

## 1990 Honda Accord DX

1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul

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#### PX4B Electronic Controls & Overhaul

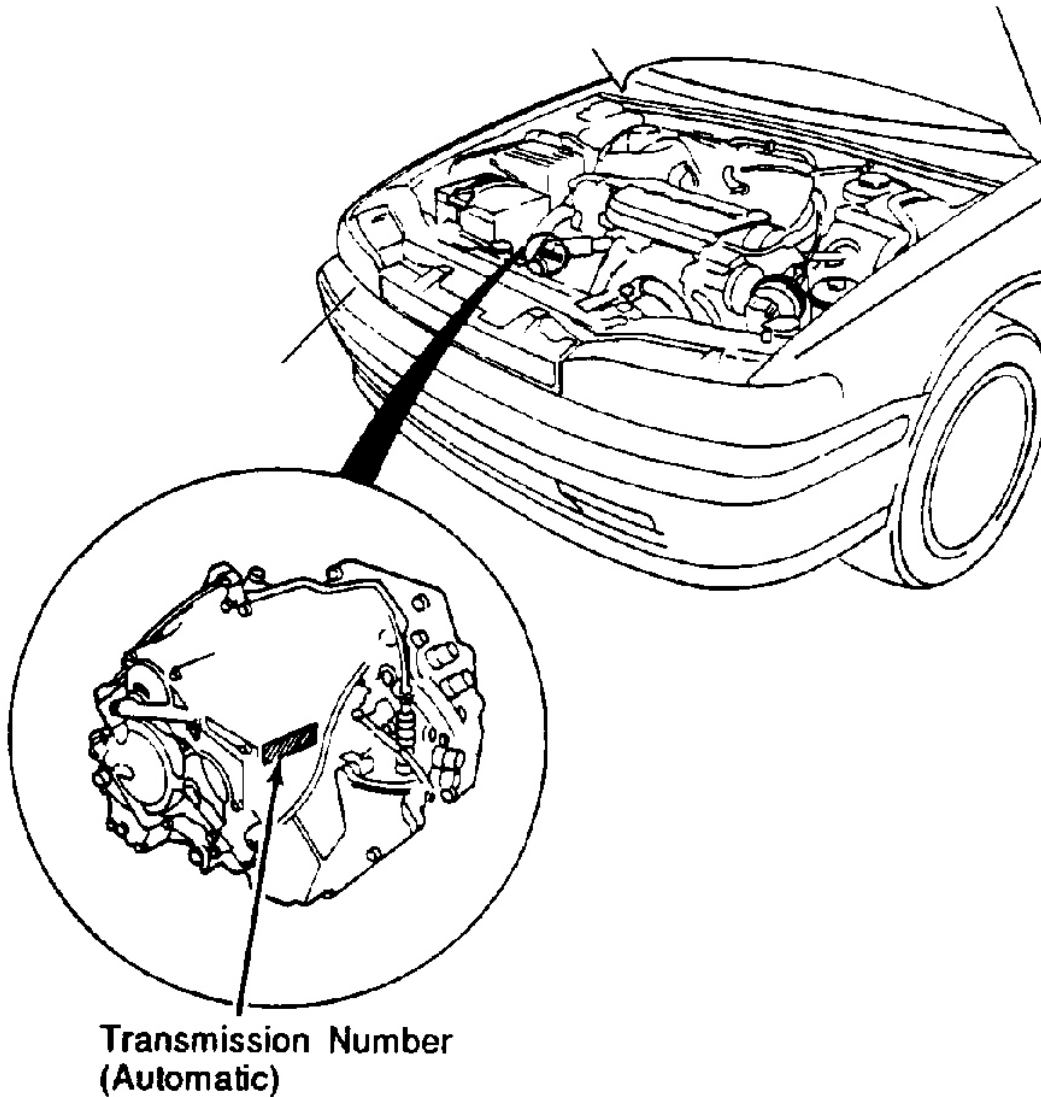
## APPLICATION

### TRANSAXLE APPLICATION

| Application | Transaxle Model |
|-------------|-----------------|
| Accord      | PX4B            |

## IDENTIFICATION

Transaxle identification number is stamped on a metal pad on top of transaxle. See **Fig. 1** .



G96J26210

**Fig. 1: Transaxle Identification Number Location**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## DESCRIPTION & OPERATION

### TRANSAXLE

The automatic transaxle is a combination of a 3-element torque converter and a triple-shaft electronically controlled automatic transaxle which provides 4 speeds forward and one speed reverse. Transaxle is positioned in line with engine. The torque converter consists of a pump, turbine and stator, assembled in a single unit. The transaxle has 3 parallel shafts, mainshaft, countershaft and secondary shaft. The mainshaft is in line with engine

crankshaft. The electronic control system consists of an Automatic Transaxle Control Unit (ATCU), sensors, and 4 solenoid valves. Shifting and lock-up are electronically controlled for optimal performance. For solenoid operation status, see **SELECTOR SOLENOID APPLICATION** and **CONVERTER LOCK-UP SOLENOID APPLICATION** tables. The main valve assembly includes the main body, secondary body, servo body, regulator body and throttle body. Input from various sensors located throughout the car determines which shift control solenoid valve the ATCU will activate.

### SELECTOR SOLENOID APPLICATION

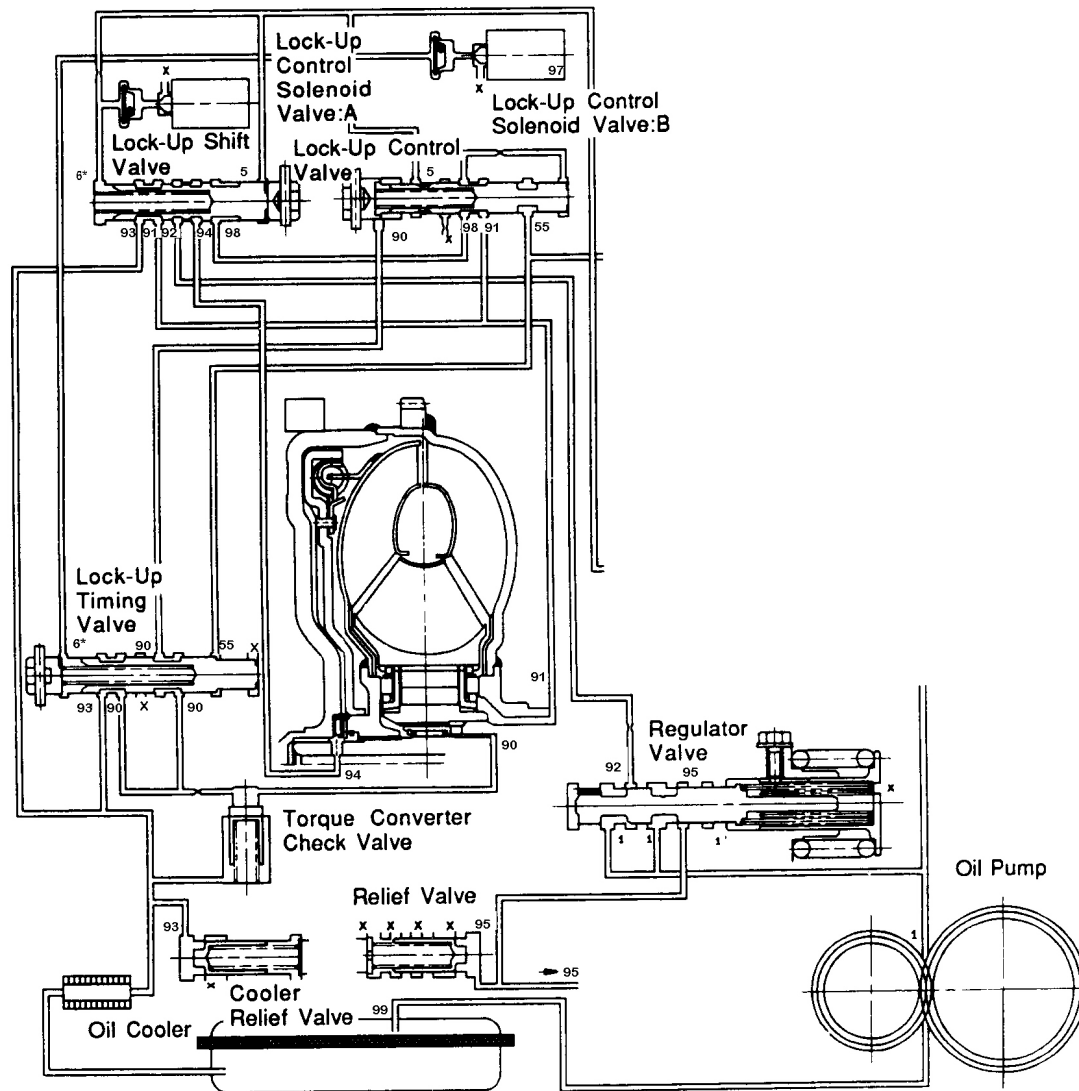
| Selector Position | Solenoid "A" | Solenoid "B" |
|-------------------|--------------|--------------|
| 1st (D4, D3)      | OFF          | ON           |
| 2nd (D4, D3)      | ON           | ON           |
| 3rd (D4, D3)      | ON           | OFF          |
| 4th (D4)          | OFF          | OFF          |

### LOCK-UP MECHANISM

In "D4" and in 2nd, 3rd and 4th, pressurized fluid from torque converter is directed to lock-up piston which locks transaxle mainshaft to engine crankshaft. Lock-up is controlled by engine speed, hydraulic pressure and ATCU. Under certain conditions, the lock-up clutch is applied during deceleration, in 3rd and 4th speed. The lock-up valves control range of lock-up according to lock-up control solenoid valves A and B, and throttle valve B. When ATCU activates lock-up control solenoid valves A and B, modulator pressure changes. Lock-up control solenoid valves A and B are mounted on torque converter housing, and are controlled by ATCU. See **Fig. 2** . For solenoid status, see **CONVERTER LOCK-UP SOLENOID APPLICATION**

### CONVERTER LOCK-UP SOLENOID APPLICATION

| Solenoid Condition | Solenoid "A" | Solenoid "B" |
|--------------------|--------------|--------------|
| OFF                | OFF          | OFF          |
| Slight On          | ON           | OFF          |
| Half On            | ON           | ON           |
| Full On            | ON           | ON           |
| Deceleration       | ON           | Cycling      |



G96A26211

**Fig. 2: Lock-Up Clutch Schematic**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## GEAR SELECTION

The selector has 7 positions and is not linked mechanically to transaxle. It controls electrical switches which are connected to ATCU, which controls operation within selected range.

### "P" Park

Front wheels locked; parking pawl engaged with parking gear on countershaft. All clutches released. A slide-type neutral safety switch allows starting in this position.

### "R" Reverse

Reverse selector engaged with countershaft reverse gear and 4th gear clutch locked.

**"N" Neutral**

All clutches released. A slide-type neutral safety switch allows starting in this position.

**"D4" Drive**

General driving; starts in 1st, shifts automatically to 2nd, 3rd, then 4th. Downshift through 3rd, 2nd and 1st. The lock-up mechanism comes into operation in "D4".

**"D3" Drive**

For rapid acceleration at highway speeds and general driving; starts off in 1st, shifts automatically to 2nd, then 3rd. Downshifts through 2nd to 1st on deceleration.

**"2" Second**

For engine braking or better traction starting off on loose or slippery surfaces; stays in 2nd gear, does not shift up or down.

**"1" First**

For engine braking; stays in 1st gear, does not shift up or down.

**SELF-DIAGNOSIS**

The ATCU controls shifting and lock-up operation and also provides diagnostics capabilities. If a problem is present within the system the S indicator light and LED on ATCU will blink when ignition is turned on. When the service check connector located at lower right of glove compartment is shorted with a jumper wire the indicator light "S" and ATCU LED will blink fault code. See **Fig. 3**. The LED or indicator "S" can indicate a number of faults by blinking separate codes one after another and store them in erasable memory. To clear stored codes disconnect "Back-Up" fuse in under hood relay box for more than 10 seconds.

**NOTE:** Some PGM-FI problems will make S indicator light come on. After repairing PGM-FI system, disconnect "Back-Up" fuse in under hood relay box for more than 10 seconds to reset ATCU memory. Only A and D sections of ECU test harness are used for A/T troubleshooting. Unless otherwise noted, use only Digital Multimeter (KS-AHM-32-003) for testing.

**LUBRICATION & ADJUSTMENTS**

See **SERVICING** article.

**ON-VEHICLE SERVICE****DRIVE AXLE SHAFTS**

See **FWD AXLES SHAFTS** article in DRIVELINE/AXLES.

## TROUBLE SHOOTING

**NOTE:** Before trouble shooting transaxle malfunction, verify that electronic operation is functioning properly before checking hydraulic operations.

### SYMPTOM DIAGNOSIS

#### SYMPTOM DIAGNOSIS

| Problem Or Symptom                                                             | (1) Possible Cause Of Symptom Reference No. |
|--------------------------------------------------------------------------------|---------------------------------------------|
| Engine runs, but car does not move in any gear                                 | 1, 6, 7, 16                                 |
| Car moves in "R" and "2", but not in "D3" or "D4" or "1"                       | 8, 29, 44, 48                               |
| Car moves in "D <sub>3</sub> ", "D <sub>4</sub> ", "1" and "R", but not in "2" | 9, 30, 49                                   |
| Car moves in "D <sub>3</sub> ", "D <sub>4</sub> ", "2" and "1", but not in "R" | 1, 11, 22, 34, 38, 39, 40                   |
| Car moves in "N"                                                               | 1, 8, 9, 10, 11, 46, 47                     |
| Excessive idle vibration                                                       | 5, 17                                       |
| Slips in all gears                                                             | 6, 7, 16                                    |
| No engine braking in "1" position                                              | 12                                          |
| Slips in low gear                                                              | 8, 29, 44, 48                               |
| Slips in 2nd gear                                                              | 9, 20, 23, 30, 49                           |
| Slips in 3rd gear                                                              | 10, 21, 23, 31, 44                          |
| Slips in 4th gear                                                              | 11, 23, 32                                  |
| Slips in reverse gear                                                          | 11, 32, 34                                  |
| Flares on 1-2 upshift                                                          | 3, 15                                       |
| Flares on 2-3 upshift                                                          | 3, 15, 24, 44                               |
| Flares on 3-4 upshift                                                          | 3, 15, 25, 44                               |
| No upshift, trans. stays in low gear                                           | 14, 19, 23                                  |
| No downshift to low gear                                                       | 12, 19                                      |
| Late upshift                                                                   | 14                                          |
| Erratic shifting                                                               | 2, 14, 26                                   |
| Harsh shift (up & down shifting)                                               | 2, 4, 15, 23, 24, 27, 47                    |
| Harsh shift (1-2)                                                              | 2, 9                                        |
| Harsh shift (2-3)                                                              | 2, 10, 23, 24                               |
| Harsh shift (3-4)                                                              | 2, 11, 23, 25                               |
| Harsh kickdown shifts                                                          | 2, 23, 27, 28                               |
| Harsh kickdown shift (2-1)                                                     | 48                                          |
| Harsh downshift at closed throttle                                             | 15                                          |
| Harsh shift when manually shifting into "1"                                    | 33                                          |
| Axle(s) slip out of trans. on turns                                            | 43, 50                                      |

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|                                                                                                          |                          |
|----------------------------------------------------------------------------------------------------------|--------------------------|
| Axle(s) stuck in trans.                                                                                  | 43                       |
| Ratcheting noise when shifting into "R"                                                                  | 6, 7, 38, 39, 40         |
| Loud popping noise when taking off in "R"                                                                | 38, 39, 40               |
| Ratcheting noise when shifting from "R" to "P" or from "R" to "N"                                        | 38, 39, 40, 45           |
| Noise from trans. in all selector lever positions                                                        | 6, 17                    |
| Noise from trans. only when wheels are rolling                                                           | 39, 42                   |
| Gear whine, RPM related (pitch changes with shifts)                                                      | 8, 13, 41                |
| Gear whine, speed related (pitch changes with speed)                                                     | 38, 42                   |
| Trans. will not shift into 4th gear in "D <sub>4</sub> "                                                 | 1, 21, 28, 32            |
| Lock-up clutch does not lock up smoothly                                                                 | 17, 36, 37               |
| Lock-up clutch does not operate properly                                                                 | 2, 3, 15, 18, 35, 36, 37 |
| Trans. has multitude of problems shifting (at disassembly, large particles of metal are found on magnet) | 43                       |

(1) Possible cause of symptom reference No. corresponds with reference No. in **POSSIBLE CAUSE OF SYMPTOMS** table.

### POSSIBLE CAUSE OF SYMPTOMS

| Reference No. | Possible Cause                                                     |
|---------------|--------------------------------------------------------------------|
| 1             | Shift cable broken/out of adjustment                               |
| 2             | Throttle cable too short                                           |
| 3             | Throttle cable too long                                            |
| 4             | Wrong type ATF                                                     |
| 5             | Idle RPM too low/high                                              |
| 6             | Oil pump worn or binding                                           |
| 7             | Pressure regulator stuck                                           |
| 8             | 1st clutch defective                                               |
| 9             | 2nd clutch defective                                               |
| 10            | 3rd clutch defective                                               |
| 11            | 4th clutch defective                                               |
| 12            | 1st hold clutch defective                                          |
| 13            | Mainshaft, countershaft & secondary shaft idler gears worn/damaged |
| 14            | Modulator valve stuck                                              |
| 15            | Throttle valve "B" stuck                                           |
| 16            | ATF strainer clogged                                               |
| 17            | Torque converter defective                                         |
| 18            | Torque converter check valve stuck                                 |
| 19            | 1-2 shift valve stuck                                              |
| 20            | 2-3 shift valve stuck                                              |
| 21            | 3-4 shift valve stuck                                              |

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|    |                                       |
|----|---------------------------------------|
| 22 | EAT "D" inhibitor valve stuck         |
| 23 | Clutch pressure control valve stuck   |
| 24 | 2nd orifice control valve stuck       |
| 25 | Orifice control valve stuck           |
| 26 | 3-2 kickdown valve stuck              |
| 27 | 3rd kickdown valve stuck              |
| 28 | 4th exhaust valve stuck               |
| 29 | 1st accumulator defective             |
| 30 | 2nd clutch accumulator defective      |
| 31 | 3rd clutch accumulator defective      |
| 32 | 4th/reverse accumulator defective     |
| 33 | 1st hold clutch accumulator defective |
| 34 | Servo valve stuck                     |
| 35 | Lock-up clutch timing valve stuck     |
| 36 | Lock-up clutch shift valve stuck      |
| 37 | Lock-up clutch control valve stuck    |
| 38 | Shift fork bent                       |
| 39 | Reverse gears worn/damaged (3 gears)  |
| 40 | Reverse selector worn                 |
| 41 | 3rd gears worn/damaged (2 gears)      |
| 42 | Final gears worn/damaged (2 gears)    |
| 43 | Differential pinion shaft worn        |
| 44 | Feedpipe "O" ring broken              |
| 45 | 4th gears worn/damaged (2 gears)      |
| 46 | Gear clearance incorrect              |
| 47 | Clutch clearance incorrect            |
| 48 | Sprag clutch defective                |
| 49 | Sealing rings/guide worn              |
| 50 | Axle-inboard joint clip missing       |

## SELF-DIAGNOSTIC SYSTEM

### SYSTEM FAULT CODES

**NOTE:** The following applies to **SYSTEM FAULT CODE IDENTIFICATION** table.

- If symptoms for Codes 3, 6, or 11 are described and LED is not blinking, it is necessary to recreate the symptom by test driving and checking LED with ignition still ON.
- If LED displays codes other than those listed above or stays lit continuously, control unit is faulty.
- S indicator light and Check Engine warning light may come on simultaneously. Check PGM-FI system according to number of blinks on the PGM-FI ECU self-diagnosing indicator. Reset memory by removing Back Up fuse in under-hood relay box for more than 10 seconds. Drive vehicle for several

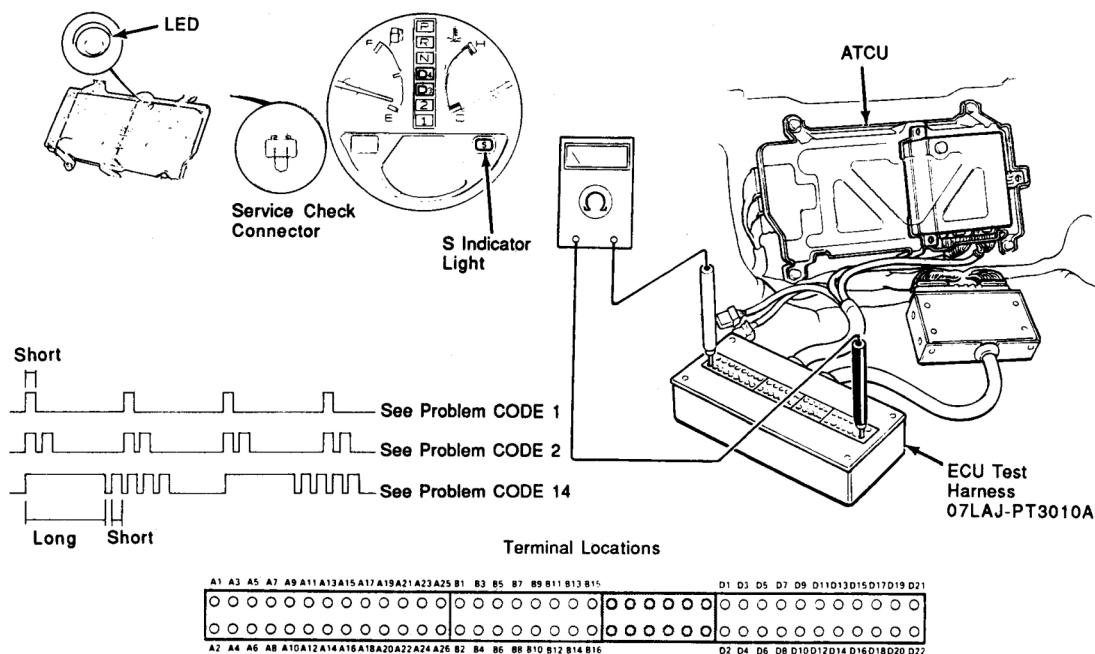
**1990 Honda Accord DX****1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul**

minutes at speed over 30 MPH and recheck lights.

**SYSTEM FAULT CODE IDENTIFICATION**

| <b>No. LED Blinks</b> | <b>Indicator Light "S"</b> | <b>System/Symptom</b>                                                                             | <b>Probable Cause</b>                                                                                                                                 |
|-----------------------|----------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                     | Blinks                     | Lock-up clutch won't engage or disengage, frequent engine stalls                                  | Disconnected lock-up control solenoid valve "A" coupler, short/open in valve "A" wire or faulty lock-up control solenoid valve "A"                    |
| 2                     | Blinks                     | Lock-up clutch does not engage                                                                    | Disconnected lock-up control solenoid valve "B" coupler, short/open in valve "B" wire or faulty lock-up control solenoid valve "B"                    |
| 3                     | Blinks or OFF              | Lock-up clutch does not engage                                                                    | Disconnected TPS coupler, short/open in TPS wire or faulty TPS sensor.                                                                                |
| 4                     | Blinks                     | Lock-up clutch does not engage                                                                    | Disconnected speed sensor coupler, short/open in speed sensor wire or faulty speed sensor                                                             |
| 5                     | Blinks                     | Will only perform 2-4 shift and lock-up clutch will not engage                                    | Shorted shift position console switch wire or faulty shift position console switch                                                                    |
| 6                     | OFF                        | Will only perform 2-4 shift, lock-up clutch does not engage or engages and disengages alternately | Disconnected shift position console switch coupler, open in shift position console switch wire or faulty shift position console switch                |
| 7                     | Blinks                     | Fails to shift between 1-4, 2-4, or 2-3 gears only or fails to shift (stuck in 4th gear)          | Disconnected shift control solenoid valve "A" coupler, short/open in shift control solenoid valve "A" wire or faulty shift control solenoid valve "A" |
| 8                     | Blinks                     | Fails to shift (stuck in 1st or 4th gear)                                                         | Disconnected shift control solenoid valve "B" coupler, short/open in shift control solenoid valve "B" wire or faulty shift control solenoid valve "B" |
| 9                     | Blinks                     | Lock-up clutch does not engage                                                                    | Disconnected NC speed sensor coupler, short/open in NC SPEED sensor wire or faulty NC speed sensor                                                    |
| 10                    | Blinks                     | Lock-up clutch does not engage                                                                    | Disconnected coolant temp. sensor coupler, short/open in coolant temp. sensor wire or faulty coolant temp. sensor                                     |
| 11                    | OFF                        | Lock-up clutch does not engage                                                                    | Disconnected ignition coil coupler, short/open in ignition coil wire or faulty ignition coil                                                          |
| 14                    | OFF                        | Transaxle jerks hard when shifting                                                                | Short/open in FAS wire or trouble in the PGM-FI unit                                                                                                  |
| 15                    | OFF                        | Transaxle jerks hard when shifting                                                                | Disconnected NM speed sensor coupler, short/open in NM speed sensor wire or                                                                           |

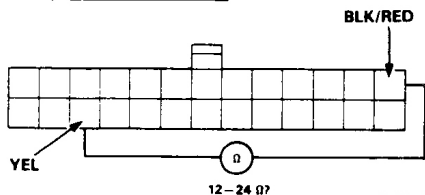
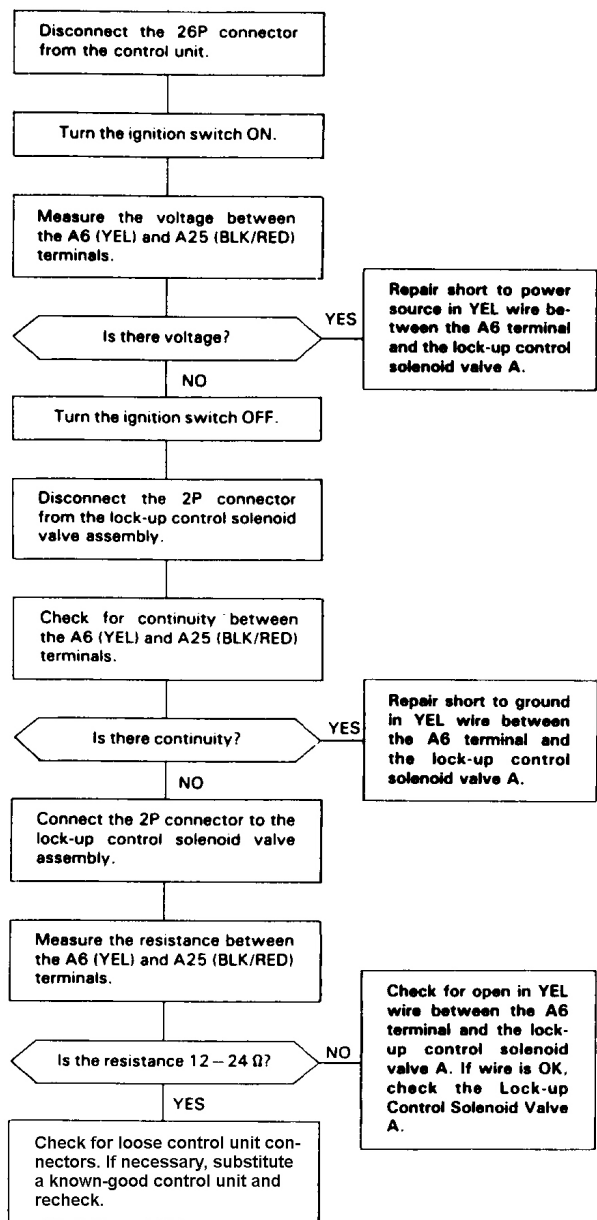
faulty NM speed sensor



**Fig. 3: Self Diagnostic Equipment & Indicator Lights**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## DIAGNOSTIC FLOW CHARTS

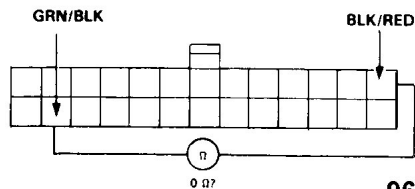
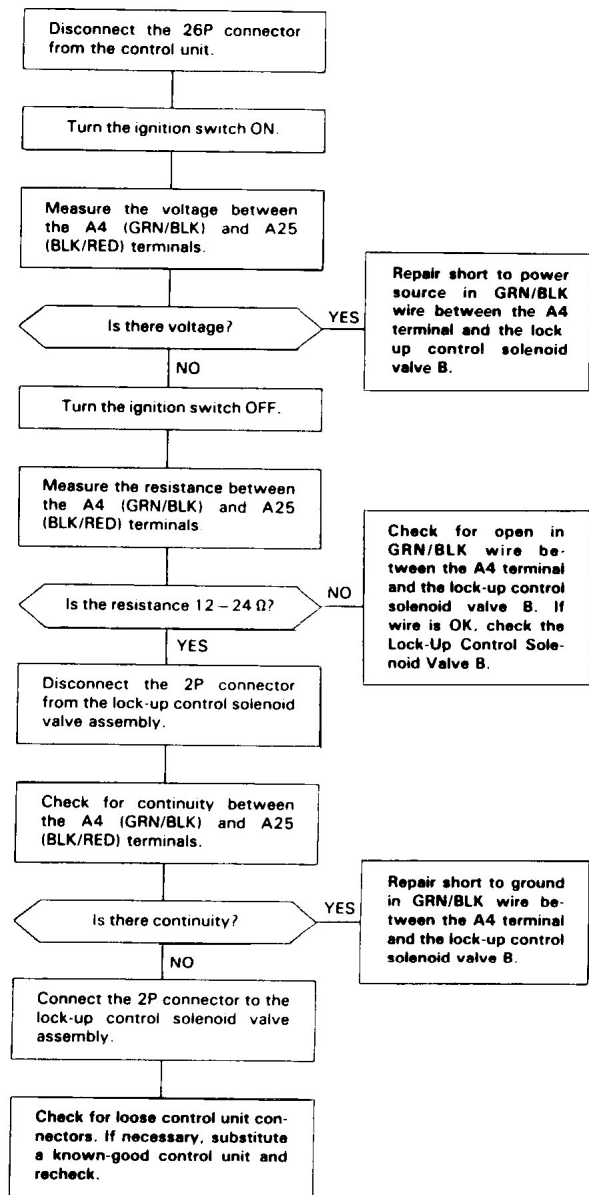
LED BLINKS 1 TIME



96E26215

**Fig. 4: Flow Chart - LED Blinks One Time**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

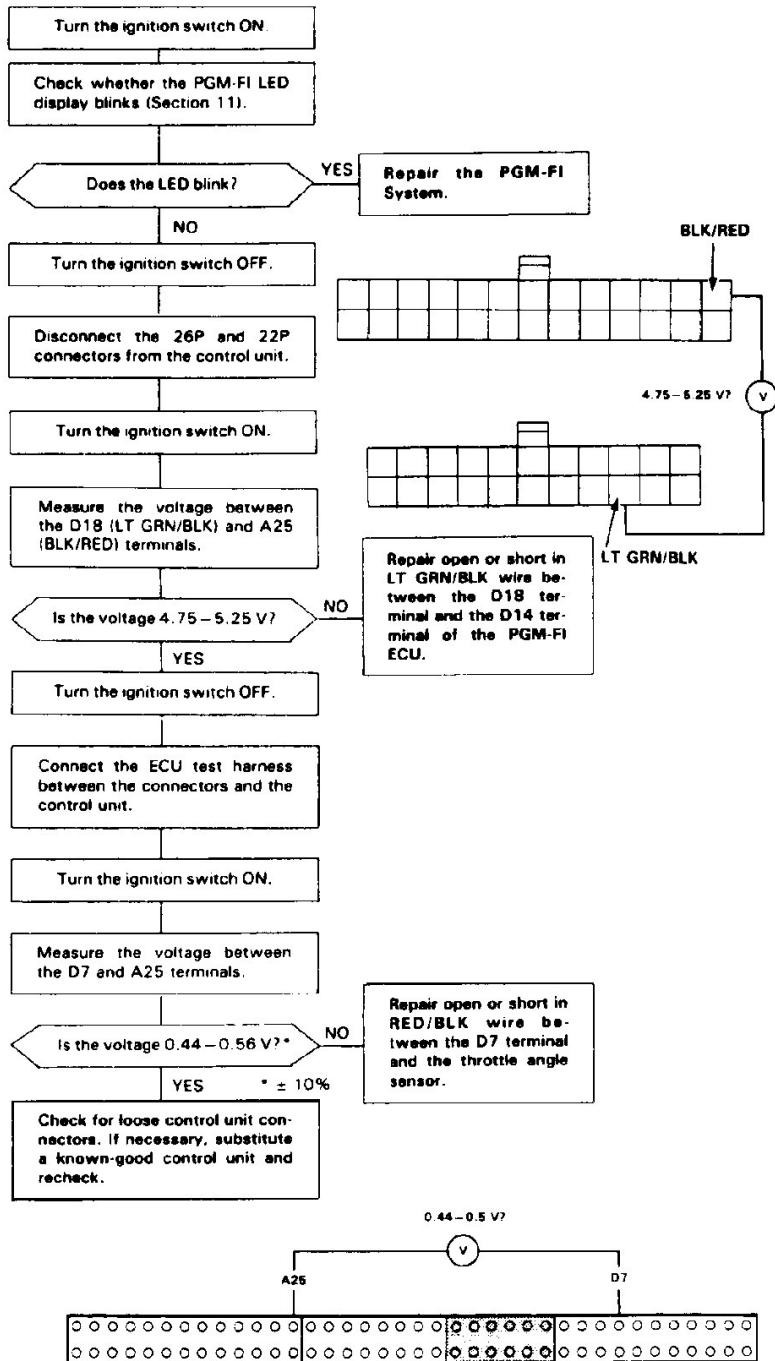
## LED BLINKS 2 TIMES



96F26216

**Fig. 5: Flow Chart - LED Blinks Two Times**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

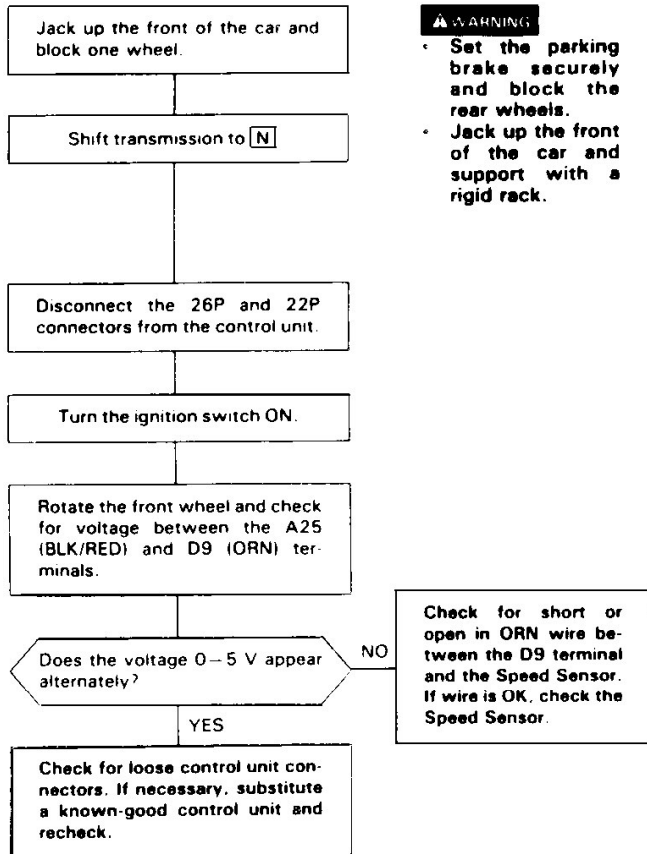
### LED BLINKS 3 TIMES



G96G26217

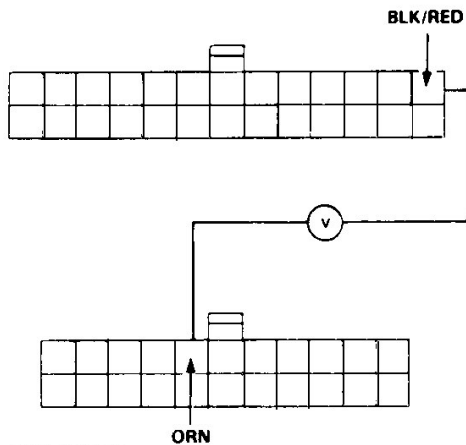
**Fig. 6: Flow Chart - LED Blinks Three Times**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## LED BLINKS 4 TIMES



**WARNING**

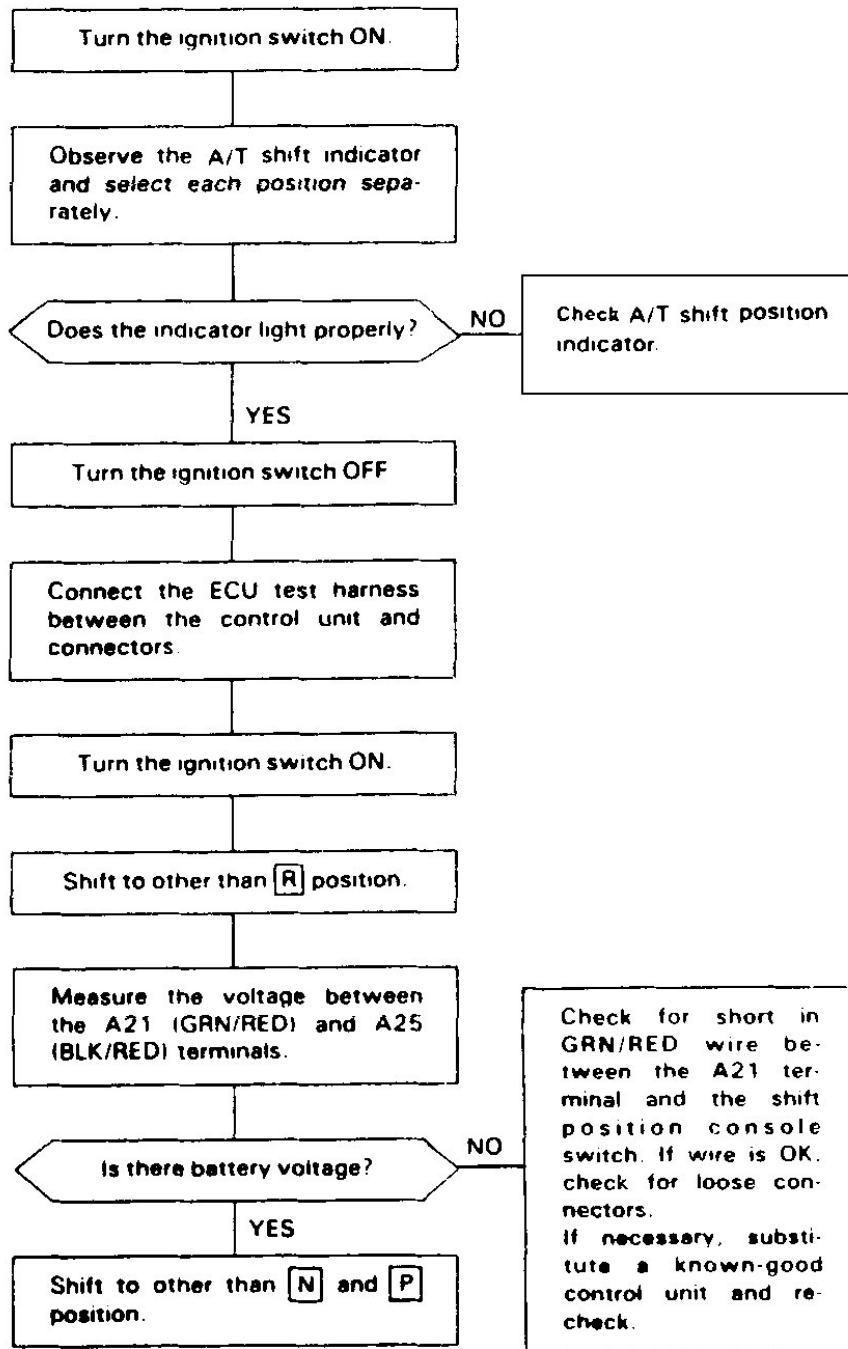
- Set the parking brake securely and block the rear wheels.
- Jack up the front of the car and support with a rigid rack.



G96H26218

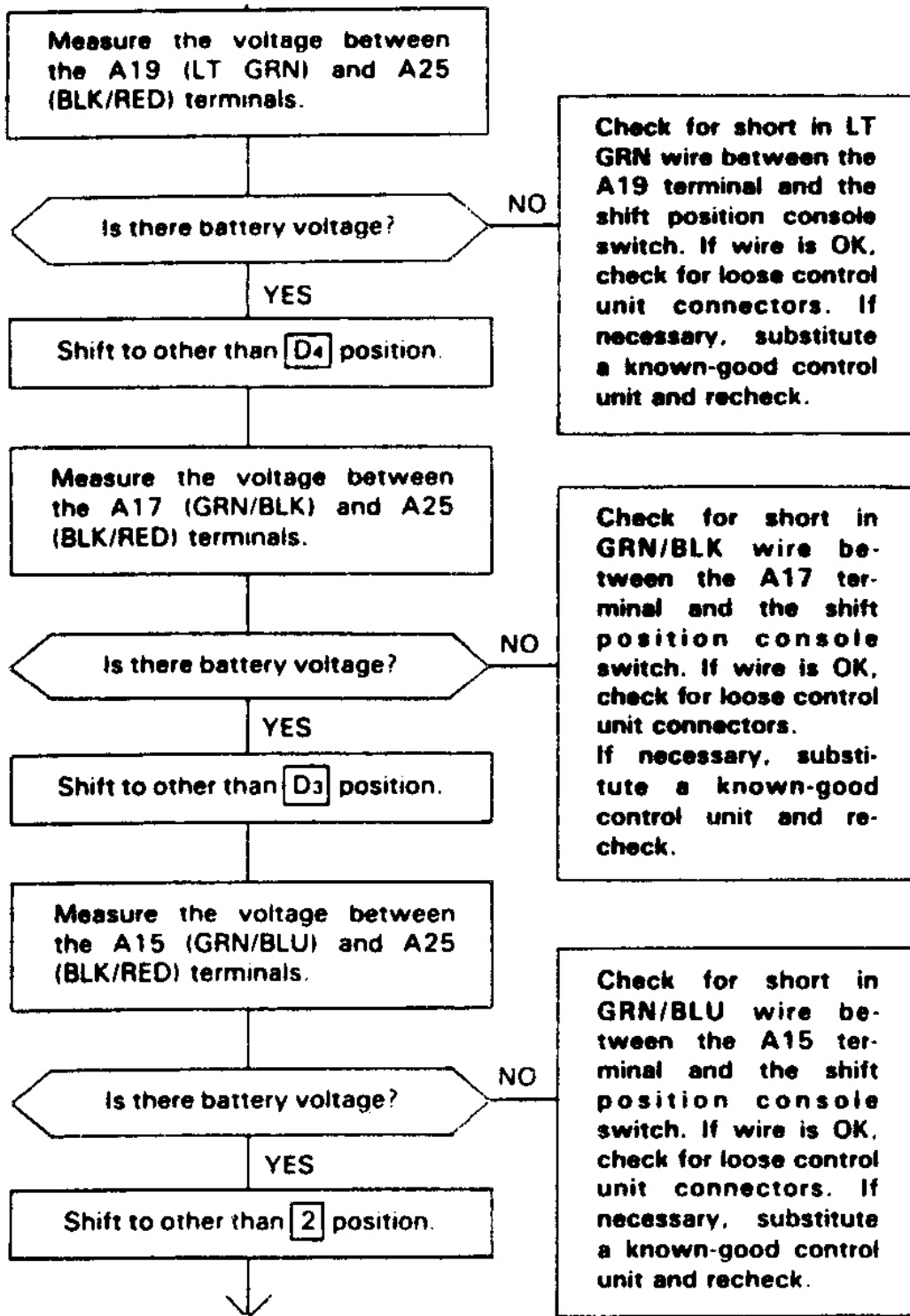
**Fig. 7: Flow Chart - LED Blinks Four Times**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**LED BLINKS 5 TIMES**



G96I26219

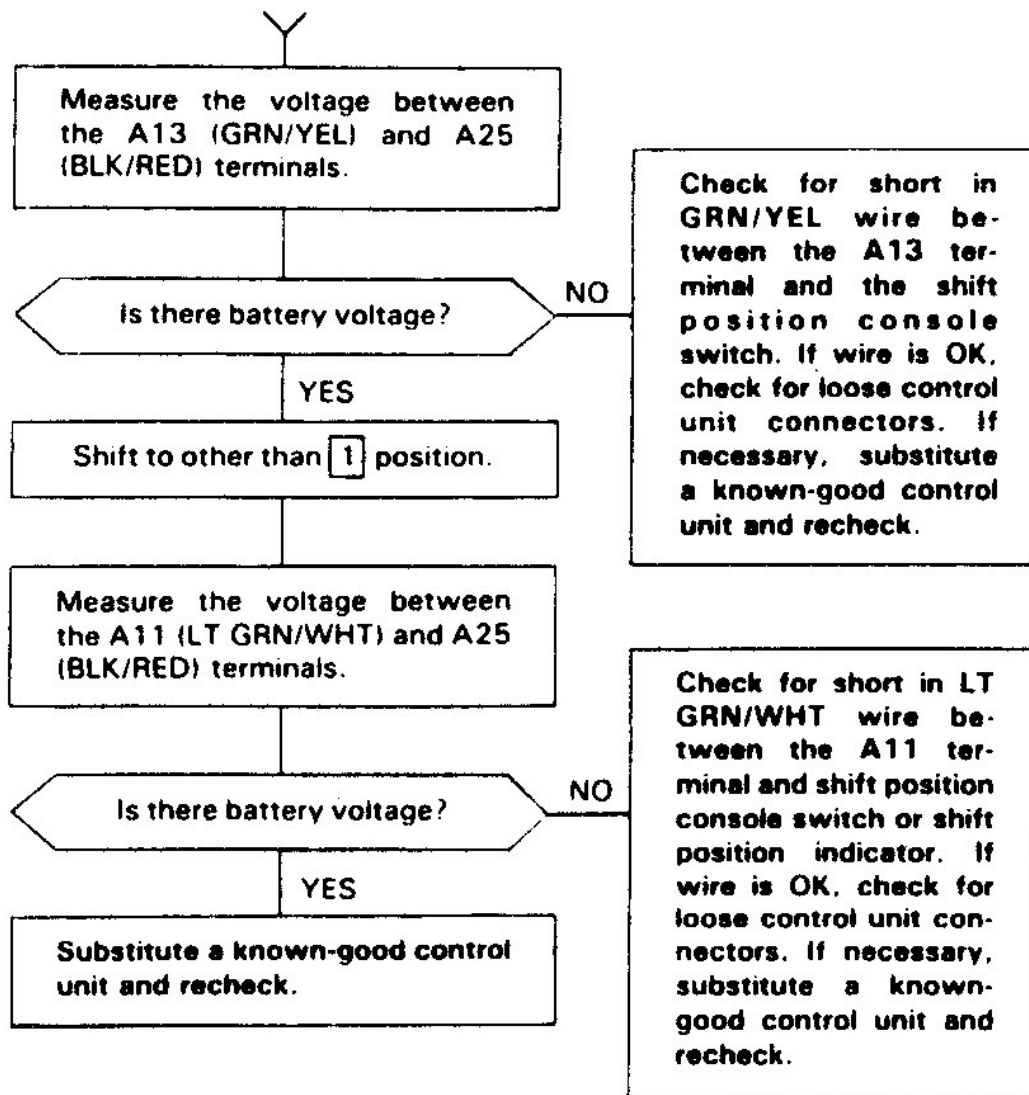
**Fig. 8: Flow Chart - LED Blinks Five Times (1 of 4)**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.



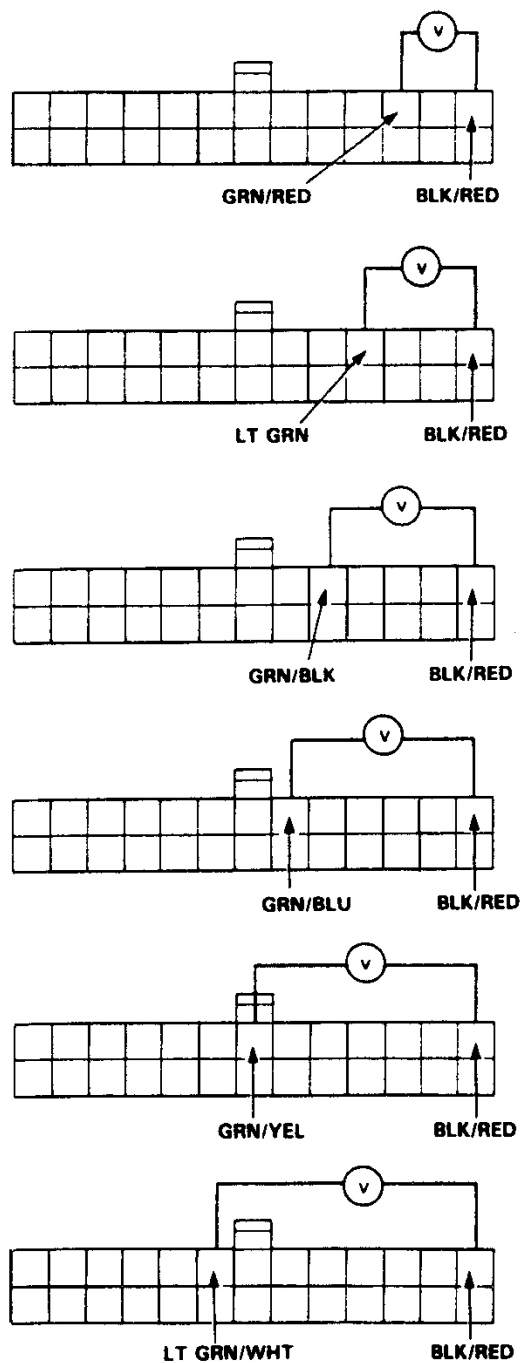
96B26220

**Fig. 9: Flow Chart -LED Blinks Five Times (2 of 4)**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

**96C26221****Fig. 10: Flow Chart - LED Blinks Five Times (3 of 4)**

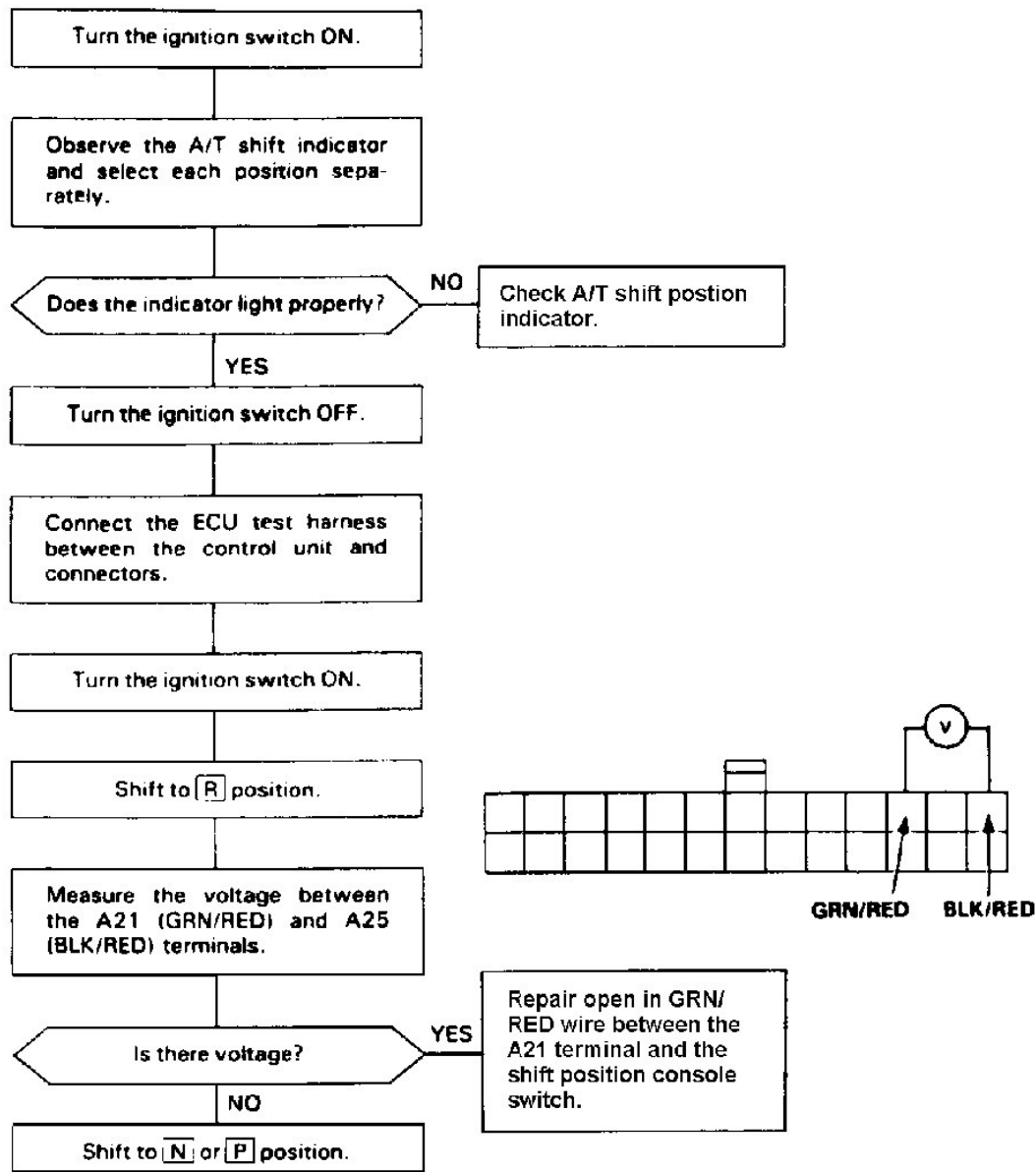
Courtesy of AMERICAN HONDA MOTOR CO., INC.



96D26222

**Fig. 11: Connector View - LED Blinks Five Times (4 of 4)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

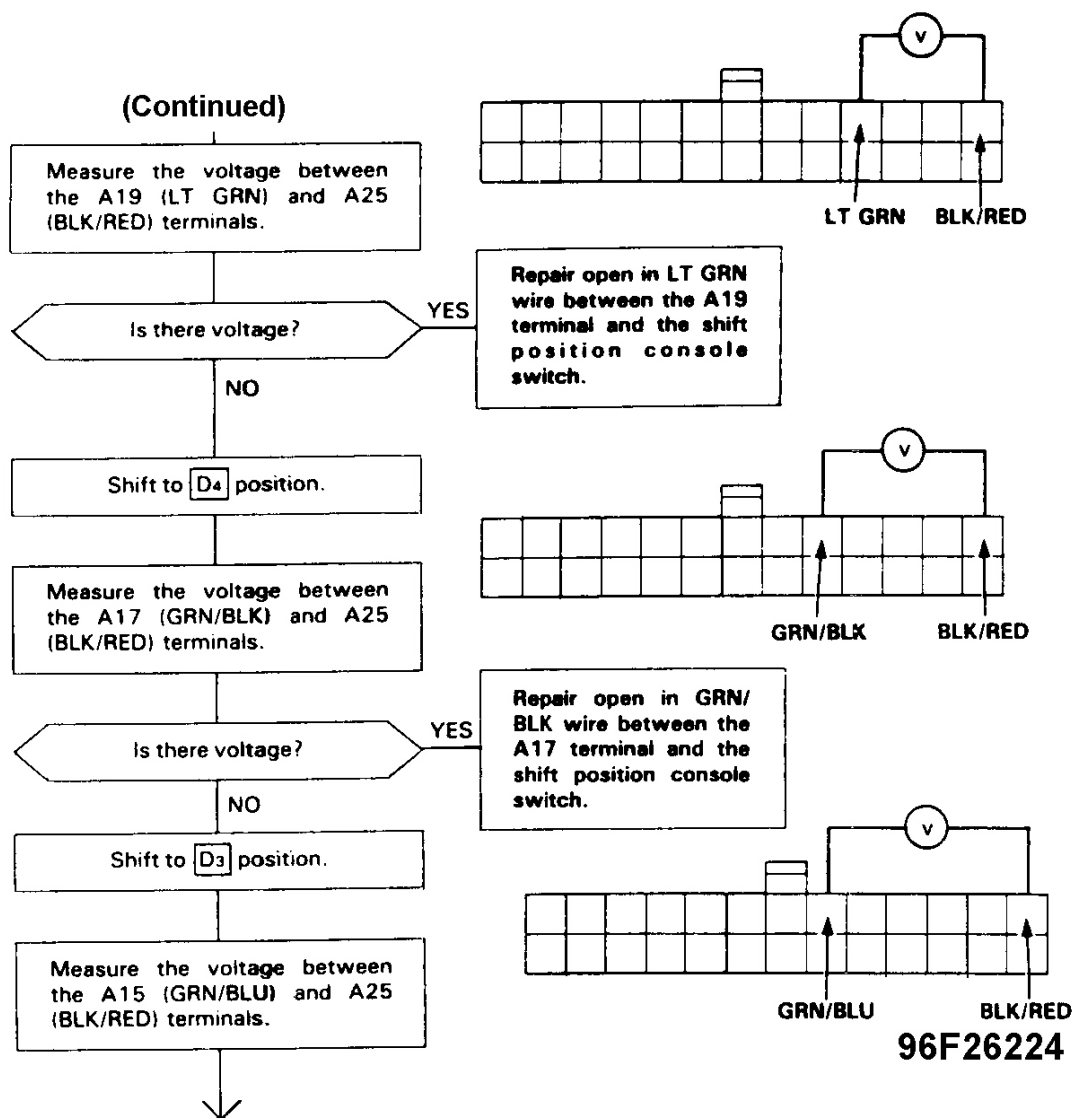
**LED BLINKS 6 TIMES**



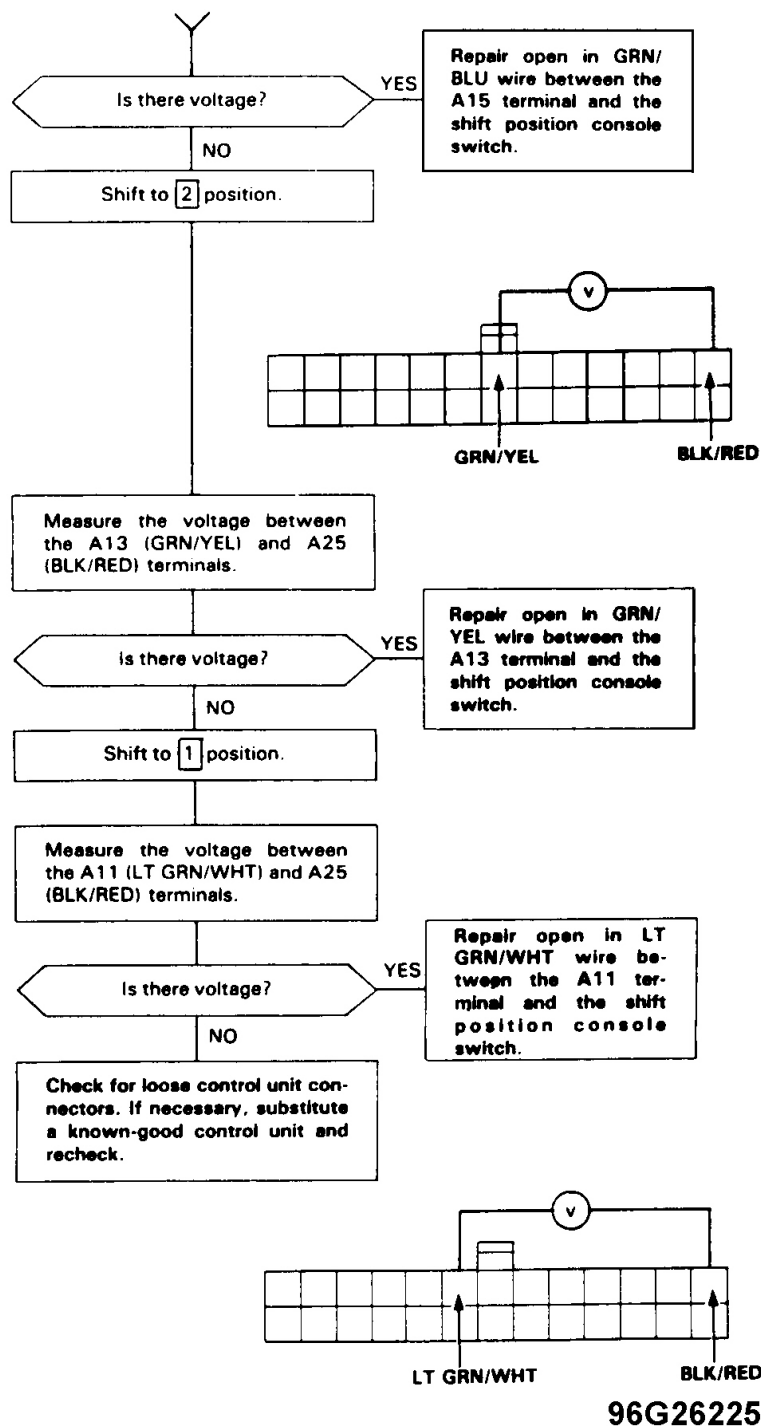
(Continued)

G96E26223

**Fig. 12: Flow Chart - LED Blinks Six Times (1 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

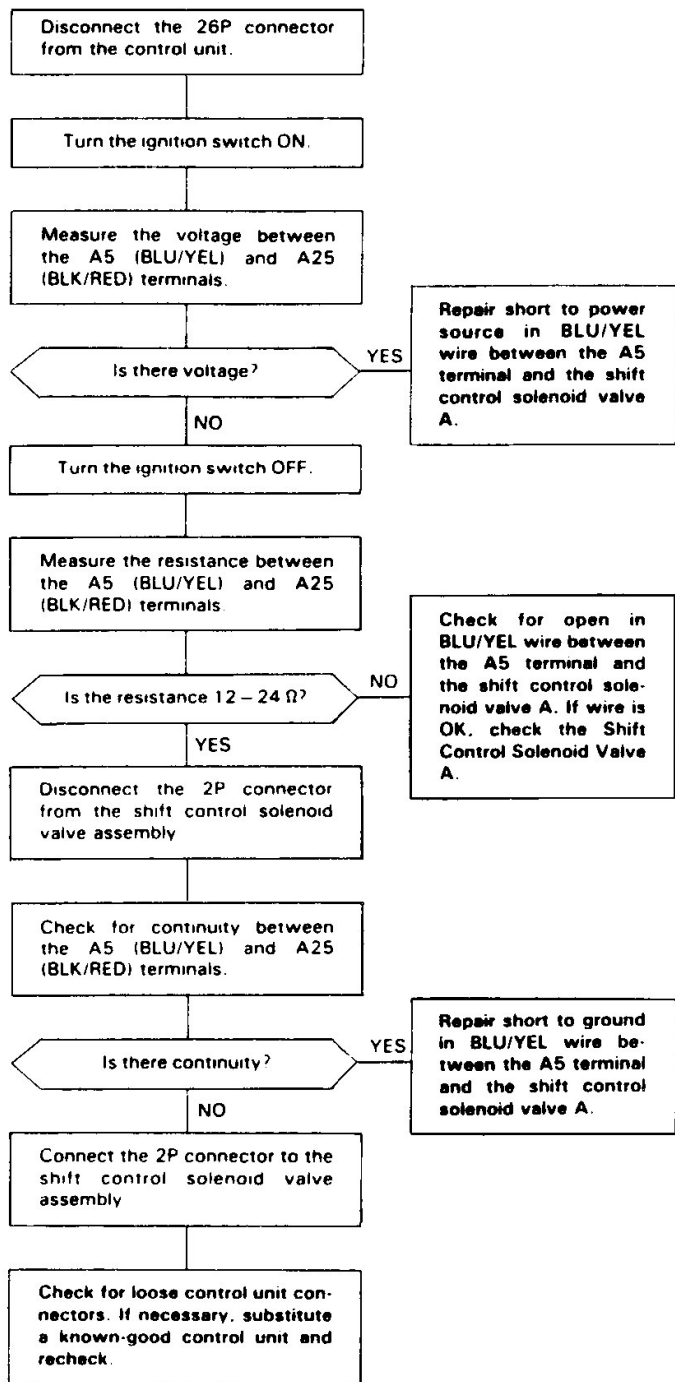


**Fig. 13: Flow Chart - LED Blinks Six Times (2 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



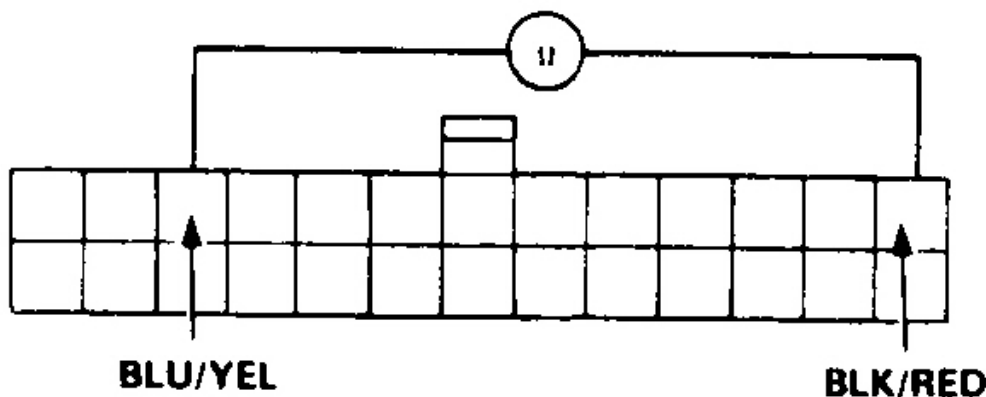
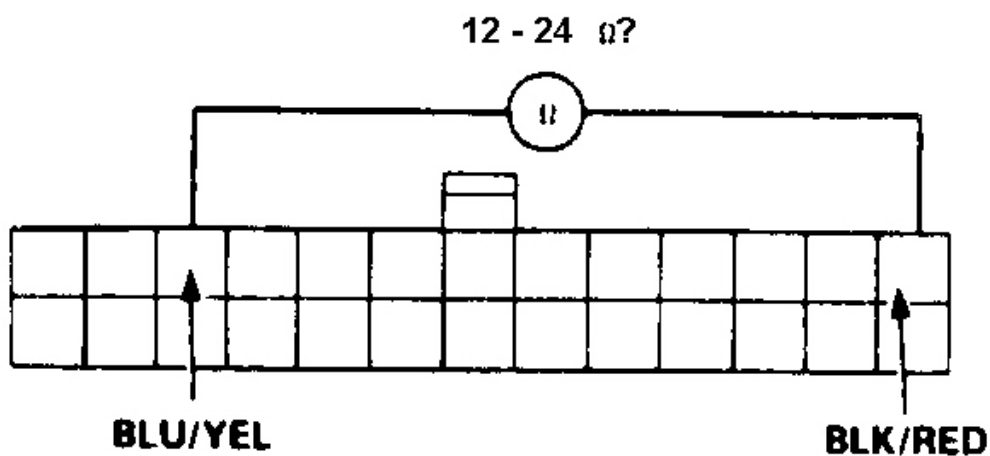
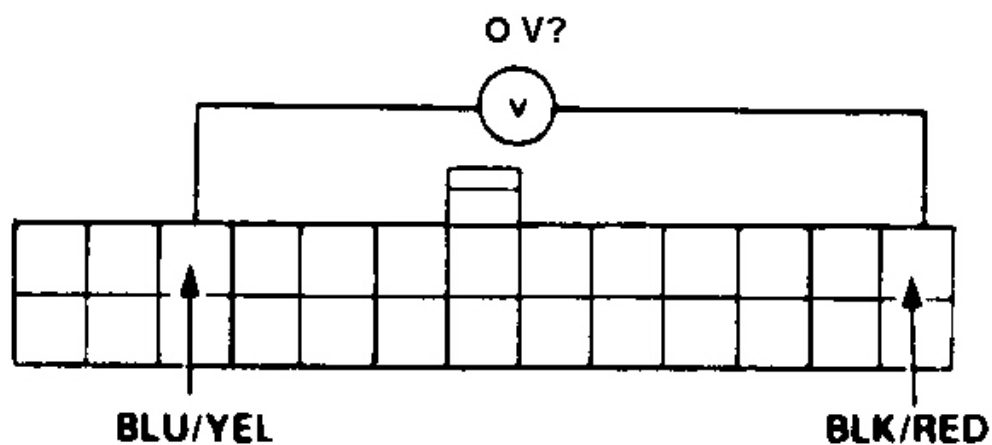
**Fig. 14: Flow Chart - LED Blinks Six Times (3 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

### LED BLINKS 7 TIMES



G96H26226

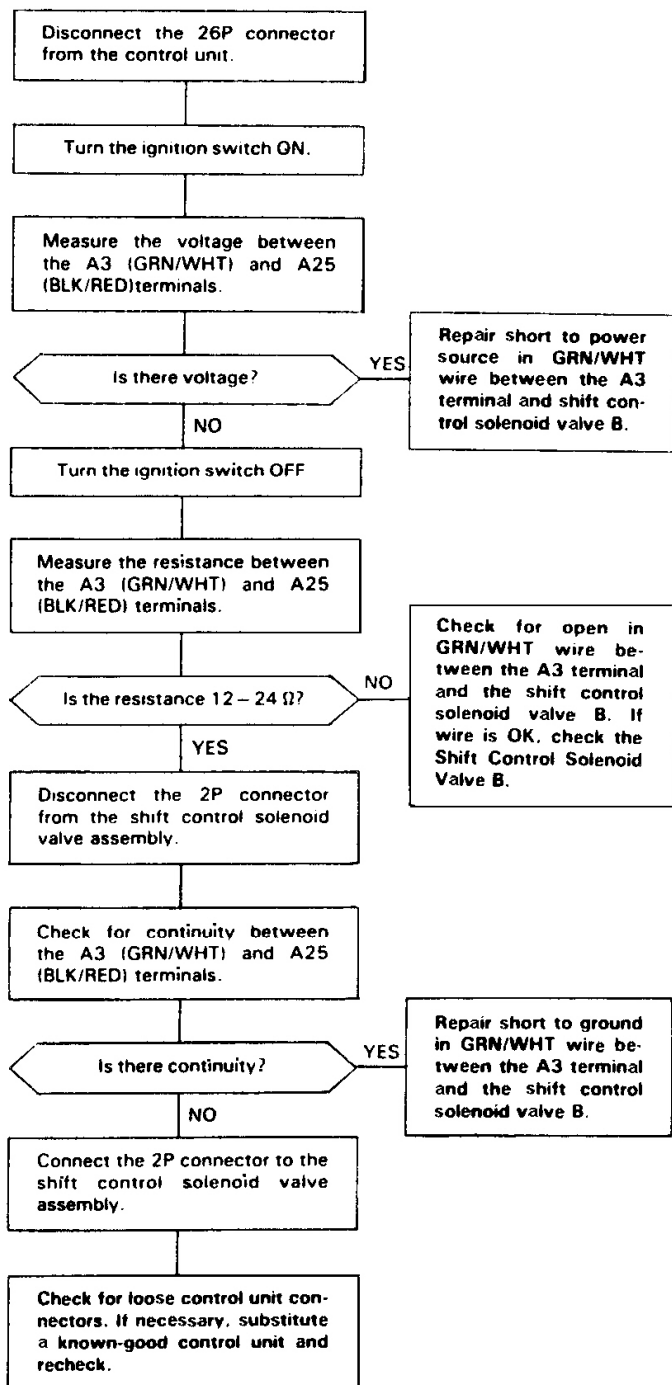
**Fig. 15: Flow Chart - LED Blinks Seven Times**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



**96126227**

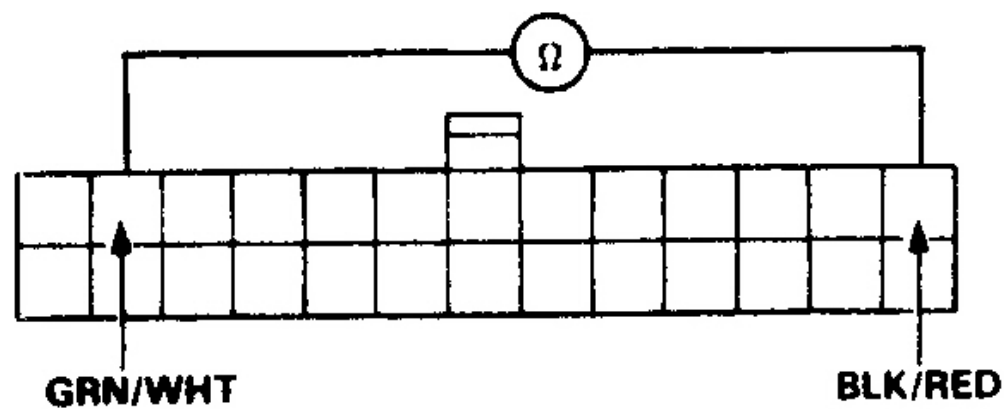
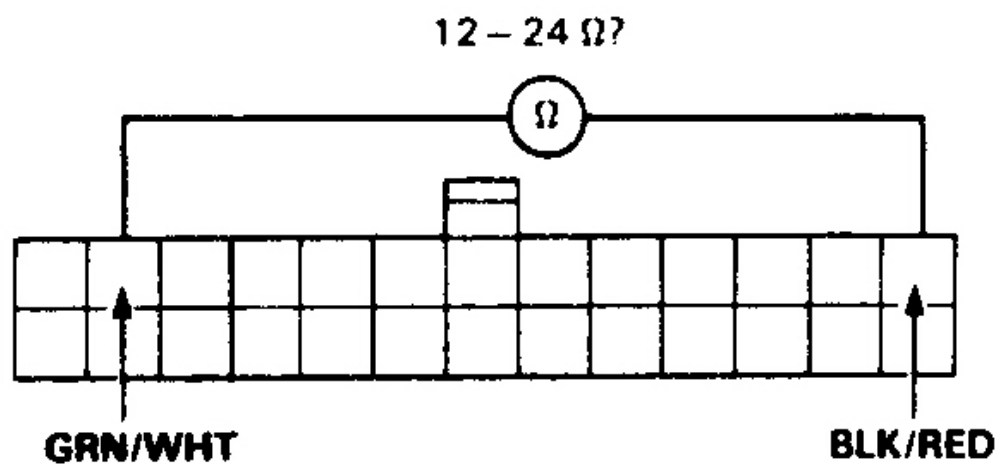
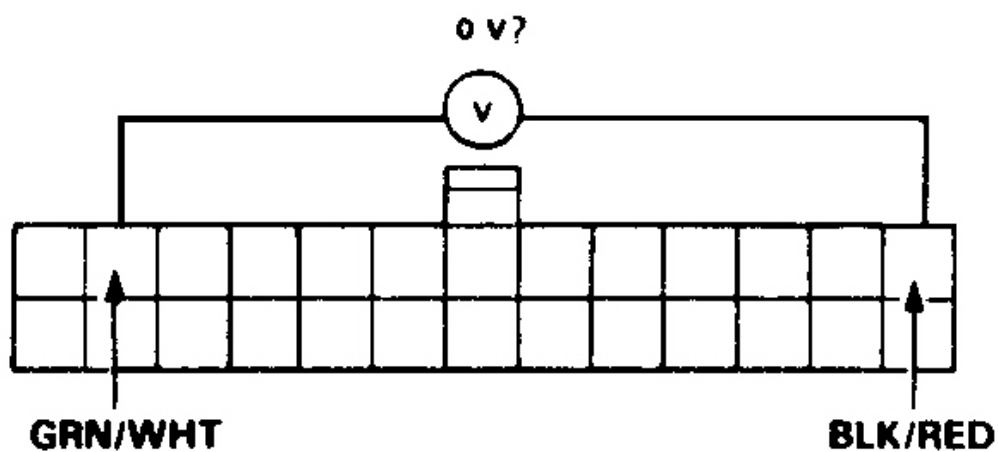
**Fig. 16: Connector View - LED Blinks Seven Times**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

### LED BLINKS 8 TIMES



G96J26228

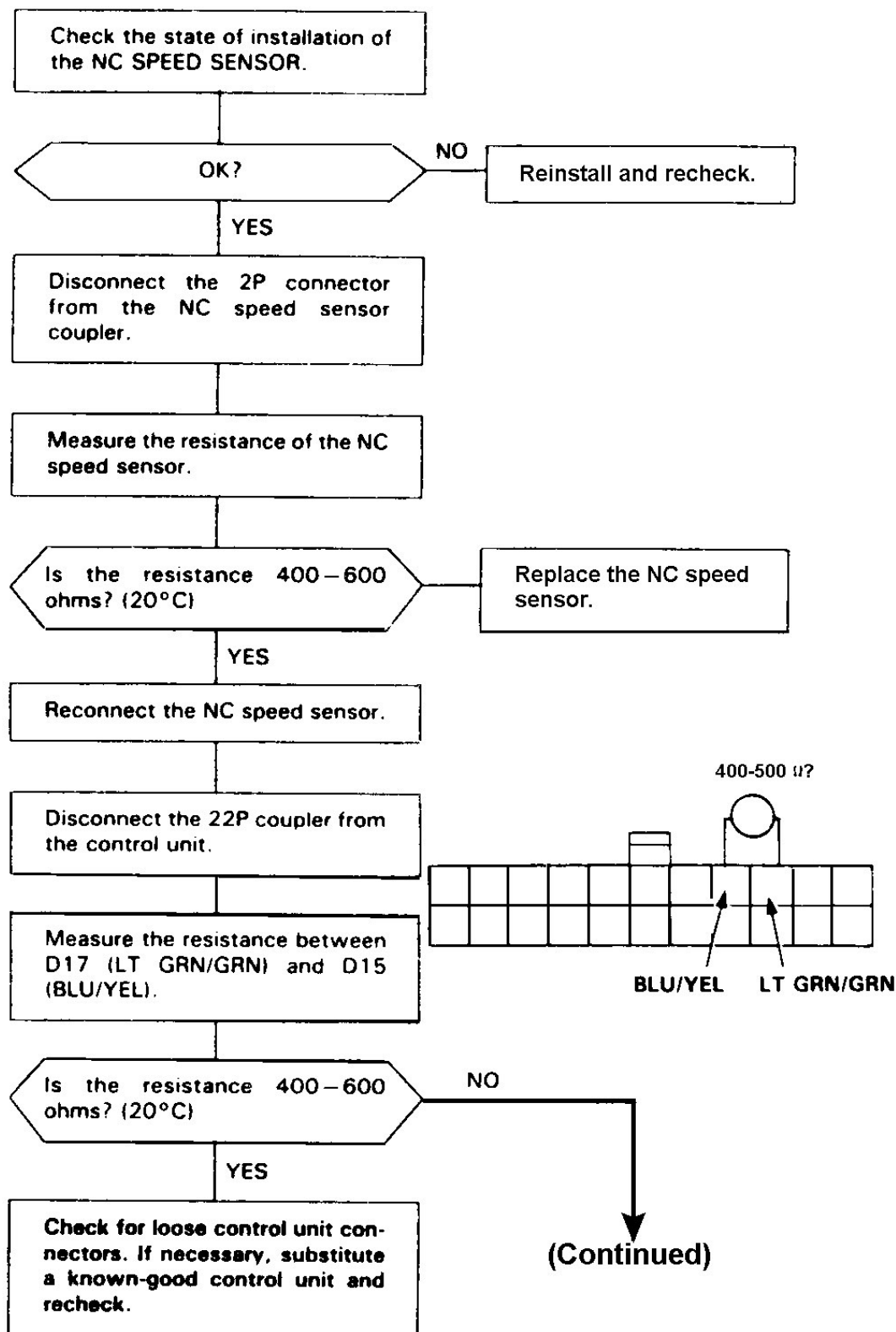
**Fig. 17: Flow Chart - LED Blinks Eight Times**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.



**96A26229**

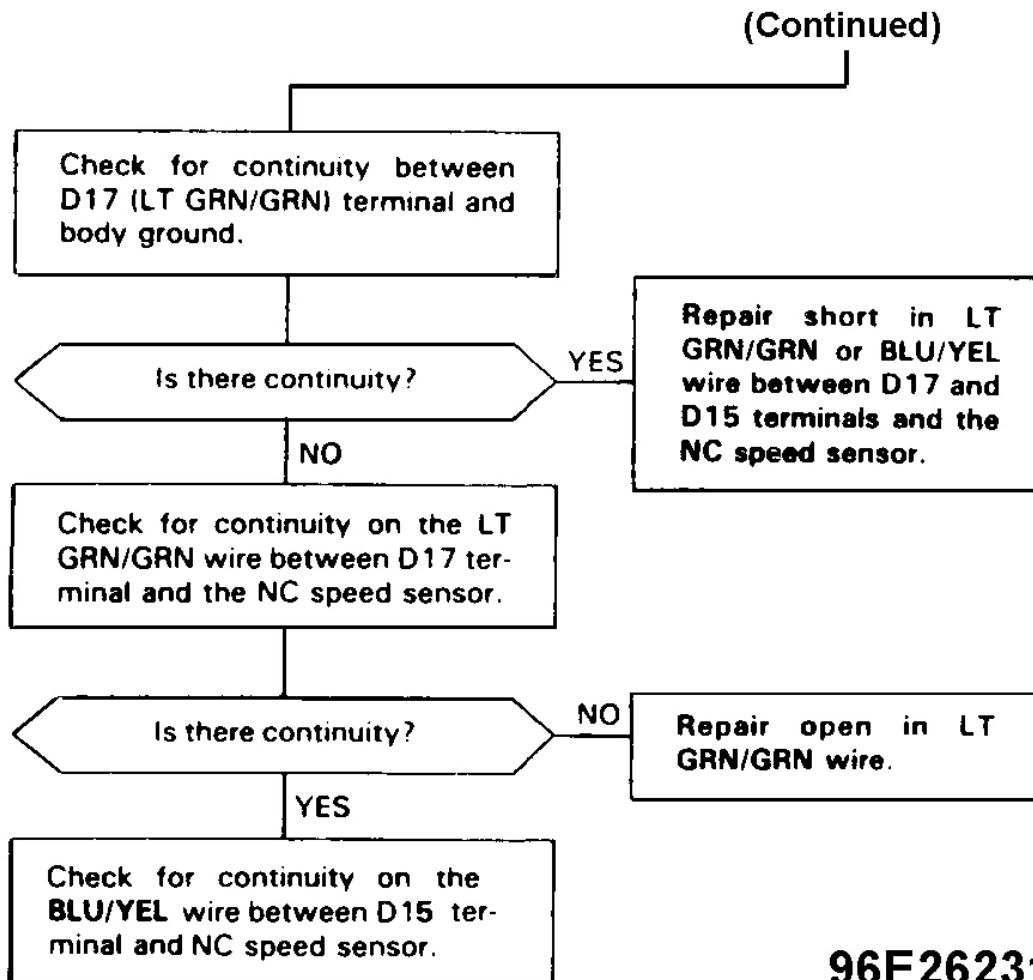
**Fig. 18: Connector View - LED Blinks Eight Times**  
**Courtesy of AMERICAN HONDA MOTOR CO., INC.**

**LED BLINKS 9 TIMES**



G96D26230

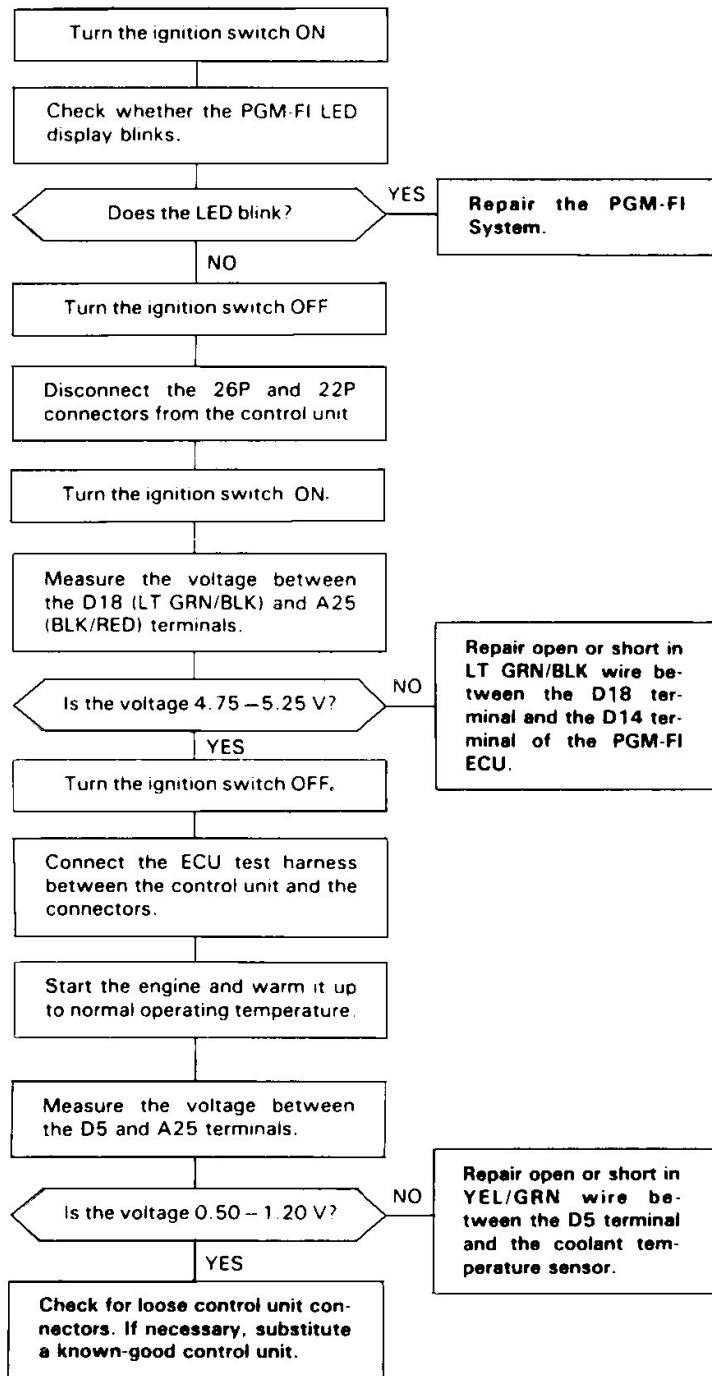
**Fig. 19: Flow Chart - LED Blinks Nine Times (1 of 2)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



**96E26231**

**Fig. 20: Flow Chart - LED Blinks Nine Times (2 of 2)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

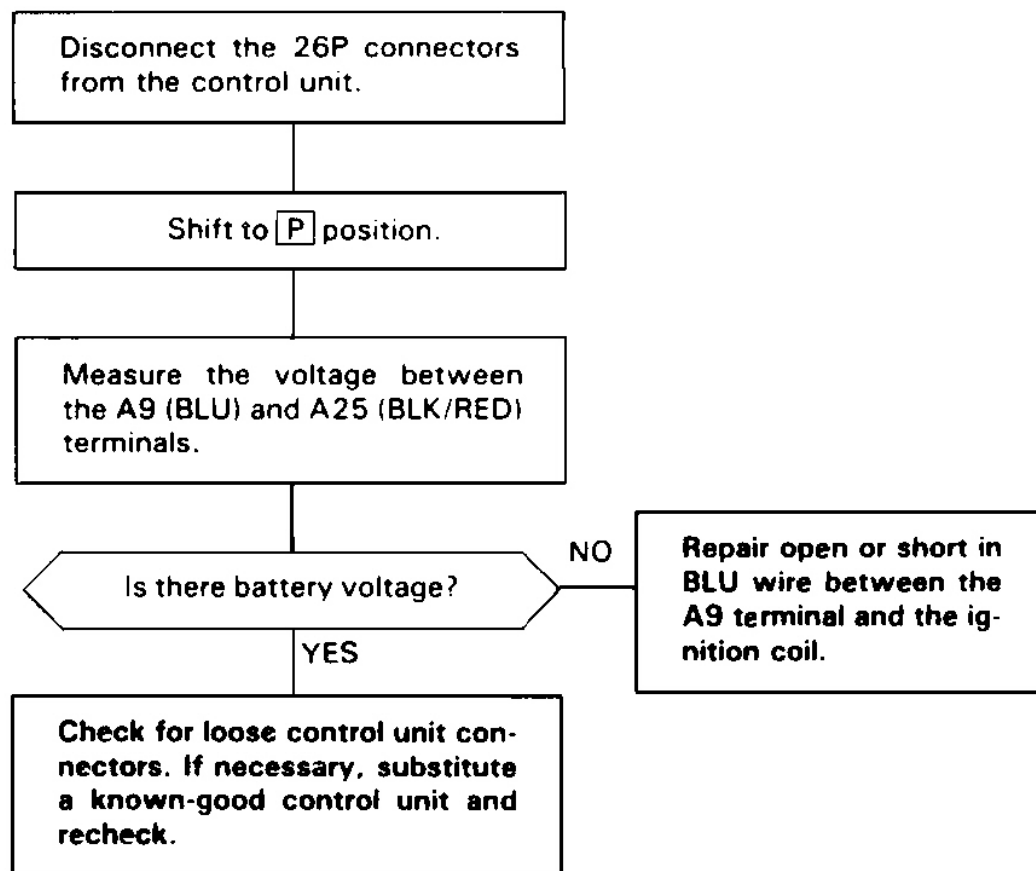
### LED BLINKS 10 TIMES



G96F26232

**Fig. 21: Flow Chart - LED Blinks Ten Times**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

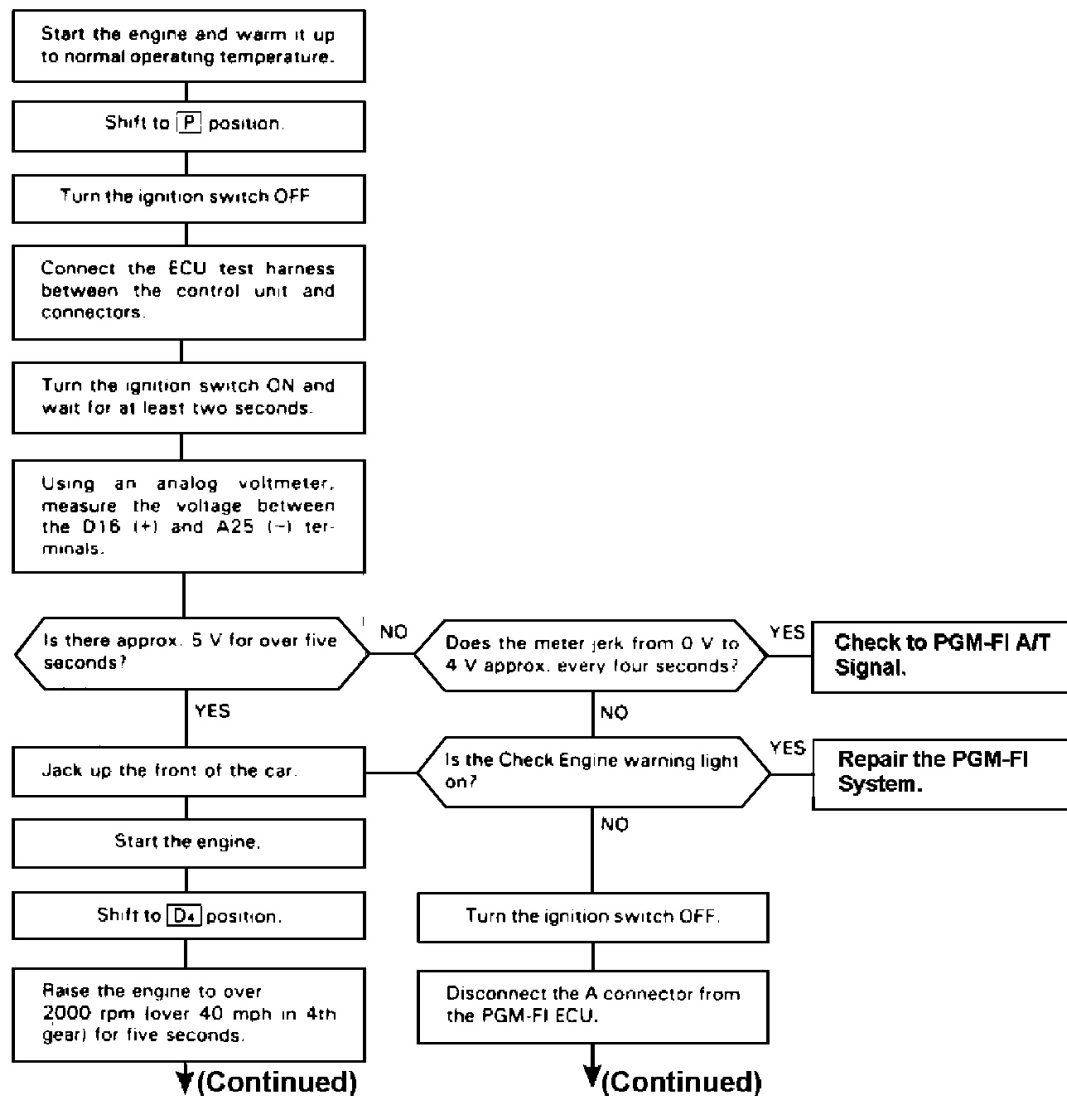
## LED BLINKS 11 TIMES



G96G26233

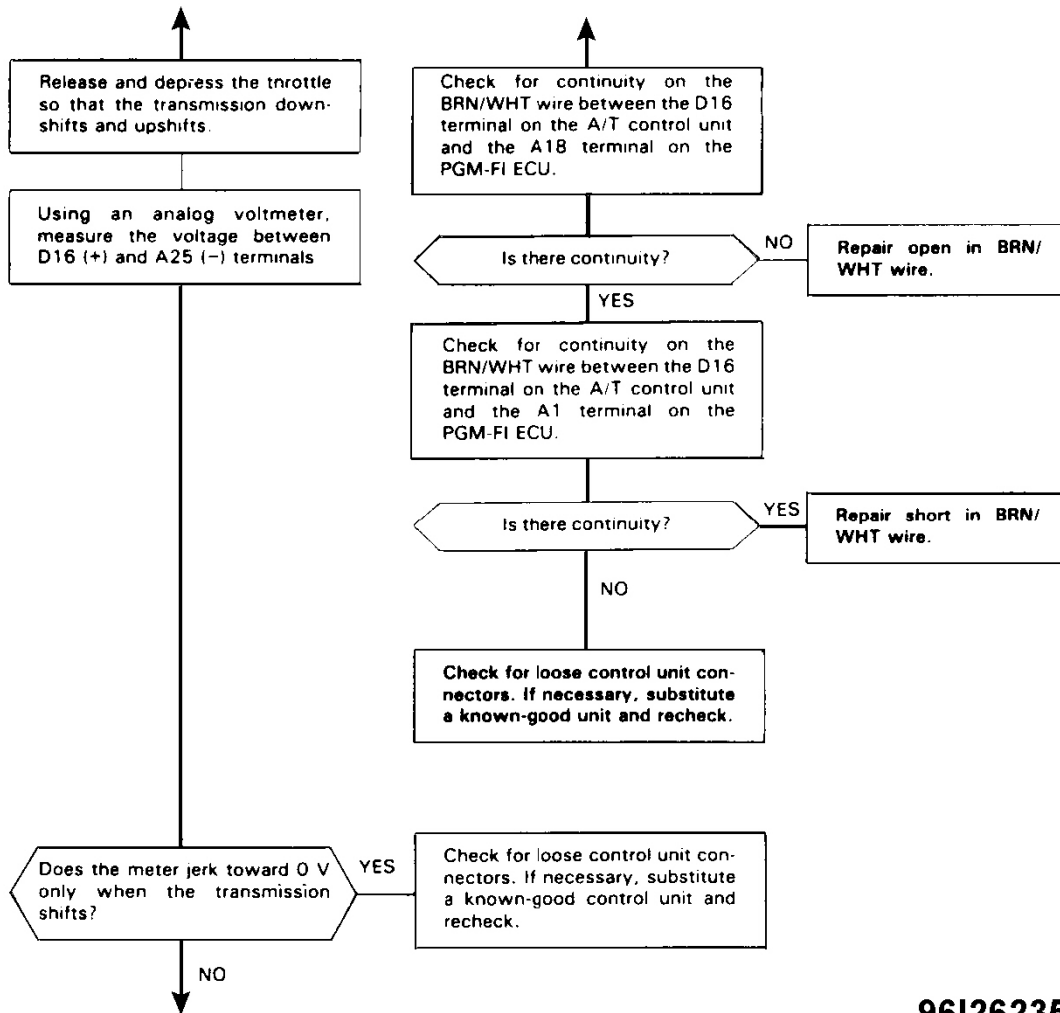
**Fig. 22: Flow Chart - LED Blinks Eleven Times**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## LED BLINKS 14 TIMES



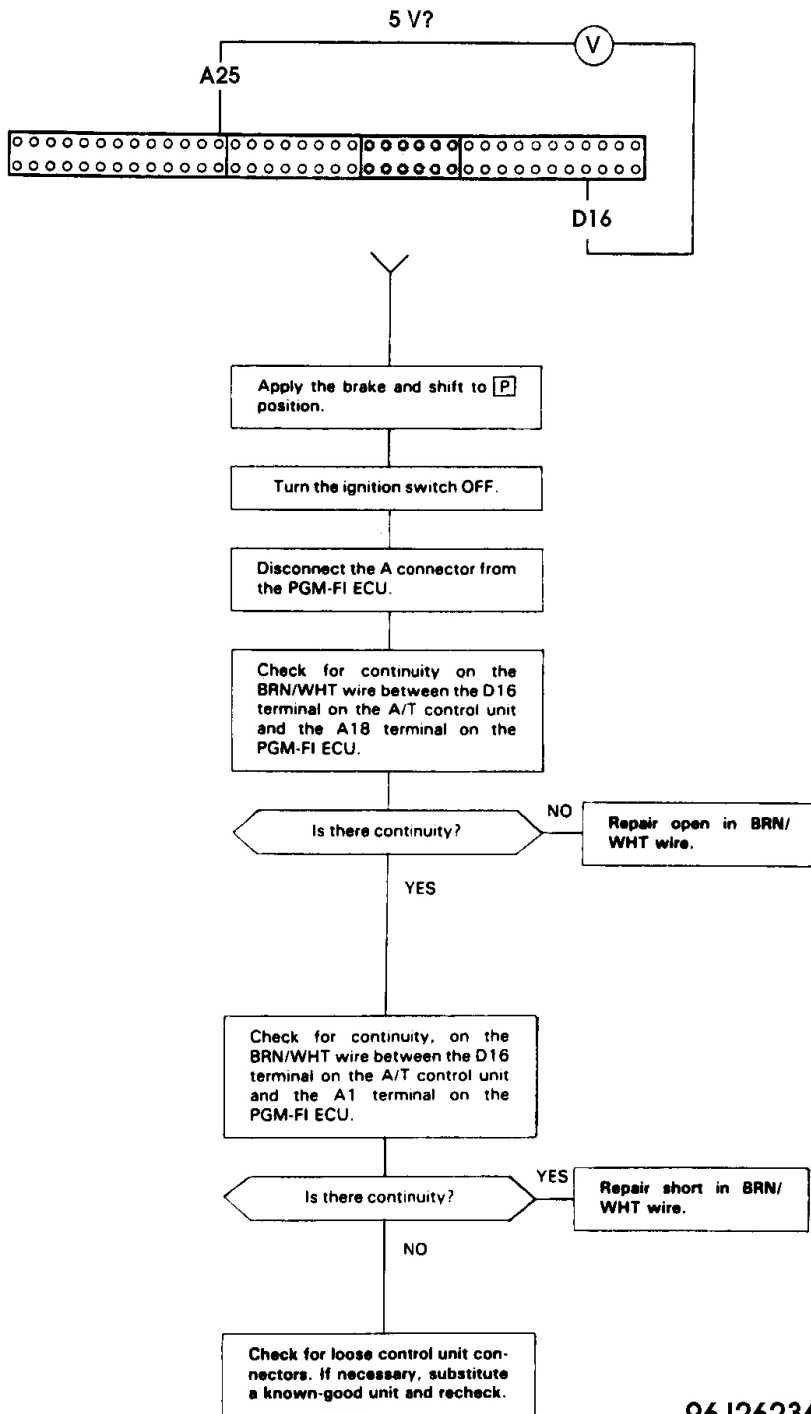
G96H26234

**Fig. 23: Flow Chart - LED Blinks Fourteen Times (1 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



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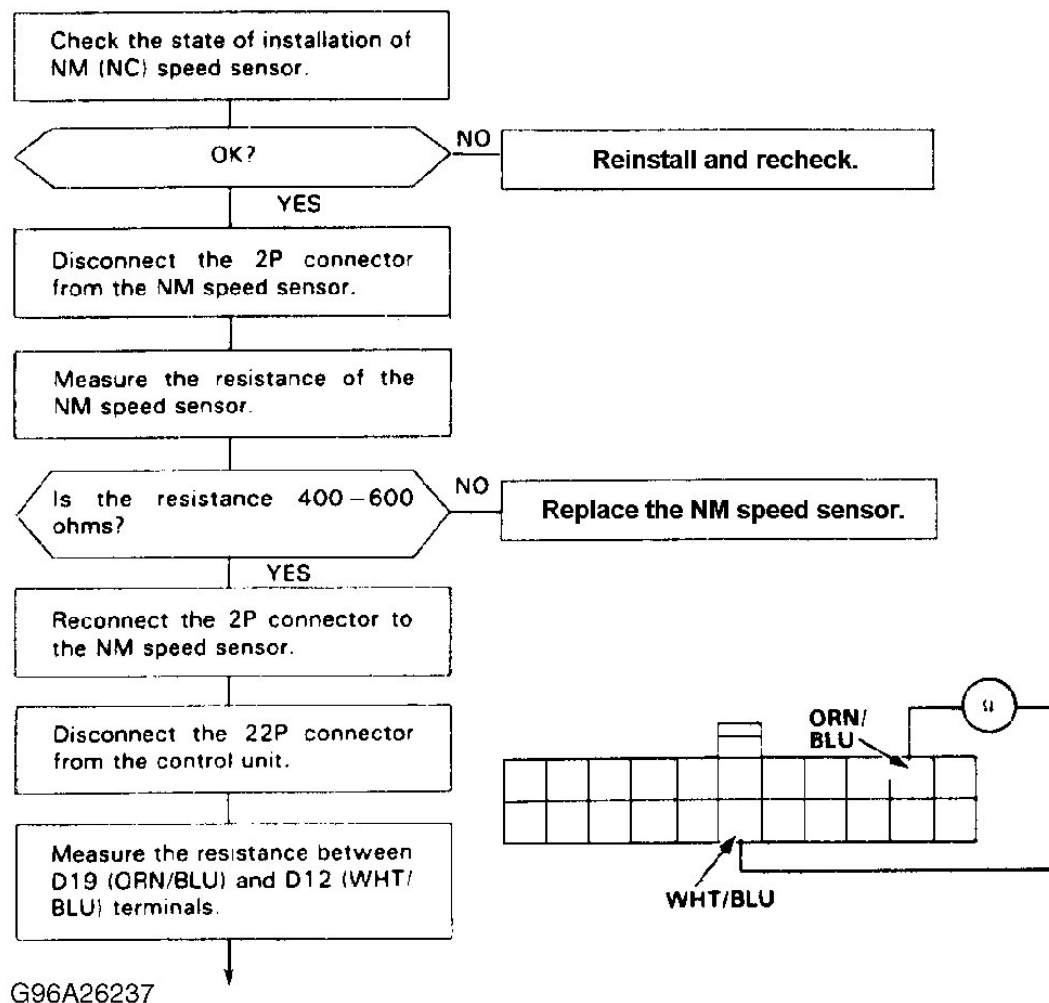
**Fig. 24: Flow Chart - LED Blinks Fourteen Times (2 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



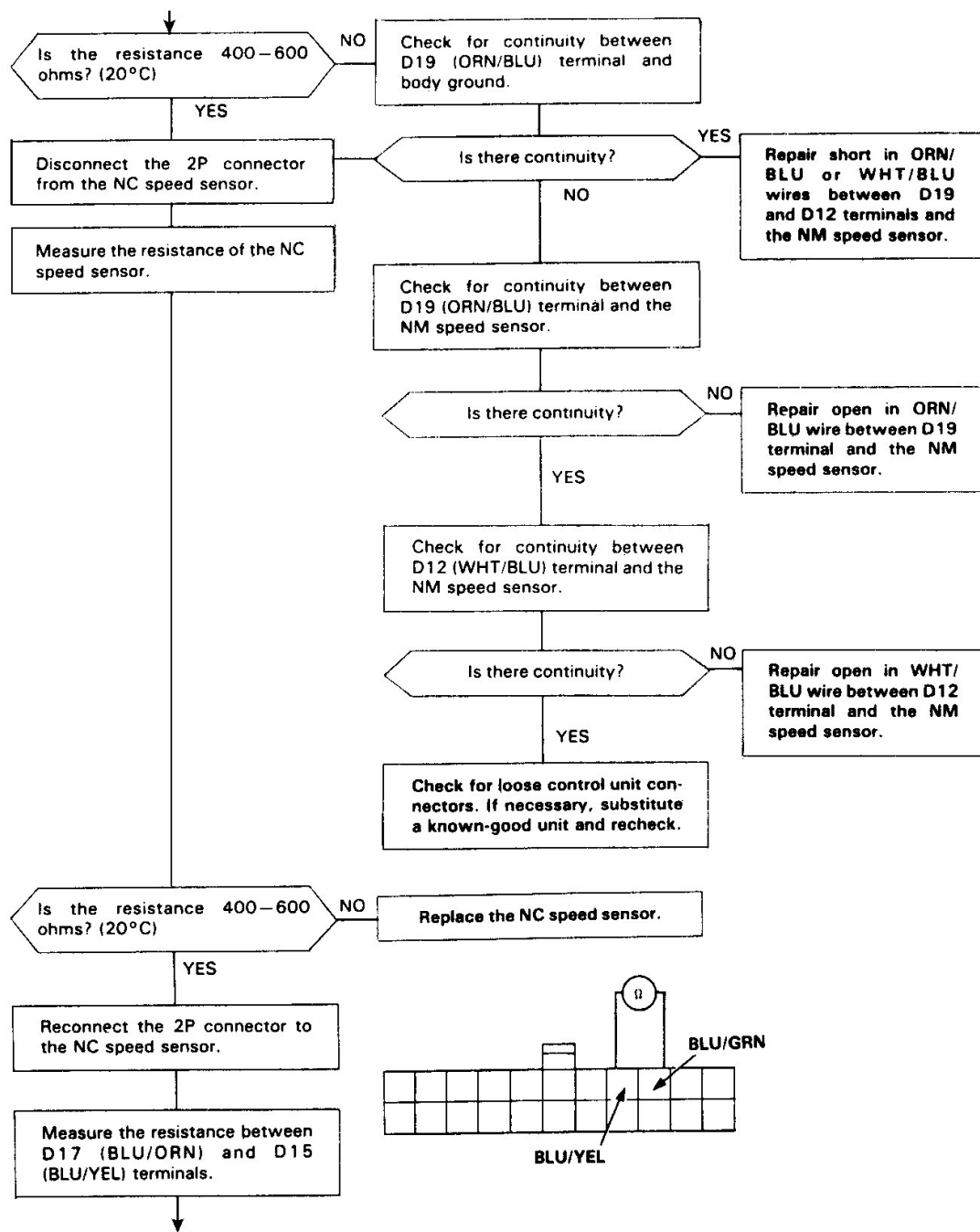
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**Fig. 25: Flow Chart - LED Blinks Fourteen Times (3 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## LED BLINKS 15 TIMES

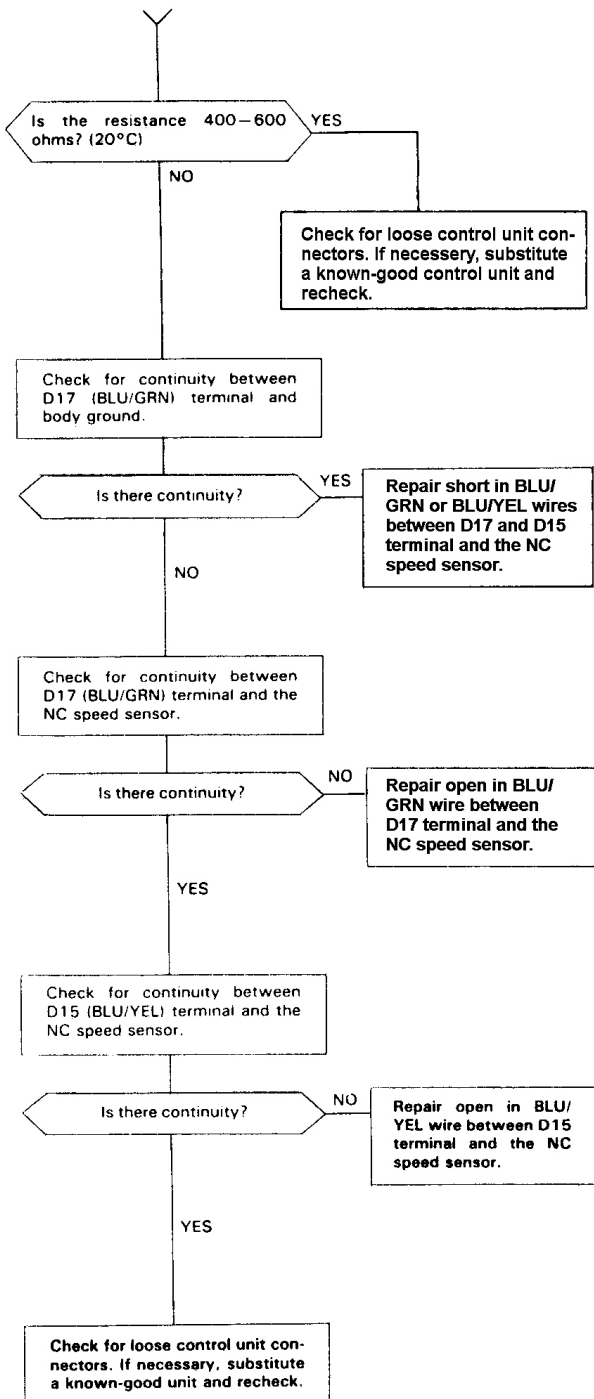


**Fig. 26: Flow Chart - LED Blinks Fifteen Times (1 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



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**Fig. 27: Flow Chart - LED Blinks Fifteen Times (2 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



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**Fig. 28: Flow Chart - LED Blinks Fifteen Times (3 of 3)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

## PERFORMANCE TESTS

**ROAD TEST**

**CAUTION: DO NOT shift from "D3" or "D4" to "2" at speeds over 62.5 MPH. Damage to transaxle may occur.**

**"D4" & "D3" Range**

1. Warm engine to operating temperatures. Apply parking brake and block wheels. Start engine, move selector to "D4" while depressing brake pedal. Depress accelerator pedal, and release it suddenly. Engine should not stall.
2. Check that shift points occur at proper speed. See **TRANSAXLE SHIFT POINT TEST** table. Check for abnormal noise and clutch slippage.
3. Apply parking brake and block wheels. Start engine, move selector to "D3" while depressing brake pedal. Depress accelerator pedal, and release suddenly. Engine should not stall.

**"1", "2" (1st & 2nd Gear) Range**

Accelerate from a stop at full throttle. Check for abnormal noise or clutch slippage. Upshifts and downshifts should not occur with selector in this range.

**"R" Reverse**

Accelerate from a stop at full throttle, and check for abnormal noise and clutch slippage.

**"P" Park**

Park car on a slope (approx. 16 degrees), apply the parking brake, and shift into Park. Release brake; the car should not move.

**TRANSAXLE SHIFT POINT TEST**

| Condition                                | MPH   |
|------------------------------------------|-------|
| Upshift "D4" & "D3"                      |       |
| 1/8 throttle coasting downhill from stop |       |
| 1st-2nd                                  | 13-15 |
| 2nd-3rd                                  | 26-28 |
| 3rd-4th                                  | 36-40 |
| Lock-Up Clutch ON                        | 14-17 |
| 1/2 throttle acceleration from stop      |       |
| 1st-2nd                                  | 17-21 |
| 2nd-3rd                                  | 35-39 |
| 3rd-4th                                  | 54-60 |
| Lock-Up Clutch ON                        | 60-65 |
| Full-throttle acceleration from stop     |       |
| 1st-2nd                                  | 30-35 |

# 1990 Honda Accord DX

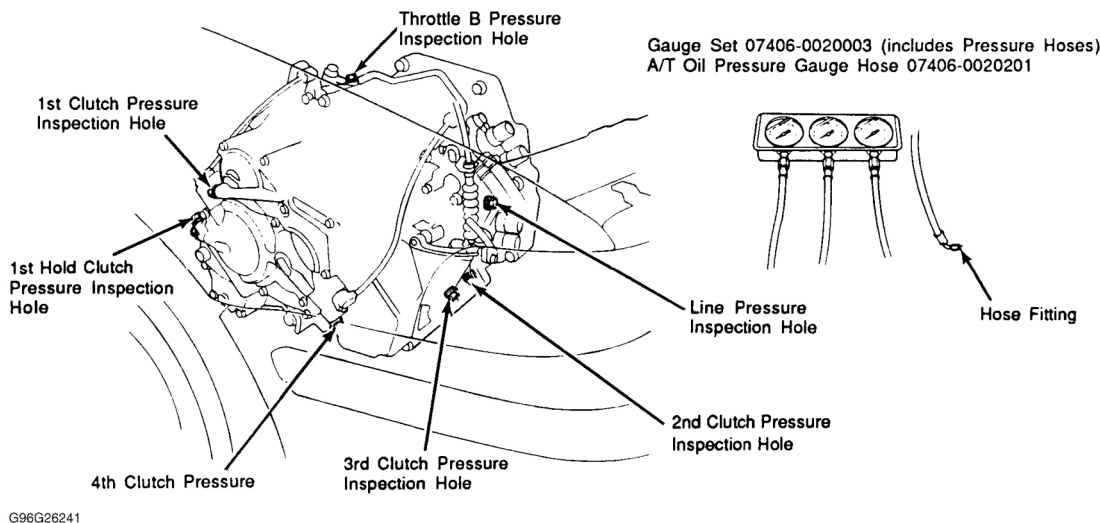
## 1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul

|                                                        |        |
|--------------------------------------------------------|--------|
| 2nd-3rd                                                | 63-68  |
| 3rd-4th                                                | 94-100 |
| Lock-Up Clutch ON                                      | 84-89  |
| "D4" & "D3" (With "S" Switch In Operation)             |        |
| 1/8 throttle coasting downhill from stop               |        |
| 1st-2nd                                                | 11-13  |
| 2nd-3rd                                                | 24-26  |
| 3rd-4th                                                | 38-42  |
| Lock-Up Clutch ON                                      | 23-26  |
| 1/2 throttle acceleration from stop                    |        |
| 1st-2nd                                                | 17-21  |
| 2nd-3rd                                                | 41-45  |
| 3rd-4th                                                | 62-68  |
| Lock-Up Clutch ON                                      | 69-74  |
| Full-throttle acceleration from stop                   |        |
| 1st-2nd                                                | 30-35  |
| 2nd-3rd                                                | 63-68  |
| 3rd-4th                                                | 94-102 |
| Lock-Up Clutch ON                                      | 84-94  |
| Downshift "D4" & "D3"                                  |        |
| 1/8 throttle coasting downhill from stop               |        |
| Lock-Up Clutch OFF                                     | 13-16  |
| 4th-3rd                                                | 18-22  |
| 3rd-1st                                                | 6-10   |
| 1/2 throttle acceleration from stop, Lock-Up Clutch ON | 48-53  |
| Full-throttle acceleration from stop                   | 80-85  |
| Lock-Up Clutch OFF                                     |        |
| 4th-3rd                                                | 78-84  |
| 3rd-2nd                                                | 53-59  |
| 2nd-1st                                                | 25-30  |
| Downshift "D4" & "D3" (With "S" Switch In Operation)   |        |
| 1/8 throttle coasting downhill from stop               |        |
| Lock-Up Clutch OFF                                     | 22-25  |
| 4th-3rd                                                | 18-22  |
| 3rd-1st                                                | 6-10   |
| 1/2 throttle acceleration from stop Lock-Up Clutch ON  | 52-57  |
| Full-throttle acceleration from stop                   |        |
| Lock-Up Clutch OFF                                     | 80-85  |
| 4th-3rd                                                | 78-84  |
| 3rd-2nd                                                | 55-61  |
| 2nd-1st                                                | 25-30  |

## HYDRAULIC PRESSURE TESTS

**CAUTION:** Prior to testing, ensure that transaxle fluid level is correct. Also, before installing pressure gauge test equipment, ensure that correct inspection hole is used with corresponding pressure measurement. Incorrect diagnosis could result if not performed properly.

1. With engine off, attach hoses from pressure testing Gauge Set (07406-00200003) or equivalent to transaxle. Tighten hose fittings to 13 ft. lbs. (18 N.m). **DO NOT** reuse aluminum washers.
2. Make line pressure measurement after setting parking brake securely and running engine at 2000 RPM. See **Fig. 29**.
3. When making clutch pressure measurement, set parking brake and block rear wheels. Raise the front of the vehicle and support it safely, allow front wheels to rotate freely. Run engine at 2000 RPM. See **Fig. 29**.
4. When making low/high pressure test, set parking brake, block rear wheels. Raise car and support with stands. Disconnect throttle control cable from throttle lever. Warm engine to operating temperature (cooling fan comes on).
5. With engine idling, shift to "D3" or "D4", slowly move throttle linkage to increase engine RPM until pressure is indicated on appropriate gauge. Release throttle, allow engine to return to idle and record pressure reading.
6. Repeat step 5) for each clutch pressure being inspected.
7. With engine idling, lift throttle control lever up approximately 1/2 of possible travel. Increase engine RPM until pressure is registered. Record highest pressure reading obtained.
8. Repeat step 6 for each clutch pressure being inspected. See **Fig. 29**.
9. When making throttle B pressure measurement, set parking brake and block rear wheels. Run engine at 1000 RPM. Disconnect throttle control cable from throttle lever and set control lever in full throttle position. See **Fig. 29**.



**Fig. 29: Pressure Inspection Points & Testing Gauges**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

### TRANSAXLE LINE PRESSURE TEST

| Selector Position | System/Symptom          | Probable Cause                                                                       | Pressure Standard | Press. Limit |
|-------------------|-------------------------|--------------------------------------------------------------------------------------|-------------------|--------------|
| "N" or "P"        | No or Low line pressure | Torque converter oil pump pressure regulator, torque converter check valve, oil pump | 114-121 (758-834) | 107 (735)    |

### CLUTCH PRESSURE MEASUREMENT

| Measured Pressure | Selector Position | System/Symptom              | Probable Cause  | Pressure Standard | Press. Limit |
|-------------------|-------------------|-----------------------------|-----------------|-------------------|--------------|
| 1st Hold Clutch   | "1"               | No or Low 1st Hold pressure | 1st Hold Clutch | 114-121 (758-834) | 107 (735)    |
| 1st Clutch        | "1"               | No or Low 1st pressure      | 1st Clutch      | 114-121 (758-834) | 107 (735)    |
| 2nd Clutch        | "2"               | No or Low 2nd pressure      | 2nd Clutch      | 114-121 (758-834) | 107 (735)    |
| 2nd Clutch        | "D3" or "D4"      | No or Low 2nd pressure      | 2nd Clutch      | 68-121 (471-834)  | 107 (735)    |
| 3rd Clutch        | "D3" or "D4"      | No or Low 3rd pressure      | 3rd Clutch      | 114-121 (758-834) | 107 (735)    |
| 4th Clutch        | "D4"              | No or Low 4th pressure      | 4th Clutch      | 114-121 (758-834) | 107 (735)    |

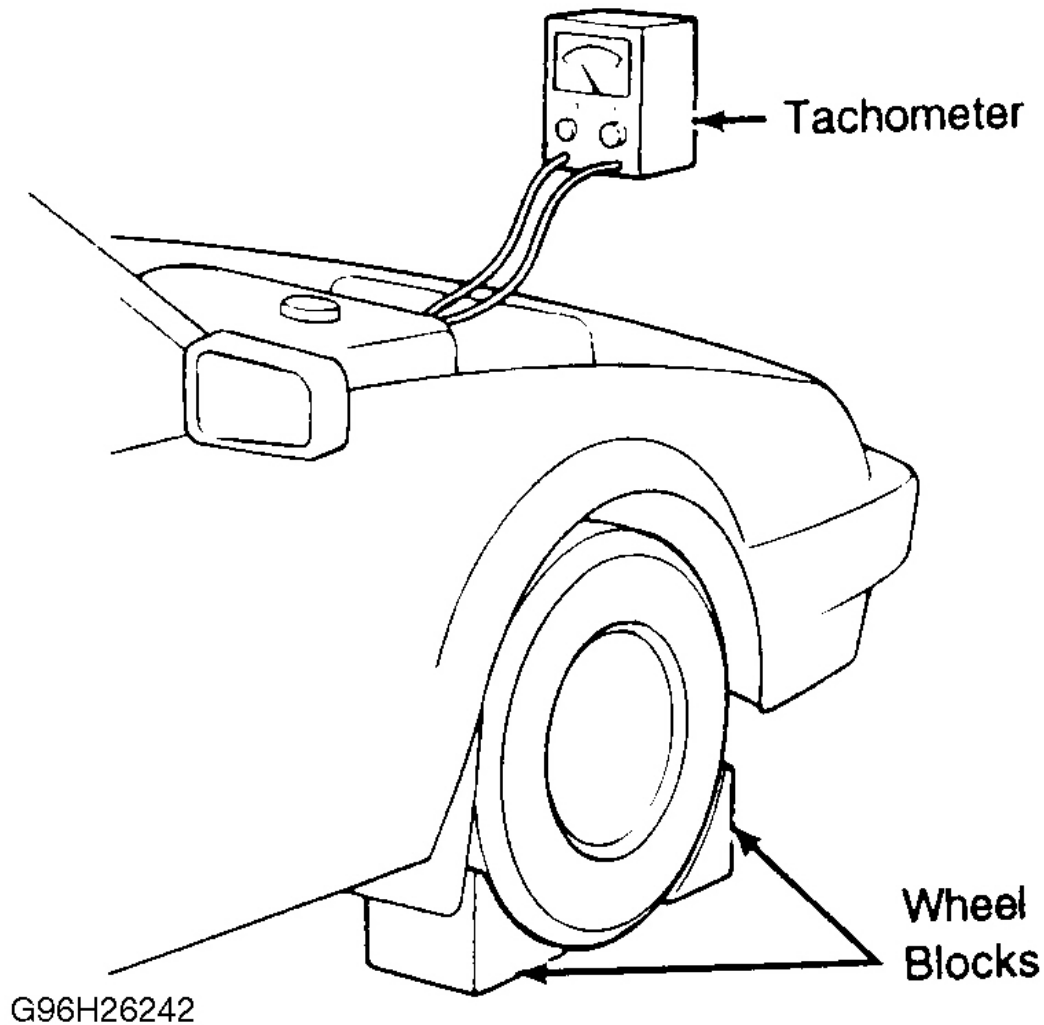
### THROTTLE "B" PRESSURE MEASUREMENT

| Selector Position | System/Symptom                  | Probable Cause     | Pressure Standard | Press. Limit |
|-------------------|---------------------------------|--------------------|-------------------|--------------|
| "D3" or "D4"      | No or Low Throttle "B" pressure | Throttle Valve "B" | 0-121 (0-834)     | 107 (735)    |

### STALL SPEED TEST

**CAUTION:** To prevent transaxle damage, DO NOT test stall speed for more than 10 seconds at a time. DO NOT shift the lever while raising the engine speed. Be sure to remove the pressure gauge before testing stall speed.

1. Engage parking brake and block front wheels. Connect tachometer and start engine. After engine has warmed up to normal operating temperature, shift into "2". See **Fig. 30**



**Fig. 30: Securing Vehicle for Stall Test**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Fully depress brake pedal and accelerator for 6 to 8 seconds, and note engine speed.
3. Allow 2 minutes for cooling, then repeat same test in "D4", "1" and "R". Stall speed in "D4", "2", "1" and "R" must be the same, and within limits. See **STALL SPEED SPECIFICATIONS** table. If stall speed is not within specification, see **STALL SPEED TROUBLE SHOOTING** table.

#### STALL SPEED SPECIFICATIONS

| Application        | RPM       |
|--------------------|-----------|
| Stall Speed        | 2500      |
| Service Unit Range | 2350-2650 |

**STALL SPEED TROUBLE SHOOTING**

| <b>Trouble</b>                 | <b>Probable Cause(s)</b>                                                                                          |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| RPM High in "D4", "2", "1" & R | Low fluid level or oil pump output, Clogged Oil strainer, Pressure regulator valve stuck closed, Slipping clutch. |
| RPM High in "R"                | Slippage of 4th clutch.                                                                                           |
| RPM High in "2"                | Slippage of 2nd clutch.                                                                                           |
| RPM High in "D4"               | Slippage of 1st clutch or 1st gear 1-way clutch.                                                                  |
| RPM Low in "D4" "2", "1" & R   | Engine output low, Torque converter 1-way clutch is slipping.                                                     |

**SYMPTOM TESTS****INDICATOR LIGHT "S" STAYS ON WHENEVER IGNITION SWITCH IS ON**

1. Turn ignition switch off and disconnect connectors 26-pin and 22-pin from ATCU.
2. Connect ECU test harness to wire harness only, not to ATCU. Check for continuity between terminal D-20 (**Red**) and body ground.
3. If there is continuity disconnect connector 2-pin from switch "S". Check continuity between terminal D-20 (**Red**) and body ground. If there is continuity repair short in **Red** wire between terminal D-20 and switch "S". If there is no continuity replace switch "S".
4. If there is no continuity connect ECU test harness to ATCU. Turn ignition On. Measure voltage between terminal A-8 (**Green**) and body ground.
5. If there is no voltage replace ATCU. If there is voltage measure voltage between **Green** wire and gauge assembly to body ground.
6. If there is no voltage replace faulty shift position indicator. If there is voltage repair short to power source on **Green** wire between terminal A-8 and gauge assembly.

**INDICATOR LIGHT "S" DOES NOT COME ON WITH IGNITION TURNED ON**

1. Shift to D3 or D4 and depress switch "S". If the indicator light "S" comes on check for loose control unit connectors. If necessary substitute a known good ATCU and recheck.
2. If the indicator light "S" does not come on turn ignition switch off, disconnect connectors 26-pin and 22-pin from ATCU. Check for continuity between terminals D-20 (**Red**) and A-25 (**Black**). If there is no continuity check for continuity on **Red** wire between terminal D-20 and switch "S". If there is no continuity repair open in **Red** wire between terminal D-20 and switch "S" and G401, G402. If there is continuity replace switch "S". If there is no continuity repair open in **Black** wire between switch "S" and G401, G402.
3. If there is continuity, reconnect connectors 26-pin and 22-pin to ATCU. Turn ignition switch ON. Check for voltage on **Green** wire at gauge set.
4. If there is no voltage disconnect connectors 26-pin and 22-pin from ATCU. Check for continuity between terminal A-8 (**Green**) and gauge assembly. If there is no continuity repair open in **Green** wire between terminal A-8 and gauge assembly. If there is continuity check for loose control unit connectors. If necessary substitute a good control unit and recheck.
5. If there is voltage, check for continuity on **Black** wire from gauge wire assembly to body ground. If there is no continuity repair open **Black** wire between gauge assembly and G401. If there is continuity replace

shift position indicator.

## CIRCUIT TESTS

### A/C SIGNAL INSPECTION

1. Start engine, turn blower switch on and push A/C button on.
2. If A/C compressor clutch does not engage continue with Air Conditioner inspection. If A/C compressor clutch engages, stop engine. Disconnect connector 26-pin from ATCU and start engine.
3. Measure voltage between terminals A-22 (**Red /Blue** ) and A-25 (**Black /Red** ) with A/C compressor off. If there is no voltage repair open in **Red /Blue** wire between A-22 terminal and A/C clutch relay. If there is voltage, A/C signal is okay.

### BRAKE LIGHT SIGNAL INSPECTION

1. Check that brake lights come on when brake pedal is pushed. If brake light does not come on, repair brake light circuit.
2. If brake lights come on, disconnect connectors 26-pin and 22-pin from ATCU. Measure voltage between terminals D-2 (**Green /White**) and A-25 (**Black /Red** ) with brake pedal pushed. If there is no battery voltage repair short in **Green /White** wire between terminal D-2 and brake light switch. If there is battery voltage brake light signal is okay.

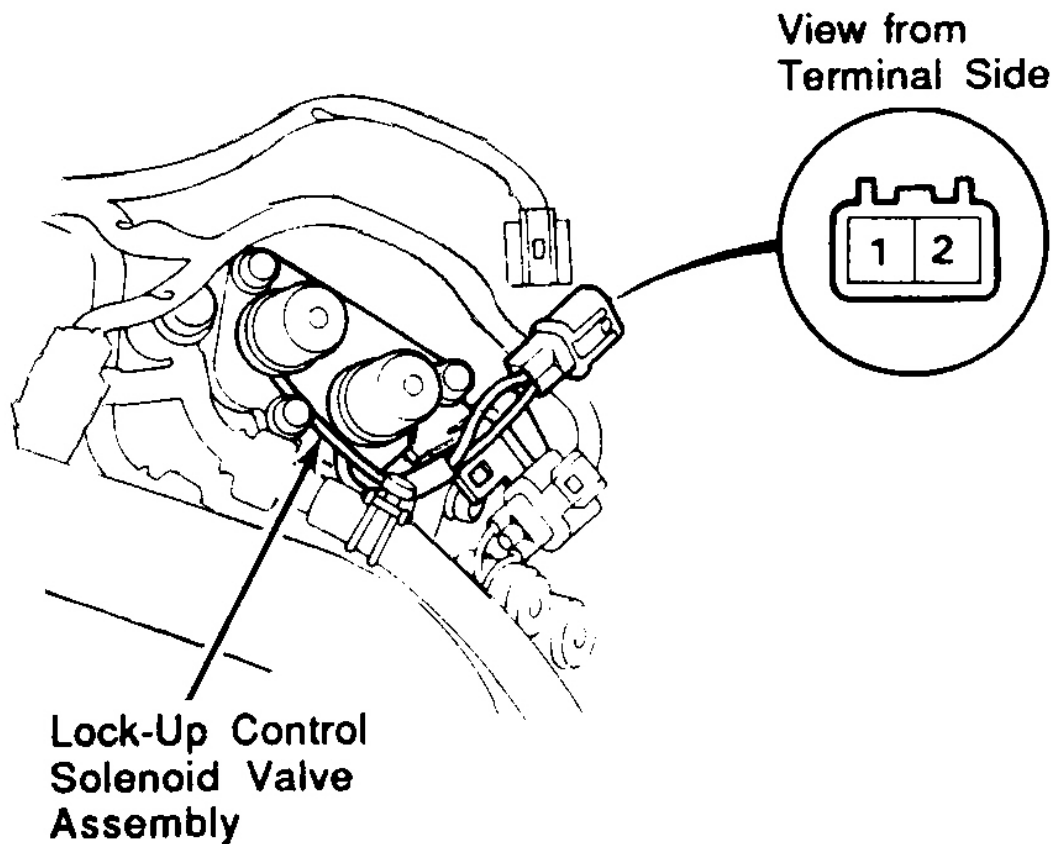
## COMPONENT TESTS

### A/T SPEED PULSER

1. Disconnect speed pulser connector. Connect an ohmmeter across connector terminals. With front end raised, rotate front wheels. A pulse signal should be evident as speed pulser circuit makes and breaks continuity.
2. With speed pulser removed, it may be checked by passing a magnet next to pulser. The circuit should have continuity with magnet close to pulser, and circuit should be open when magnet is pulled away from pulser.

### LOCK-UP CONTROL SOLENOID VALVES "A" & "B"

1. The solenoid valves are serviced and replaced as an assembly. Disconnect solenoid electrical connector. Measure resistance between individual connector contacts and ground. Resistance should be 12-24 ohms. See **Fig. 31** .



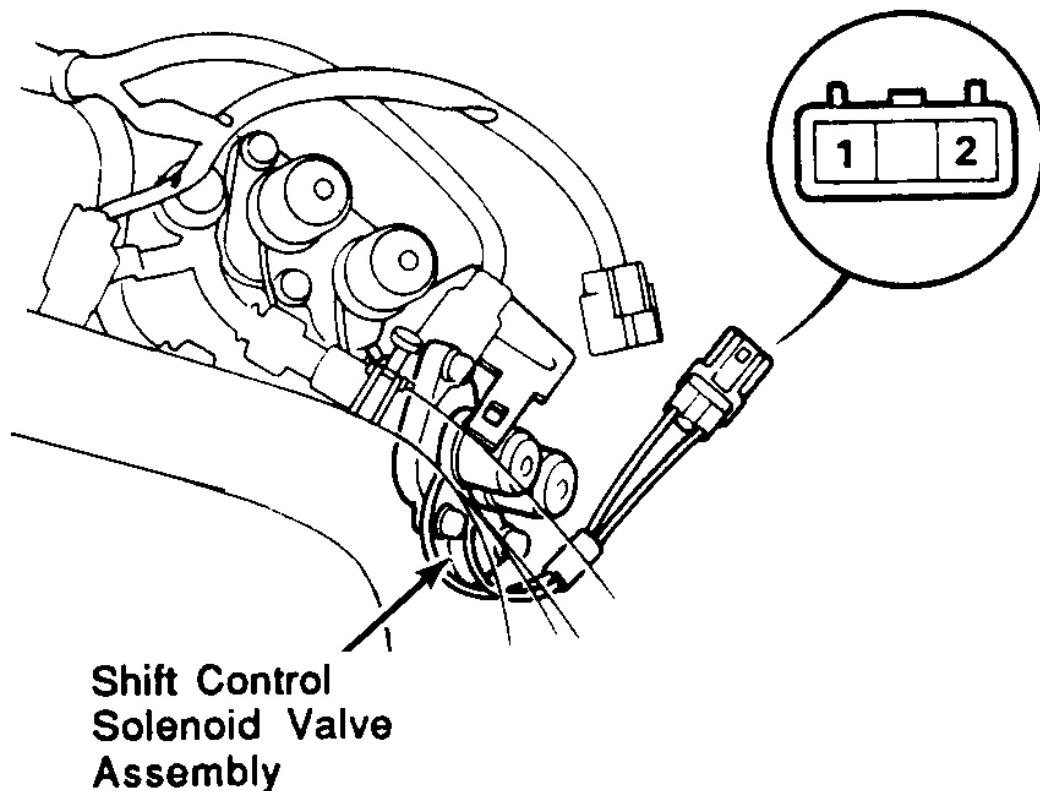
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**Fig. 31: Testing Lock-Up Control Solenoids**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Replace solenoid assembly if either resistance value is beyond specification. Test solenoid operation by connecting 12 volts to connector terminals. A clicking sound should be heard each time a connection is made.
3. If a solenoid does not operate, check continuity between solenoid connector and ground. Replace solenoid assembly if continuity exists between connector and ground.

#### SHIFT CONTROL SOLENOID "A" & "B"

1. Disconnect solenoid electrical connector. Measure resistance between individual connector contacts and ground. Resistance should be 12-24 ohms. See **Fig. 32**.



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**Fig. 32: Testing Shift Control Solenoid Valve**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. Replace solenoid assembly if either resistance value is beyond specification. Test solenoid operation by connecting 12 volts to connector terminals. A clicking sound should be heard each time a connection is made. See wiring diagram for terminal connections and testing points. See **Fig. 4**.

## REMOVAL & INSTALLATION

### TRANSAXLE

For transaxle removal procedures, see appropriate REMOVAL & INSTALLATION article.

### TORQUE CONVERTER

Torque converter consists of pump, turbine and stator assembled as a unit. Torque converter is non-servicable, if defective it must be replaced as a unit.

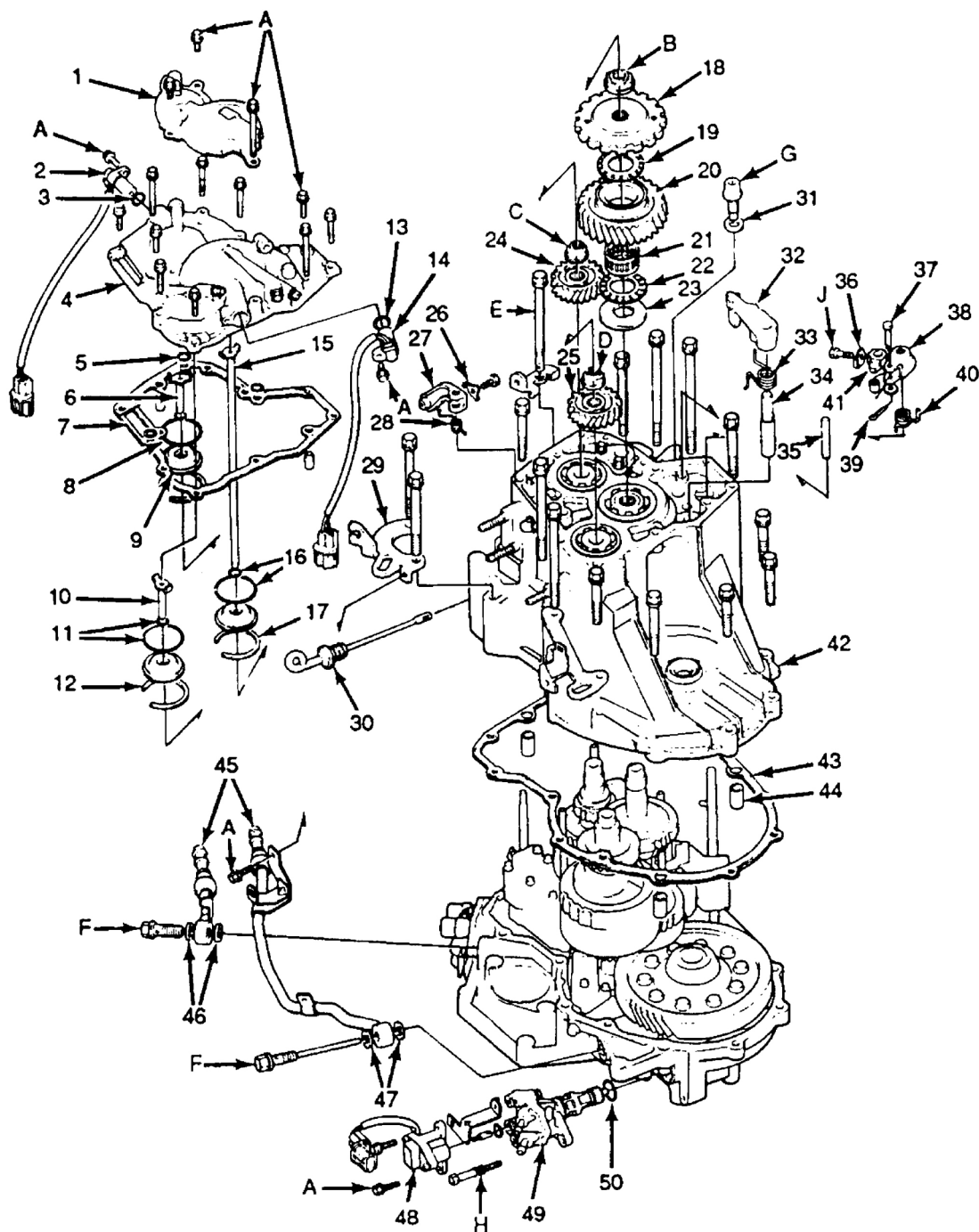
### TRANSAXLE DISASSEMBLY

1. Remove 10 right side cover to case bolts. Remove right side cover. See **Fig. 33** . Use Mainshaft Holder 07GAB-PF50100 to lock mainshaft.
2. Remove end cover gasket, dowel pins and pry staked edge of lock nut out of notch in 1st clutch or parking gear and remove lock nut. Remove mainshaft lock nut.

**NOTE:**        **Mainshaft lock nut has LEFT-HAND threads.**

3. Align control shaft spring pin with cut out in transaxle housing. Install transaxle housing puller over countershaft with 4 bolts and tighten securely. Screw in puller bolt against end of countershaft until transaxle housing comes loose. See specific components under **COMPONENT DISASSEMBLY & REASSEMBLY** for further information. Also, see **Fig. 34** .

**NOTE:**        **When viewing Fig. 33 , refer to FIGURE 33 LEGEND and FIGURE 33 FASTENER SPECIFICATIONS tables.**



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**Fig. 33: Exploded View Of Right Side Cover (Refer To Appropriate Tables For Legend & Fastener Specifications)**

**FIGURE 33 LEGEND**

| Item | Description      |
|------|------------------|
| 1    | R Side Protector |

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## 1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls &amp; Overhaul

|    |                                              |
|----|----------------------------------------------|
| 2  | NM Speed Sensor                              |
| 3  | "O" Ring Replace                             |
| 4  | R Side Cover                                 |
| 5  | "O" Ring Replace                             |
| 6  | 4th Clutch Feed Pipe                         |
| 7  | Gasket Replace                               |
| 8  | "O" Ring Replace                             |
| 9  | Feed Pipe Flange                             |
| 10 | 1st Clutch Feed Pipe                         |
| 11 | "O" Ring Replace                             |
| 12 | Circlip                                      |
| 13 | "O" Ring Replace                             |
| 14 | NC Speed Sensor                              |
| 15 | Low-Hold Clutch Feed Pipe                    |
| 16 | "O" Ring Replace                             |
| 17 | Circlip                                      |
| 18 | Parking Gear                                 |
| 19 | Thrust Needle Bearing                        |
| 20 | Countershaft Idler Gear                      |
| 21 | Needle Bearing                               |
| 22 | Thrust Needle Bearing                        |
| 23 | Spline Washer                                |
| 24 | Mainshaft Idler Gear                         |
| 25 | Secondary Shaft Idler Gear                   |
| 26 | Lock Washer Replace                          |
| 27 | Throttle Control Lever                       |
| 28 | Throttle Lever Spring                        |
| 29 | Trans. Bracket/Throttle Control Wire Bracket |
| 30 | ATF Level Gauge                              |
| 31 | Lock Washer - Replace                        |
| 32 | Parking Brake Pawl                           |
| 33 | Parking Brake Pawl Spring                    |
| 34 | Parking Brake Pawl Shaft                     |
| 35 | Parking Brake Pawl Stopper                   |
| 36 | Lock Washer - Replace                        |
| 37 | Roller Pin                                   |
| 38 | Parking Brake Lever                          |
| 39 | Cotter Pin - Replace                         |
| 40 | Parking Brake Spring                         |
| 41 | Parking Brake Stopper                        |
| 42 | Transaxle Housing                            |
| 43 |                                              |

**1990 Honda Accord DX**

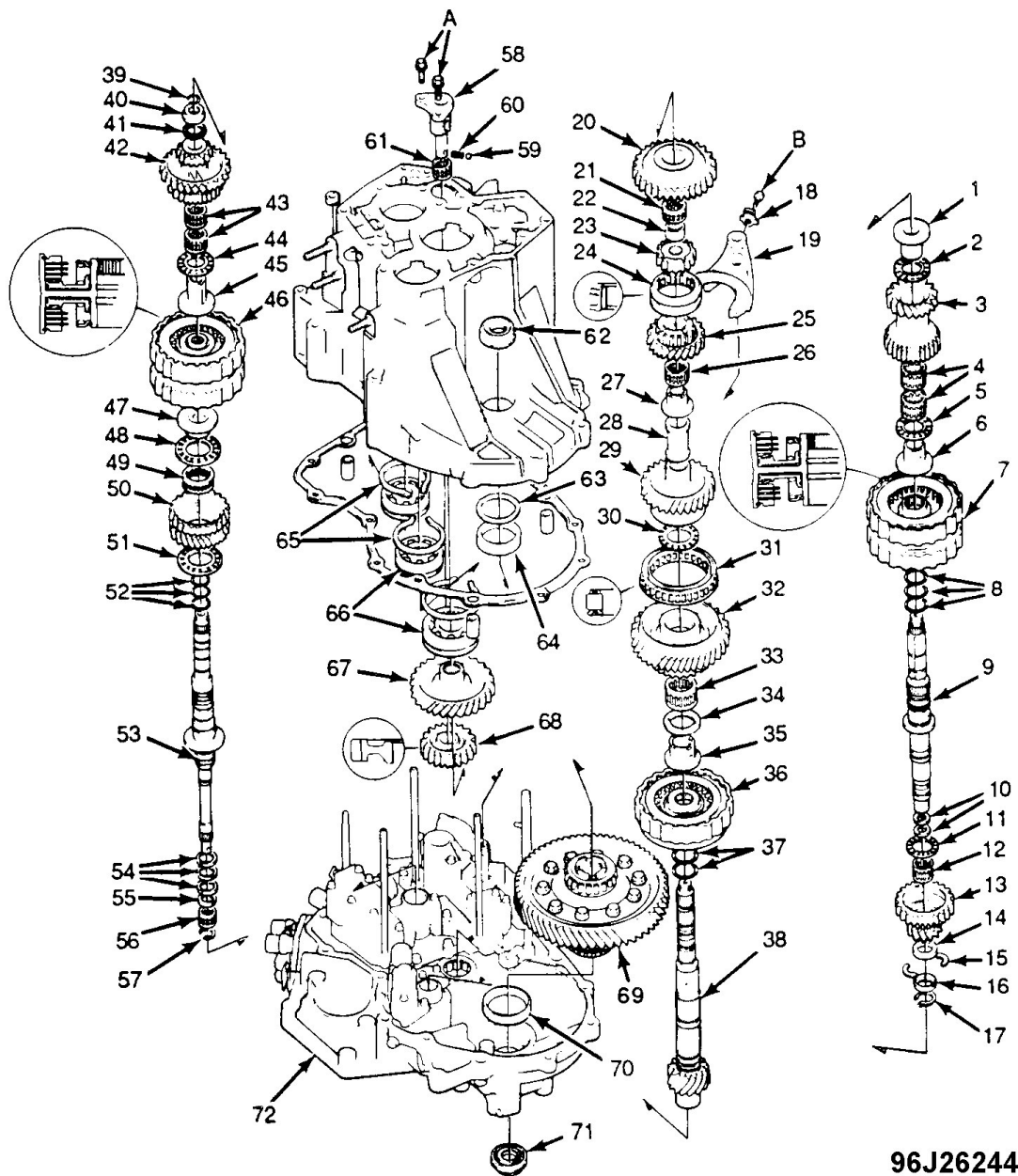
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|    |                           |
|----|---------------------------|
|    | Gasket Replace            |
| 44 | Dowel Pin                 |
| 45 | ATF Cooler Pipe           |
| 46 | Sealing Washers - Replace |
| 47 | Sealing Washers - Replace |
| 48 | Speed Sensor              |
| 49 | P/S Speed Sensor          |
| 50 | "O" Ring - Replace        |

**FIGURE 33 FASTENER SPECIFICATIONS**

| Fastener | Fastener Description | Ft. Lbs. (N.m) |
|----------|----------------------|----------------|
| A        | 6 mm                 | 9 (12)         |
| B        | 24 mm                | 145 (200)      |
| C        | 24 mm LH Threads     | 116 (160)      |
| D        | 24 mm                | 116 (160)      |
| E        | 10 mm                | 40 (55)        |
| F        | 12 mm Joint Bolts    | 21 (29)        |
| G        | 18 mm Drain Bolt     | 36 (50)        |
| H        | 8 mm                 | 13 (18)        |
| I        | 5 mm                 | 6 (8)          |
| J        | 6 mm                 | 10 (14)        |

**NOTE:** When viewing Fig. 34 , refer to **FIGURE 34 LEGEND** and **FIGURE 34 FASTENER SPECIFICATIONS** tables.



**Fig. 34: Exploded View Of Housing, Mainshaft, Countershaft & Secondary Shaft (Refer To Appropriate Tables For Legend & Fastener Specifications)**

**FIGURE 34 LEGEND**

| Item | Description              |
|------|--------------------------|
| 1    | 2nd Gear Collar          |
| 2    | Thrust Needle Bearing    |
| 3    | Secondary Shaft 2nd Gear |
| 4    | Needle Bearings          |

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|    |                                  |
|----|----------------------------------|
| 5  | Thrust Needle Bearing            |
| 6  | 2nd Gear Collar                  |
| 7  | 1st-2nd Clutch Assembly          |
| 8  | "O" Ring - Replace               |
| 9  | Secondary Shaft                  |
| 10 | Seal Rings                       |
| 11 | Thrust Needle Bearing            |
| 12 | Needle Bearing                   |
| 13 | Secondary Shaft 1st Gear         |
| 14 | Distance Collar (5 mm)           |
| 15 | Cotter (29 mm)                   |
| 16 | Cotter Retainer                  |
| 17 | Circlip                          |
| 18 | Lock Washer - Replace            |
| 19 | Reverse Shift Fork               |
| 20 | Countershaft Reverse Gear        |
| 21 | Needle Bearing                   |
| 22 | Countershaft Reverse Gear Collar |
| 23 | Reverse Selector Hub             |
| 24 | Reverse Selector                 |
| 25 | Countershaft 4th Gear            |
| 26 | Needle Bearing                   |
| 27 | 4th Gear Collar                  |
| 28 | Distance Collar (46 mm)          |
| 29 | Countershaft 3rd Gear            |
| 30 | Thrust Needle Bearing            |
| 31 | One-Way Clutch                   |
| 32 | Countershaft 1st Gear            |
| 33 | Needle Bearing                   |
| 34 | Thrust Washer                    |
| 35 | 1st Gear Collar                  |
| 36 | 1st Hold Clutch Assembly         |
| 37 | "O" Rings - Replace              |
| 38 | Countershaft                     |
| 39 | Snap Ring                        |
| 40 | Collar                           |
| 41 | Thrust Needle Bearing            |
| 42 | Countershaft 4th-Reverse Gear    |
| 43 | Needle Bearings                  |
| 44 | Thrust Needle Bearing            |
| 45 | 4th Gear Collar                  |
| 46 |                                  |

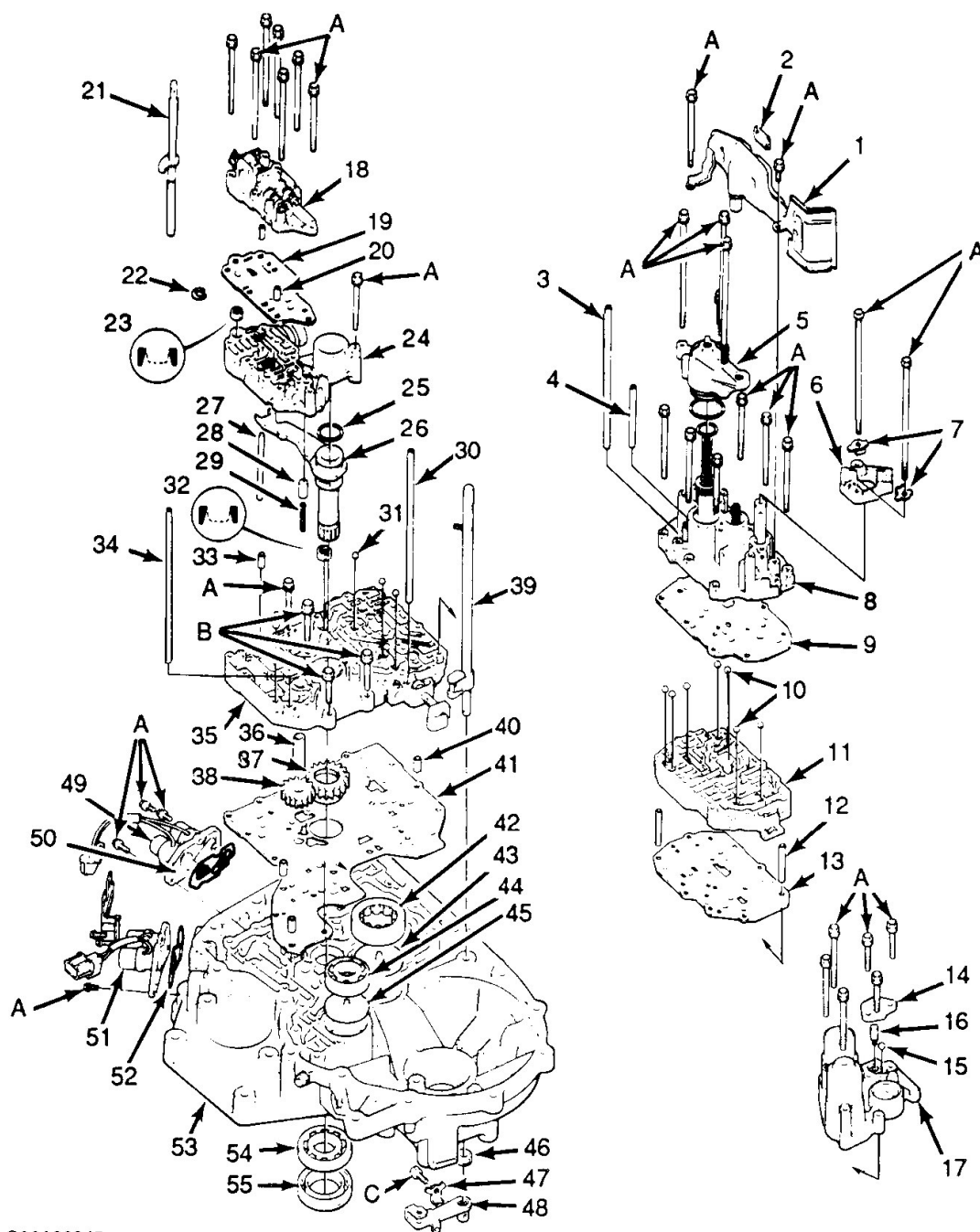
**1990 Honda Accord DX****1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul**

|    |                                 |
|----|---------------------------------|
|    | 3rd-4th Clutch Assembly         |
| 47 | 3rd Gear Collar                 |
| 48 | Thrust Needle Bearing           |
| 49 | Needle Bearing                  |
| 50 | Mainshaft 3rd Gear              |
| 51 | Thrust Needle Bearing           |
| 52 | "O" Rings - Replace             |
| 53 | Mainshaft                       |
| 54 | Seal Rings (31 mm)              |
| 55 | Seal Ring (25 mm)               |
| 56 | Needle Bearing                  |
| 57 | Set Ring (23 mm)                |
| 58 | Reverse Idler Shaft Holder      |
| 59 | Steel Ball                      |
| 60 | Spring                          |
| 61 | Needle Bearing                  |
| 62 | Differential Oil Seal           |
| 63 | Thrust Shim                     |
| 64 | Bearing Outer Race              |
| 65 | Circlips                        |
| 66 | Transaxle Housing Ball Bearings |
| 67 | Countershaft 2nd Gear           |
| 68 | Reverse Idler Gear              |
| 69 | Differential Assembly           |
| 70 | Bearing Outer Race              |
| 71 | Differential Oil Seal           |
| 72 | Torque Converter Housing        |

**FIGURE 34 FASTENER SPECIFICATIONS**

| <b>Fastener</b> | <b>Fastener Description</b> | <b>Ft. Lbs. (N.m)</b> |
|-----------------|-----------------------------|-----------------------|
| A               | 6 mm                        | 9 (12)                |
| B               | 6 mm                        | 10 (14)               |

**NOTE:** When viewing Fig. 35 , refer to FIGURE 35 LEGEND and FIGURE 35 FASTENER SPECIFICATIONS tables.



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**Fig. 35: Exploded View Of Torque Converter Housing & Main Valve Body Assembly (Refer To Appropriate Tables For Legend & Fastener Specifications)**

**FIGURE 35 LEGEND**

| Item | Description              |
|------|--------------------------|
| 1    | Transaxle Fluid Strainer |

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## 1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls &amp; Overhaul

|    |                               |
|----|-------------------------------|
| 2  | Magnet                        |
| 3  | Clutch Feed Pipe              |
| 4  | Feed Pipe                     |
| 5  | Accumulator Cover             |
| 6  | Servo Detent Base             |
| 7  | Lock Washer                   |
| 8  | Servo Body                    |
| 9  | Servo Separator Plate         |
| 10 | Check Balls                   |
| 11 | Secondary Valve Body          |
| 12 | Dowel Pin                     |
| 13 | Secondary Separator Plate     |
| 14 | Accumulator Body Cover        |
| 15 | Steel Ball                    |
| 16 | 1st Accumulator Choke         |
| 17 | 1st-2nd Accumulator Body      |
| 18 | Throttle Valve Body           |
| 19 | Throttle Separator Plate      |
| 20 | Dowel Pin                     |
| 21 | Throttle Control Shaft        |
| 22 | E-Clip                        |
| 23 | Filter                        |
| 24 | Regulator Valve Body          |
| 25 | "O" Ring                      |
| 26 | Stator Shaft Assembly         |
| 27 | Stopper Pin                   |
| 28 | Torque Converter Check Valve  |
| 29 | Torque Converter Check Spring |
| 30 | Clutch Feed Pipe              |
| 31 | Check Balls                   |
| 32 | Filter                        |
| 33 | Dowel Pin                     |
| 34 | Clutch Feed Pipe              |
| 35 | Main Valve Body               |
| 36 | Oil Pump Driven Gear Shaft    |
| 37 | Oil Pump Drive Gear           |
| 38 | Oil Pump Driven Gear          |
| 39 | Control Shaft                 |
| 40 | Dowel Pin                     |
| 41 | Main Separator Plate          |
| 42 | Countershaft Needle Bearing   |
| 43 |                               |

## 1990 Honda Accord DX

### 1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul

|    |                                         |
|----|-----------------------------------------|
|    | Oil Guide Plate                         |
| 44 | Secondary Shaft Ball Bearing            |
| 45 | Oil Guide Plate                         |
| 46 | Oil Seal                                |
| 47 | Lock Washer                             |
| 48 | Control Lever                           |
| 49 | Lock-Up Control Solenoid Valve Assembly |
| 50 | Lock-Up Control Solenoid Filter Gasket  |
| 51 | Shift Control Solenoid Valve Assembly   |
| 52 | Shift Control Solenoid Filter Gasket    |
| 53 | Torque Converter Housing                |
| 54 | Mainshaft Ball Bearing                  |
| 55 | Oil Seal                                |

**FIGURE 35 FASTENER SPECIFICATIONS**

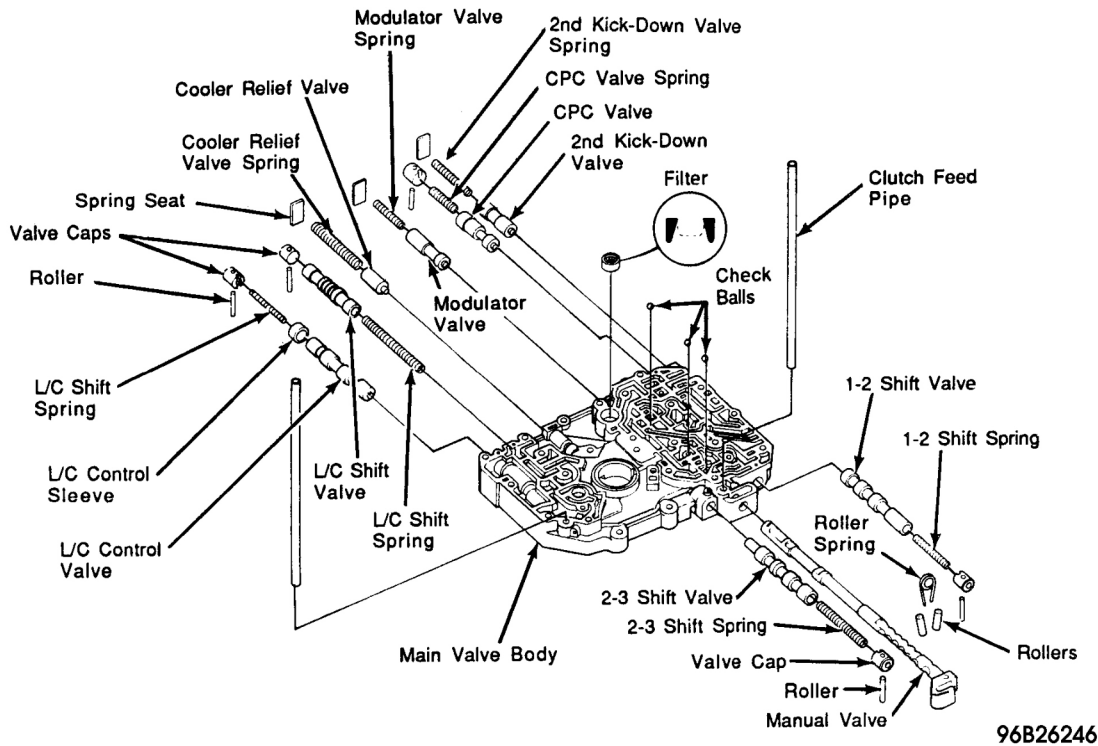
| Fastener | Fastener Description | Ft. Lbs. (N.m) |
|----------|----------------------|----------------|
| A        | 6 mm                 | 9 (12)         |
| B        | 8 mm                 | 13 (18)        |
| C        | 6 mm                 | 10 (14)        |

## COMPONENT DISASSEMBLY & REASSEMBLY

### MAIN VALVE BODY

#### Disassembly

1st and 2nd accumulator cover is spring loaded. To prevent possibility of stripping threads from converter housing, press down on accumulator cover while removing bolts in a crisscross pattern. Follow this procedure for installation as well. **DO NOT** use a magnet to remove steel balls. Balls may become magnetized and result in improper transaxle operation. Note installed position of all valves and spring for reassembly reference. See **Fig. 36** .



**Fig. 36: Exploded View of Main Valve Body**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Cleaning & Inspection

1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Check that all valves move freely. If valves do not move freely polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.
3. Ensure that all springs meet specifications. See **SPRING FREE LENGTH** table. Coat all parts in ATF before reassembly.

**NOTE:** Before using No. 600 abrasive paper, ensure that it has been soaked in ATF for about 30 minutes.

### SPRING FREE LENGTH

| Free Length Spring    | In. (mm)       |
|-----------------------|----------------|
| 1st Accumulator       | 3.780" (96.00) |
| 2nd Accumulator       | 3.177" (80.70) |
| 3rd Accumulator       | 3.709" (94.20) |
| 4th Accumulator       | 3.327" (84.50) |
| Cooler Relief Valve   | 2.902" (73.70) |
| CPC Valve Spring A, B | 1.299" (33.00) |

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|                             |                |
|-----------------------------|----------------|
| D-Inhibitor                 | 2.071" (52.60) |
| Lock-Up Control             | 1.614" (41.00) |
| Lock-Up Shift               | 2.902" (73.70) |
| Lock-Up Timing              | 2.502" (64.00) |
| Modulator Valve Spring A, B | 1.299" (33.00) |
| Regulator Valve Spring A    | 3.406" (86.50) |
| Regulator Valve Spring B    | 1.732" (44.00) |
| Relief Valve                | 1.539" (39.10) |
| Stator Reaction             | 1.193" (30.30) |
| Servo Orifice Control       | 2.067" (52.50) |
| Throttle B                  | 1.634" (41.50) |
| Throttle B Adjusting        | 1.810" (30.00) |
| Torque Converter Check      | 1.331" (33.80) |
| 1st Hold Accumulator        | 2.547" (64.70) |
| 1-2 Shift                   | 1.626" (41.30) |
| 2-3 Shift                   | 2.244" (57.00) |
| 3-4 Shift                   | 2.244" (57.00) |
| 2nd Kickdown                | 1.846" (46.90) |
| 3rd Kickdown                | 1.902" (48.30) |
| 2nd Orifice Control         | 2.055" (52.20) |
| 4th Exhaust                 | 2.394" (60.80) |

#### Reassembly

1. Install 1-2 shift valve and shift valve spring with cap. Secure in place using roller (or roll pin). Install 2-3 shift valves in main valve body in same manner as 1-2 shift valve. Install manual valve, 6.5X19 mm rollers and spring. Set relief spring in relief valve and install in main valve body.
2. Install spring using screwdriver, and install check valve cap with cutout (slot) aligned with screwdriver. Set spring 2nd kickdown valve and install it in valve body. Push spring in with screwdriver and install spring seat. Use same procedure to install modulator valve and cooler relief valve.
3. Install CPC valve, lock-up clutch control valve, lock-up clutch shift valves, valve spring and cap in valve body. Secure with roller spring. Install clutch feed pipes and filter on main valve body. See **Fig. 36**.

#### OIL PUMP

##### Cleaning & Inspection

1. Install pump gears and shaft in main valve body. Install oil pump shaft and measure side clearance of drive and driven gears.
2. Standard pump side (radial) drive gear clearance should be .0083-.0104" (.210-.265 mm). Driven gear (radius) clearance should be .0014-.0025" (.035-.063 mm). Inspect teeth for wear or damage.
3. Measure thrust clearance of driven gear-to-valve body. Standard clearance should be .001-.002" (.03-.05 mm). Service limit is .0028" (.070 mm).

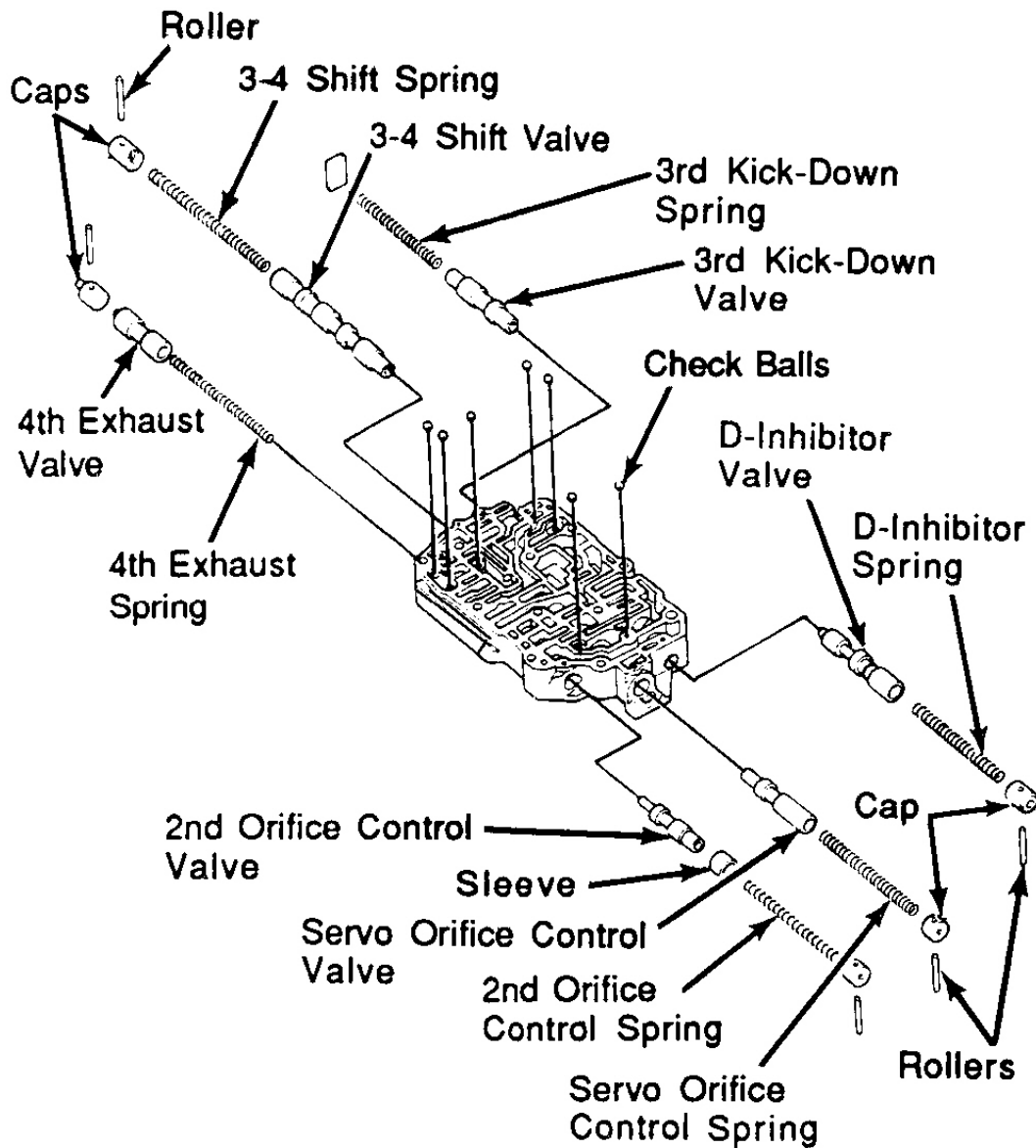
## **SECONDARY VALVE BODY**

### **Disassembly & Reassembly**

For disassembly and reassembly reference, See **Fig. 37** .

### **Cleaning & Inspection**

1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Ensure all valves move freely. If valves do not move freely, polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.
3. Make sure all springs meet specifications. See **SPRING FREE LENGTH** table. Coat all parts in ATF before reassembly.



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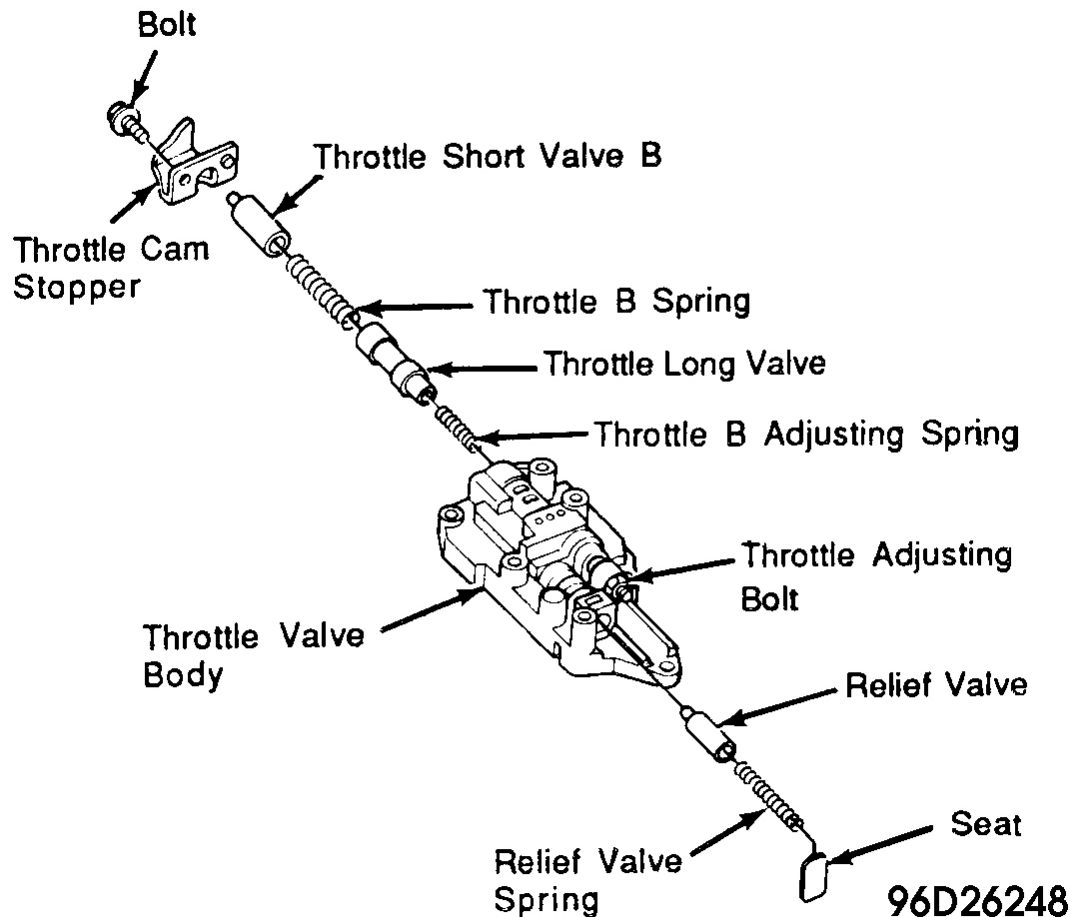
**Fig. 37: Exploded View of Secondary Valve Body**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## THROTTLE VALVE BODY

**NOTE:** DO NOT loosen or remove throttle adjusting bolt.

### Disassembly

For disassembly and reassembly reference, See **Fig. 38** .



**Fig. 38: Exploded View of Throttle Valve Body**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

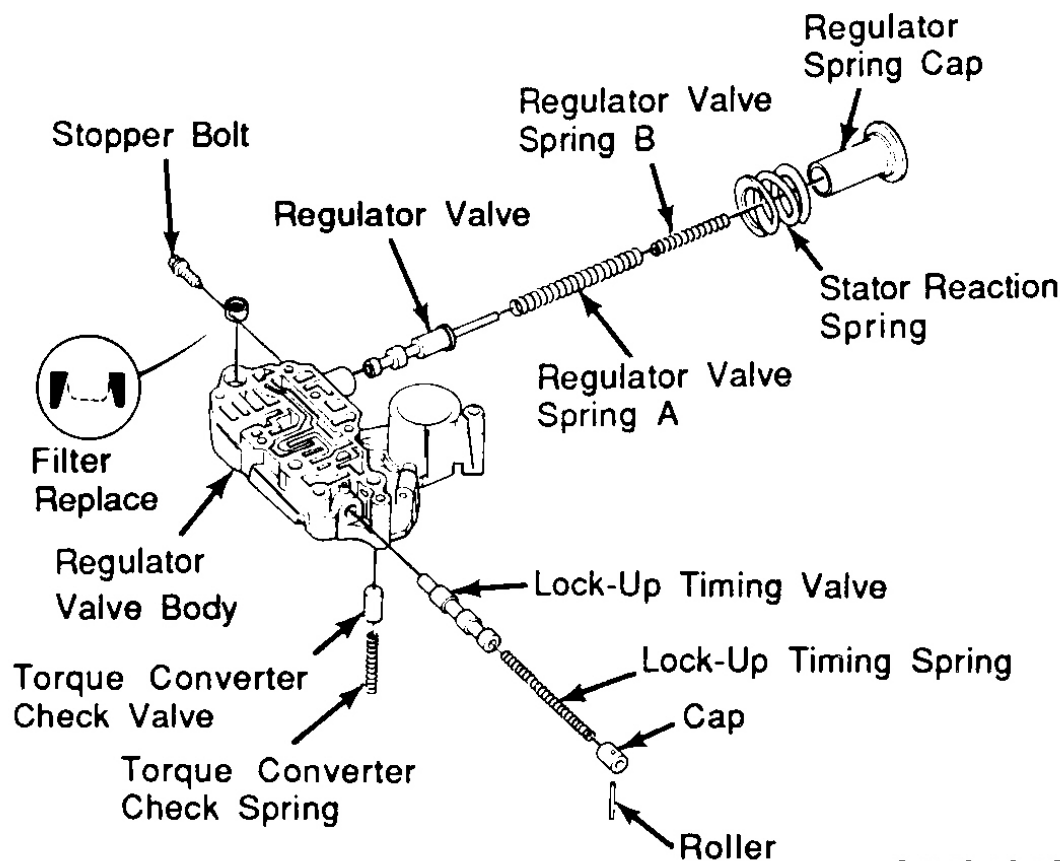
#### Cleaning & Inspection

1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Ensure all valves move freely. If valves do not move freely, polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.
3. Make sure all springs meet specifications. See **SPRING FREE LENGTH** table. Coat all parts in ATF before reassembly.

#### REGULATOR VALVE BODY

##### Disassembly

Hold regulator spring cap in place while removing stopper bolt. Once bolt is removed release spring cap slowly. See **Fig. 39** .



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**Fig. 39: Exploded View of Regulator Valve Body**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

#### Cleaning & Inspection

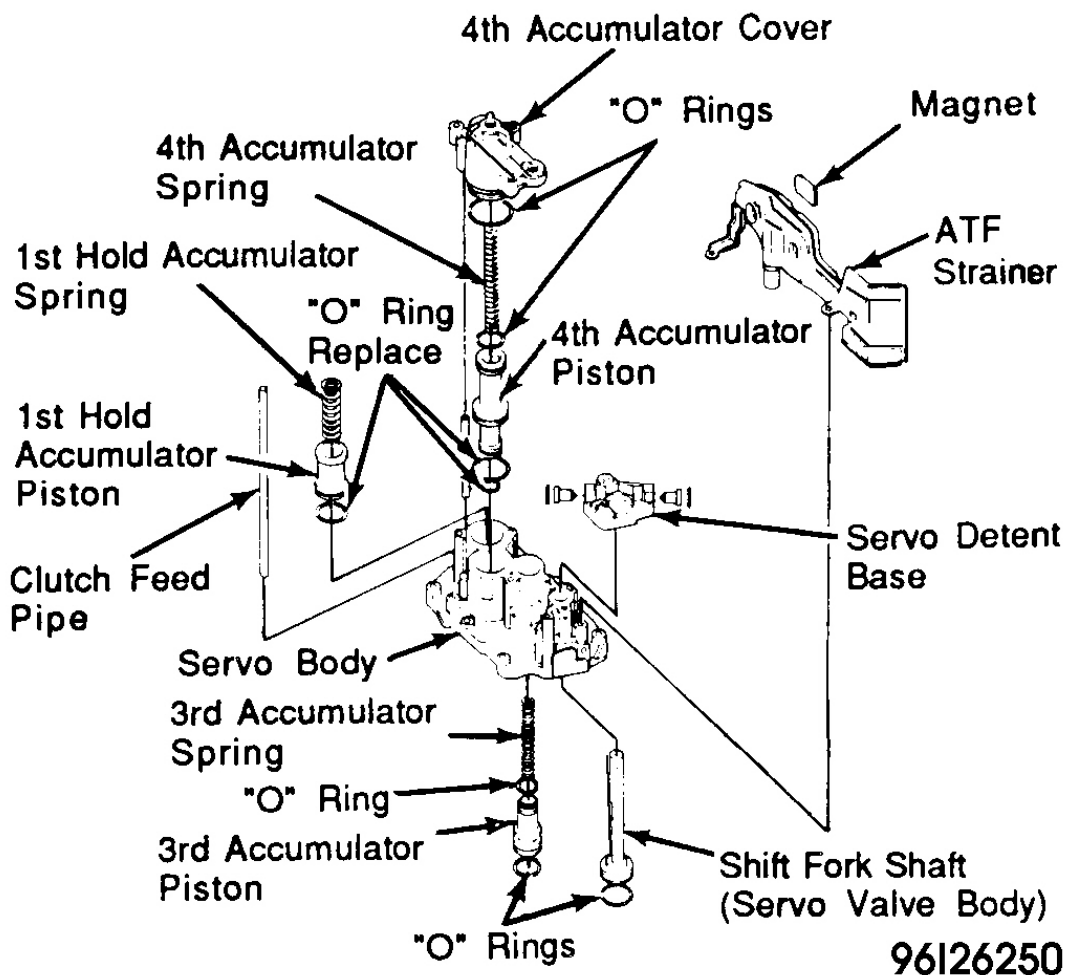
1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Ensure all valves move freely. If valves do not move freely, polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.
3. Make sure all springs meet specifications. See **SPRING FREE LENGTH** table. Coat all parts in ATF before reassembly.

#### Reassembly

For reassembly information See **Fig. 39** .

**SERVO VALVE BODY****Disassembly & Reassembly**

For disassembly and reassembly reference, see **Fig. 40** .



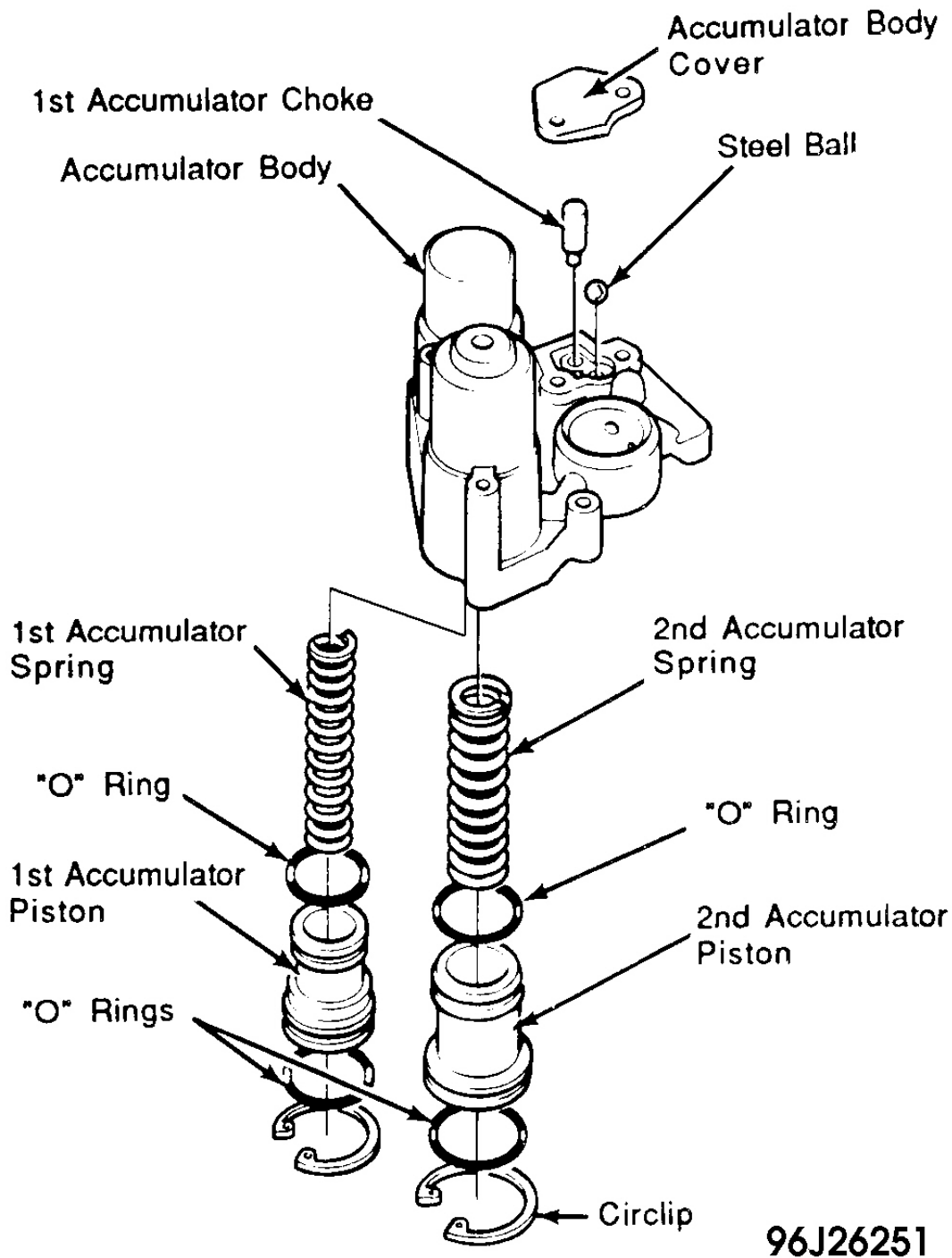
**Fig. 40: Exploded View of Servo Valve Body**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Cleaning & Inspection**

1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Ensure all valves move freely. If valves do not move freely, polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.

**ACCUMULATOR BODY****Disassembly & Reassembly**

For disassembly and reassembly reference, See **Fig. 41** .



**Fig. 41: Exploded View of Accumulator Body**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

**Cleaning & Inspection**

1. Thoroughly clean all parts in solvent or carburetor cleaner. Dry using compressed air and blow out all passages. Replace valve body as an assembly if any parts are worn or damaged.
2. Ensure all valves move freely. If valves do not move freely, polish off burrs or rough areas using ATF soaked No. 600 abrasive paper. Rewash entire valve body and parts thoroughly if polishing was needed.
3. Make sure all springs meet specifications. See **SPRING FREE LENGTH** table. Coat all parts in ATF before reassembly.

## **MAINSHAFT & COUNTERSHAFT**

### **Disassembly**

For information on disassembly, see **Fig. 42** and **Fig. 43** .

**NOTE:**        **Use hydraulic press to remove countershaft while supporting 1st clutch drum. Place a protective cap between hydraulic press and countershaft to prevent damage to shaft.**

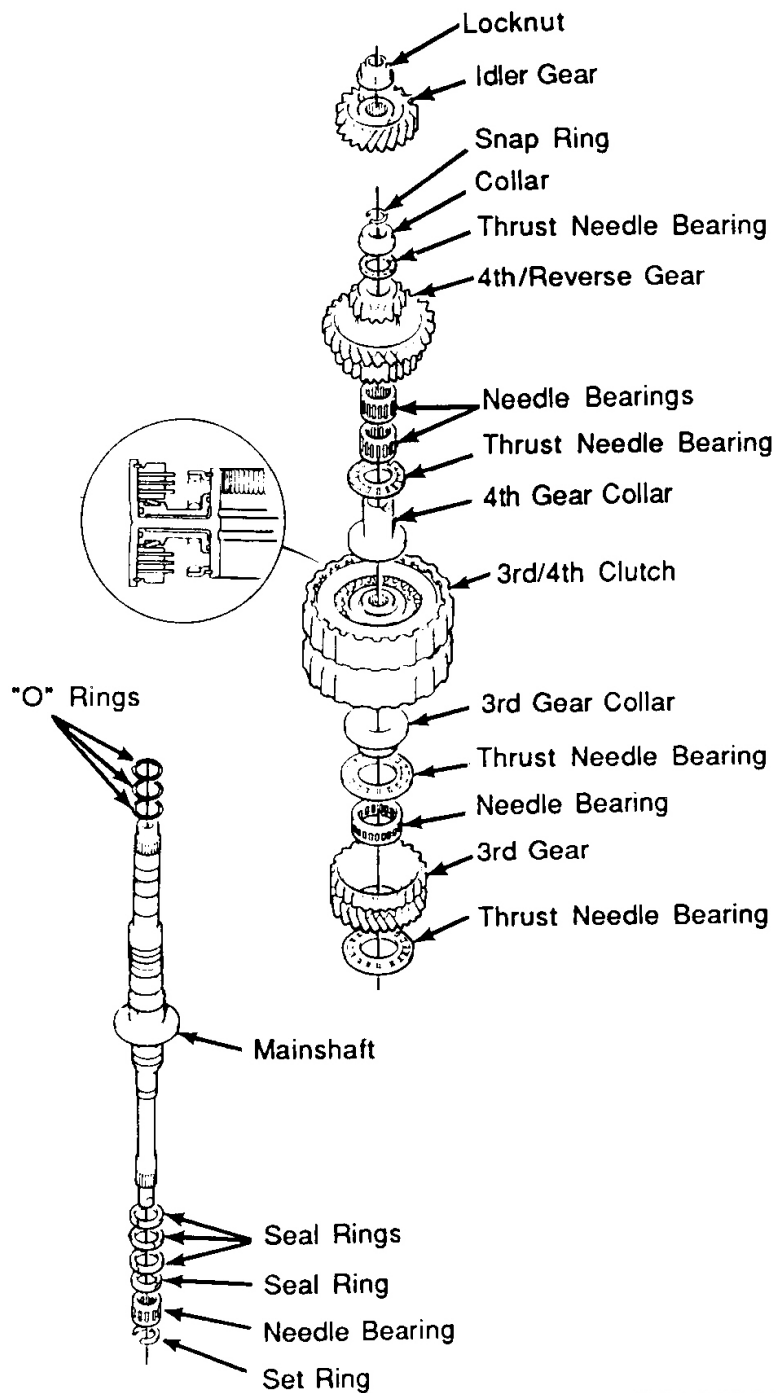
### **Cleaning & Inspection**

1. Check all splines for excessive wear or damage. Also check bearing surfaces for scoring, scratches or excessive wear. Replace metal seal rings.
2. Check needle bearings for galling and rough movement. Replace all "O" rings.

### **Reassembly**

1. Lubricate all parts with ATF prior to reassembly. Install thrust needle bearings with unrolled edge of bearing retainer facing washer.
2. Assemble mainshaft and countershaft. Torque mainshaft lock nut 118 ft. lbs. (160 N.m) and countershaft lock nuts to 148 ft. lbs. (200 N.m). See **Fig. 42** and **Fig. 43** .

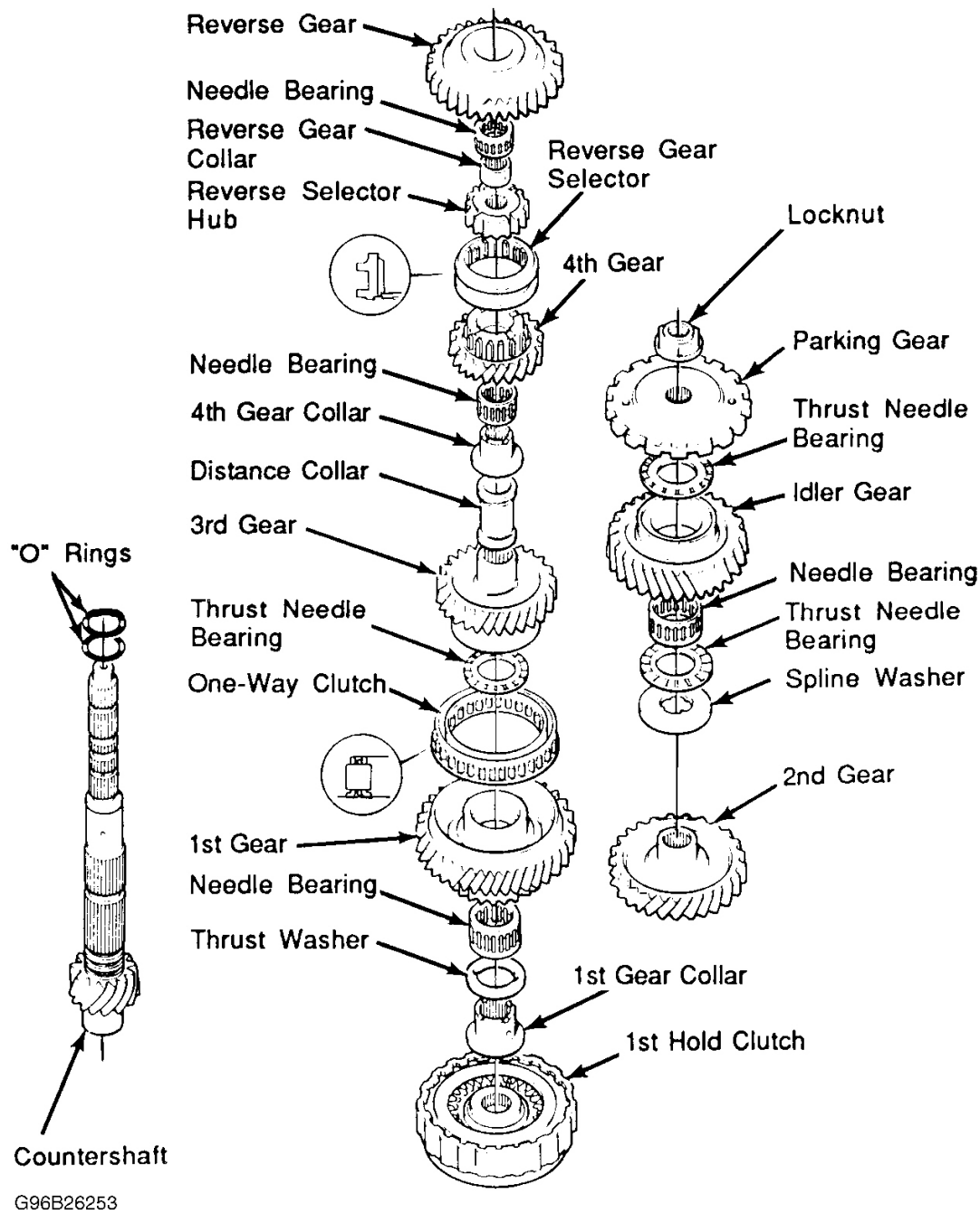
**NOTE:**        **Countershaft lock nut has LEFT-HAND threads.**



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**Fig. 42: Exploded View of Mainshaft**

Courtesy of AMERICAN HONDA MOTOR CO., INC.



**Fig. 43: Exploded View of Countershaft**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

## ONE-WAY CLUTCH

### Disassembly

Separate countershaft 3rd gear from 1st gear by turning 3rd gear in counterclockwise direction. Remove one-way clutch by prying up using screwdriver.

**CAUTION: DO NOT pry on 3 copper friction strips. If strip is broken or damaged, clutch will not operate properly.**

### Cleaning & Inspection

Inspect 1st gear and countershaft 3rd gear for wear or scoring. Inspect one-way clutch for damage or faulty movement.

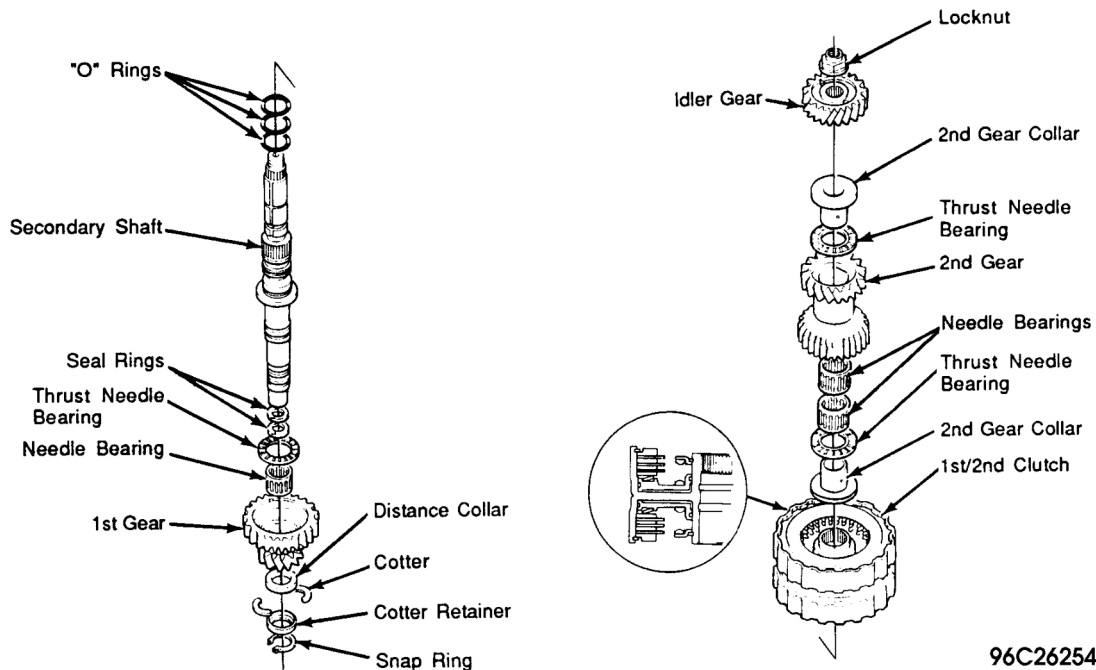
### Reassembly

After parts are assembled, hold countershaft 3rd gear and turn 1st gear in counterclockwise direction to ensure it rotates freely.

## SECONDARY SHAFT

### Disassembly

For information on disassembly, See [Fig. 44](#).



**Fig. 44: Exploded View of Secondary Shaft**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

### Cleaning & Inspection

1. Check all splines for excessive wear or damage, also check bearing surfaces for scoring, scratches or excessive wear.
2. Check needle bearings for galling and rough movement. Replace all "O" rings.

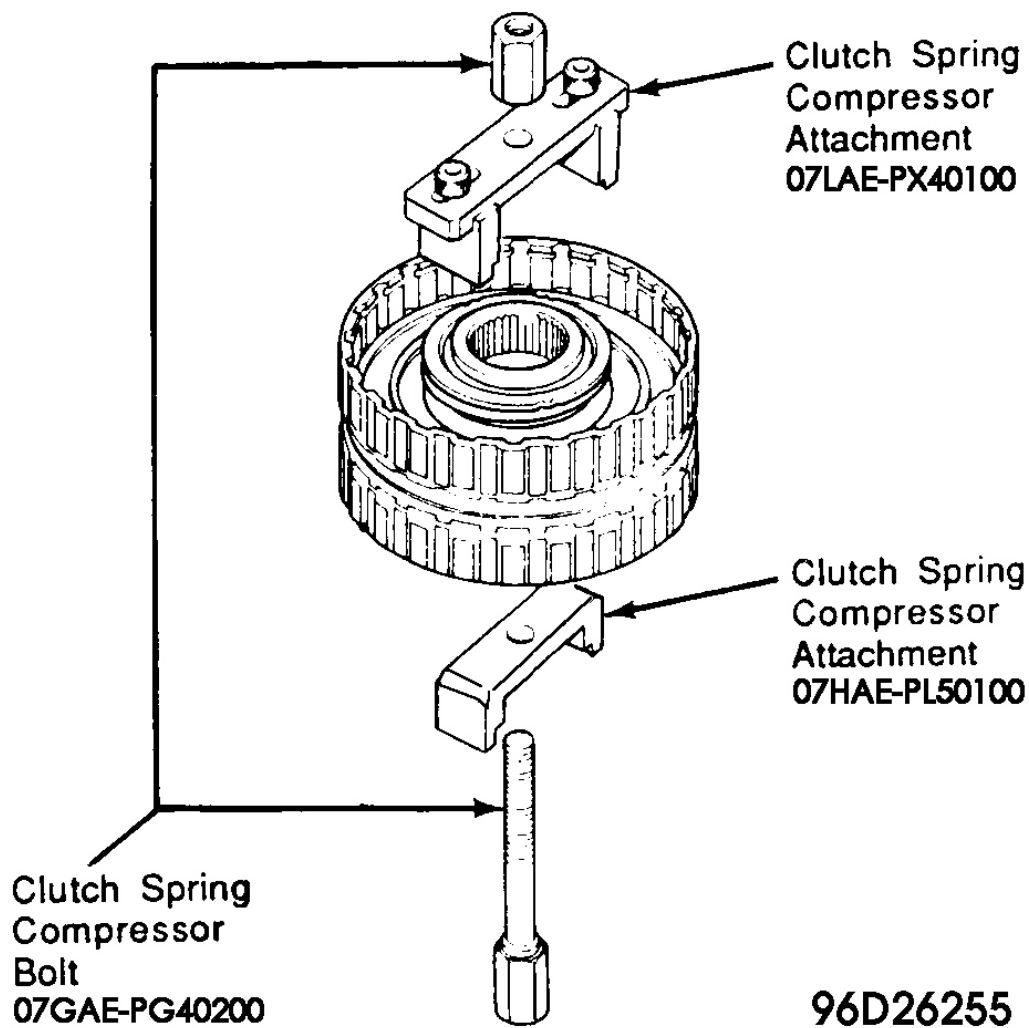
**Reassembly**

Lubricate all parts with ATF prior to reassembly. Install thrust needle bearings with unrolled edge of bearing retainer facing washer. Tighten the secondary shaft lock nut to 118 ft. lbs. (160 N.m). See **Fig. 44** .

**CLUTCH****Disassembly**

1. On 1st Hold, 1st-2nd and 3rd-4th clutch, remove snap ring, clutch end plate, clutch discs and plates. Remove clutch piston plate. Using Spring Compressor (07HAE-PL50100), compress clutch return spring. See **Fig. 45** .

**CAUTION:** If either end of compressor attachment is set over an area of retainer which is unsupported by spring, retainer may be damaged.



**Fig. 45: Clutch Spring Compressor Tool**  
Courtesy of AMERICAN HONDA MOTOR CO., INC.

2. On 1st Hold clutch, assemble spring compressor on clutch drum and compress clutch return spring. Follow same procedure for 1st-2nd clutch and 3rd-4th clutch.
3. Remove circlip, spring compressor, spring retainer and return spring. With clutch drum wrapped in shop towel, apply compressed air to oil passage to remove piston. Place finger tip on other end while applying air pressure.

#### Cleaning & Inspection

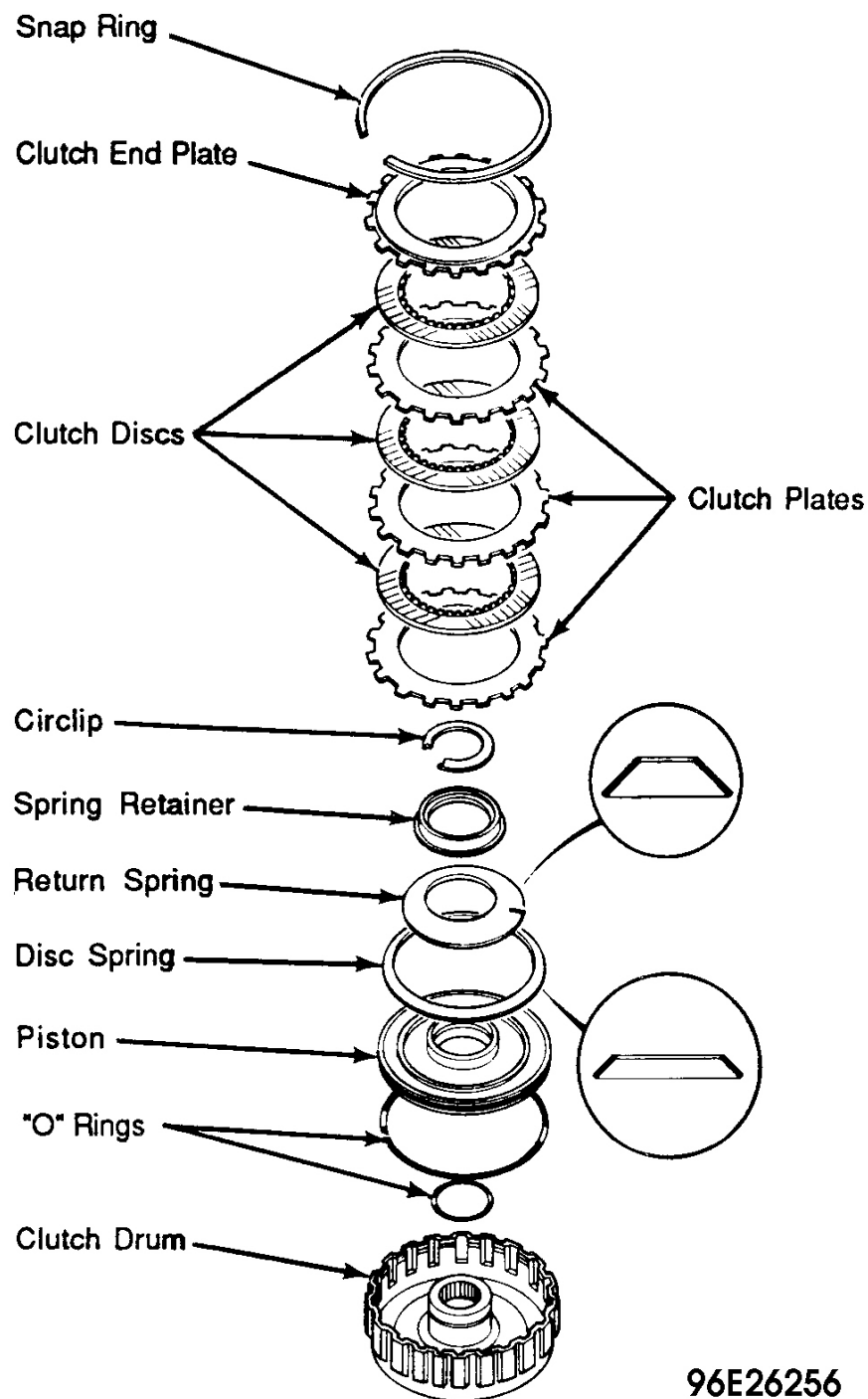
Clean all parts thoroughly using solvent and dry using compressed air. Ensure all passages are blown out. Lubricate all parts with ATF before reassembly. Use new "O" ring on clutch pistons.

**CAUTION:** Before installing plates and discs, ensure that inside of clutch drum is free of dirt or other foreign matter. DO NOT pinch "O" ring by forcing piston installation.

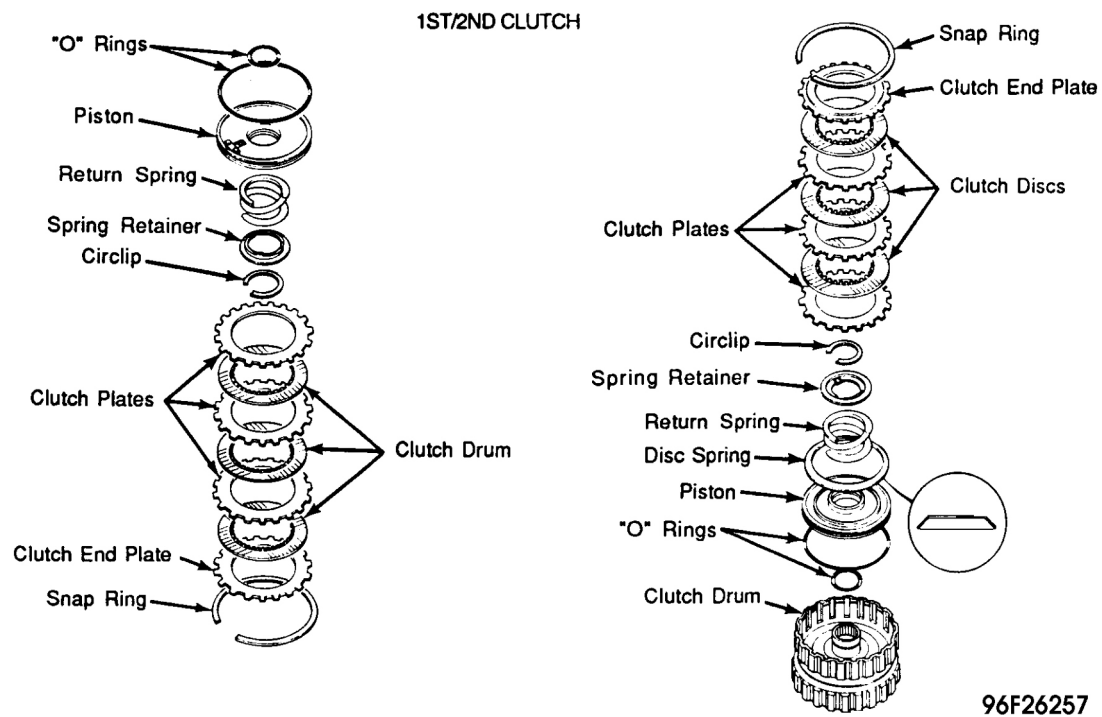
**Reassembly**

1. Ensure that clutch discs soak in ATF for a minimum of 30 minutes before installation. During reassembly ensure that piston plate and spring washer are installed correctly. See **Fig. 46** -**Fig. 48** .
2. Reverse disassembly to continue with reassembly. Starting with clutch plate, alternately install clutch plates and discs.
3. Install clutch end plate with flat side toward disc. Install snap ring.

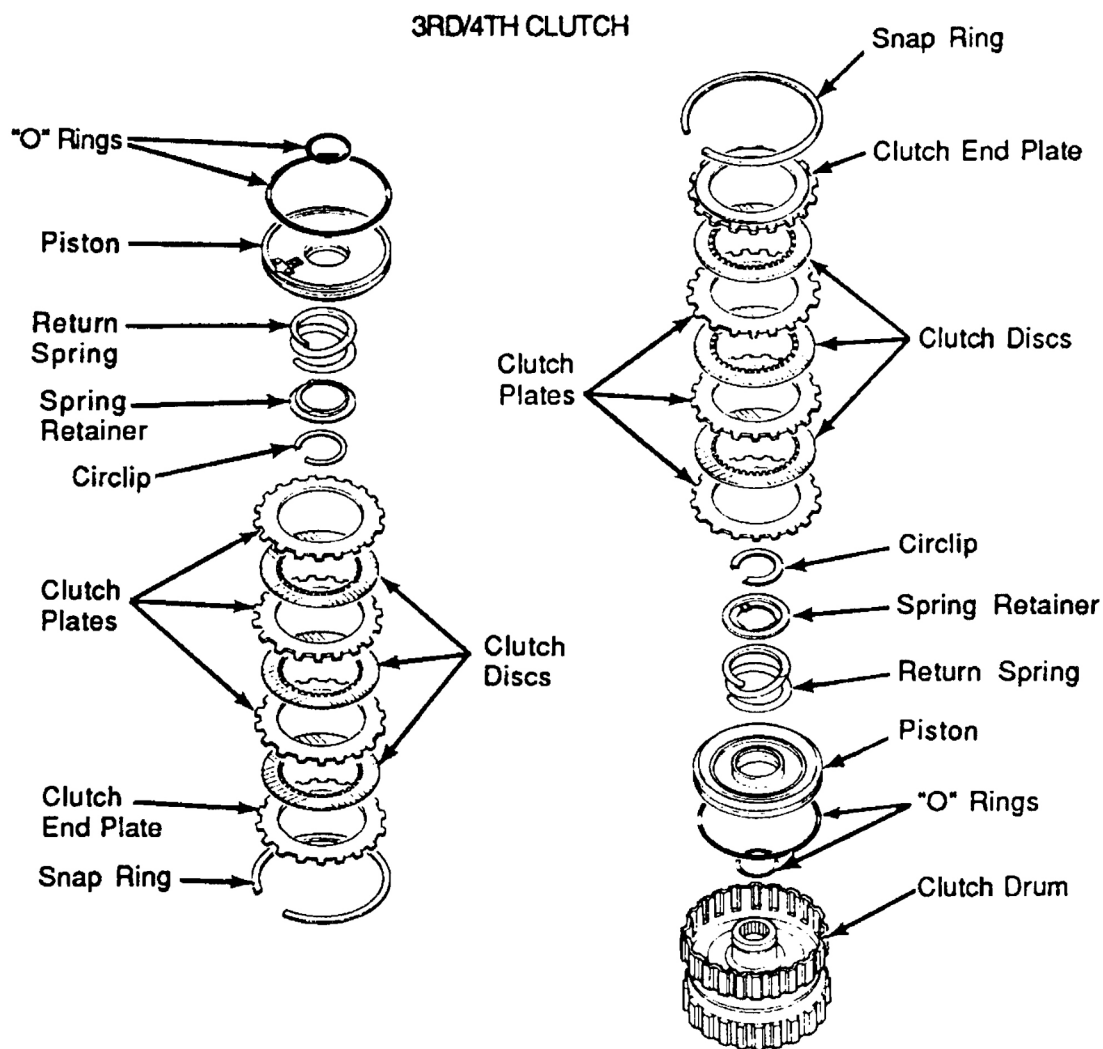
**NOTE:** For 1st Hold and 2nd clutches. Install disc spring in proper direction. See **Fig. 46** .



**Fig. 46: Exploded View of 1st Hold Clutch**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

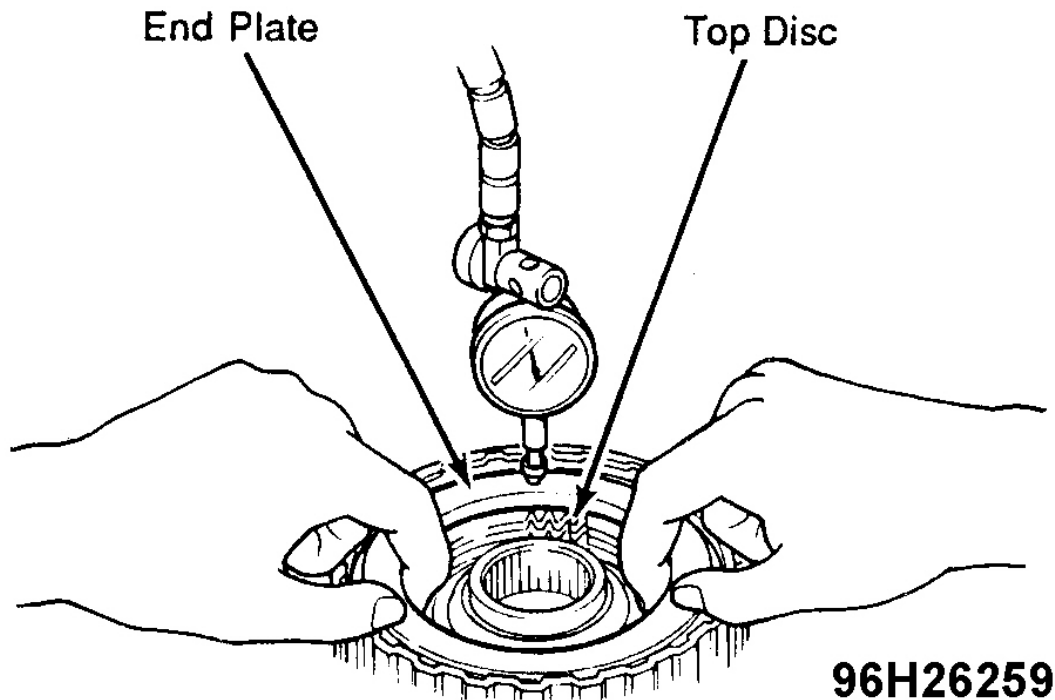


**Fig. 47: Exploded View of 1st-2nd Clutch Assembly**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



**Fig. 48: Exploded View of 3rd-4th Clutch Assembly**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

4. Measure clearance between clutch end plate and top disc with a dial indicator. Zero dial indicator with clutch and plate lowered and lift it up to snap ring. Distance measured is clearance between clutch end plate and top disc. See **Fig. 49** .



**Fig. 49: Measuring End Plate & Top Disc Clearance**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

5. Measure at 3 different locations. If measurement is not within service limits, select a new clutch end plate. See **END PLATE-TO-TOP DISC CLEARANCE** table.

**NOTE:** If thickest clutch end plate is installed and clearance is over standard replace clutch disc and clutch plates.

#### END PLATE-TO-TOP DISC CLEARANCE

| Gear Position | Service Limit In. (mm) |
|---------------|------------------------|
| 1st           | .026-.033" (.65-.85)   |
| 2nd           | .026-.033" (.65-.85)   |
| 3rd           | .016-.024" (.40-.60)   |
| 4th           | .016-.024" (.40-.60)   |
| Low-Hold      | .031-.039" (.80-1.00)  |

#### CLUTCH END PLATE

| Part No.      | Plate No. | Thickness In. (mm) |
|---------------|-----------|--------------------|
| 22551-PX4-000 | 1         | .082 (2.10)        |
| 22552-PX4-000 | 2         | .086 (2.20)        |

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|               |   |             |
|---------------|---|-------------|
| 22553-PX4-000 | 3 | .090 (2.30) |
| 22554-PX4-000 | 4 | .094 (2.40) |
| 22555-PX4-000 | 5 | .098 (2.50) |
| 22556-PX4-000 | 6 | .102 (2.60) |
| 22557-PX4-000 | 7 | .106 (2.70) |
| 22558-PX4-000 | 8 | .110 (2.80) |
| 22559-PX4-000 | 9 | .114 (2.90) |

## TORQUE CONVERTER HOUSING

### Disassembly

Remove mainshaft, countershaft and secondary shaft bearings.

### Cleaning & Inspection

Wash all parts thoroughly in solvent and dry with compressed air. Inspect all parts for wear or damage and replace any that are defective.

### Reassembly

Replace mainshaft, countershaft and secondary shaft bearing.

## TRANSAXLE HOUSING

### Disassembly

Remove mainshaft, countershaft bearings and secondary bearings.

### Cleaning & Inspection

Wash all parts thoroughly in solvent and dry with compressed air. Inspect all parts for wear or damage and replace any that are defective.

### Reassembly

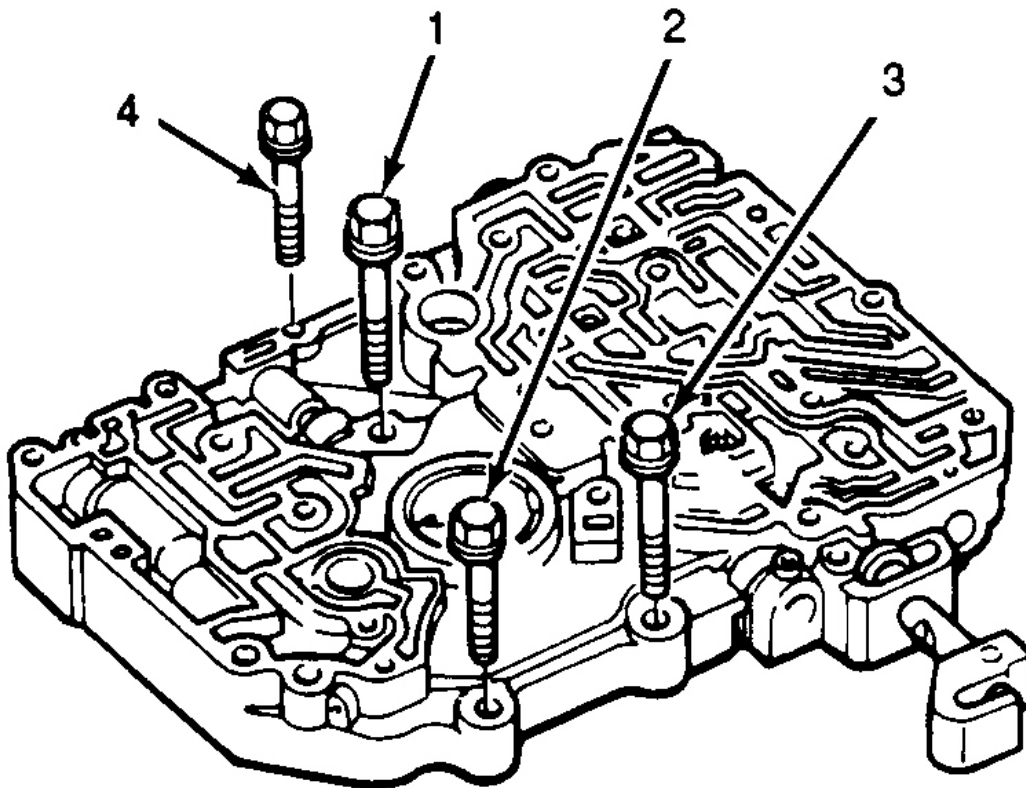
1. Replace mainshaft, countershaft bearings and secondary shaft bearings. Install countershaft 2nd gear.
2. Install reverse roller gear. Ensure that larger chamfer on shaft bore faces torque converter housing. Torque reverse idler shaft holder bolts to 106 INCH lbs. (12 N.m).

## TRANSAXLE REASSEMBLY

1. Install main separator plate and 3 dowel pins on torque converter housing. Install oil pump driven gear with chamfered side facing down. Ensure pump gear and pump shaft move freely. Failure to align pump shaft properly will result in seized pump gear or pump shaft.
2. Install main valve body on housing and loosely tighten 4 bolts. See **Fig. 50** . Once all bolts have been

loosely tightened, torque bolts 1-3 to 13 ft. lbs. (18 N.m), bolt 4 to 106 INCH lbs. (12 N.m).

3. Install 3 steel bolts in main valve body oil passages. Install stator shaft arm and stop pin. Assemble and install 1st/2nd accumulator body on main valve body shaft and control lever. Torque bolt to 106 INCH lbs. (12 N.m).
4. Install control arm, clutch feed pipes and regulator valve body on main valve body. Torque bolts to 106 INCH lbs. (12 N.m)
5. Install throttle separator plate, 2 dowel pins, throttle control shaft, and throttle valve body. Torque bolts to 106 INCH lbs. (12 N.m).
6. Install secondary valve body, with 2 dowel pins and secondary valve body. Place 7 steel balls in secondary valve body oil passages and servo separator plate. Torque bolts to 106 INCH lbs. (12 N.m). See **Fig. 11** .



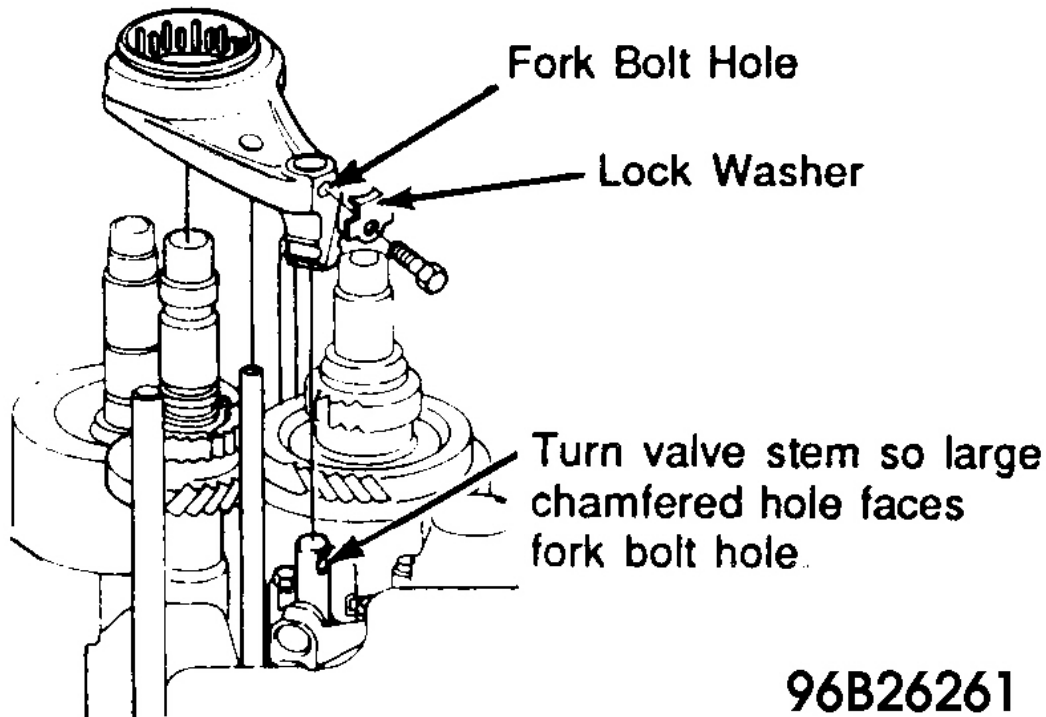
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**Fig. 50: Main Valve Body Torque Specifications**

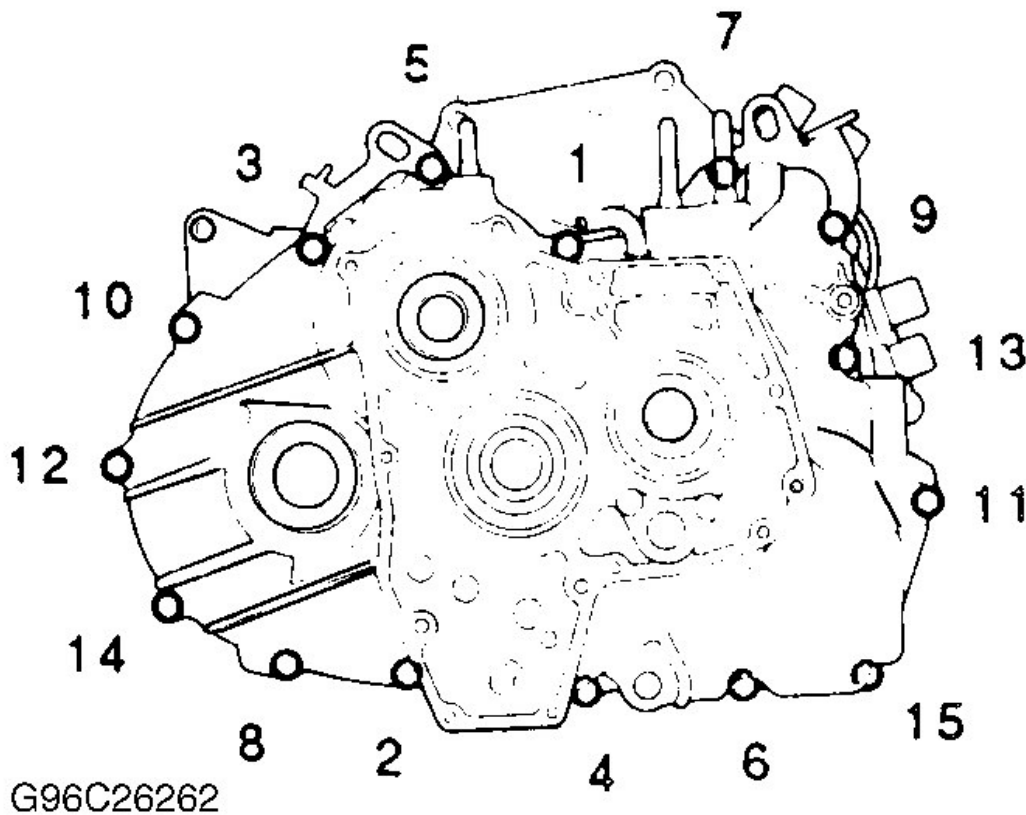
Courtesy of AMERICAN HONDA MOTOR CO., INC.

7. Install servo valve body and torque bolts to 106 INCH lbs. (12 N.m). Assemble servo valve body, place clutch feed pipe, and accumulator body on servo body. Torque 3 accumulator cover bolts to 106 INCH lbs. (12 N.m).

8. Install clutch feed pipe and transaxle fluid strainer and magnet on servo body. Torque 2 bolts to 106 INCH lbs. (12 N.m).
9. Install servo detent base and torque 2 bolts to 106 INCH lbs. (12 N.m). Install differential assembly. Install countershaft, mainshaft and secondary shaft in torque converter housing.
10. Install 4th gear collar, needle bearings, countershaft 4th gear, reverse selector, reverse selector hub reverse shift fork on countershaft. Torque bolt to 10 ft. lbs. (14 N.m). Bend lock tab on washer against bolt head. Ensure large chamfered hole faces fork bolt hole. See **Fig. 51** .
11. Install countershaft reverse gear collar needle bearing, secondary shaft 2nd gear thrust needle bearing, 2nd gear collar on secondary shaft. Install countershaft reverse gear on countershaft.
12. Replace torque converter housing gasket and install transaxle housing. Attach transaxle bracket/throttle control wire bracket. Align control shaft spring pin with cut out in transaxle housing. Torque 13 bolts on housing to 41 ft. lbs. (56 N.m). See **Fig. 52** .



**Fig. 51: Exploded View of Fork & Stem Hole Alignment**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.



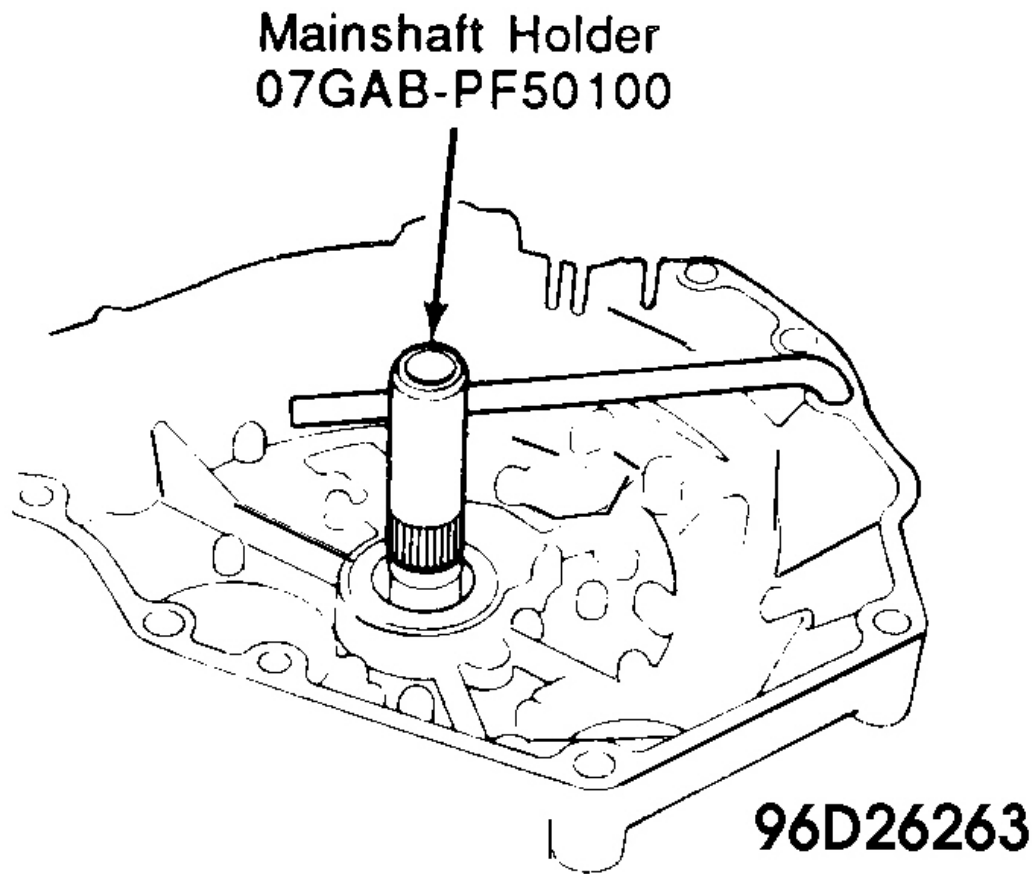
**Fig. 52: Transaxle Housing Bolt Tightening Sequence**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.

13. Assemble and install parking brake assembly. Install secondary shaft idler gear on secondary shaft. Tighten lock nut loosely. Install mainshaft idler gear on mainshaft and tighten lock nut loosely. Install spline washer, thrust needle bearing, needle bearing and countershaft idler gear.

**NOTE: Lock nut has LEFT-HAND threads.**

14. Install Mainshaft Holder Tool 0907GAB-PF50100. Torque mainshaft lock nut to 118 ft. lbs. (160 N.m). Torque countershaft to 148 ft. lbs. (201 N.m). Torque secondary shaft to 118 ft. lbs. (160 N.m). Stake lock nuts into each shaft. See **Fig. 53**.
15. Install ATF cooler pipes and torque bolts to 106 INCH lbs. (12 N.m). Install speed sensor and P/S speed sensor to torque converter housing.
16. Install feed pipes in right side cover aligning lugs with grooves in right side cover. Install snap rings. Install right side cover torque bolts to 106 INCH lbs. (12 N.m).
17. Install torque converter with new "O" ring. When disassembling or reassembling torque converter ensure that bolts are tightened (or loosened) in crisscross pattern. Inspect drive plate for cracks and replace "O"

ring. Torque 6 X 1.0 mm bolt to 106 INCH lbs. (12 N.m), and 12 X 10 mm bolt to 55 ft. lbs. (75 N.m).



**Fig. 53: Mainshaft Holding Tool**

Courtesy of AMERICAN HONDA MOTOR CO., INC.

## TORQUE SPECIFICATIONS

### TORQUE SPECIFICATIONS

| Application           | Ft. Lbs. (N.m) |
|-----------------------|----------------|
| Countershaft Lock Nut | 148 (201)      |
| Mainshaft Lock Nut    | 118 (160)      |
| Main Valve Body       |                |
| Bolts No. 1, 2, 3     | 13 (18)        |
| Bolt No. 4            | 9 (12)         |
| Pressure Point Bolt   | 36 (50)        |

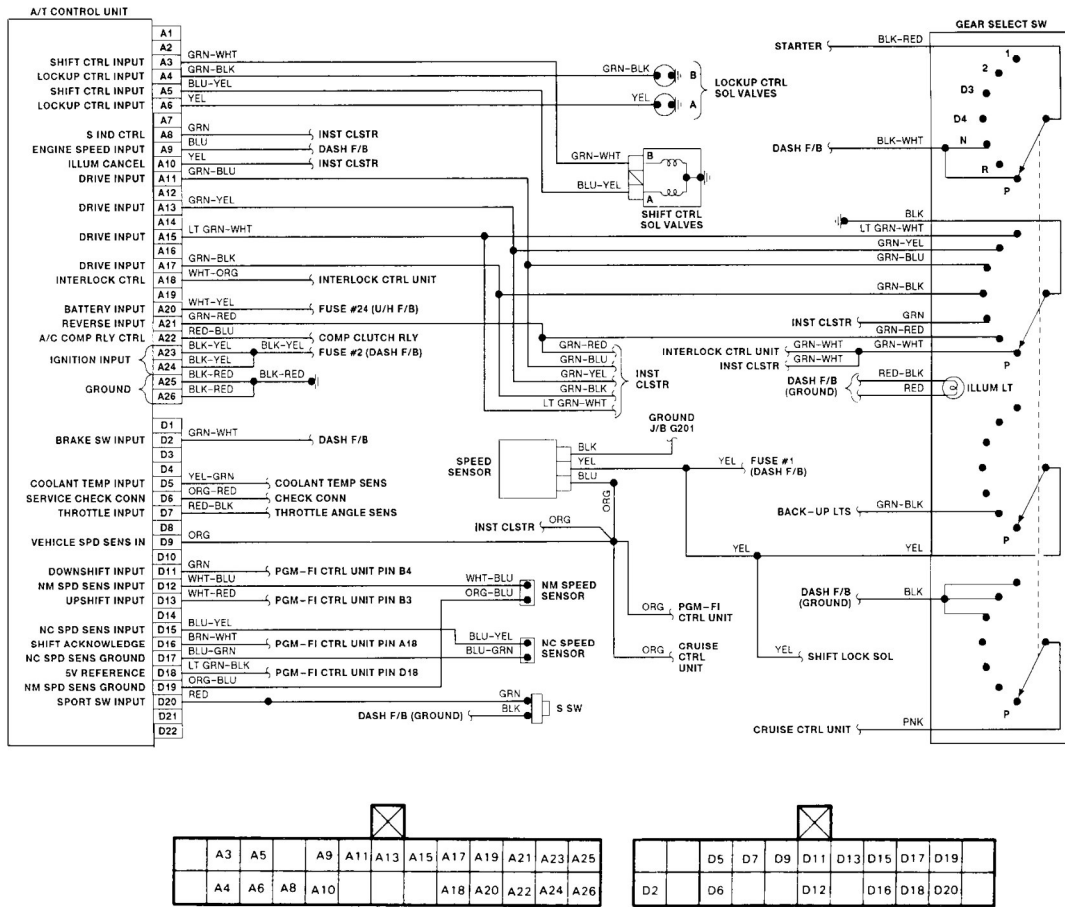
**1990 Honda Accord DX****1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul**

|                                         |           |
|-----------------------------------------|-----------|
| P/S Speed Sensor Bolt                   | 36 (50)   |
| Secondary Shaft Lock Nut                | 118 (160) |
| Speed Sensor Bolt                       | 37 (50)   |
| Transaxle Bracket Bolts                 | 41 (56)   |
| Transaxle Housing Bolts                 | 41 (56)   |
| Torque Converter Bolts 12 X 10 mm       | 55 (75)   |
| <b>INCH Lbs. (N.m)</b>                  |           |
| Accumulator Cover Bolt                  | 106 (12)  |
| ATF Cooler Pipe Bolt                    | 106 (12)  |
| Control Lever Bolt                      | 106 (12)  |
| Lock-Up Control Solenoid Valve Assembly | 106 (12)  |
| N.C Speed Sensor Bolt                   | 106 (12)  |
| N.m Speed Sensor Bolt                   | 106 (12)  |
| Parking Brake Bolt                      | 123 (14)  |
| Regulator Valve Body Bolt               | 106 (12)  |
| Reverse Idler Shaft Holder Bolt         | 106 (12)  |
| Reverse Shift Fork Bolt                 | 123 (14)  |
| Right Side Cover Bolts                  | 106 (12)  |
| Servo Valve Body Bolts                  | 106 (12)  |
| Servo Detent Base Bolt                  | 106 (12)  |
| Shift Control Solenoid Valve Assembly   | 106 (12)  |
| Throttle Valve Body Bolt                | 106 (12)  |

**WIRING DIAGRAMS**

# 1990 Honda Accord DX

## 1990 AUTOMATIC TRANSMISSIONS PX4B Electronic Controls & Overhaul



TERMINAL LOCATION

96F26240

**Fig. 54: ATCU System Wiring Diagram (1990 Accord)**  
 Courtesy of AMERICAN HONDA MOTOR CO., INC.