THM 3T40 (125C)
ALL WHEEL DRIVE 125C

This bulletin is to introduce you to the new THM A-l transaxle, which is a THM 125C transaxle equipped with an all new drive unit to provide driving capability to the rear wheels. This transaxle was first seen in the 1988 Pontiac STE "All Wheel Drive".

The THM A-l transaxle is presently on an exchange program only, until further notice from Hydra-matic Division. Units requiring internal repairs are being returned to Hydra-matic Division for root cause analysis, so do not expect any dealer work right away.

This bulletin contains the following:

* Electrical wiring diagrams to help in diagnosing any converter clutch problems that you may encounter. See Figure 1.

* Line pressure chart to help in diagnosing internal transaxle problems, or shifting problems. See Figure 6.

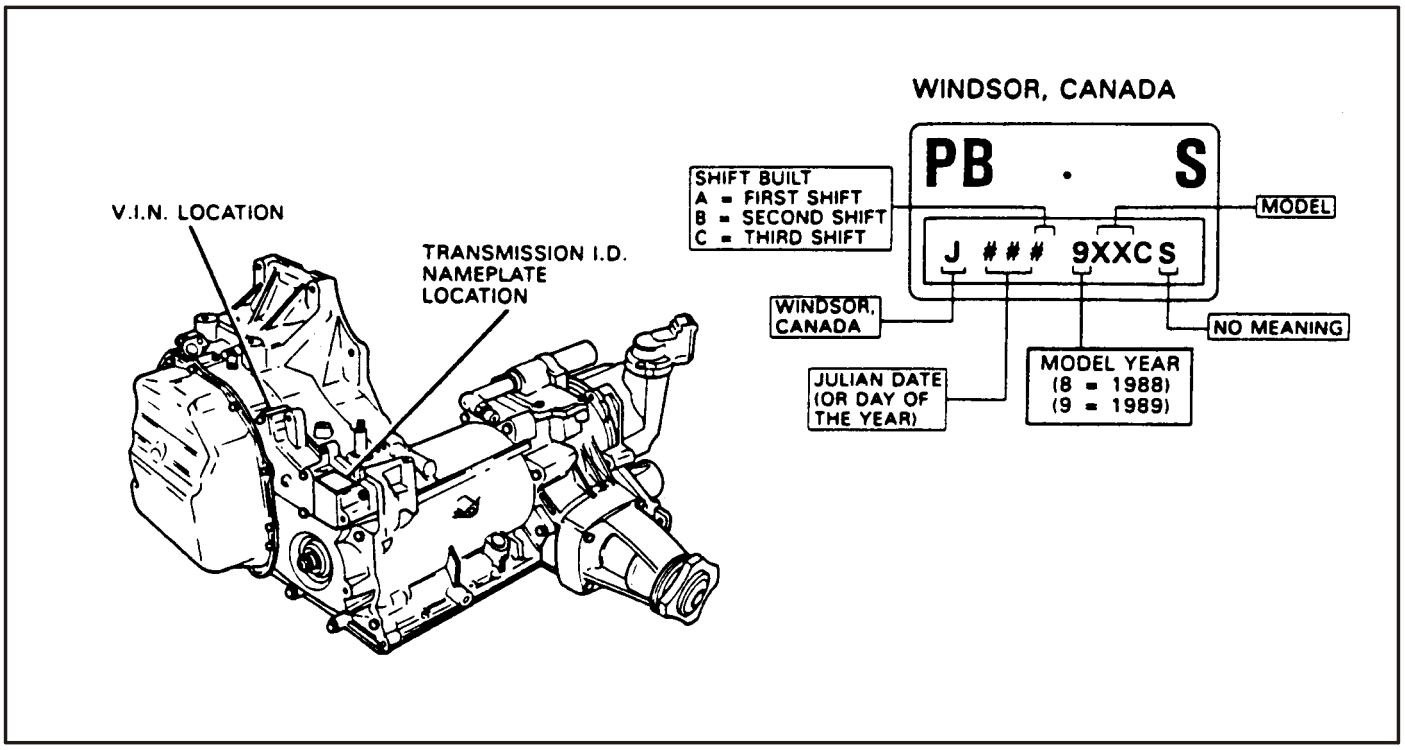
* Shift speed chart for proper shift speeds. See Figure 6.

* List of components that can be serviced or repaired without removing the transaxle from the vehicle. See Figure 2.

* Identification information. See Figure 1.

* Chart for potential leak areas. See Figure 7.

* Exploded drawings for familiarization. See Figures 3, 4, and 5.


WINDSOR, CANADA
PB • S
SHIFT BUILT
A = FIRST SHIFT
B = SECOND SHIFT
C = THIRD SHIFT
MODEL
J ### 9XXCS
WINDSOR, CANADA
NO MEANING
JULIAN DATE (OR DAY OF THE YEAR)
MODEL YEAR (8 = 1988) (9 = 1989)
V.I.N. LOCATION
TRANSMISSION I.D. NAMEPLATE LOCATION

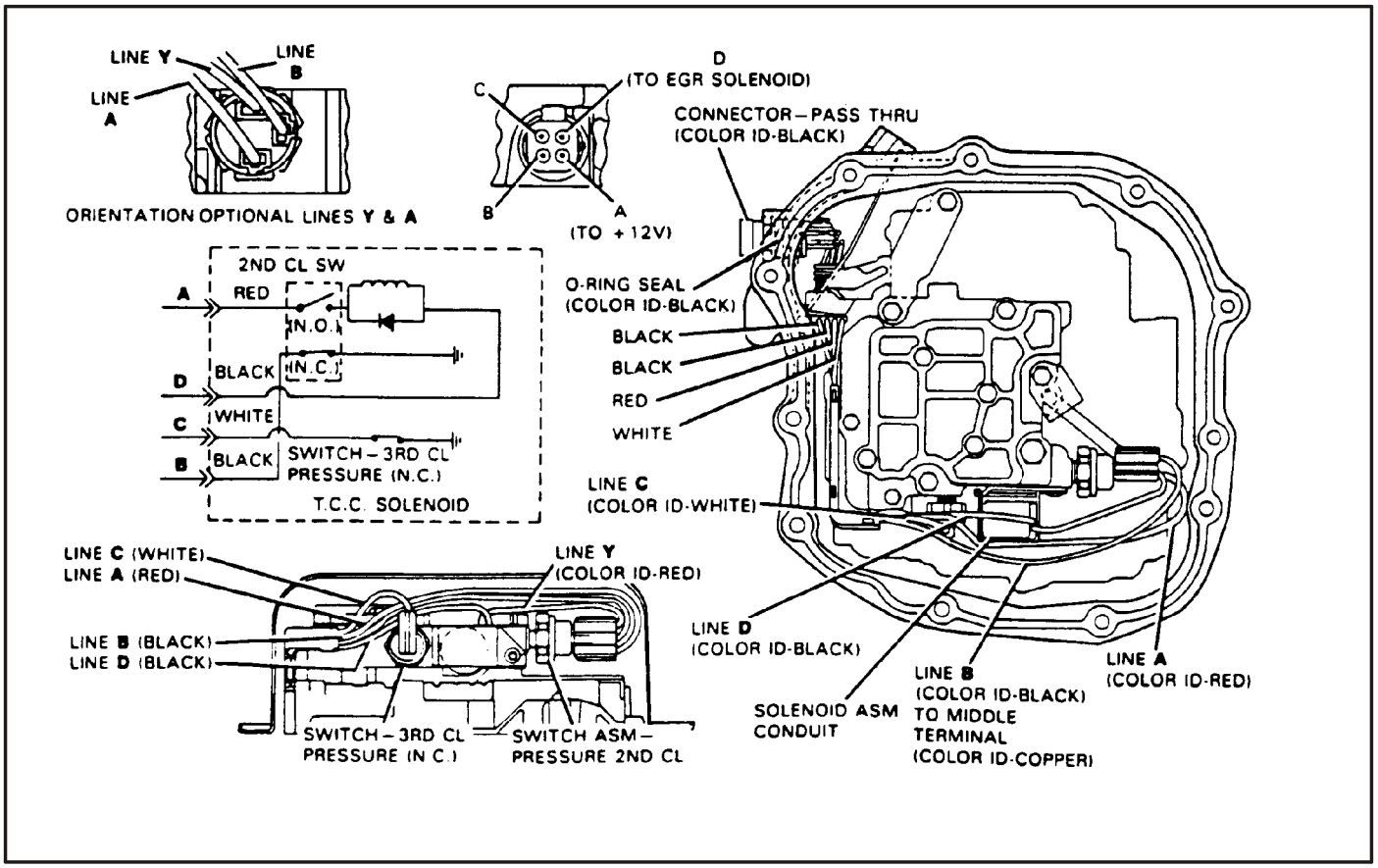

LINE Y
LINE B
LINE A
ORIENTATION OPTIONAL LINES Y & A
D
(TO EGR SOLENOID)
C
B
A
(TO +12V)
CONNECTOR—PASS THRU (COLOR ID-BLACK)
2ND CL SW
A
RED
(N.O.)
BLACK
(N.C.)
D
WHITE
C
BLACK
B
SWITCH—3RD CL PRESSURE (N.C.)
T.C.C. SOLENOID
O-RING SEAL (COLOR ID-BLACK)
BLACK
BLACK
RED
WHITE
LINE C (COLOR ID-WHITE)
LINE C (WHITE)
LINE A (RED)
LINE Y (COLOR ID-RED)
LINE B (BLACK)
LINE D (BLACK)
LINE D (COLOR ID-BLACK)
LINE A (COLOR ID-RED)
LINE B (COLOR ID-BLACK) TO MIDDLE TERMINAL (COLOR ID-COPPER)
SOLENOID ASM CONDUIT
SWITCH—3RD CL PRESSURE (N.C.)
SWITCH ASM—PRESSURE 2ND CL

Figure 1

Lo and Reverse Pipes(l) “0” ring (2) and cup plug (3)
Parking Pawl, Lock Shaft, Return Spring, and Actuator Assembly(4)
Fluid Level Indicator Stop Bracket (5)
Intermediate Servo(6) and Direct Clutch Accumulator Check Valve(7)
Speed Sensor Assembly (8)
Speed Sensor Housing (9) and Housing “0” Ring (10)
Filler Tube and Sleeve Seal(11)
Output Shaft Oil Seals (Front Drive Axles) (12)
Valve Body (Side Pan) Cover (l3) and Gasket (14)
Bottom Pan(l5) and Gasket (16)
l Oil Pan Baffle Bottom Front (17) and Rear (18)
Magnet (19)
Strainer Assembly(20) and “0” ring (21)
Auxiliary Valve Body (22)
Valve Body and Oil Pump Assembly(23)
Valve Body Spacer Plate(24), Gaskets(25), T.V. Lever and Bracket Assembly
Torque Converter Clutch Solenoid and Wiring(26)
Governor Pressure Switch and 3rd Clutch Pressure Switches(27)
Converter to Flywheel Bolts
Lo Blow Off Ball, Spring, and Plug
Case Cover(28) and Gaskets(29)
Cooler Lines and/or Fittings (30)
Manual Valve(31) and Manual Detent Spring and Roller Assembly(32)
l-2 Accumulator Piston(33), Spring (34) and Seal (35)
Thermo-static Element Assembly (36)
Drive Link(37), Sprockets (38) and Thrust Washers(39)
Thrust Bearing (40)
Oil Pump Shaft(41)
Electrical Connector (47)
T.V. Cable and Seal
Vent Assembly (42)
Transmission Mounts
l Center Differential Locking Switch (43)
l Seal “0” Ring (Intermediate Case/Rear Output Housing) (44)
1Seal “0” Ring Electrical Connector Housing (45)
A-1. Transmission Assembly (removal from vehicle) (46)
Engine Support Fixture

NOTE: Components noted with an asterisk (*) are unique to the THM A-l Transfer Unit. The remaining components in Figure 1 are common to the THM 125/l 25C Transaxle.

Figure 2

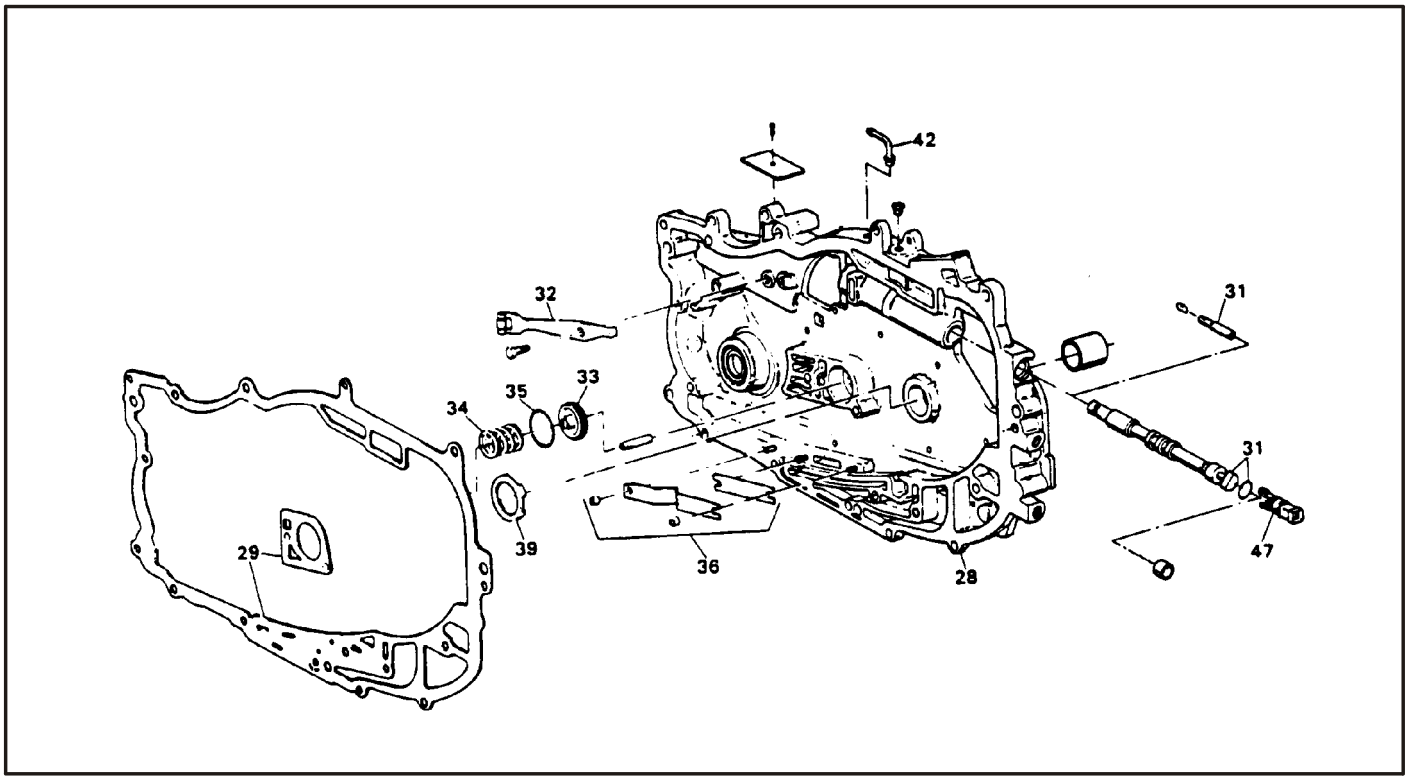


Figure 3

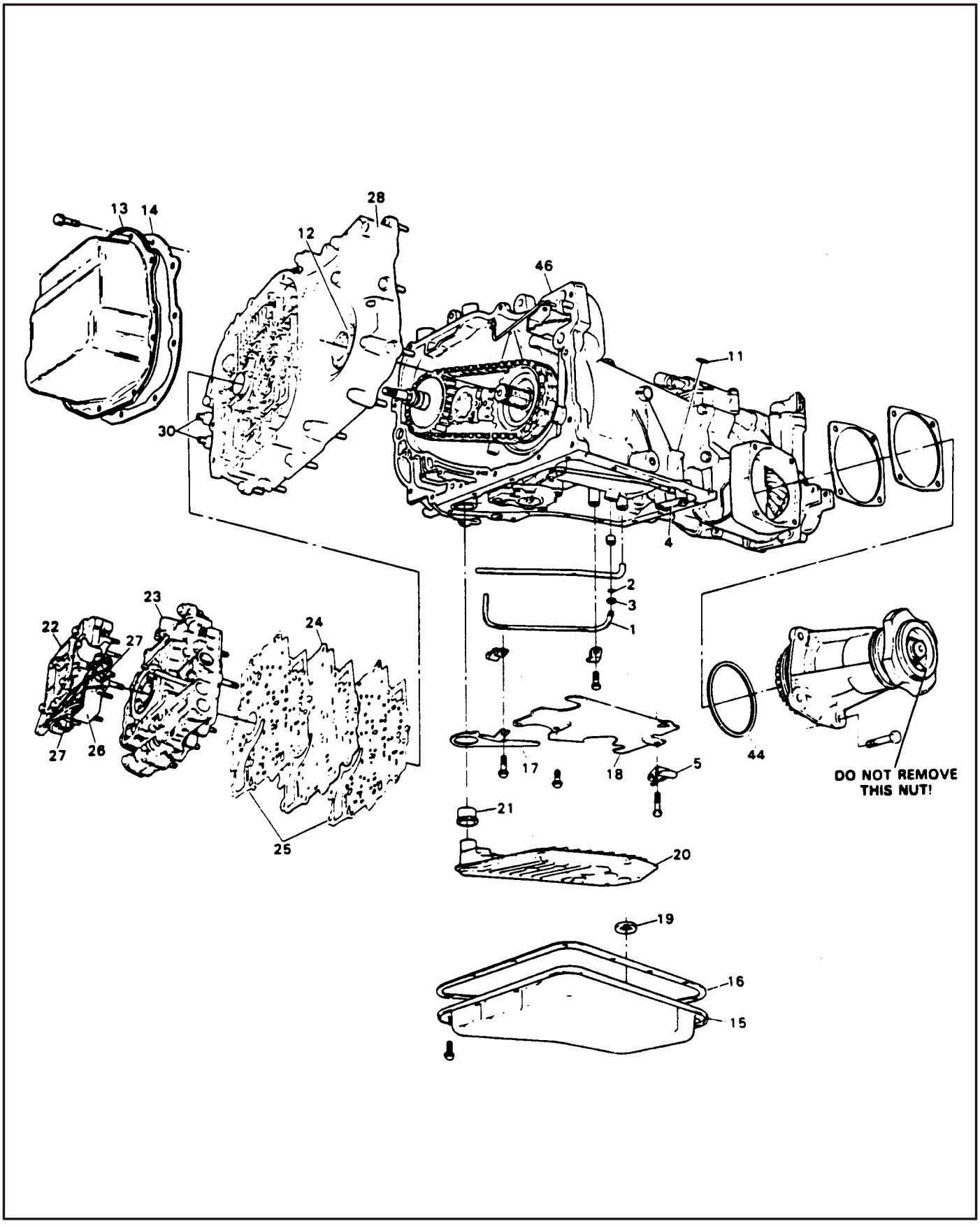

13
14
28
12
46
30
11
4
2
3
1
23
22
27
24
27
26
25
17
18
5
44
DO NOT REMOVE
THIS NUT!
21
20
19
16
15

Figure 4

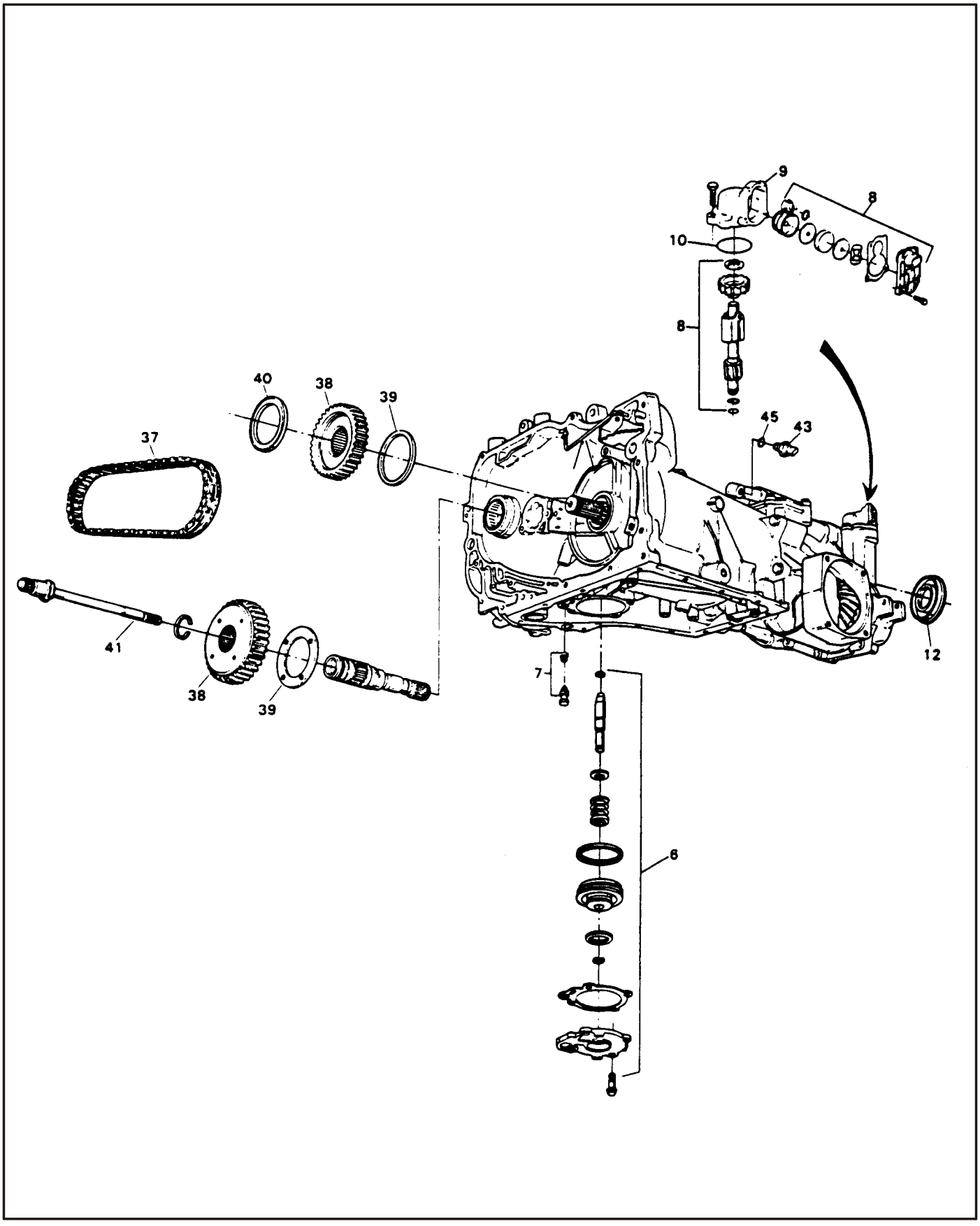
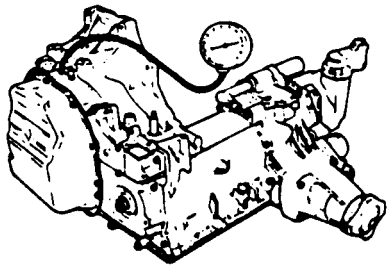


Figure 5

PRELIMINARY CHECK PROCEDURE

CHECK TRANSMISSION OIL LEVEL • CHECK AND ADJUST T.V. CABLE
CHECK OUTSIDE MANUAL LINKAGE AND CORRECT • CHECK ENGINE TUNE
INSTALL OIL PRESSURE GAGE* • CONNECT TACHOMETER TO ENGINE
CHECK OIL PRESSURES IN THE FOLLOWING MANNER:



Minimum T.V. Line Pressure Check
Set the T.V. cable to specification; and with the brakes applied, take the line pressure readings in the ranges and at the engine r.p.m.'s indicated in the chart below.

Full T.V. Line Pressure Check
Full T.V. line pressure readings are obtained by tying or holding the T.V. cable to the full extent of its travel; and with the brakes applied, take the line pressure readings in the ranges and at the engine r.p.m.'s indicated in the chart below.

CAUTION Brakes must be applied at all times.

NOTICE Total running time for this combination not to exceed 2 minutes.

RANGE	PBS MODEL	MINIMUM T.V.		MAXIMUM T.V.	
		kPa	P.S.I.	kPa	P.S.I.
Park @ 1000 RPM		459 - 507	66 - 73	459 - 507	66 - 74
Reverse @ 1000 RPM		775 - 883	112 - 124	1926 - 2151	279 - 312
Neutral/ Drive @ 1000 RPM		459 - 505	66 - 73	1143 - 1276	166 - 185
Intermediate/ Lo @ 1000 RPM		1151 - 1267	167 - 184	1151 - 1267	167 - 184

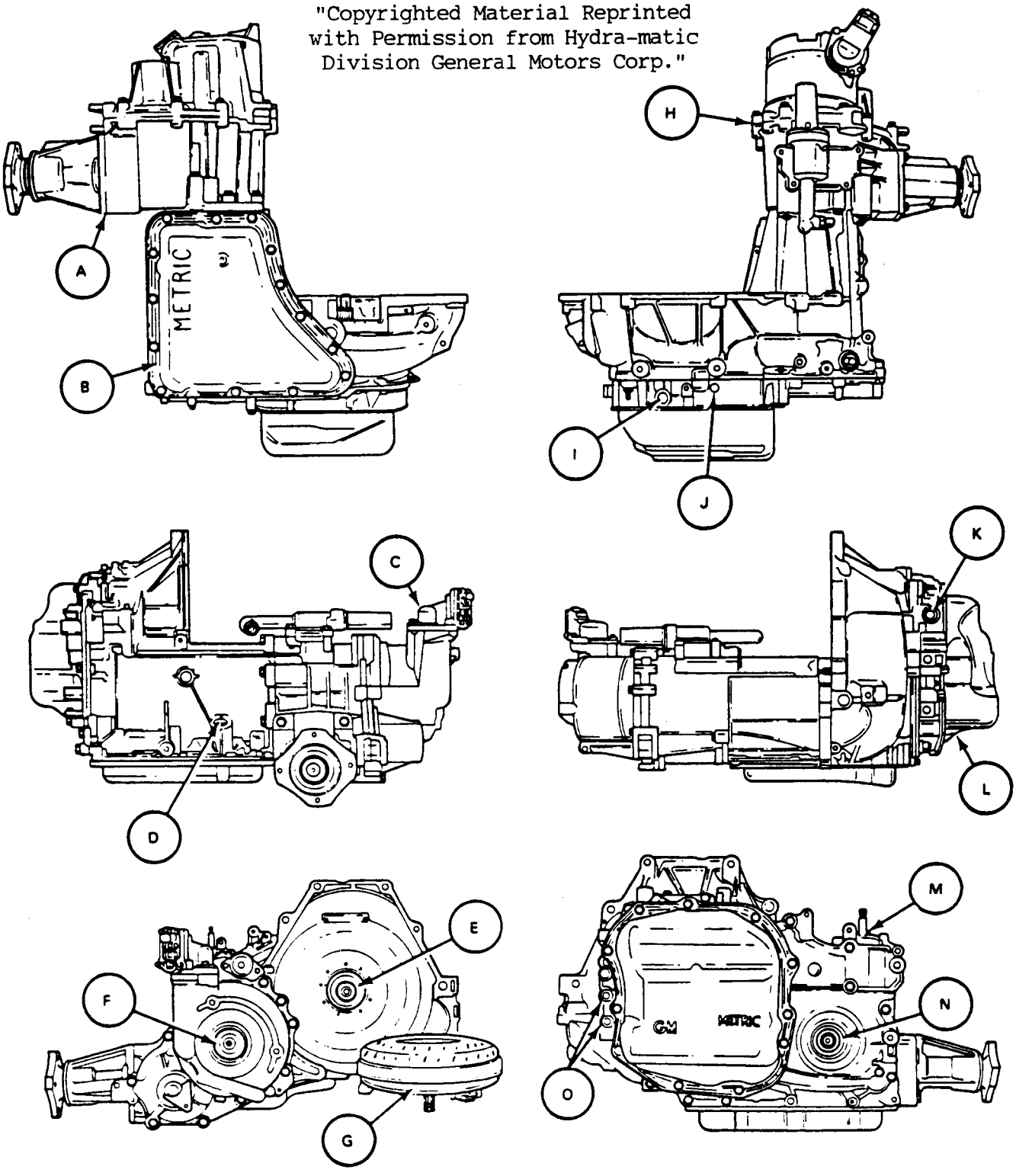
Line pressure is basically controlled by pump output and the pressure regulator valve. In addition, line pressure is boosted in Reverse, Intermediate and Lo by the reverse boost valve.

Also, in the Neutral, Drive and Reverse positions of the selector lever, the line pressure should increase with throttle opening because of the T.V. system. The T.V. system is controlled by the T.V. cable, the throttle lever and bracket assembly and the T.V. link, as well as the control valve pump assembly.

'THM A-1" SHIFT SPEED CHART

MODEL	FINAL DRIVE RATIO	1-2 MIN. THROTTLE	2-3 MIN. THROTTLE	3-2 PART THROTTLE	3-2 COAST DOWN	2-1 COAST DOWN	2-1 MAN LOW
PBS	2.84	9-12	20-21	43-50	18-20	6-10	43-49

Figure 6



A INTERMEDIATE CASE/REAR OUTPUT HOUSING
B OIL PAN (BOTTOM)
C SPEED SENSOR
D FILLER PIPE AND/OR SEAL
E CONVERTER TO CASE SEAL
F AXLE SEAL (RH)
G TORQUE CONVERTER

H CENTER DIFFERENTIAL LOCKING COVER
I T.V. CABLE AND/OR CASE SEAL
J OIL VENT
K ELECTRICAL CONNECTOR
L VALVE BODY COVER (SIDE PAN)
M MANUAL LEVER SEAL
N AXLE SEAL (LH)
O COOLER FITTINGS

Figure 7