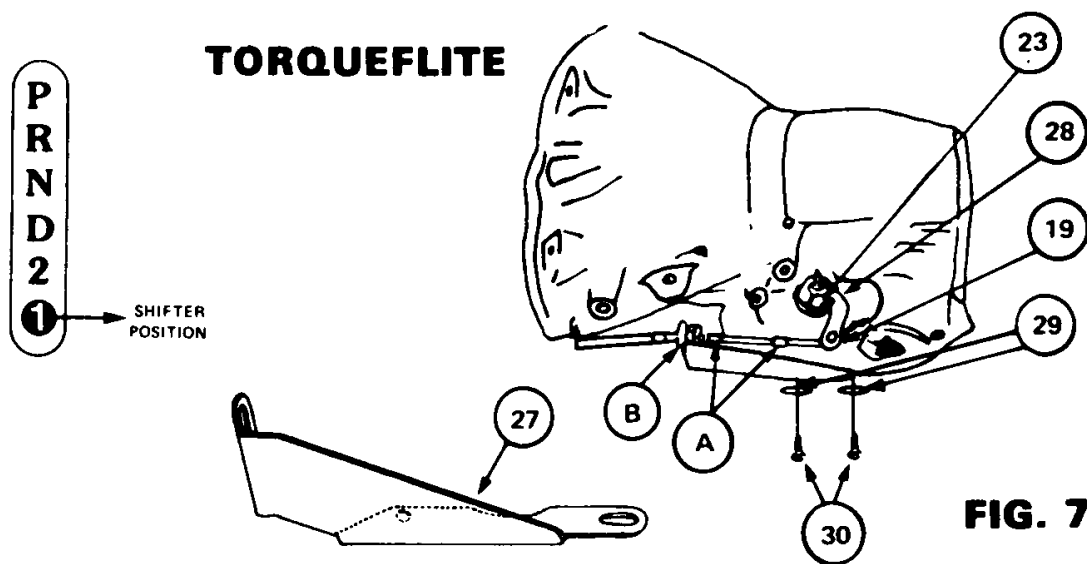
400**FIG. 6B**

9. Remove the tape from the cable and reinstall 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** 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, 6A, or 6B). **IMPORTANT: Use tie straps or clamps to secure the cable away from the exhaust pipes and engine.**
10. The trans arm must be moved to the far rear position and the shifter must be moved to the first gear position (See Figure 6). Adjust the pivot #19 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.** If the pivot interferes with the oil pan when it is moving forward, this indicates the trans arm is on backwards. Return to Step 8 and repeat the procedure.

Torqueflite A-904 & A-727

11. Remove the throttle lever from the transmission by removing the bolt and nut; pry it off the shaft with a screwdriver. This lever is located just above the trans arm. Remove the factory trans arm and linkage which will not be reused. Install the Hurst trans arm #28 using the 1/4" x 1 1/2" bolt and nut #23 supplied in the kit. Reinstall the throttle lever and linkage on the small diameter shaft. Check the throttle lever to be sure it operates freely.
12. The two oil pan bolts #30 directly below the shift lever must be removed. Install cable bracket #27 along with the two spacers #29 between the bracket and pan using two 5/16" x 3/4" bolts supplied. If the transmission has a cast aluminum oil pan, the spacers may not be needed.
13. Remove the tape from the cable and reinstall 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 Figures 2 and 7) It may be necessary to slightly bend the transmission oil lines to attain clearance for the cable.

IMPORTANT: Use tie straps or clamps to secure the cable away from exhaust pipes and engine.

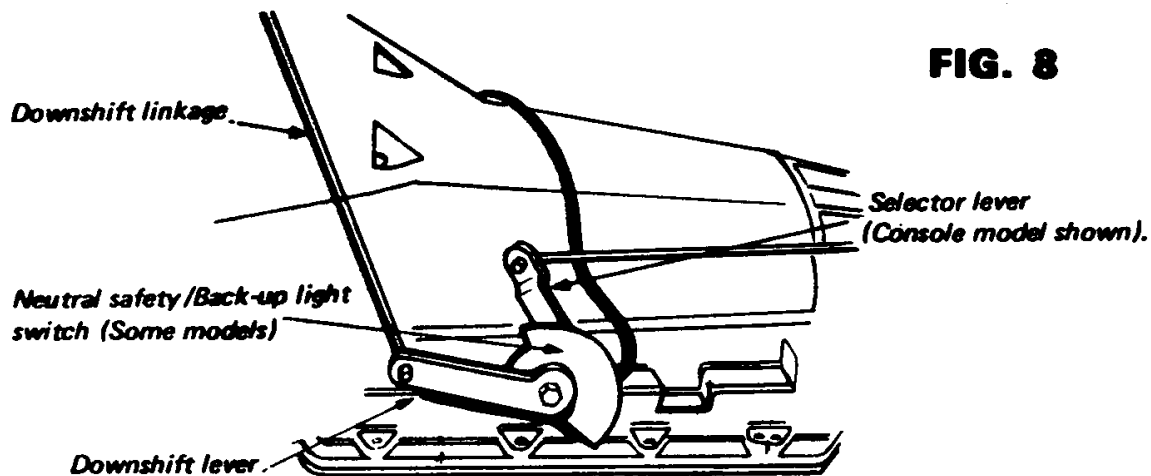


14. The trans arm must be moved to the full forward position (first gear) and the shifter must be moved to first gear position (See Figure 7). Adjust the pivot #19 on the end of the cable until it falls freely into the hole in the trans arm. Attach the cotter pin. **IT MAY BE NECESSARY TO MAKE A FINE ADJUSTMENT OF THE PIVOT BEFORE THE SHIFTER WILL ENGAGE ALL GEAR PROPERLY.**

FORD C4 and C6

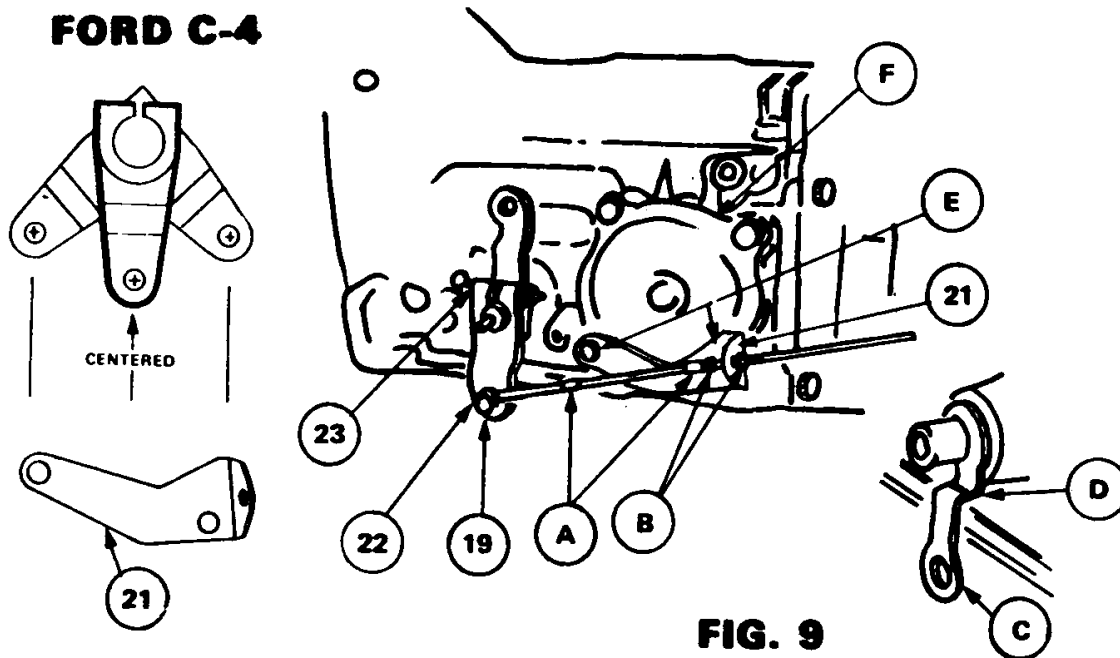
15. Remove the lever and the linkage that is connected to the downshift lever shaft. Factory shift linkage rods should be disconnected and discarded. The factory neutral safety and back-up light switch that are found on some transmissions should be disconnected and discarded (See Figure 8).

16. The Hurst trans arm #22 must be installed pointing downward. If the factory trans arm C points downward, you must cut off the lower part of the arm at the bend D, to clear the Hurst trans arm (See Figure 9). The Hurst trans arm must be installed so there is an equal amount of travel from center in both directions (See Figure 9). Use the 1/4" x 1/2" bolt and nut #23 to secure it in place. Make sure O-ring on the downshift shaft is in position before installing the downshift lever on the shaft. The downshift lever must move freely (See Figure 8).



17. **C-4:** The two lower bolts E on the rear servo cover F, must be removed to install the cable bracket #21 on the transmission. Install the cable bracket with these same two bolts and tighten (See Figure 9).

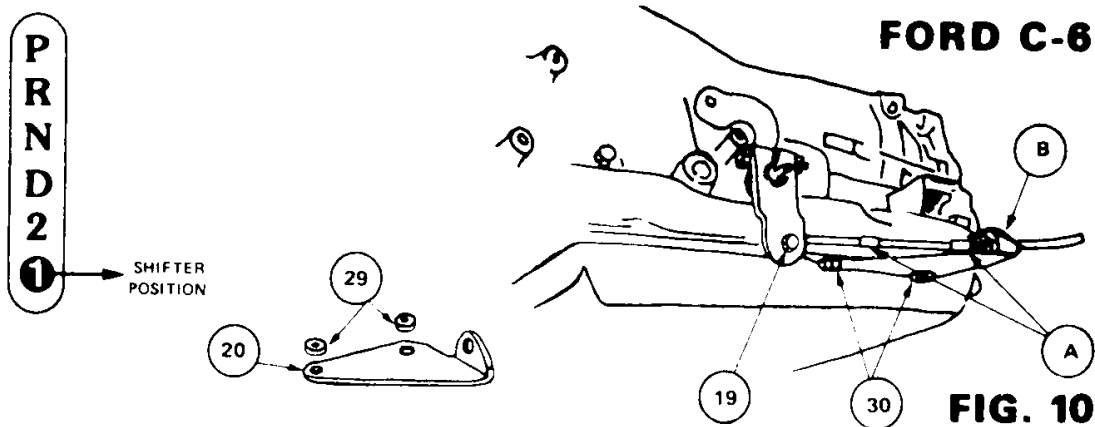
- C-6:** The two oil pan bolts #30 at the left rear corner must be removed to install the cable bracket #20 and two spacers #29. They are installed between the bracket and the pan using the 5/16" x 3/4" bolts supplied (See Figure 10). If the transmission has a cast aluminum oil pan the spacers may not be necessary.



18. Remove the tape from the cable and reinstall one nut and flat washer **B** on the shifter cable. Route the cable through the bracket and reinstall the other flat washer, nut **B**, and two rubber boots **A** (See Figures 2 and 10).

IMPORTANT: Use tie straps or clamps to secure the cable away from exhaust pipes and engine.

19. The trans arm must be moved to the full rear position and the shifter must be moved to the first gear position (See Figure 10). Adjust the pivot **#19** 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.**



CONNECTION OF NEUTRAL SAFETY AND BACK-UP LIGHT SWITCHES AND WIRING

20. The **V-MATIC 2™** shifter has an integrated electrical switch which replaces the original equipment neutral safety switch and back-up light switch on some installations.

GENERAL DESCRIPTION

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 **V-MATIC 2™** Shifter. These instructions must be carefully read and understood prior to proceeding to page 10 for the installation instructions for specific vehicles.

MOPAR & AMC APPLICATIONS

1966 - 1968

The original equipment neutral safety switch is located on the transmission and no changes are needed.

To connect the back-up lights, locate the supply side of the back-up light fuse, (which goes to the original back-up light switch on the steering column) and connect the red wire from the **V-MATIC 2™** Shifter to this terminal. Connect the black wire from the **V-MATIC 2™** Shifter to the back-up light lead wire (connected to the lamp side of the original back-up switch). Insulate the splices and unused wires with electrical tape.

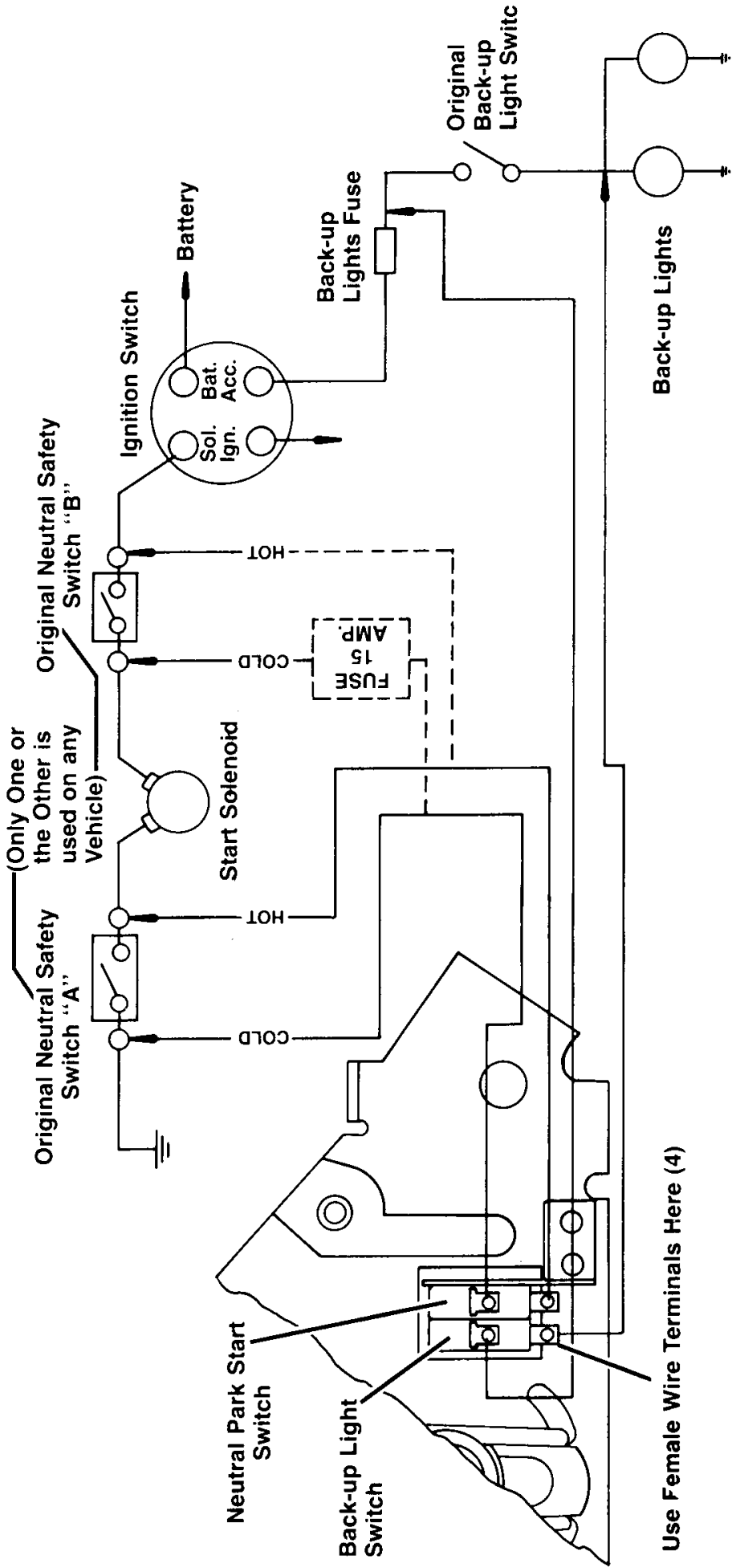
FIG. 11

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



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 connectors are correct.

CONSOLE OPERATION

21. Install the indicator lens into the chrome boot retainer plate from the bottom side, use lens plate **#34** and screws **#35**(See Figure 1.) The indicator lens supplied with the shifter is designed for a standard shift pattern automatic valve body. Slip two speed nuts **#11** on the shifter mechanism as shown (See Figure 1.)
22. The bottom of the console **#8** 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 13). Place the console over the shifter mechanism and hold it level with the shifter. Measure the distance A (See Figure 13.) from the underside of the console to the console mounting surface on the shifter mechanism. Using a pair of dividers set to $\frac{1}{4}$ " less than the dimension 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, carefully 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 the console be at room temperature before breaking the excess material away.
23. Install the console **#8** over the shifter mechanism. Check the fit at the floor and speed nut mounts. If any more trimming is necessary, do it at this time. Console should fit snugly against floor and shifter mounting tabs.
24. Before installing the rubber boot, the bottom flange must be trimmed. To do this place chrome Boot retainer plate over rubber boot on a workbench or flat surface. Align plate holes with boot holes and mark boot with a pencil along both sides. Trim rubber boot flange on pencil lines with a razor blade or scissors.
25. With the T-Handle removed, install the rubber boot. Carefully stretch it over the trigger and onto the boot plate **#36**
26. Place boot retainer plate over boot and align the holes with the boot and the console.
27. Install two screws **#4** through boot retainer plate, rubber boot and console. Snug them down but do not install the remaining screws until gear indicator light position is checked.
28. Thread jam nut **#2** and T-Handle **#1** onto shifter lever. Shifter can now be checked for proper operation. After shifter is operational, **remove 2 screws #4**. Indicator lens can now be positioned for proper gear engagement over indicator light and tightened in place, secure 2 screws **#4** through plate. The remaining 5 screws **#3** can be attached securely.

SHIFTER OPERATION

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 the trigger must be lifted to clear the safety stop between Park and Reverse. Once in Reverse the handle must be pushed down, then the shifter is ready for a straight pull back to Neutral.

After Neutral is engaged, you have the choice of either pulling straight back to D, 2, or 1 positions or instead pushing straight down on the T-Handle then back into the ratchet mode of D, 2, or 1. In this ratchet mode, the first pull back will be Drive position. Release the T-Handle and the shifter will return to a relaxed position. Another pull back will engage 2nd gear. Release and another pull back will engage 1st gear. To upshift, push the T-Handle forward until it stops and release. This procedure must be done for each gear until Neutral is reached. At this time, the T-Handle will spring upward. To engage Reverse, the trigger must be lifted with two fingers and the T-Handle pushed forward. To shift into Park, lift trigger and push T-Handle forward to stop. Release trigger and T-Handle and Park is secured.

For full manual valve body transmissions, the shift pattern is usually reversed and Part #2418569 indicator lens is available from your Hurst Dealer.

FIG. 12

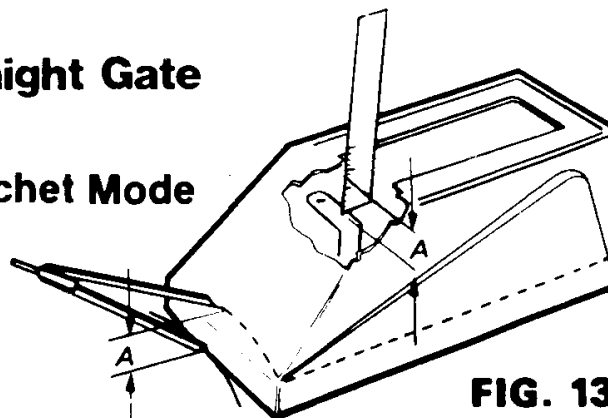
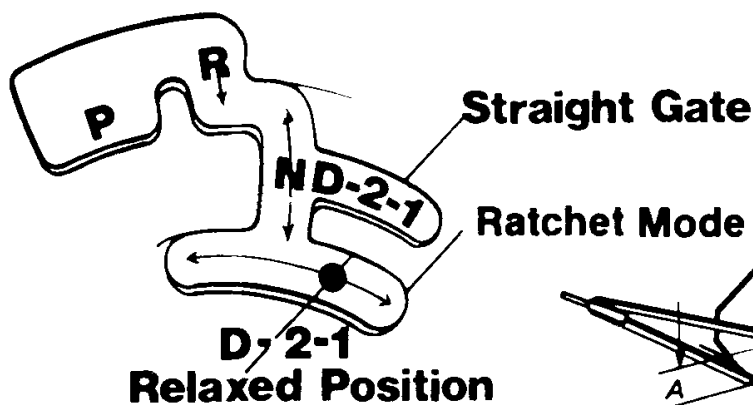


FIG. 13