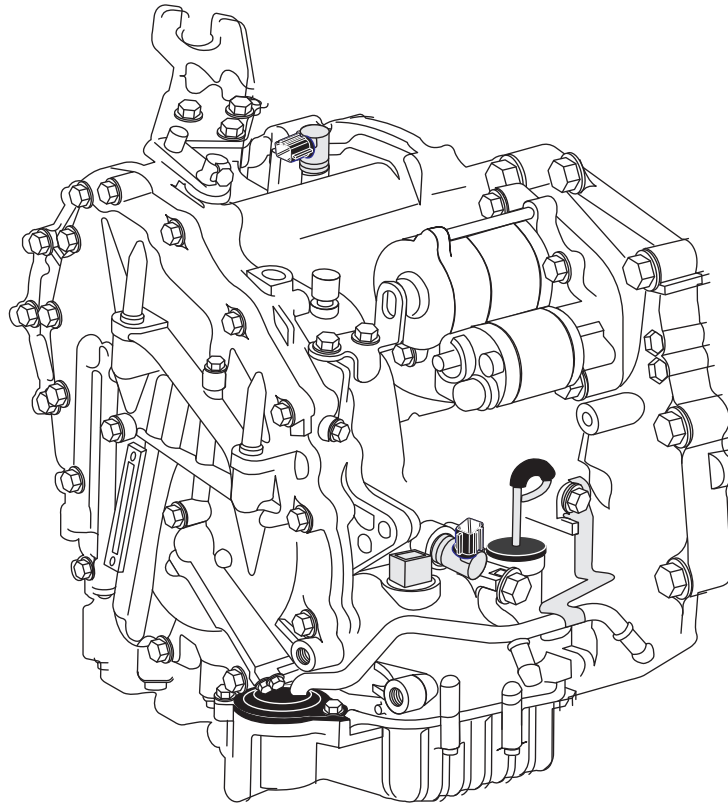




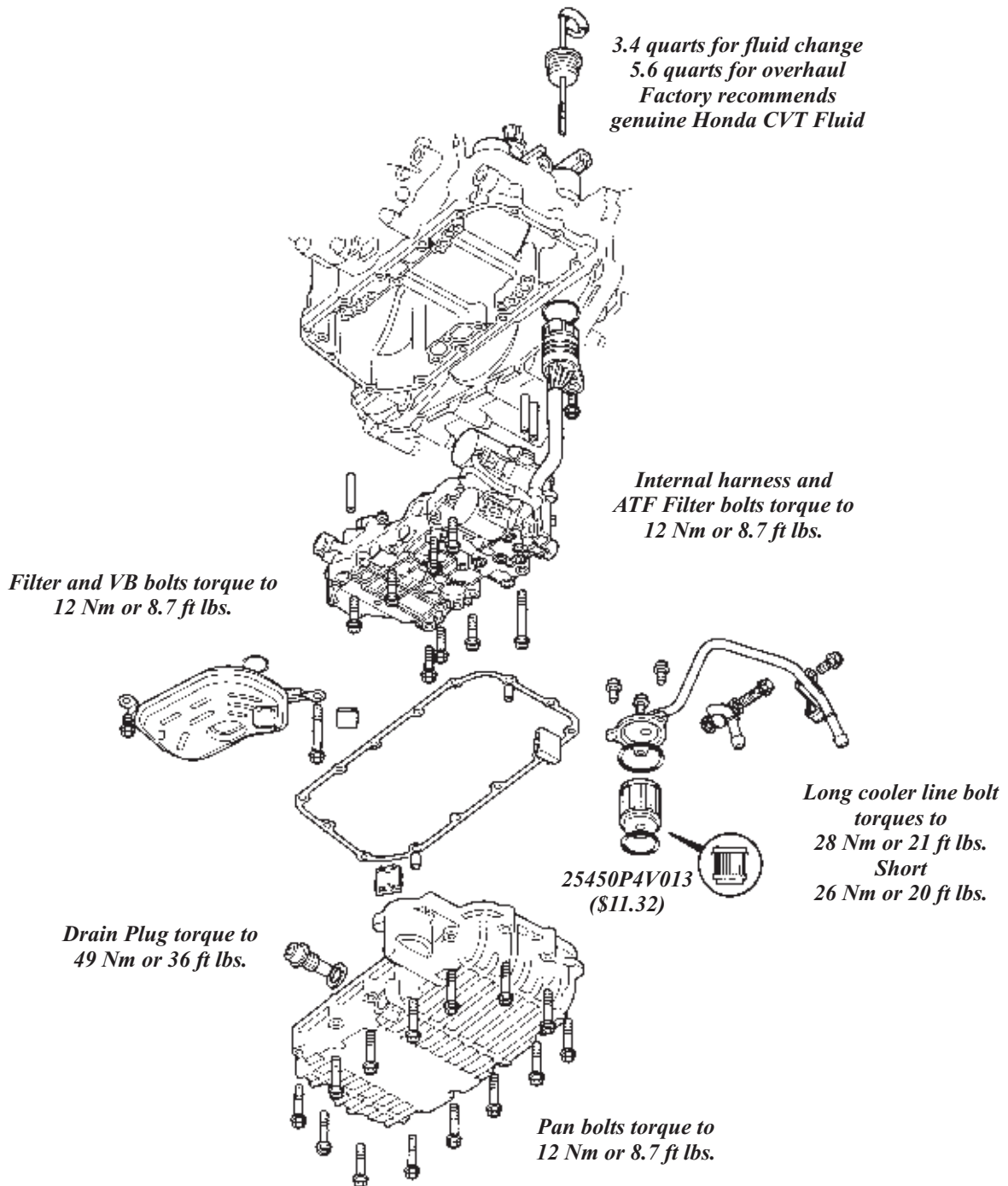
Technical Service Information

Honda Civic HX
M4VA - 1996 to 2000
MLYA - 2001
SLYA - 2002 to 2004
SZCA - 2003 to 2004 Hybrid



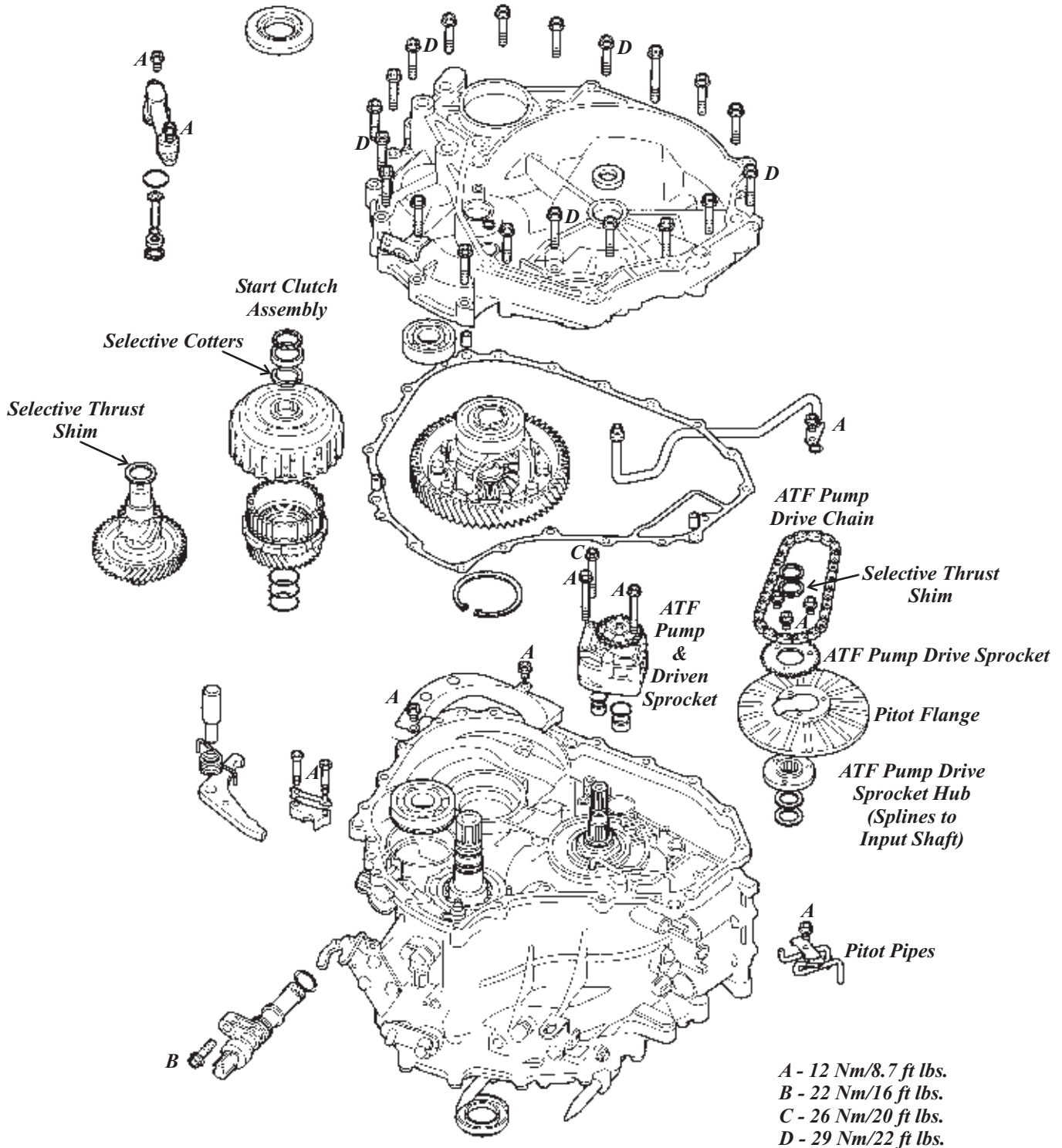
Quick Reference Tek Spek Sheets

Lower Valve Body Assembly



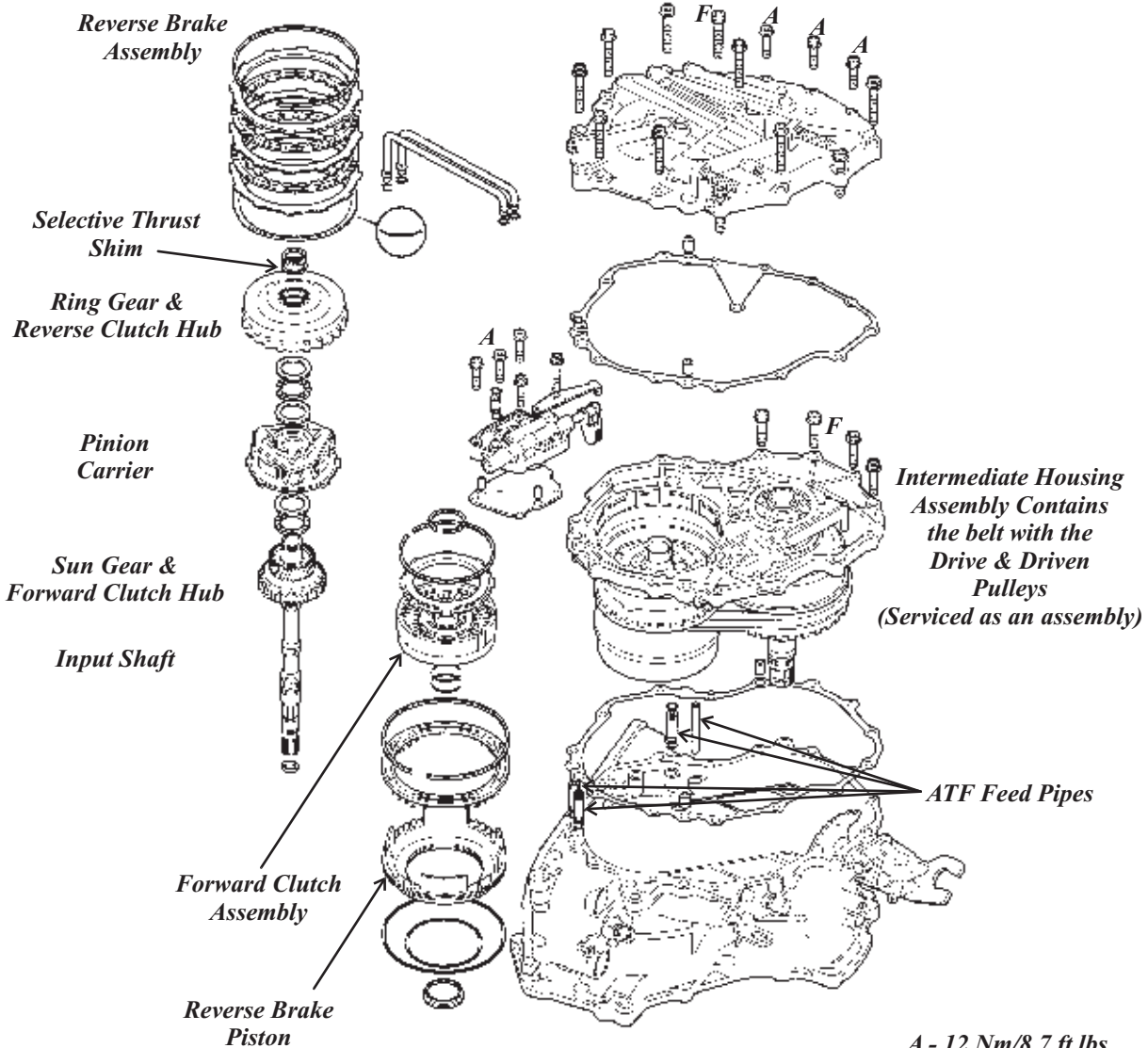
Quick Reference Tek Spek Sheets

Transmission/Flywheel Housing



Quick Reference Tek Spek Sheets

Transmission End Cover/Intermediate Housing

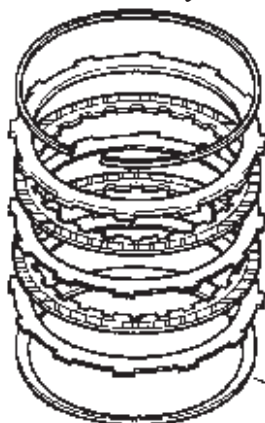


- A - 12 Nm/8.7 ft lbs
- B - 14 Nm/10 ft lbs.
- C - 22 Nm/16 ft lbs.
- D - 26 Nm/20 ft lbs.
- E - 29 Nm/22 ft lbs.
- F - 37 Nm/27 ft lbs.

Quick Reference Tek Spek Sheets

Forward and Reverse Clutch

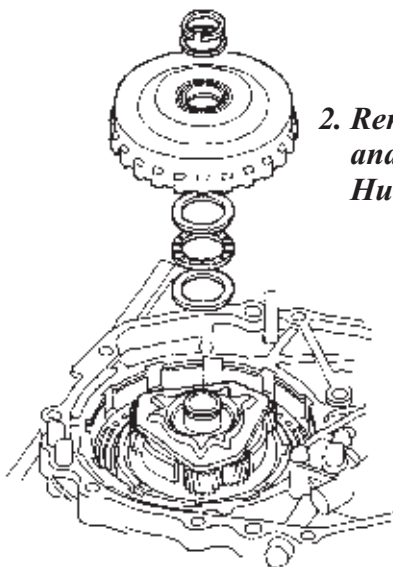
**1. Remove the reverse
brake assembly**



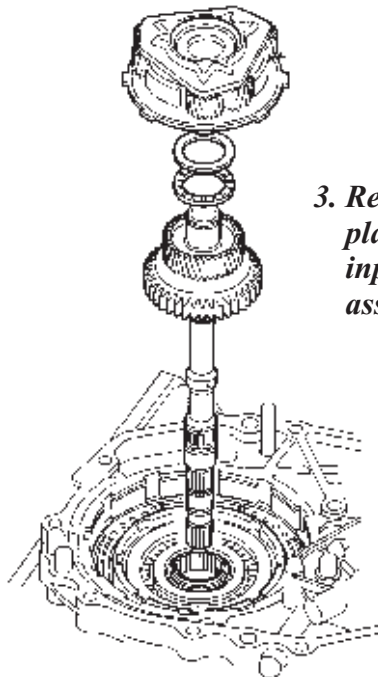
*Note:
Cushion plate
sits like a bowl*



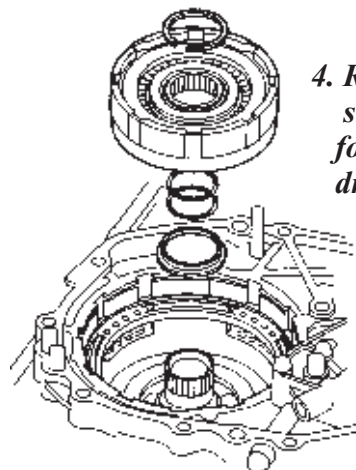
**2. Remove snap ring
and the Reverse Brake
Hub and small parts**



**3. Remove the
planetary and
input shaft
assembly**



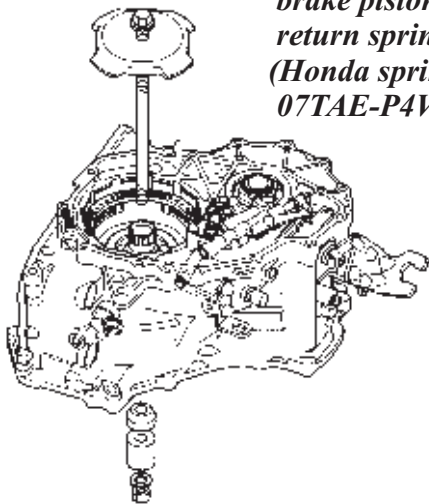
**4. Remove the
snap ring and
forward clutch
drum assembly**



Quick Reference Tek Spek Sheets

Forward and Reverse Clutch

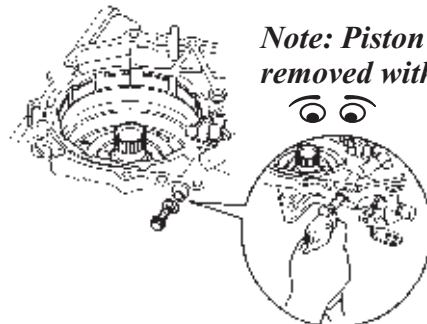
5. Remove the reverse brake piston's caged return spring assembly
(Honda spring compressor 07TAE-P4V0110 or equivalent)



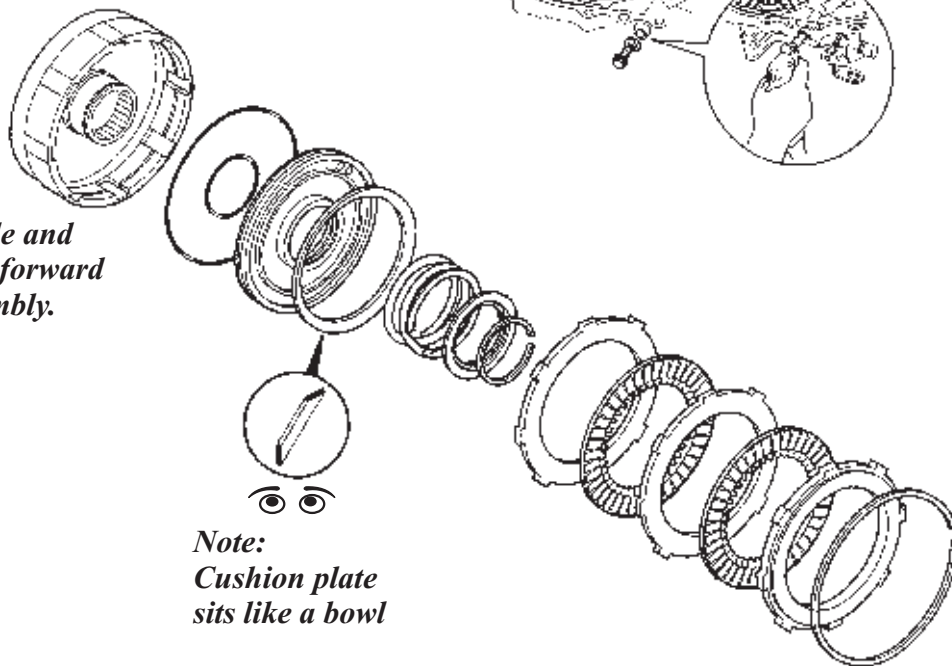
6. Remove and service the reverse piston.



Note: Piston can be removed with air assist.



7. Disassemble and service the forward drum assembly.



Note:
Cushion plate sits like a bowl

Quick Reference Tek Spek Sheets

Forward Clutch Clearance

8. Take clearance measurements in 3 equally spaced places around the top of the end plate.
Clutch pack clearance should be: 0.6-0.8 mm or 0.024-0.031 in.

Clutch Clearance is adjusted through various thicknesses of the end plate.

Note: End Plate ID # is stamped into the plate

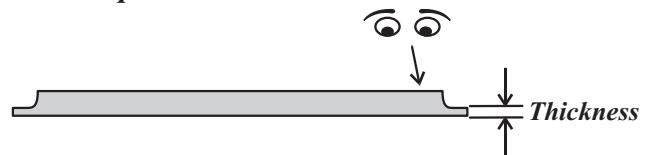
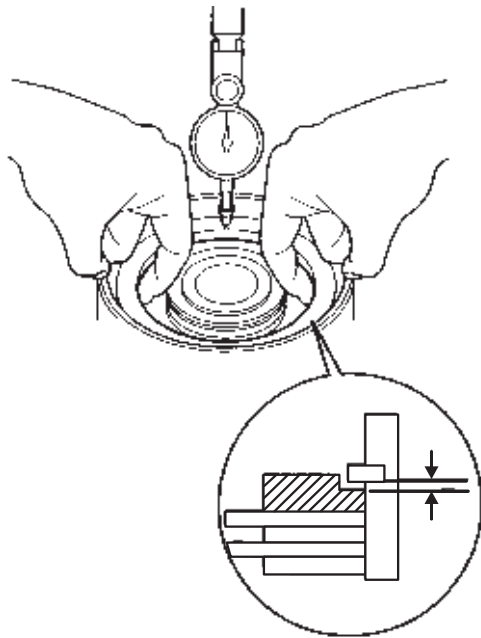
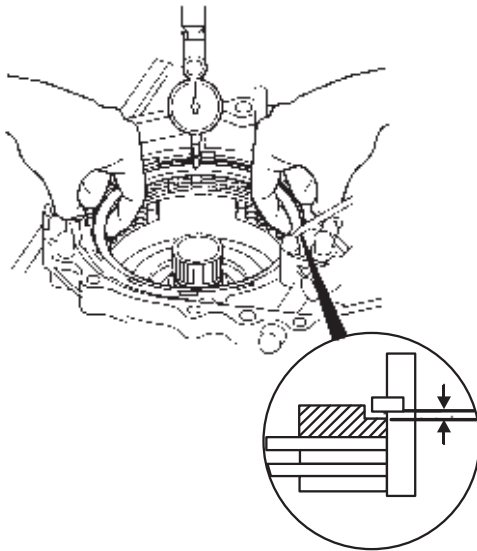


Plate No.	Part Number	Thickness
1 or 15	22561-P4V-003	3.5 mm (0.138 in)
2 or 16	22562-P4V-003	3.6 mm (0.142 in)
3 or 17	22563-P4V-003	3.7 mm (0.146 in)
4 or 18	22564-P4V-003	3.8 mm (0.150 in)
5 or 19	22565-P4V-003	3.9 mm (0.154 in)
6 or 20	22566-P4V-003	4.0 mm (0.157 in)
7 or 21	22567-P4V-003	4.1 mm (0.161 in)
8 or 22	22568-P4V-003	4.2 mm (0.165 in)
9 or 23	22569-P4V-003	4.3 mm (0.169 in)
10 or 24	22570-P4V-003	4.4 mm (0.173 in)
11 or 25	22571-P4V-003	4.5 mm (0.177 in)
12 or 26	22572-P4V-003	4.6 mm (0.181 in)
13 or 27	22573-P4V-003	4.7 mm (0.185 in)

Quick Reference Tek Spek Sheets

Reverse Clutch Clearance



9. Take clearance measurements in 3 equally spaced places around the top of the end plate.
Clutch pack clearance should be: 0.45-0.75 mm or 0.018-0.030 in.

Clutch Clearance is adjusted through various thicknesses of the end plate.

Note: End Plate ID # is stamped into the plate

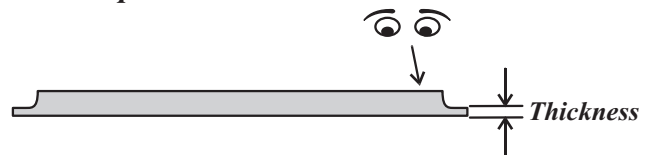
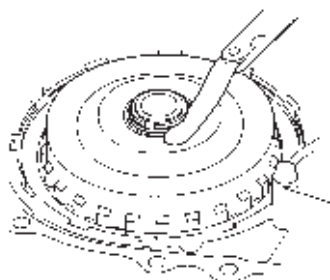


Plate No.	Part Number	Thickness
1	22551-P4V-003	3.6 mm (0.142 in)
2	22552-P4V-003	3.8 mm (0.150 in)
3	22553-P4V-003	4.0 mm (0.157 in)
4	22554-P4V-003	4.2 mm (0.165 in)
5	22555-P4V-003	4.4 mm (0.173 in)
6	22556-P4V-003	4.6 mm (0.181 in)
7	22557-P4V-003	4.8 mm (0.189 in)
8	22558-P4V-003	5.0 mm (0.200 in)

Quick Reference Tek Spek Sheets

Turbine Shaft End Play (Rear)



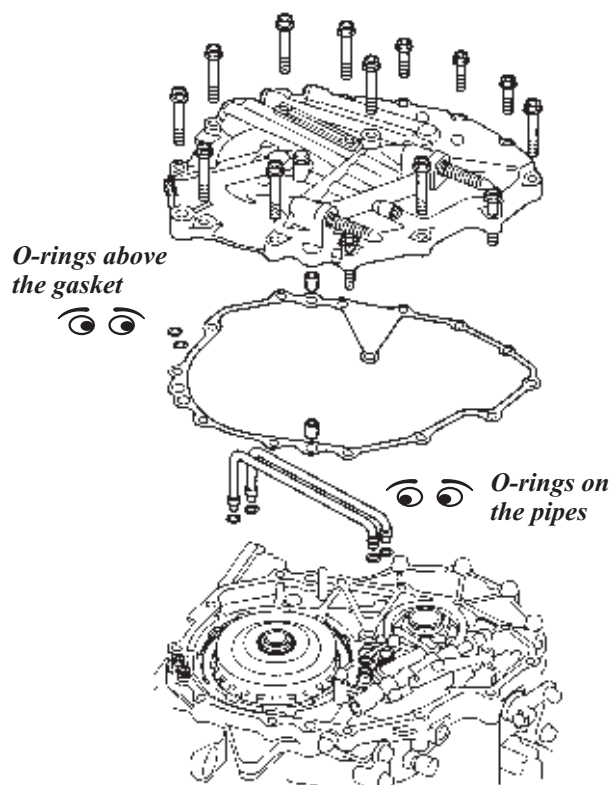
10. After reassembling the forward clutch and the reverse brake assembly (reverse the procedure as seen on page 6), the input shaft end play can be checked and adjusted by the thrust shim on top of the internal gear and reverse brake hub.

The end play clearance spec:

0.05-0.11 mm or 0.0020-0.0043 in.

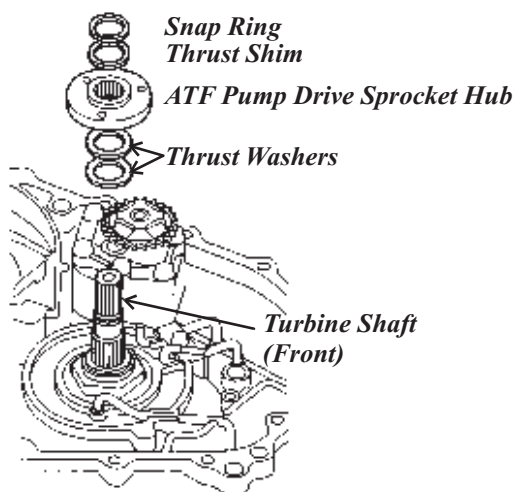
The thrust shim is selective for end play adjustments.

Shim ID	Part Number	Thickness
A	90451-P4V-000	1.05 mm (0.041 in)
B	90452-P4V-000	1.12 mm (0.044 in)
C	90453-P4V-000	1.19 mm (0.047 in)
D	90454-P4V-000	1.26 mm (0.050 in)
E	90455-P4V-000	1.33 mm (0.052 in)
F	90456-P4V-000	1.40 mm (0.055 in)
G	90457-P4V-000	1.47 mm (0.058 in)
H	90458-P4V-000	1.54 mm (0.061 in)
I	90459-P4V-000	1.61 mm (0.063 in)
J	90460-P4V-000	1.68 mm (0.066 in)
K	90461-P4V-000	1.75 mm (0.069 in)
L	90462-P4V-000	1.82 mm (0.072 in)
M	90480-P4V-000	1.085 mm (0.0427 in)
N	90481-P4V-000	1.155 mm (0.0454 in)
O	90482-P4V-000	1.225 mm (0.0482 in)
P	90483-P4V-000	1.295 mm (0.0510 in)
Q	90484-P4V-000	1.365 mm (0.0537 in)
R	90485-P4V-000	1.435 mm (0.0565 in)
S	90486-P4V-000	1.505 mm (0.0593 in)
T	90487-P4V-000	1.575 mm (0.0620 in)
U	90488-P4V-000	1.645 mm (0.0648 in)
V	90489-P4V-000	1.715 mm (0.0675 in)
W	90490-P4V-000	1.785 mm (0.0703 in)



Quick Reference Tek Spek Sheets

Turbine Shaft End Play(Front)



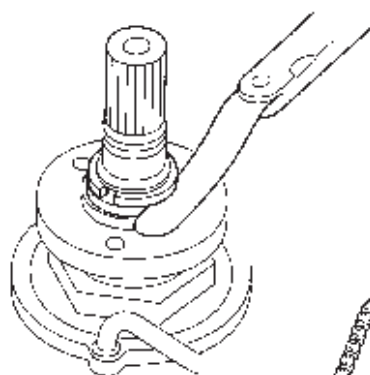
11. Once the ATF pump drive sprocket assembly has been installed onto the input shaft, an end play check can be performed between the retaining snap ring and thrust shim.

The end play clearance spec:

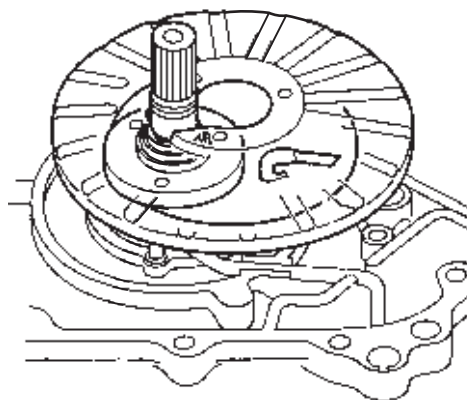
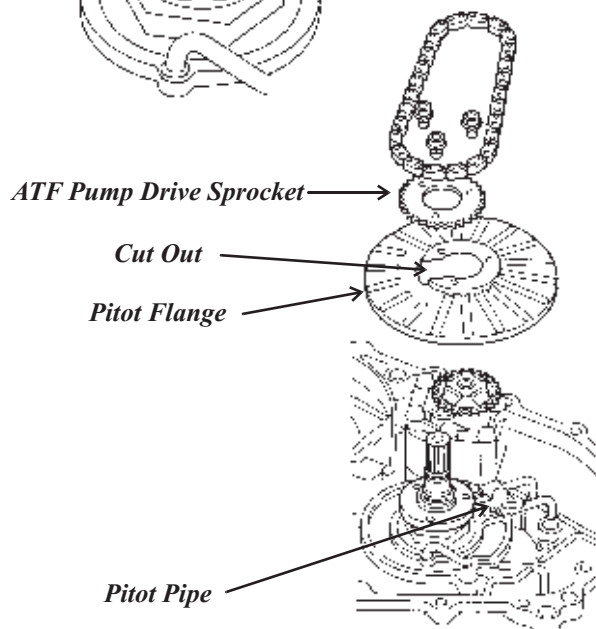
0.37-0.65 mm or 0.015-0.026 in.

The thrust shim is selective for end play adjustments.

Shim ID	Part Number	Thickness
C	90573-P4V-000	1.15 mm (0.045 in)
D	90574-P4V-000	1.40 mm (0.055 in)
E	90575-P4V-000	1.65 mm (0.065 in)
F	90576-P4V-000	1.90 mm (0.075 in)
G	90577-P4V-000	2.15 mm (0.085 in)
H	90578-P4V-000	2.40 mm (0.095 in)

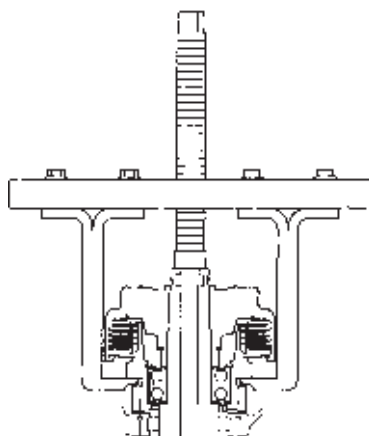


12. Use the cut out in the Pitot Flange to clear the pitot pipes.



Quick Reference Tek Spek Sheets

Start Clutch Assembly

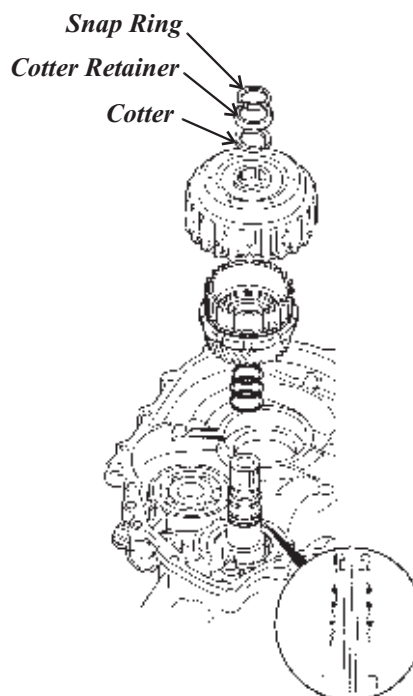
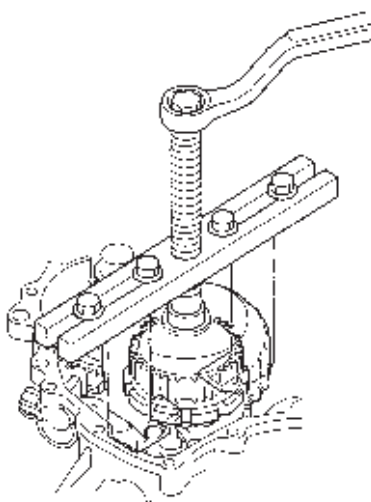


13. *The Start Clutch is located on the rear of the Driven Shaft. The individual internal components of this assembly are non-serviceable. This is serviced as an entire assembly only.*

14. *To remove this assembly, a special puller or a modified puller equivalent to the factory tool is required to make this task easy. Factory Tool Part # 07TAE-P4V0120*

The puller must be able to clear the case so as to grab the parking gear under the assembly.

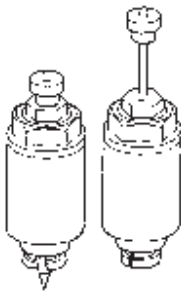
15. *Note: The Start Clutch is held onto the driven shaft by cotters which are covered by a retainer and then a snap ring. The retainer covering the cotters appear to be a part of the shaft and may go unnoticed. With only the snap ring removed, the start clutch will not come off.*



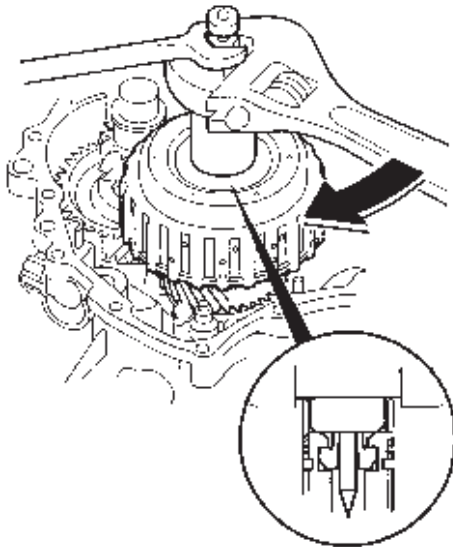
Quick Reference Tek Spek Sheets

Start Clutch Assembly

Push rod down
wedges the inner
fingers to the
Driven Shaft



Pull rod up
and the inner
fingers are
released for
tool removal

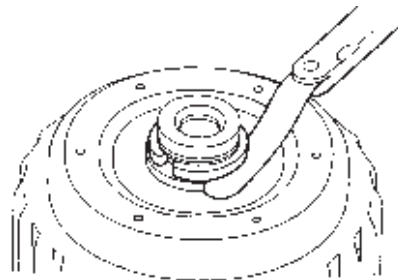


16. A Start Clutch Installer tool is used to assist in installing the Start Clutch and Secondary Drive Gear assembly onto the Driven Shaft.

Factory Tool Part # 07TAE-P4V0130

17. Once the assembly is installed, the cotters are selective to adjust the end play on the driven shaft. End play spec:

0 - 0.13mm or 0 - 0.005 in



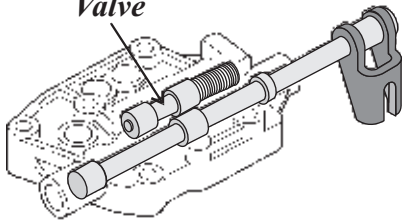
Cotter ID	Part Number	Thickness
A	90429-P4V-000	2.9 mm (0.114 in)
B	90430-P4V-000	3.0 mm (0.118 in)
C	90431-P4V-000	3.1 mm (0.122 in)
D	90432-P4V-000	3.2 mm (0.126 in)

Quick Reference Tek Spek Sheets

Valve and Solenoid Identification

*There are no check balls
located inside the
Valve Body*

*Reverse Inhibitor
Valve* *Manual Valve*



*Start Clutch Control
Linear Solenoid*

*Start Clutch Control
Valve*

Inhibitor Solenoid

*Pressure High (PH)
Pressure Low (PL)
Control Valve
(PH-PL)*

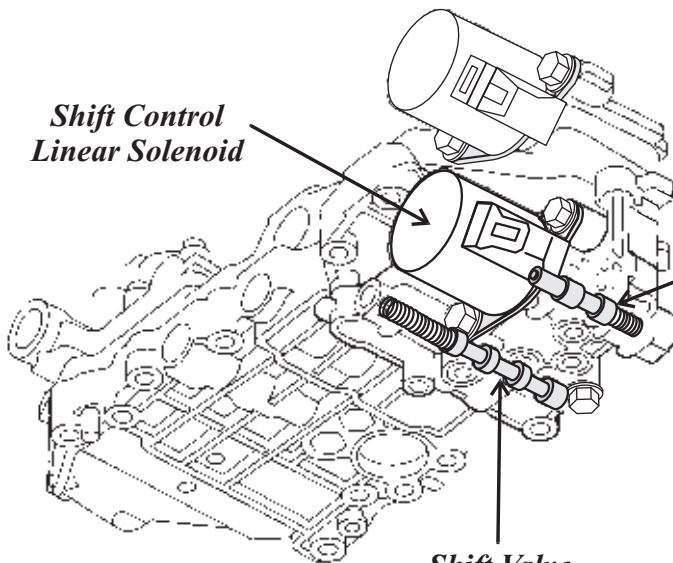
*PH-PL Control
Linear Solenoid*

*Pressure Low (PL)
Control Valve*

*Shift Control
Linear Solenoid*

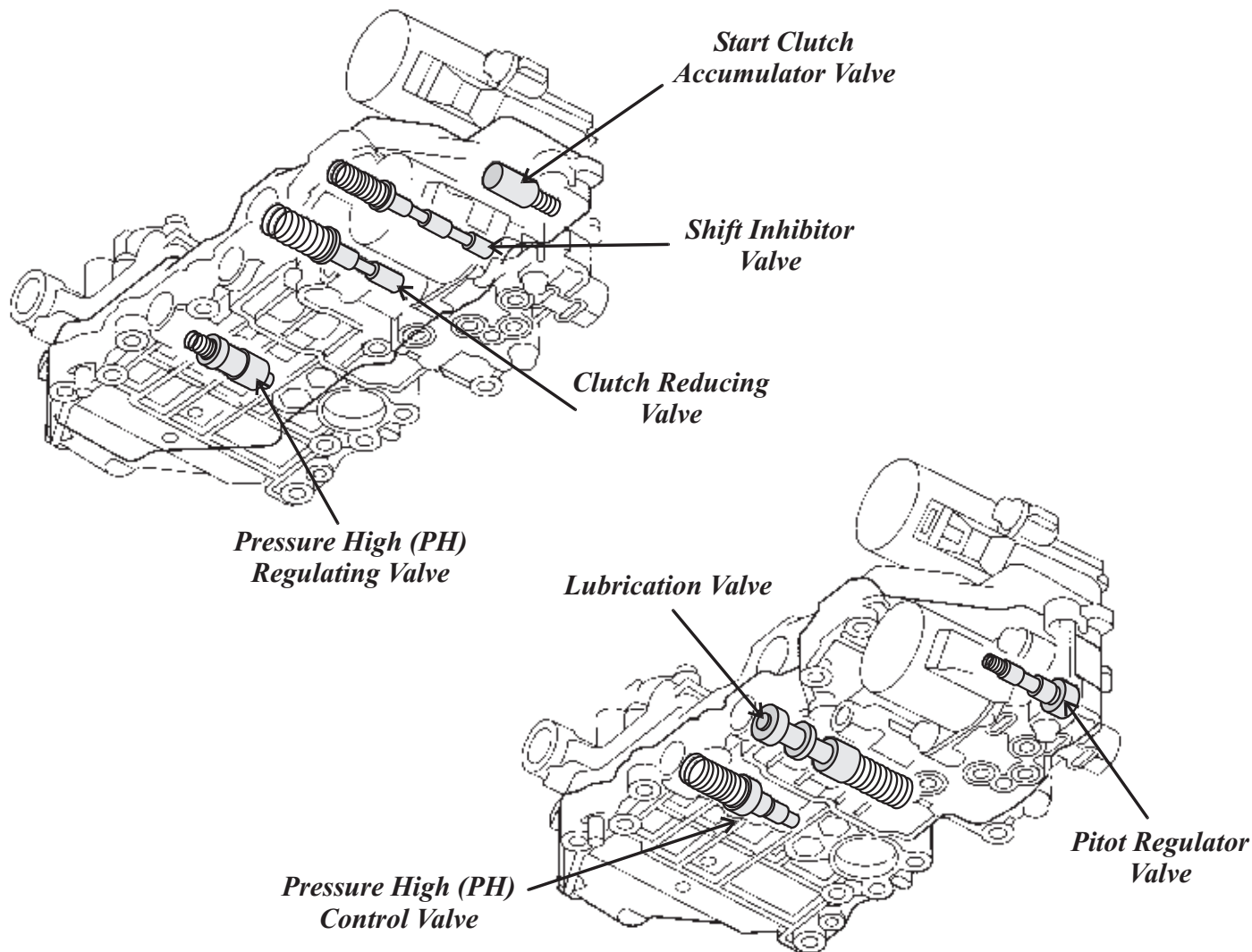
*Shift Control
Valve*

Shift Valve



Quick Reference Tek Spek Sheets

Valve Identification



SPRING	Wire Dia.	O.D.	Free Length	No. of Coils
PH regulator valve spring	1.2mm (0.047")	9.0mm (0.354")	26.7mm (1.051")	10.0
PH control valve spring	1.7mm (0.067")	13.4mm (0.528")	39.4mm (1.551")	8.7
PL regulator valve spring	0.9mm (0.035")	7.2mm (0.283")	14.6mm (0.575")	7.2
PH-PL control valve spring	1.0mm (0.039")	10.0mm (0.394")	31.4mm (1.236")	8.6
Clutch reducing valve spring	1.9mm (0.075")	16.8mm (0.661")	44.4mm (1.748")	8.0
Lubrication valve spring	1.6mm (0.063")	13.4mm (0.528")	51.6mm (2.031")	11.6
Shift valve spring	1.4mm (0.055")	8.2mm (0.323")	34.1mm (1.343")	13.0
Shift control valve spring	1.0mm (0.039")	7.4mm (0.291")	19.3mm (0.760")	7.5
Start clutch control valve spring	0.4mm (0.016")	4.1mm (0.161")	12.1mm (0.476")	6.8
Pilot regulator valve spring	0.6mm (0.024")	5.7mm (0.224")	9.5 mm (0.374")	5.0
Start clutch valve accumulator spring	1.2mm (0.047")	8.3mm (0.327")	29.8mm (1.173")	12.3
Reverse control valve spring	1.2mm (0.047")	9.4mm (0.370")	31.4mm (1.236")	11.0
Shift inhibitor valve spring	1.3mm (0.051")	13.2mm (0.520")	48.3mm (1.902")	10.6



HONDA CIVIC HX DELAYED BANG ENGAGEMENT OR SHUDDER ON TAKE-OFF

COMPLAINT: 1996 to 1999 Honda Civic HX equipped with the Continuously Variable Transmission (CVT) may experience a delayed harsh engagement or a shudder on initial take-off in both drive and reverse.

CAUSE: Some of the common causes which produces this complaint would be:

1. A mechanically failed Start Clutch Solenoid (Figure 1).
2. Sticking Start Clutch Control Valve (Figure 1).
3. A leak in the Start Clutch Drum circuit (Figure 2).
4. A cracked Drive Pulley (Figures 2&3).
5. A stretched Steel Belt slipping in the pulleys (Figures 2&3).

CORRECTION: Check the Start Clutch pressure circuit with a pressure gauge. The tap location is provided in Figure 4. Honda does not publish pressure specifications for this tap but in checking good operational vehicles, there is seen 35 to 40 psi of pressure at idle while in Drive. At stall in drive, this pressure reached 120 to 130 psi. This will verify the integrity of the Start Clutch Solenoid, valve and drum. If this pressure is low, one of these items is faulty. If pressures are within specifications there may be pulley or steel belt problems.

Pulleys are known to crack causing a loss of squeeze pressure on the belts. Figure 4 illustrates the remaining pressure tap locations with pressure specifications in the chart shown in Figure 4. Pressure check both the Drive and Driven Pulleys. If one or both are low, an internal inspection will be needed. Many times the cracks in the pulleys can be seen. If the pressures are within specification, chances are the Steel Belt has stretched and will need to be replaced.

CAUTION: CHECKING PRESSURE ON THE PULLEYS CAN REACH 600 PSI OR GREATER. BE SURE TO USE AN APPROPRIATE GAUGE.

IMPORTANT NOTE:

When the TCM, Transmission Assembly, Start Clutch Assembly, Lower Valve Body or Engine is replaced or overhauled, the TCM must relearn the feedback signal for Start Clutch Control.

The procedure for the Start clutch relearn for 1996 and 1997-99 models can be found in figure 5.

HONDA CIVIC HX DELAYED BANG ENGAGEMENT

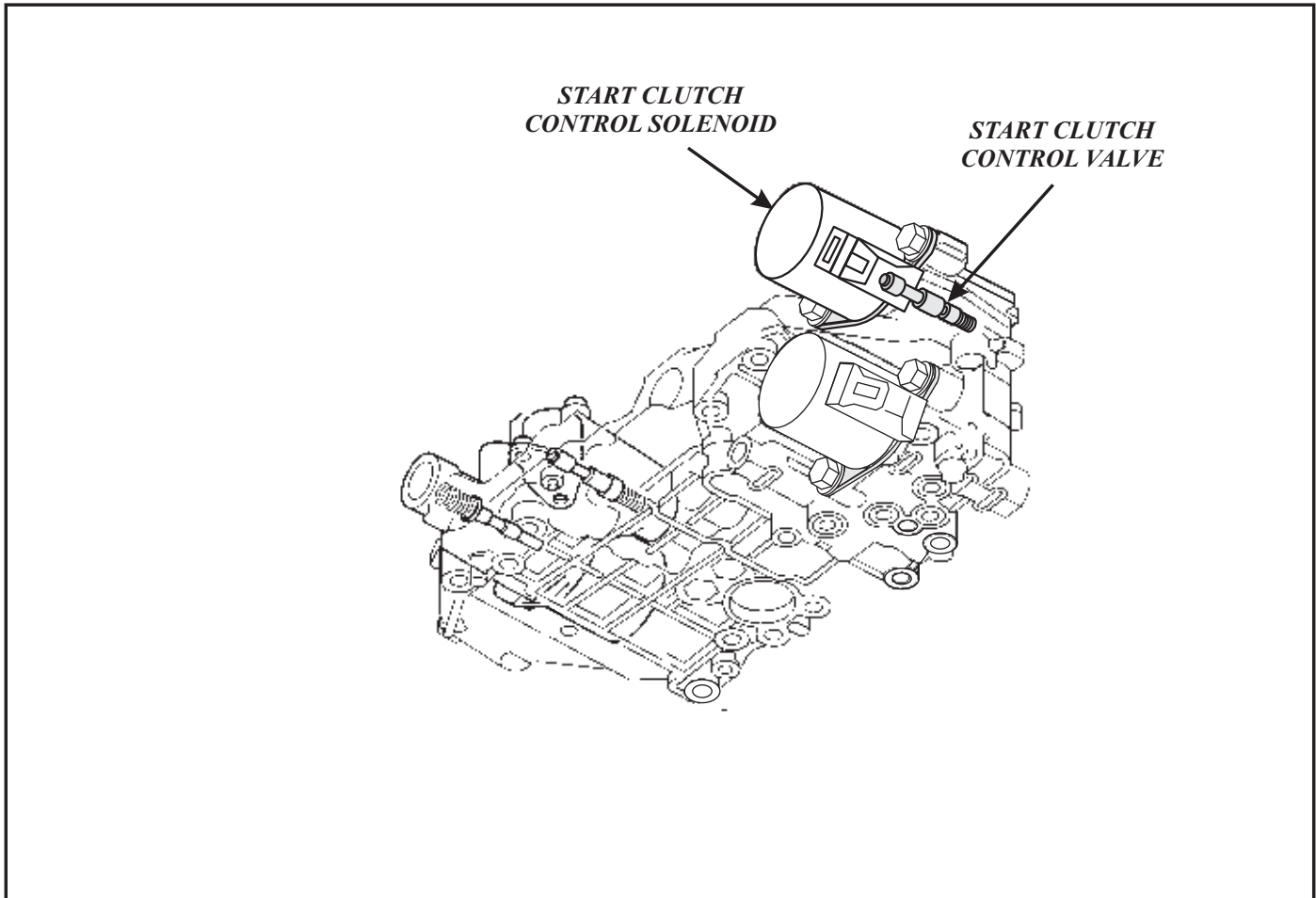


Figure 1

HONDA CIVIC HX DELAYED BANG ENGAGEMENT

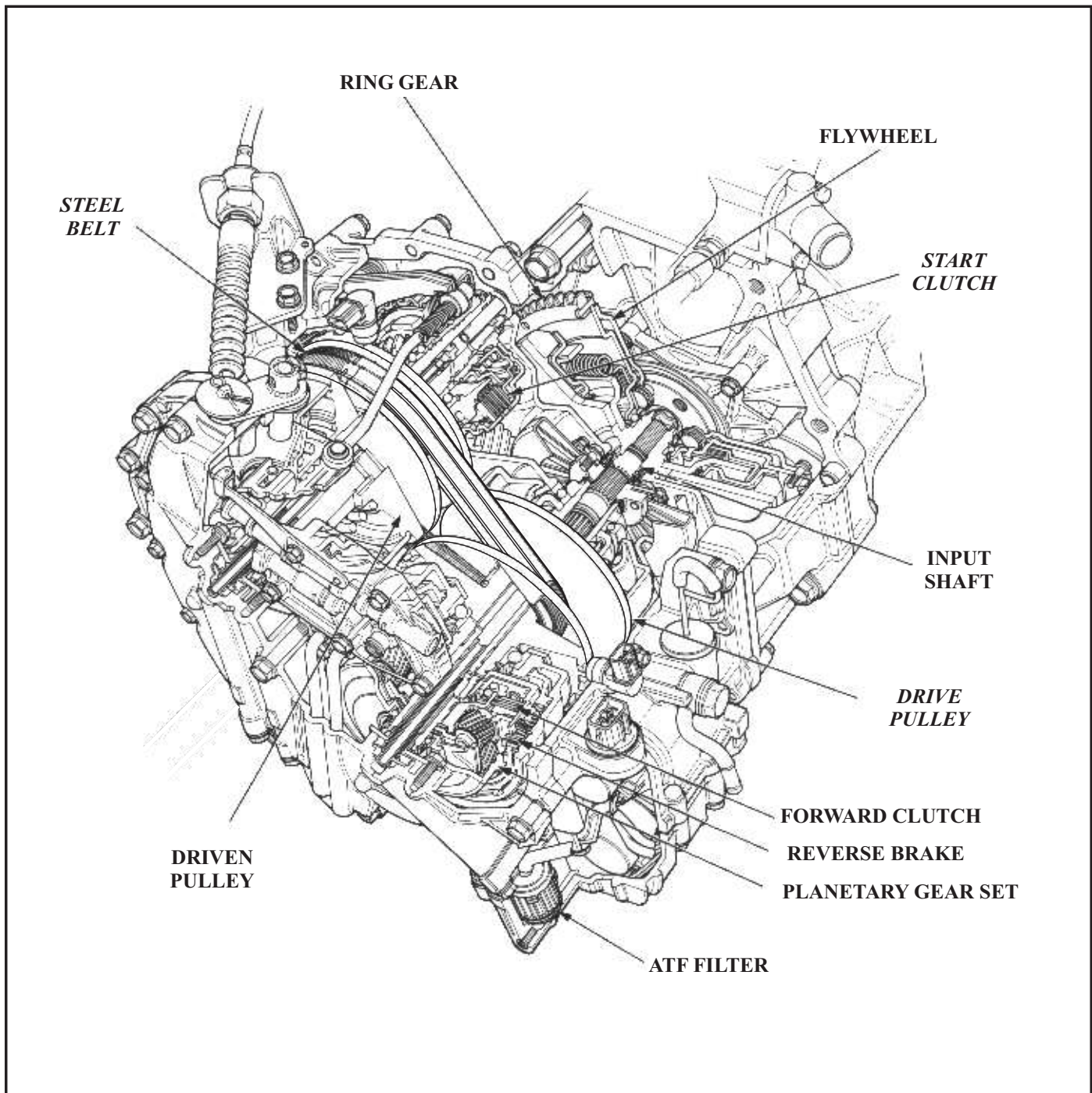


Figure 2

HONDA CIVIC HX DELAYED BANG ENGAGEMENT

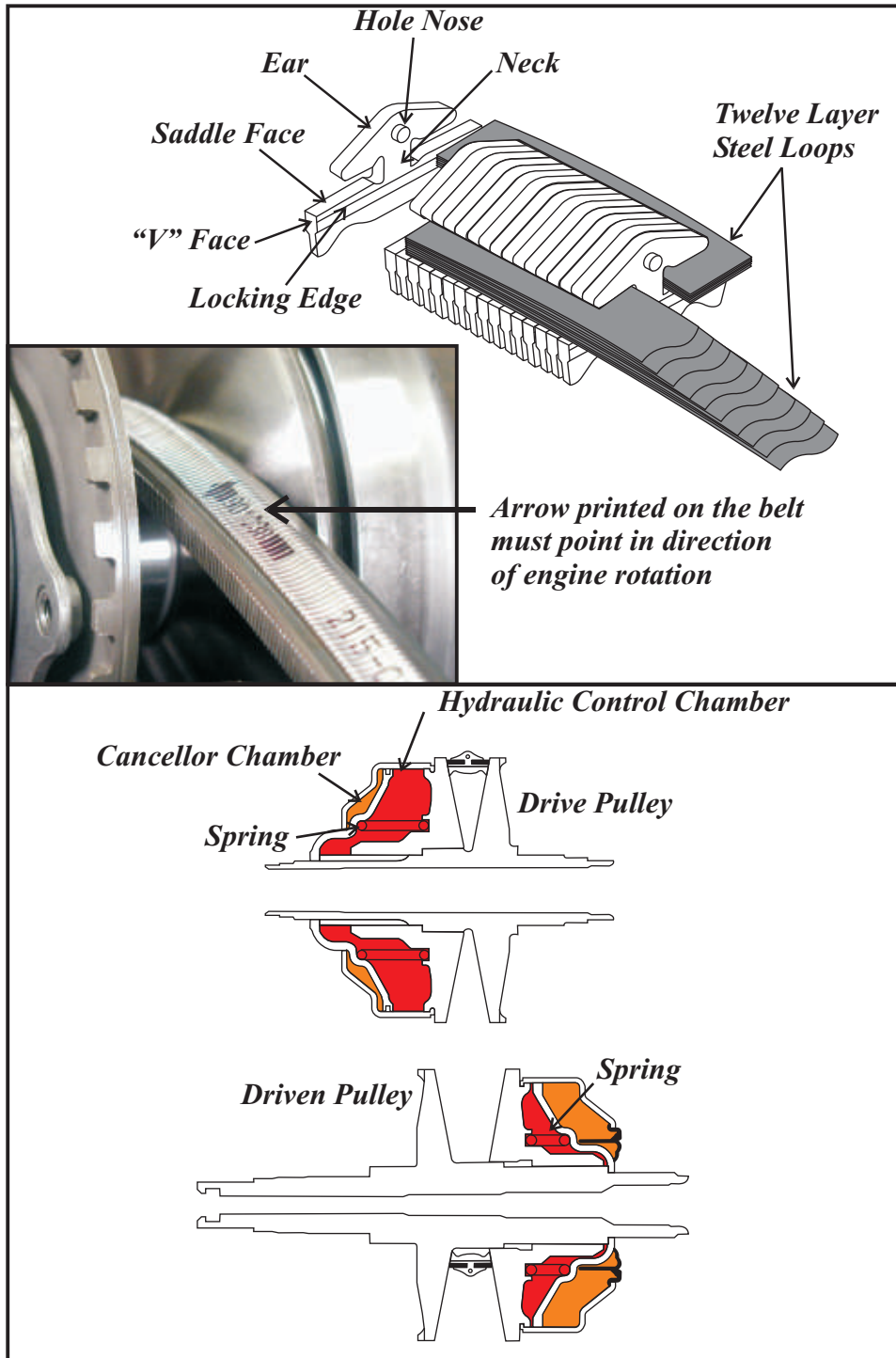


Figure 3

HONDA CIVIC HX M4VA PRESSURE CHART

SHIFT LEVER POSITION	CIRCUIT PRESSURE	CONDITIONS	PRESSURE IN PSI
D	FORWARD CLUTCH	WHEELS FREE, ENGINE @ 1500 RPM	200 - 253
R	REVERSE BRAKE	WHEELS FREE, ENGINE @ 1500 RPM	200 - 253
N	DRIVE PULLEY	WHEELS FREE, ENGINE @ 1500 RPM	*30 - 100
N	DRIVEN PULLEY	WHEELS FREE, ENGINE @ 1500 RPM	210 - 330
N	LUBRICATION	WHEELS FREE, ENGINE @ 3000 RPM	ABOVE 30
D	START CLUTCH	IDLE	35 - 40
D	START CLUTCH	STALL	120 - 130

***CAUTION:** When transmission control system is in failsafe, drive pulley pressure may exceed 600 PSI

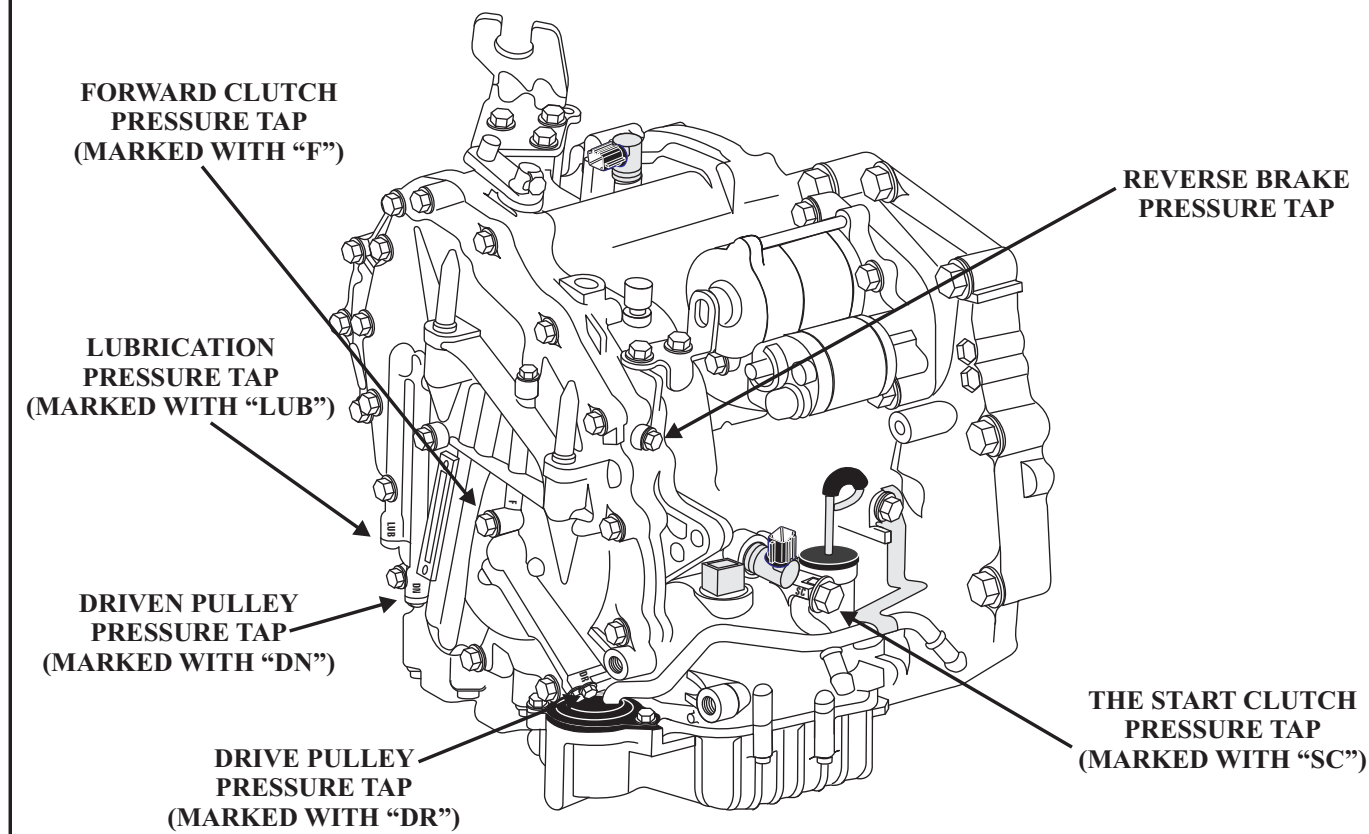


Figure 4



HONDA CIVIC HX START CLUTCH RELEARN PROCEDURE

1996 MODEL ONLY:

1. Locate the Service Check Connector under the passenger side dash and jump the connector.
2. Start the engine, and warm it up to normal operating temperature, the radiator cooling fan should come on twice.
3. Fully depress the brake pedal and accelerator pedal for 20 seconds in the "D" position.
4. Release the accelerator pedal and shift into neutral or park. To store the engine negative pressure in memory, let the engine idle for one minute under the following conditions:
 - Brake pedal depressed
 - A/C switch OFF
 - Headlight switch OFF
 - Heater Fan switch OFF
 - All accessories OFF

NOTE: Begin step 4 within 60 seconds after the radiator fan goes off.

5. Shift into "D" position, and let the engine idle for 2 minutes to store the feedback signal in memory under the same conditions as in step 4.
6. Remove the jumper from the Service Check Connector.

NOTE: The TCM will not store the feedback signal when transmission fluid temperature is below 104°F (40°C) even if coolant temperature reaches normal operating temperature.

This procedure may have to be repeated until Start Clutch calibration is complete.

1997-00 MODELS:

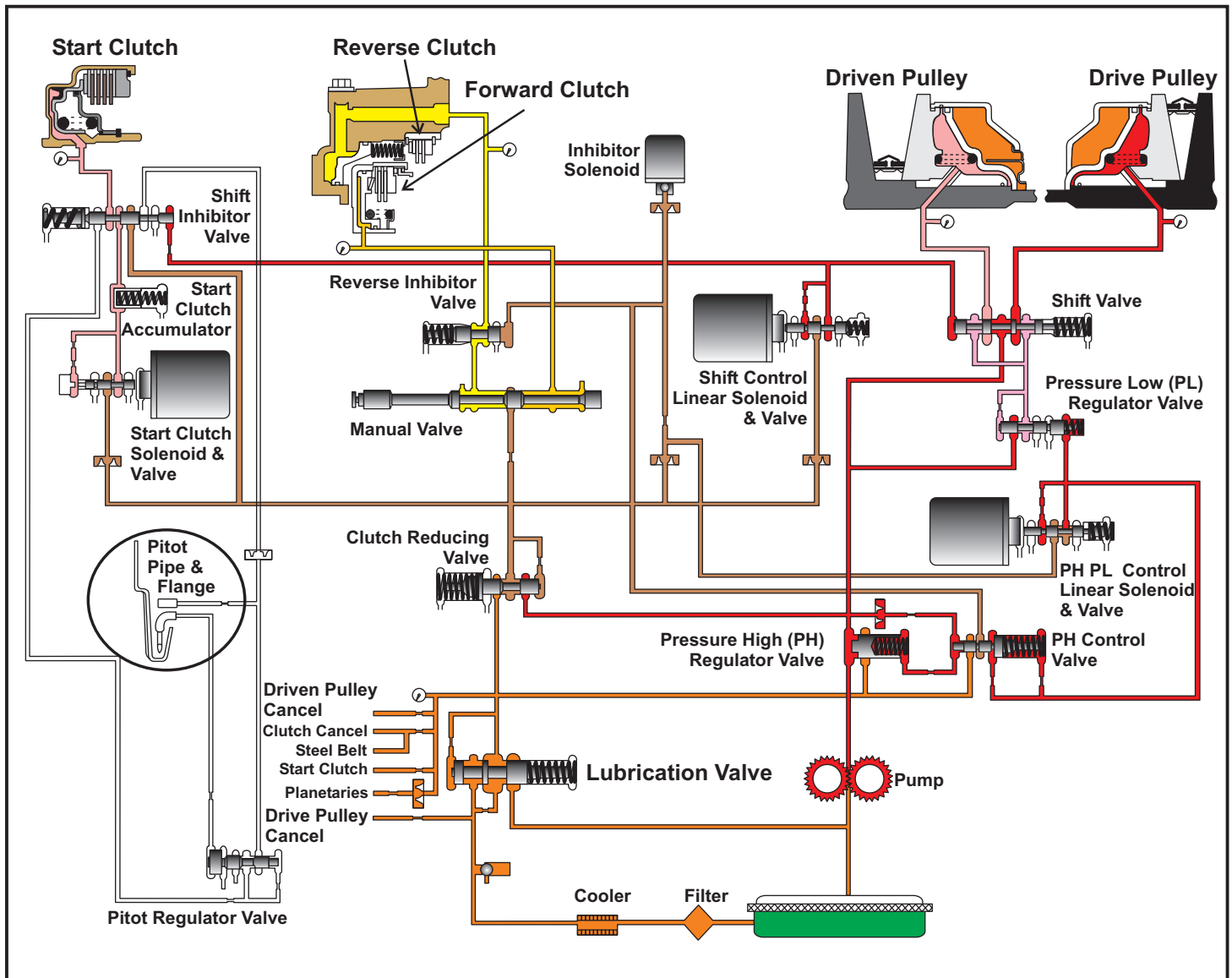
The TCM (1997-98 Models and PCM (1999 Model) memorize the Feedback Signal when you drive the vehicle as follows:

- Warm the engine to normal operating temperature.
- Shift into the "D" position.
- Turn OFF all electrical systems.
- Drive the vehicle to a speed of 37 mph (60 km/h).
- After vehicle speed reaches 37 mph (60 km/h), release the accelerator pedal for 5 Seconds.

WARNING! - If you perform a 1996 start clutch relearn procedure with 1997 and up vehicles, you will damage the transmission.

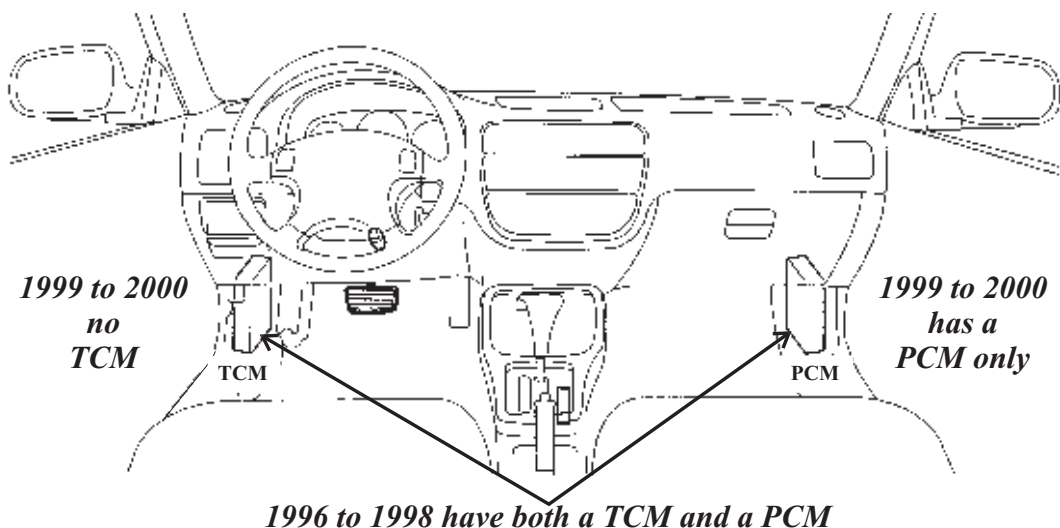
Figure 5

Quick Reference Tek Spek Sheets



Quick Reference Tek Spek Sheets

PCM/TCM



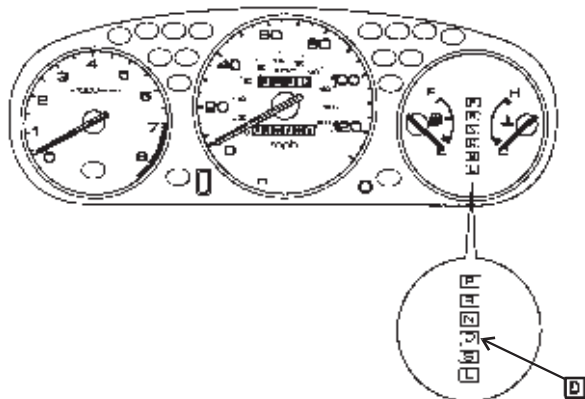
Electronic Control

'96-98 Models:

The electronic control system consists of the Transmission Control Module (TCM), sensors, three linear solenoids, and an inhibitor solenoid. Shifting is electronically controlled under all conditions. The TCM is located below the dashboard, behind the kick panel on the driver's side.

'99-00 Models:

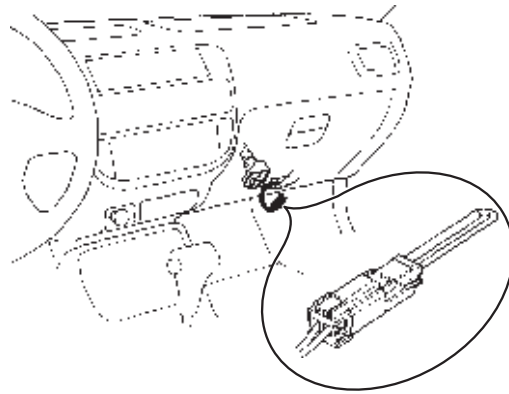
The electronic control system consists of a Powertrain Control Module (PCM), sensors, three linear solenoids and an inhibitor solenoid. Shifting is electronically controlled under all conditions. A Grade Logic Control System to control shifting in **D** position while the vehicle is ascending or descending a slope. The PCM is located below the dashboard, under the kick panel on the passenger's side.




The Drive Indicator Light will illuminate reporting the presence of a DTC or DTC's

Quick Reference Tek Spek Sheets

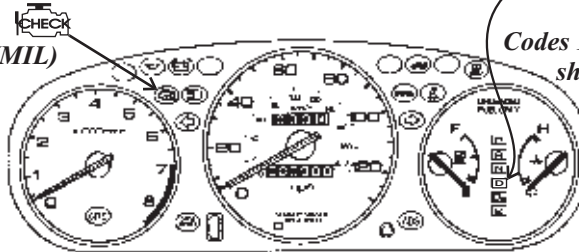
Code Retrieval



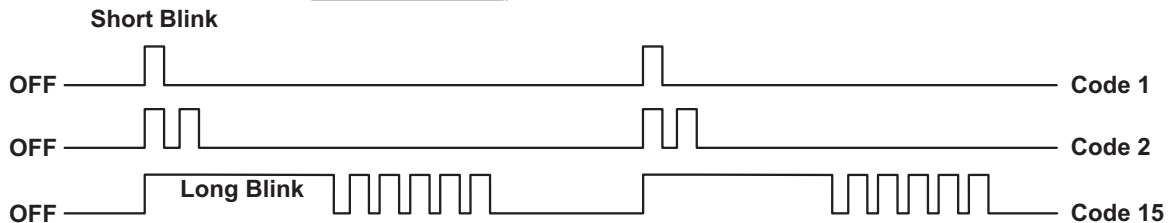
*With Key On Engine Off
Install a jumper wire into the
blue Service Check Connector
using a paper clip or Honda's
SCS Service Connector
Part # 07PAZ-0010100.*

*Codes will be flashed out
on the  light in the dash.*

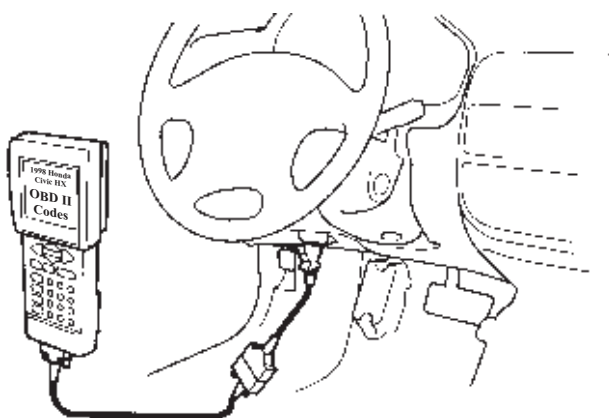
*The Malfunction
Indicator Lamp (MIL)*



*Codes 1 - 9 are represented by
short blinks while 10 and
above are represented
by long blinks. See
Example below*



*OBD II Scan tool Data Link Connector
is also available for code retrieval.
This connector is located under the
dash to the left of the steering
column.*





Technical Service Information

Quick Reference Tek Spek Sheets

Codes

1996 to 1998 Models

DTC*	<input type="checkbox"/> Indicator Light	MIL	Code Description
1790 (3)	Blinks	ON	Throttle Position Sensor
1791 (4)	Blinks	ON	Vehicle Speed Sensor
1705 (5)	Blinks	ON	AT Gear Position Switch (short to ground)
1706 (6)	OFF	ON	AT Gear Position Switch (open)
1725 (11)	Blinks	ON	Ignition Coil
1793 (12)	Blinks	ON	Manifold Absolute Pressure Sensor
1870 (30)	Blinks	ON	Shift Control Linear Solenoid
1873 (31)	Blinks	ON	PH-PL Control Linear Solenoid
1879 (32)	Blinks	ON	Start Clutch Control Linear Solenoid
1882 (33)	Blinks	ON	Inhibitor Solenoid
1885 (34)	Blinks	ON	Drive Pulley Speed Sensor
1886 (35)	Blinks	ON	Driven Pulley Speed Sensor
1888 (36)	Blinks	ON	Secondary Gear Shaft Speed Sensor
1655 (37)	Blinks	ON	ECM or TCM
1890 (42)	Blinks	ON	Shift Control System
1891 (43)	Blinks	ON	Start Clutch Control System

* Both OBDII and flash codes are presented in this column



Technical Service Information

Quick Reference Tek Spek Sheets

Codes

1999 to 2000 Models

DTC*	<input type="checkbox"/> Indicator Light	MIL	Code Description
1705 (5)	Blinks	ON	AT Gear Position Switch (short to ground)
1706 (6)	OFF	ON	AT Gear Position Switch (open)
1870 (30)	Blinks	ON	Shift Control Linear Solenoid
1873 (31)	Blinks	ON	PH-PL Control Linear Solenoid
1879 (32)	Blinks	ON	Start Clutch Control Linear Solenoid
1882 (33)	Blinks	ON	Inhibitor Solenoid
1885 (34)	Blinks	ON	Drive Pulley Speed Sensor
1886 (35)	Blinks	ON	Driven Pulley Speed Sensor
1888 (36)	Blinks	ON	Secondary Gear Shaft Speed Sensor
1655 (37)	Blinks	ON	ECM or TCM
1890 (42)	Blinks	ON	Shift Control System
1891 (43)	Blinks	ON	Start Clutch Control System

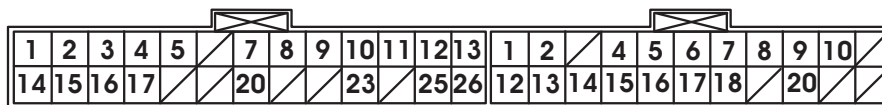
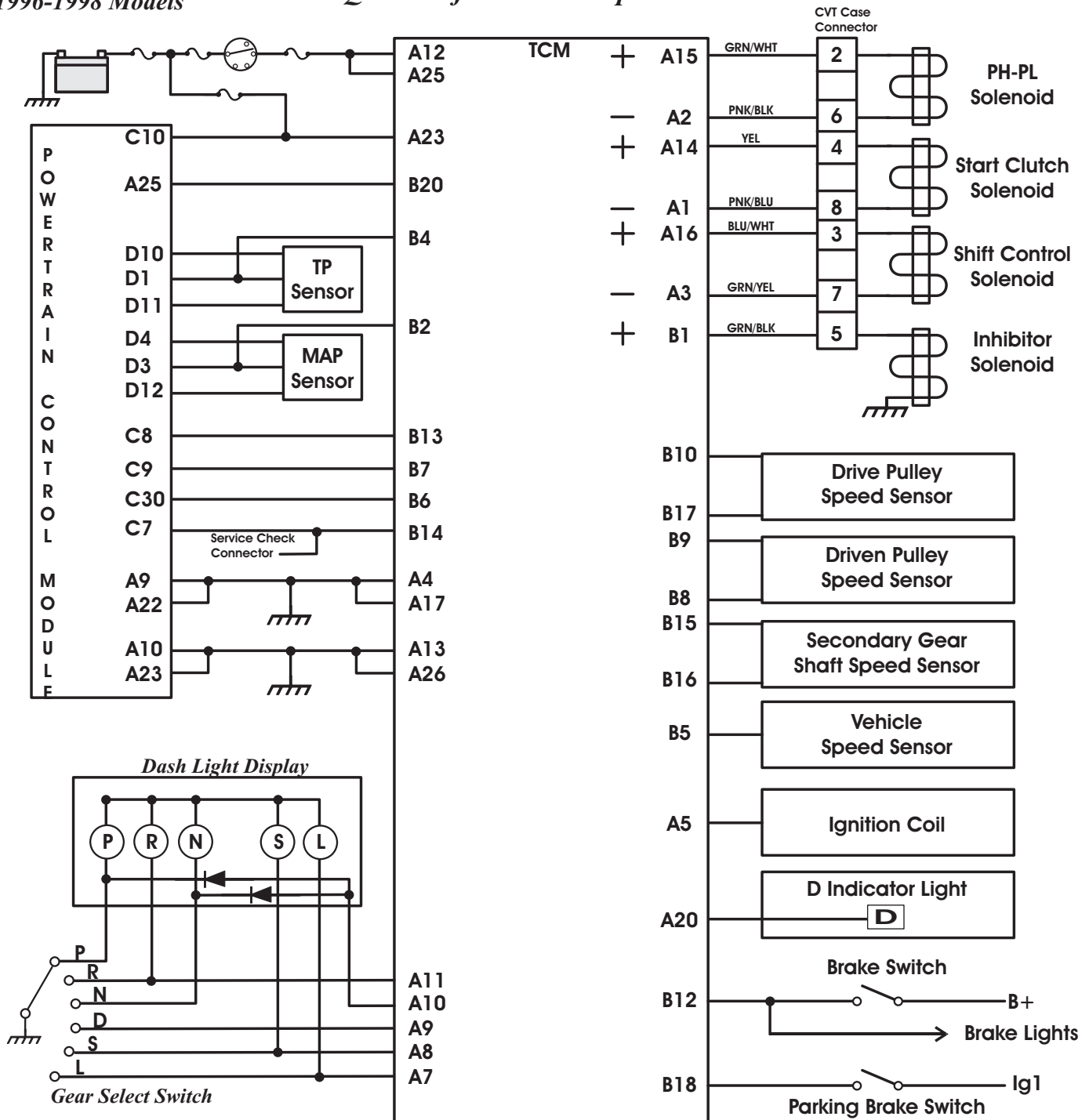
* Both OBDII and flash codes are presented in this column



Technical Service Information

1996-1998 Models

Quick Reference Tek Spek Sheets



A Connector (26 Pin)

B Connector (22 Pin)

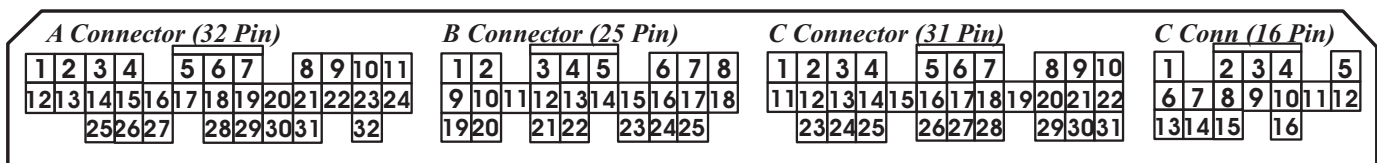
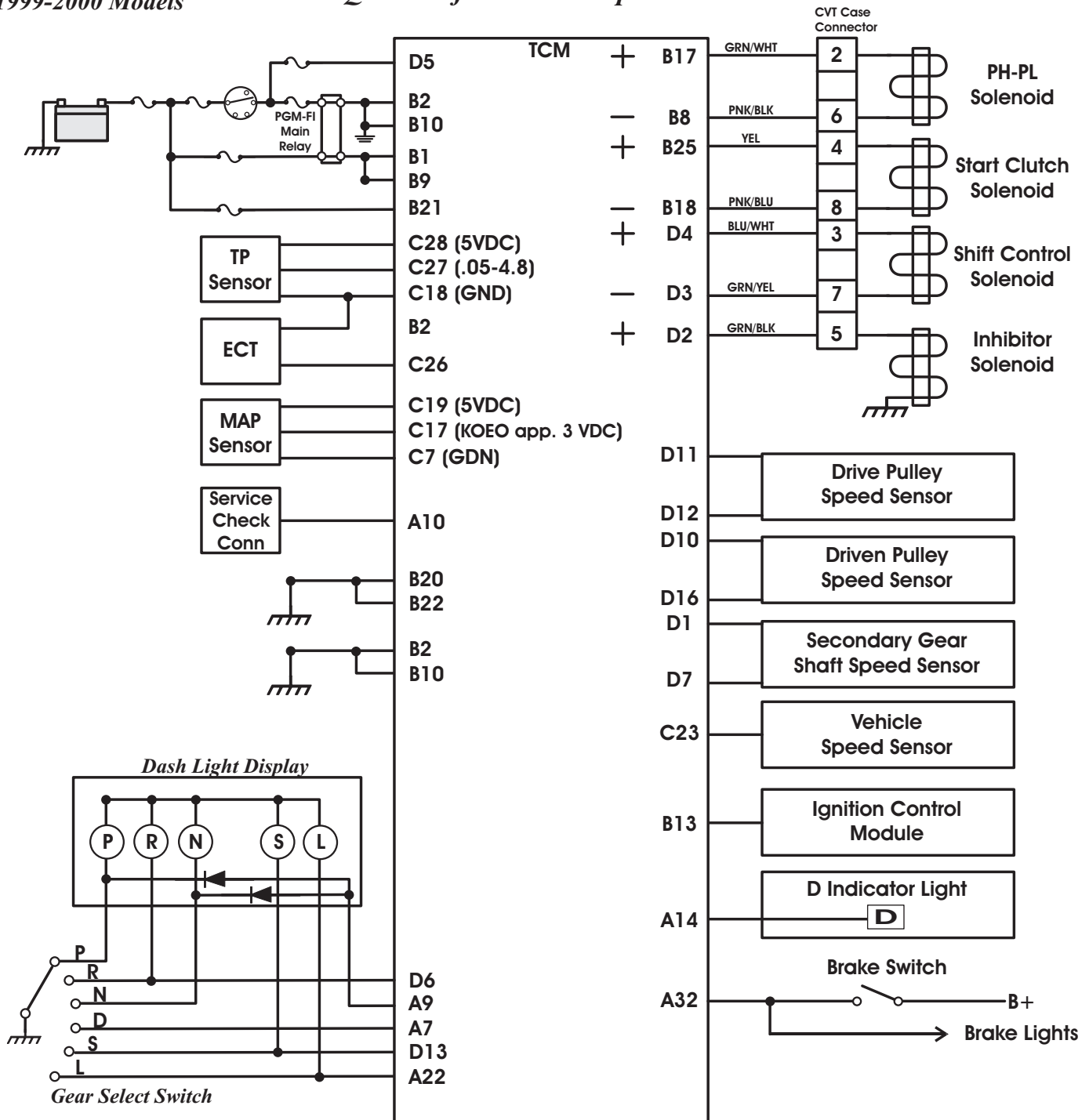
TCM Connector Terminal ID Wire Side View



Technical Service Information

1999-2000 Models

Quick Reference Tek Spek Sheets



PCM Connector Terminal ID Wire Side View

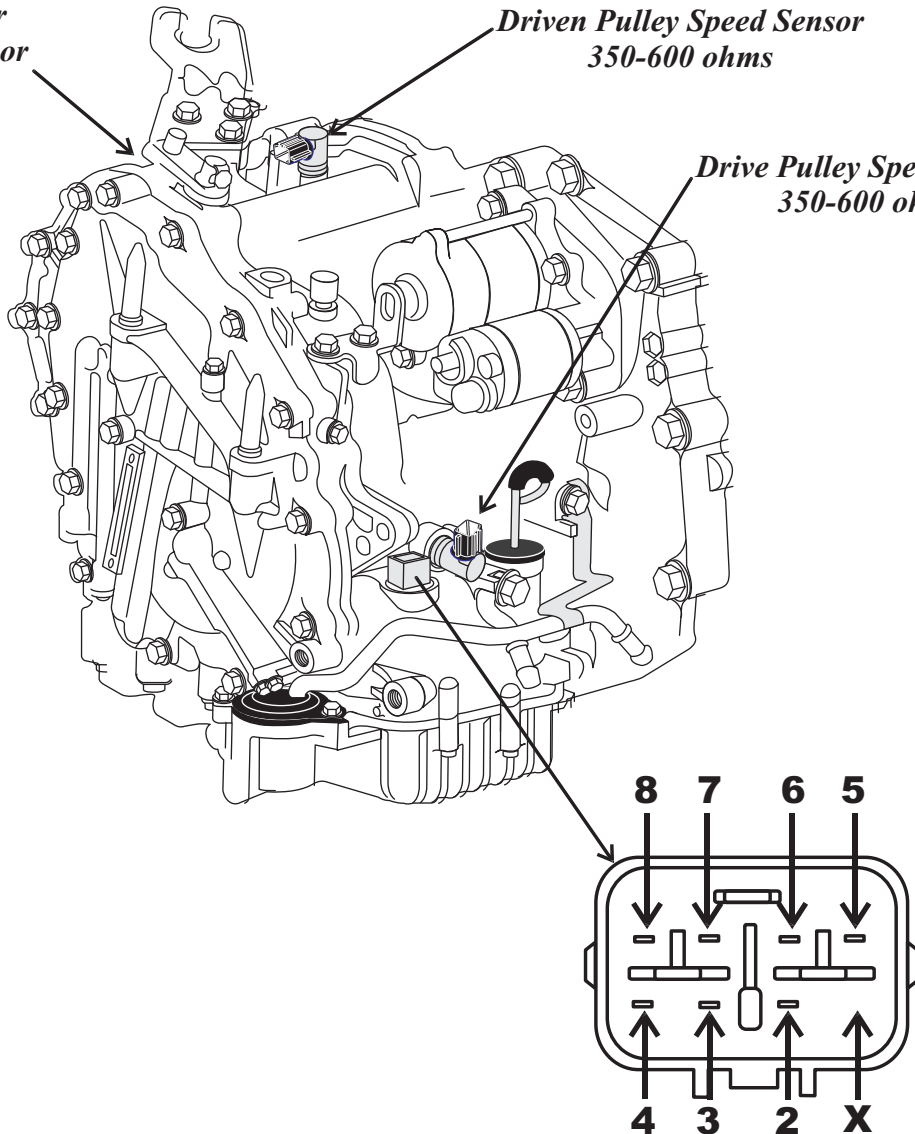
Quick Reference Tek Spek Sheets

Electrical Diagnosis

*Secondary Gear
Shaft Speed Sensor
350-600 ohms
(Out of View)*

*Driven Pulley Speed Sensor
350-600 ohms*

*Drive Pulley Speed Sensor
350-600 ohms*



SOLENOID	POS	NEG	OHMS
Shift Control Solenoid	3	7	3.8-6.8
PH-PL Control Solenoid	2	6	3.8-6.8
Start Clutch Control Solenoid	4	8	3.8-6.8
Reverse Inhibitor Solenoid	5	Body	11.7-21.0