TURBO ACTION
1535 Owens Road, Jacksonville, FL 32218 - (904)741-4850 - FAX (904)741-4853
www.turboaction.com

CHEETAH E-SHIFT Pro Series Valve Body

(Positively Not For Street Use)
Fits Torqueflite "727" & "904" 1966-90 (Non Lock-Up)

Part #17255E
PRND21 (PRN321) -Electronically Shifted

The Turbo Action ***CHEETAH Electronic Shift Pro Series Valve Body*** gives you the same clean and positive shifts that you have come to expect from a CHEETAH Valve Body. In addition, you now have automatic preset electronic upshifts for water burnouts, race shifts and pit road low rpm shifts. Your runs will be more consistent than ever before and most probable you will go faster. Low current solenoids with high reliability; produce quick positive shifts.

Note: *This valve body has no engine braking in low gear!*

Things that should be considered:

1. **Deep Oil Pan Required** w/proper pick-up (Must be single hole pick-up).
2. If "727", suggest 12-15 #17090 springs for front clutch piston.
3. If "727" & "904", suggest 3.8 Kickdown Lever or a 4.2.
4. If "904", be sure that "904" transmission core is a 1971 or newer. Part Number will be 35XXXXX or higher.
5. If "727", use an early type kickdown (Front) servo if available. If not available, order our new Billet Kickdown Servo #17342.

The following are the proper settings for your bands and clutches:

Front Band "727" & "904": Adjust front band per the following specs - (a) Locate the adjustment on the driver side on the outside of the transmission, just ahead of the linkage. (b) You will need a 3/4" wrench and an open end 5/16" wrench. Break the locknut loose (3/4" nut). Now holding
the locknut, turn the square lug in the center of the locknut with your 5/16" open end wrench. Turn wrench clockwise until wrench becomes snug (10 in./lbs.). Make sure the locknut doesn't move while tightening the square lug. (c) Now carefully turn 5/16" wrench counterclockwise 1 1/2 turns. Holding the 5/16" wrench, tighten the 3/4" wrench to 35 ft./lbs. (Very Tight). DO NOT allow the square lug to move while tightening the 3/4" locknut.

Rear Band "727": Tighten adjustment lug 10 in./lbs., back off 2 turns and tighten locknut.

Rear Band "904": Tighten adjustment lug 10 in./lbs., back off 4 turns and tighten locknut.
1971 - UP CORES ONLY.

Front Clutch "727" & "904": Four Clutches - Clearance = 0.050-0.060
Five Clutches - Clearance = 0.060-0.070

Rear Clutch "727" & "904": Four Clutches - Clearance = 0.030-0.040

Special characteristics about your *CHEETAH E-SHIFT Valve Body*:

1. First Gear - no engine braking.
2. First to second shift on jackstands will not be noticeable.
3. Line pressure can be read at the middle plug on passenger's side. Suggest a 200 PSI gauge, our Part #00107.

Very Important!!
You should use a Dacron (paper) type filter with this valve body.

Deep Pan Required
CHEETAH E-SHIFT CONTROLLER PART #70600 REQUIRED

Installation Instructions

FIRST, READ INSTRUCTIONS CAREFULLY, THEN PROCEED TO INSTALL VALVE BODY PER THESE INSTRUCTIONS.

Kit Includes:

1 - 17255E	Valve Body
1 - 17387	2-3 Shift Solenoid(Installed on Valve Body-w/wire snap plug female connector #00781)
1- 17387	1-2 Shift Solenoid(Installed on Valve Body-w/wire snap plug male connector #00782)
1 - 17388E	Case Connector
1 - 17390	Wire Restraint
1 - 00690	7/16" Drill w/1/4" Shank
1 - 00691	1/4" Pipe Tap
1 - 17013	Dacron Filter Single Hole 1966-91
1 - 17014	Filter Gasket (Use between filter extension and valve body.)
1 - 17131A	Accumulator Piston Blocker
1 - 17270C	Pan Gasket "727"
1 - 19063C	Pan Gasket "904"

STEP #1: If vehicle is on the ground, secure so it will not roll, (Preferably, vehicle should have all four wheels off the ground.) Place vehicle shift selector in park range. Remove throttle pressure linkage and gear selector linkage located on the driver's side of the vehicle. Disconnect only at the shaft coming out of the transmission case. You will note the two linkage levers on the shaft are fastened by a bolt in each case. Loosen these bolts completely. After loosening bolts, carefully pry levers upward with a screwdriver. The top throttle pressure lever is no longer needed.

STEP #2: Remove all pan bolts but two on one end. This way you will be able to drain the transmission without getting soaked with oil. These two bolts can be gradually loosened off after most of the oil has been drained.

STEP #3: Carefully remove the ten 7/16” bolts which hold the valve body in place. Slowly pull valve body out of transmission, noting the hole that the long swinging rod came out of. May be necessary to turn drive shaft to release long swinging rod. The rod controls your vehicle’s park function. Most Torqueflites will have a large spring between one end of the valve body and the case. This spring should not be put back in the vehicle when using this valve body.

STEP #4: The transmission valve body is a very intricate piece of your transmission and therefore care should be taken to keeping it clean while working on it. Lay old valve body on a bench or table so that the swinging rod is laying towards you. Remove small clip that holds the swinging rod in place. Install this swinging rod on the new valve body. Secure by reinstalling clip. This swinging rod should fit the same as it did on the old valve body.

STEP #5: Remove the three screws that hold the old filter on the old valve body. If installing deep pan, follow instructions for pickup installation. Install new filter #17013 directly against pickup. Install the thick gasket supplied between the valve body and deep pan pick-up.

STEP #6: If transmission is out of the vehicle, the governor valves can be removed.

STEP #7: Cut out the templet, Fig. #1. Mark spot to be drilled with a small punch. Drill small 1/8” pilot hole. Then take #00690 special 7/16” drill and drill hole in case as shown in Fig. #2.

STEP #8: Using #00691 special 1/4” pipe tap, tap the case till the case connector **will just show through** inside the case, Fig. #3.

STEP #9: Install case connector into case, Fig. #3.

STEP #10: Remove accumulator piston by pulling down the middle piston from the passenger side of the transmission, Fig. #6. Some units have a spring on top, some on bottom of piston and some none at all. Install #17131A Accumulator Piston Blocker between case and piston. **CAUTION:** Be sure piston is below surface enough to install valve body and not hit piston. If rod is too long, cut or grind small amount off and recheck. Also, leave out spring if it had one.

SPECIAL NOTE

If your transmission has part #35XXXXX or higher stamped on driver’s side, just under shift linkage near pan rail, you have a 1971 or newer transmission. If you have a 1971 or newer, YOU MUST check under the accumulator to see if anyone has ever drilled a 3/16” hole in the upper small bore, Fig. #6. If your unit has the hole and has the #35XXXXX or higher, you must then plug the hole with a 1/4-20 set screw. If unit is a 1970 or older part #34XXXXX or lower you do not have to plug hole.

STEP #11: Adjust rear band. If 727, turn in adjustment finger tight (10 in./lbs.), back off two (2) turns and then holding adjustment, lock the locknut. If 904, back off four (4) turns.

STEP #12: Before re-installing valve body into transmission, take note of the plastic half ball shaped neutral-switch on the driver's side of the transmission inside of the transmission case. When installing the valve body, make sure this ball does not get damaged. Either remove the switch or merely slide the valve body carefully over the ball. The ball will retract as the valve body puts pressure on it. Also, **do not** install large spring which may have been between valve body and case.

STEP #13: Place valve body back into transmission pushing the rod into hole that was mentioned in STEP #3. The rod should be angled towards the center of the transmission in the front. Push rod firmly towards rear while turning drive shaft. **BUT DO NOT FORCE ROD OR VALVE BODY.**

STEP #14: With valve body in place, install 10 valve body bolts and tighten to 8-10 ft./lbs. Note position of #17390 wire restraint, Fig. #4. Place solenoid wires thru restraint.

STEP #15: Carefully connect solenoid wires to case connector. Be sure wires are clear of park rod, Fig. #5.

STEP #16: Adjust front band at this time (see instructions page #1).

STEP #17: Clean pan and install with a new pan gasket.

STEP #18: Replace shift linkage (large piece) and tighten bolt. Adjust linkage to be sure that shifter is selecting all gears properly.

CAUTION: This unit is ***PRND21.***

STEP #19: Remove all kickdown linkage from carburetor down to the transmission.

STEP #20: Connect 2 color coded #16 wires to the #17388E case connector (Note the yellow wire is the 1-2 shift and the white wire is the 2-3 shift). Run the other end of the wires to the ***CHEETAH E-SHIFT Controller,*** **First shift Sol. and Second Shift Sol. Outputs, Fig. #7. Requires 12-16 Volts signal from #70600 Controller.**

STEP #21: Refill transmission with a good Dexron Mercon or type "F" ATF fluid. It will usually take about 5 quarts of oil. DO NOT OVERFILL! Warm transmission up, select all gears, and then recheck oil level. Always check level of transmission fluid when in neutral, but put parking brake on as a safety measure or have someone hold foot brake while checking. Shift Pattern is PRND21.

You must hookup your Pit Road and Burnout Connections on your CHEETAH E-SHIFT Controller!

STEP #22: In an area where you can safely check shifts with rear wheels in the air, apply **Pit Road** switch while in D(3) position on your shifter. Put your foot on the brake lightly and increase the rpm slowly and check for both shifts.

STEP #23: If all checks okay take car out and drive around in ***Pit Road Mode and be sure the transmission is shifting okay!***

STEP #24: ***Burnout Mode,*** we suggest that you always leave the factory 1-2 shift at 4000rpm. This will cause the car to start its burnout in second gear preventing any chance of overrunning clutch failure.

Caution: We suggest burning the tires to the staging line in second or high gear, pre-stage, clean out engine and then stage.

For your own safety and others be sure to run a transmission blanket or transmission shield per IHRA and NHRA rules.

#17255E Templet to drill hole in the "727" or "904" case for the solenoid case connector.

Fig. #1

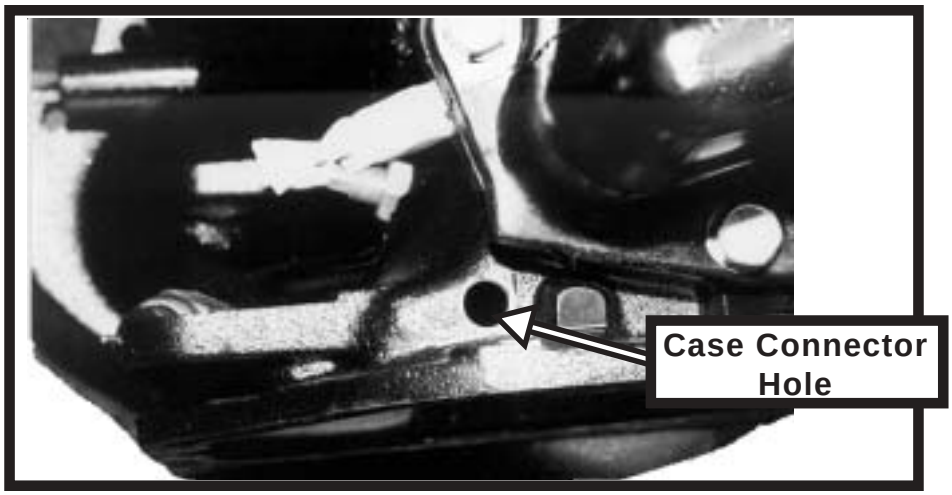


Fig. #2

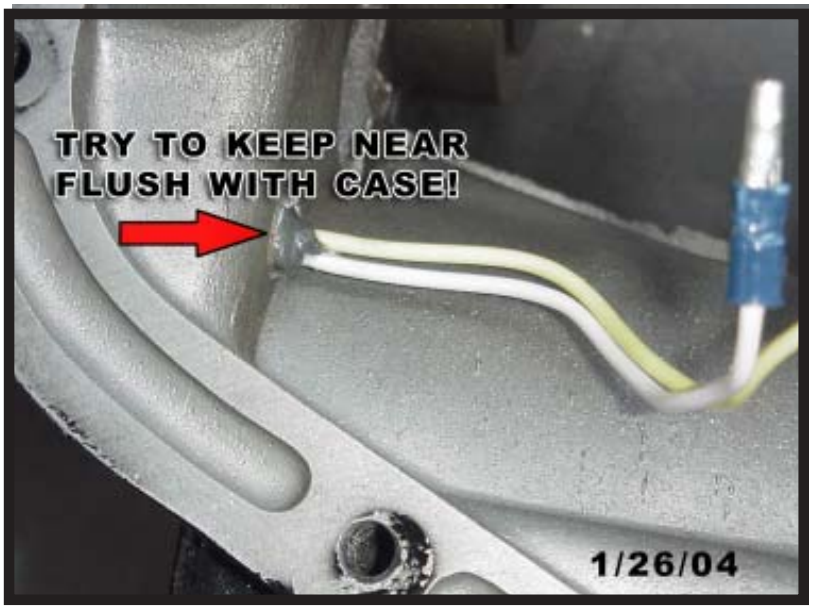


Fig. #3

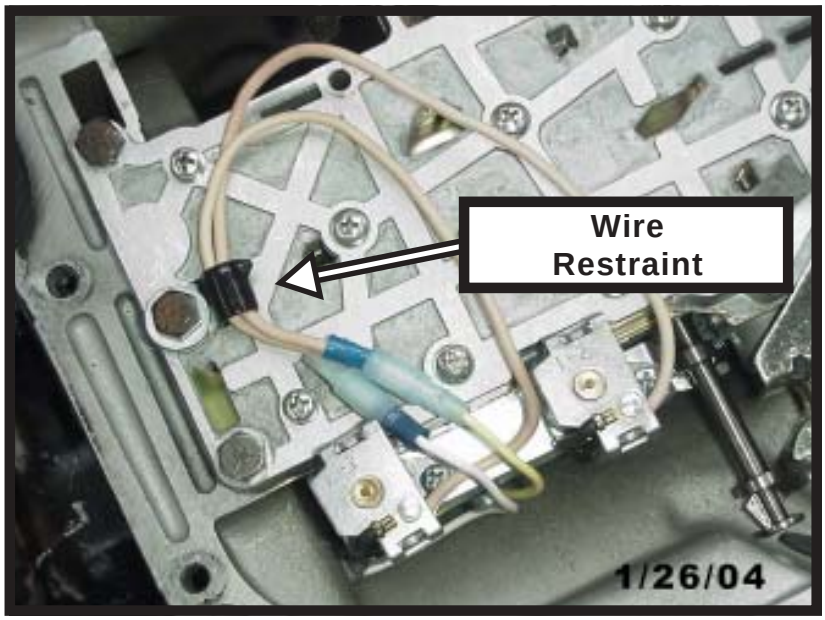
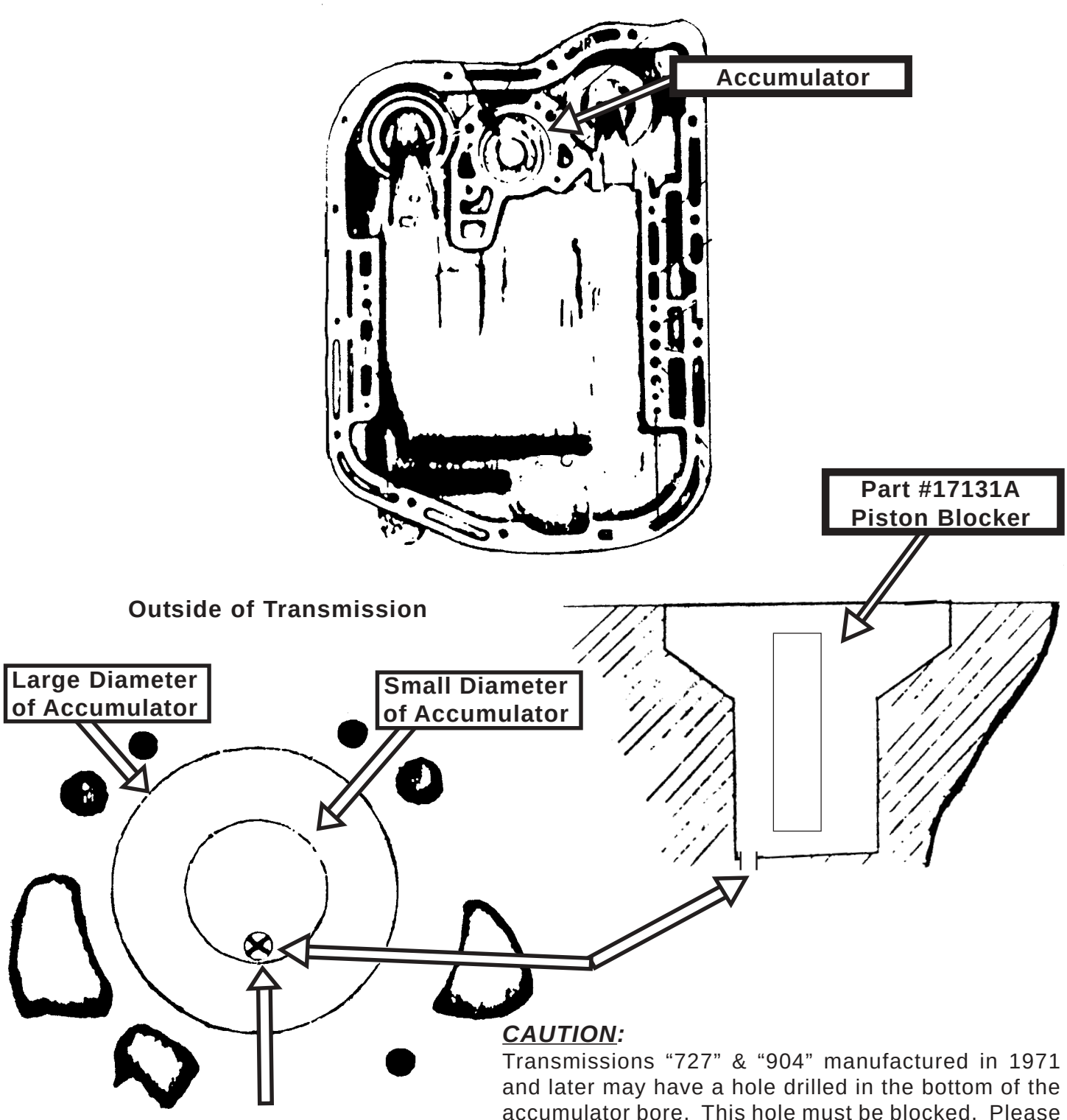


Fig. #4

Fig. #5



CAUTION:

Transmissions "727" & "904" manufactured in 1971 and later may have a hole drilled in the bottom of the accumulator bore. This hole must be blocked. Please note that some units have an elongated hole on the side of the bore which is fine to be left as is. 1971 or newer transmissions have a Part #35XXXXX or higher on the pan rail driver's side.

1970 or older transmissions Part #34XXXXX or lower will have a hole in the bottom of the bore, but does not require being blocked.

Fig. #6 - Accumulator

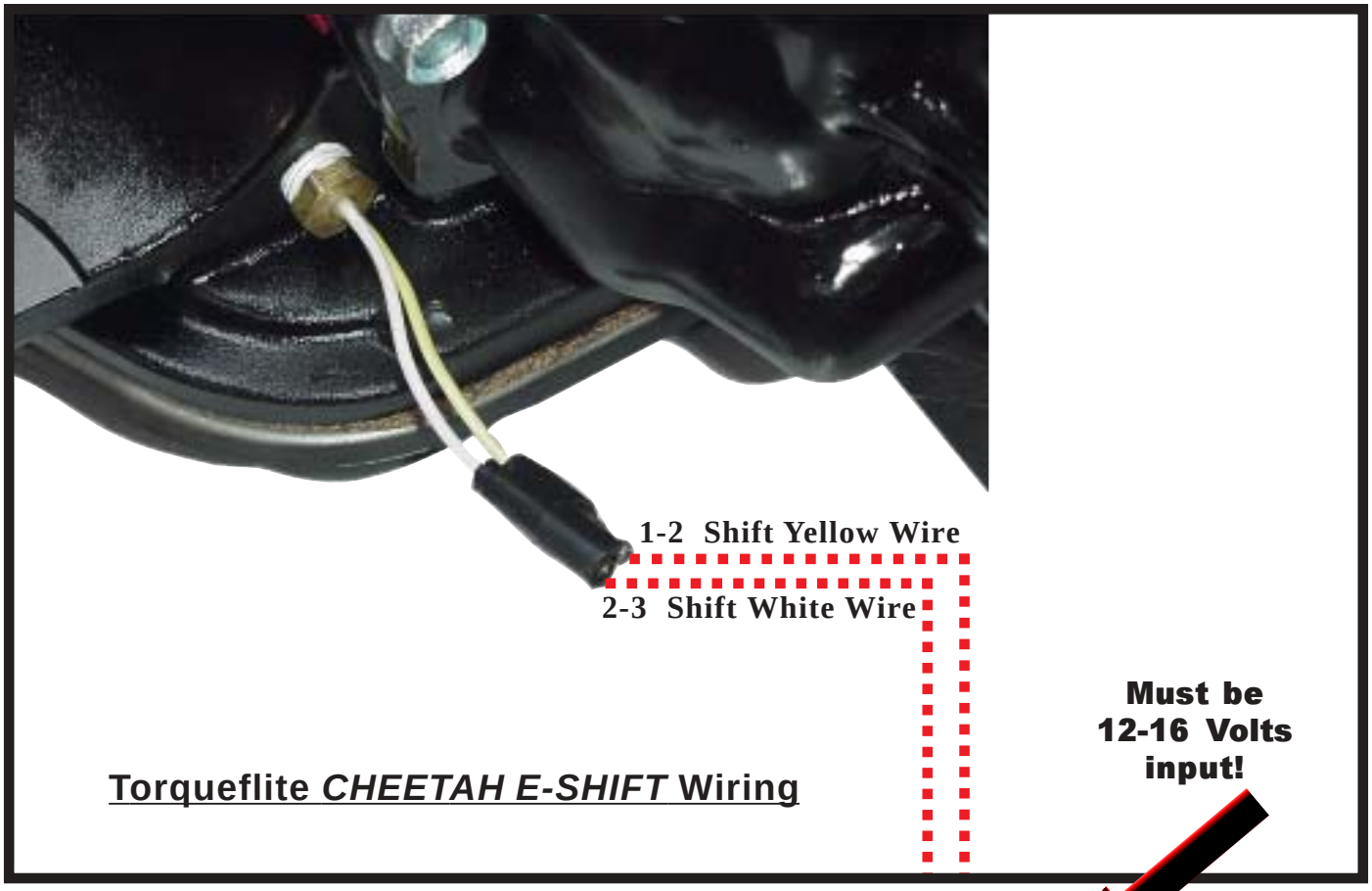

1-2 Shift Yellow Wire
2-3 Shift White Wire
Must be 12-16 Volts input!
Torqueflite *CHEETAH E-SHIFT* Wiring

Fig. #7


+12 V
Ground
Tach. Input
Bumout
Pit Road
Transbrake
1 Shift
4th Shift Sol.
3rd Shift Sol.
2nd Shift Sol.
1st Shift Sol.
+/- To Sol.
0-Race Ready
1-Set Race 1st Shift RPM
2-Set Race 2nd Shift RPM
3-Set Race 3rd Shift RPM
4-Set Race 4th Shift RPM
5-Set Race & BurnOut Fallback RPM
6-Set BurnOut 1st Shift RPM
7-Set BurnOut 2nd Shift RPM
8-Set BurnOut 3rd Shift RPM
9-Set BurnOut 4th Shift RPM
10-Set PitRoad 1st Shift RPM
11-Set PitRoad 2nd Shift RPM
12-Set PitRoad FallBack RPM
13-Set Number of Cylinders
14-Set Shift Times
15-Set Shift Pulse/Hold or Defaults
2 Shift
3 Shift
4 Shift
To restore factory defaults set rotary switch to position 15 and press reset button for 5 seconds.
Hold/ Pulse
Select
1000's Set Time Select
100's Set Time Set
Shift Number
Shift Time
Setup Position
RPM
Reset
8.8.8.8.8.