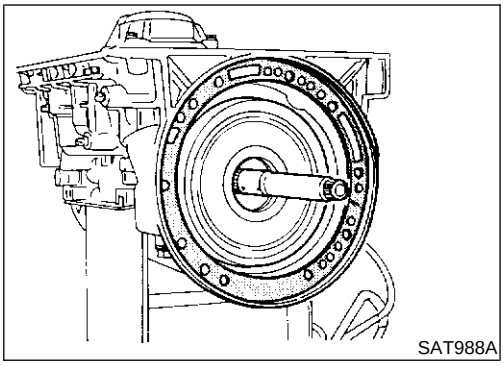
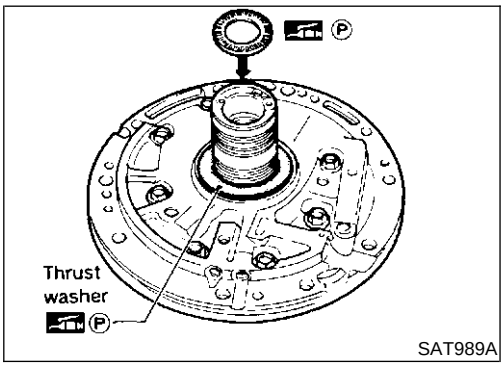
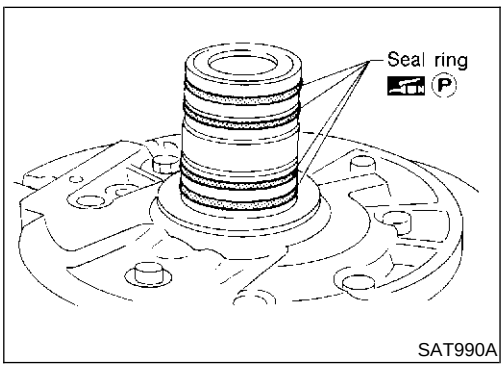

SAT988A

2. Install input shaft on transmission case.
- **Pay attention to its direction — O-ring groove side is front.**
3. Install gasket on transmission case.



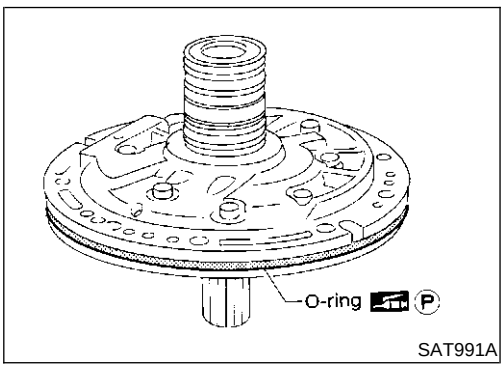
SAT989A

4. Install oil pump assembly.
a. Install needle bearing on oil pump assembly.
- **Apply petroleum jelly to the needle bearing.**
b. Install selected thrust washer on oil pump assembly.
- **Apply petroleum jelly to thrust washer.**



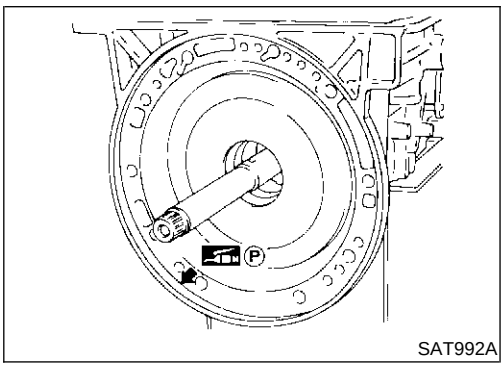
SAT990A

c. Carefully install seal rings into grooves and press them into the petroleum jelly so that they are a tight fit.

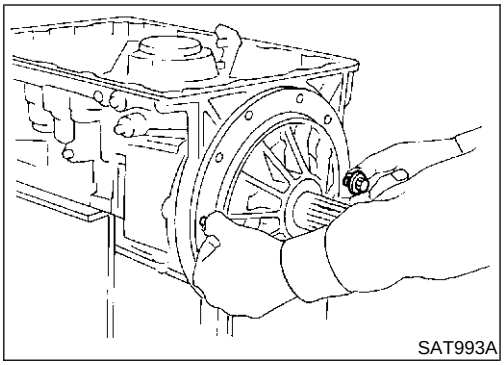


SAT991A

d. Install O-ring on oil pump assembly.
- **Apply petroleum jelly to O-ring.**

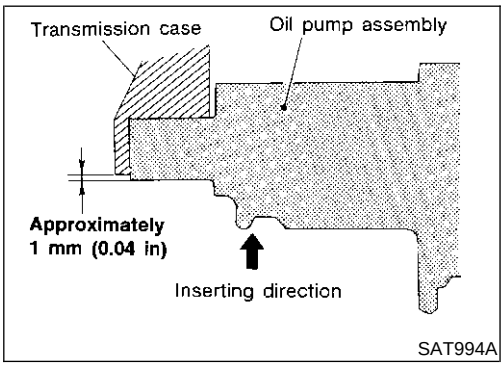

SAT992A

e. Apply petroleum jelly to mating surface of transmission case and oil pump assembly.


SAT993A

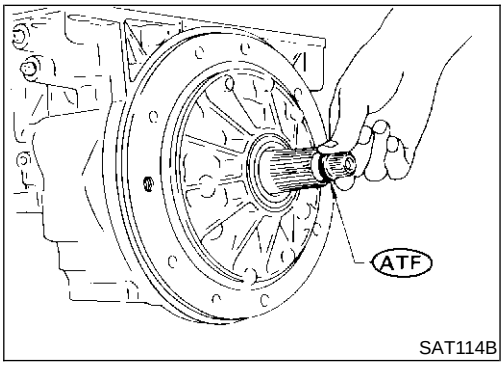
f. Install oil pump assembly.

- **Install two converter housing securing bolts in bolt holes in oil pump assembly as guides.**



SAT994A

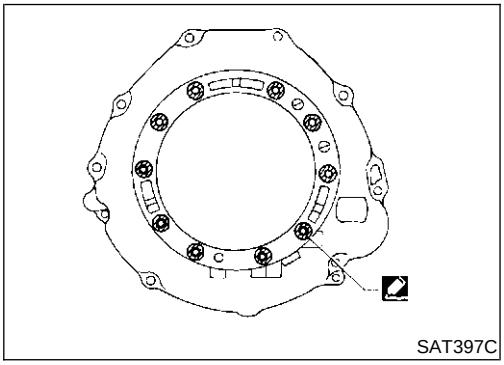
- **Insert oil pump assembly to the specified position in transmission, as shown at left.**



SAT114B

5. Install O-ring on input shaft.

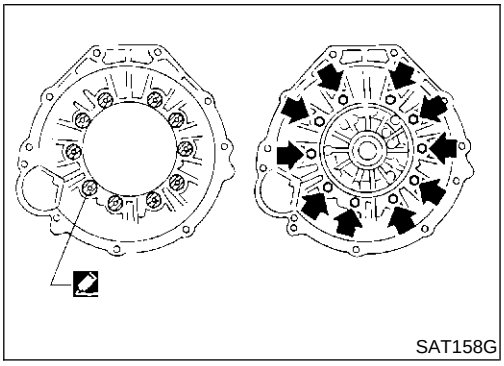
- **Apply ATF to O-rings.**


SAT397C

6. Install converter housing.

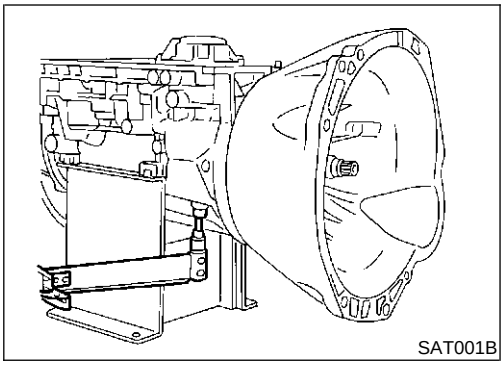
a. Apply recommended sealant (Genuine Anaerobic Liquid Gasket or equivalent. Refer to GI section.) to outer periphery of bolt holes in converter housing.

- **Do not apply too much sealant.**


SAT158G

b. Apply recommended sealant (Genuine Anaerobic Liquid Gasket or equivalent. Refer to GI section.) to seating surfaces of bolts that secure front of converter housing.

c. Install converter housing on transmission case.


SAT001B

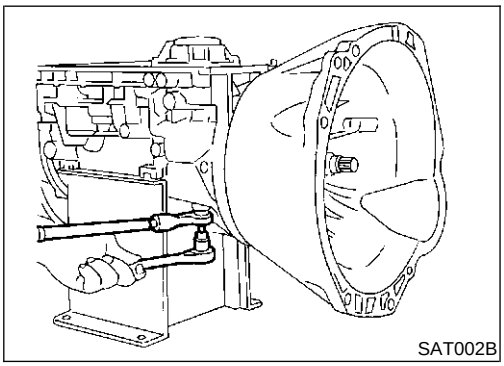
7. Install turbine revolution sensor.
8. Adjust brake band.

a. Tighten anchor end bolt to specified torque.

Anchor end bolt:

: 4 - 6 N·m (0.4 - 0.6 kg-m, 35 - 52 in-lb)

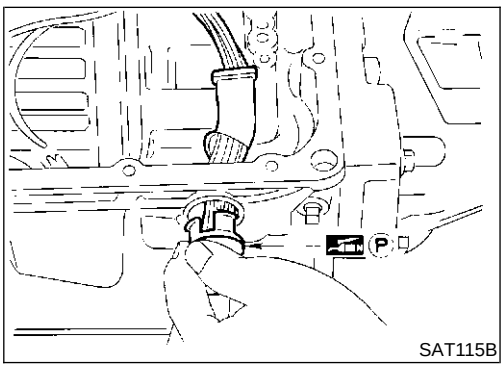
b. Back off anchor end bolt two and a half turns.


SAT002B

c. While holding anchor end bolt, tighten lock nut.

Ancher end bolt nut:

: 41 - 50 N·m (4.1 - 5.2 kg-m, 30 - 37 ft-lb)



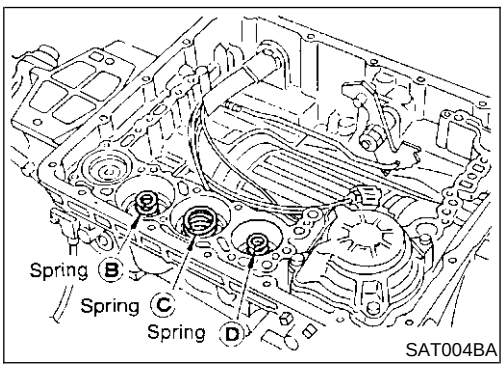
SAT115B

9. Install terminal cord assembly.

a. Install O-ring on terminal cord assembly.

- **Apply petroleum jelly to O-ring.**

b. Compress terminal cord assembly stopper and install terminal cord assembly on transmission case.



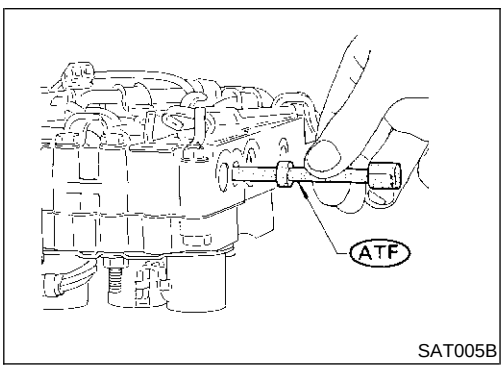
SAT004BA

10. Install control valve assembly.

a. Install accumulator piston return springs B, C and D.

Free length of return springs:

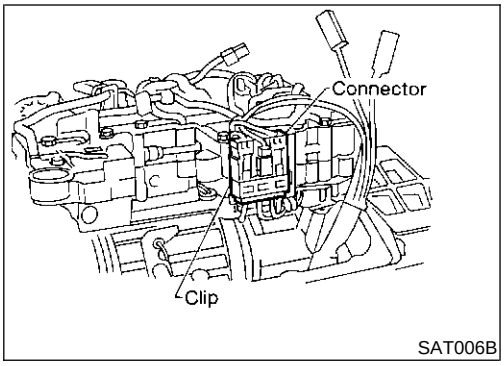
Refer to SDS, AT-355.



SAT005B

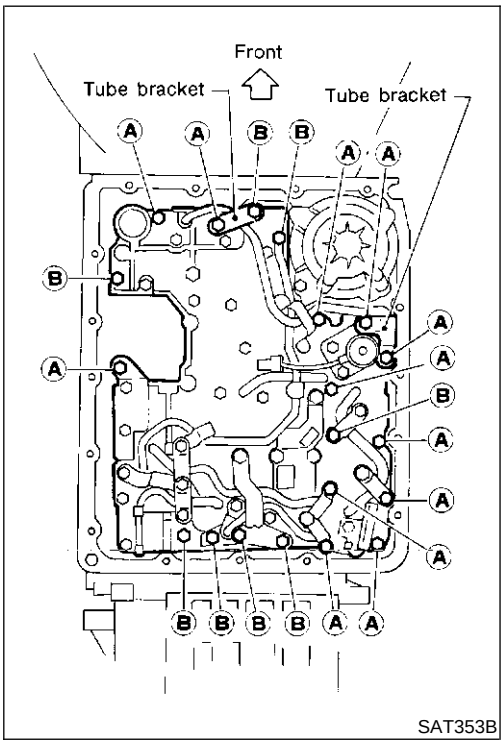
b. Install manual valve on control valve.

- **Apply ATF to manual valve.**



SAT006B

c. Place control valve assembly on transmission case. Connect solenoid connector for upper body.
d. Install connector clip.

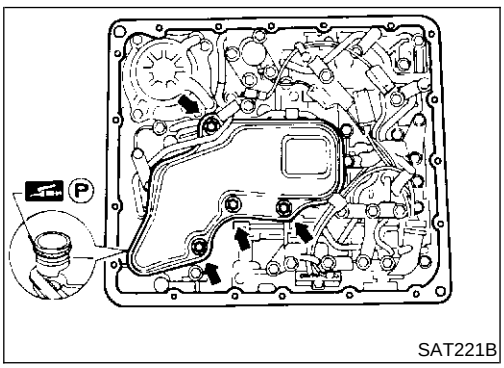


SAT353B

e. Install control valve assembly on transmission case.
f. Install connector tube brackets and tighten bolts A and B.

- **Check that terminal assembly does not catch.**

Bolt symbol	ℓ mm (in)
A	33 (1.30)
B	45 (1.77)

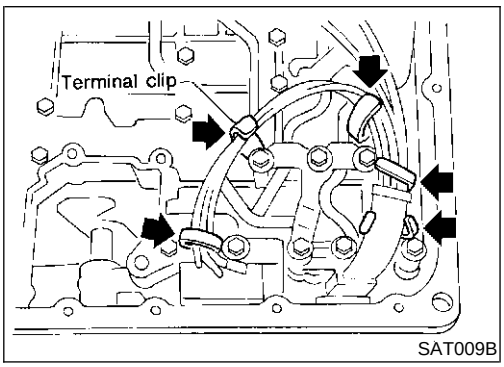


SAT221B

g. Install O-ring on oil strainer.

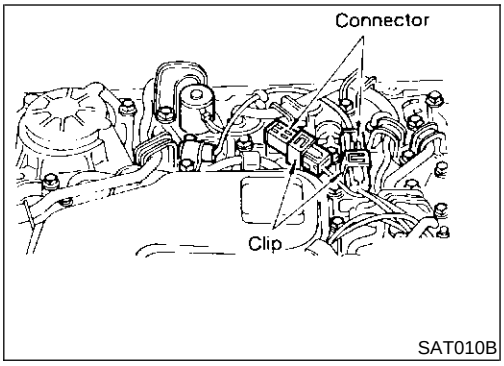
- **Apply petroleum jelly to O-ring.**

h. Install oil strainer on control valve.

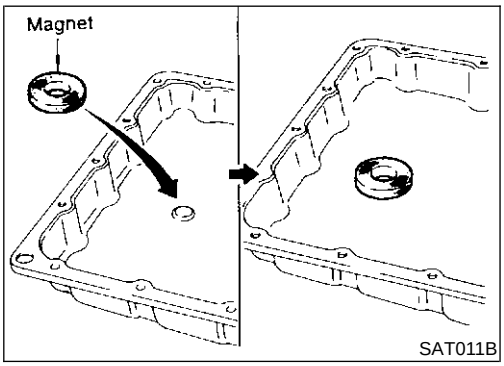


SAT009B

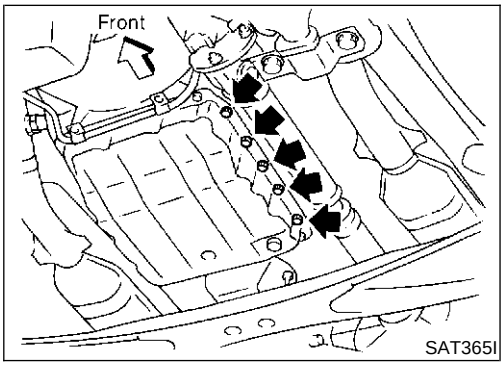
i. Securely fasten terminal harness with clips.



j. Install torque converter clutch solenoid valve and A/T fluid temperature sensor connectors.

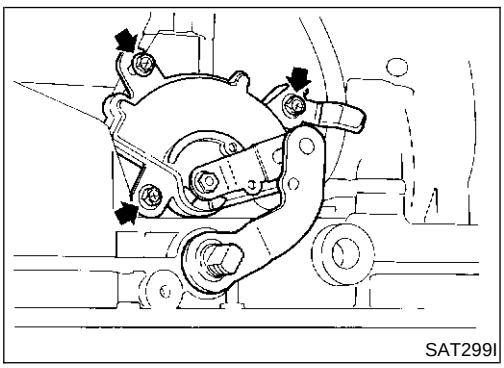


11. Install oil pan.
a. Attach a magnet to oil pan.

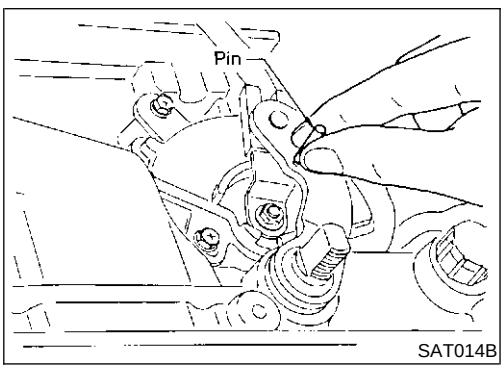


b. Install new oil pan gasket on transmission case.
c. Install oil pan and bracket on transmission case.
- **Always replace oil pan bolts as they are self-sealing bolts.**
- **Before installing bolts, remove traces of sealant and oil from mating surface and thread holes.**
- **Tighten four bolts in a criss-cross pattern to prevent dislocation of gasket.**

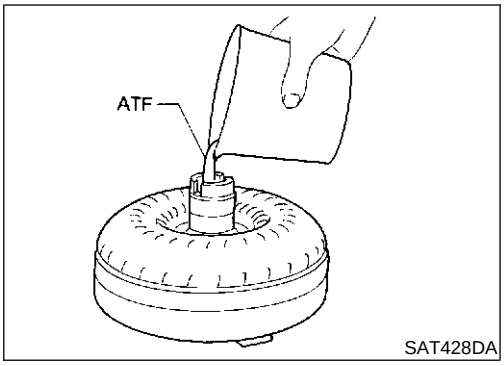
d. Tighten drain plug.



12. Install PNP switch.
a. Check that manual shaft is in "1" position.
b. Temporarily install PNP switch on manual shaft.
c. Move manual shaft to "N".



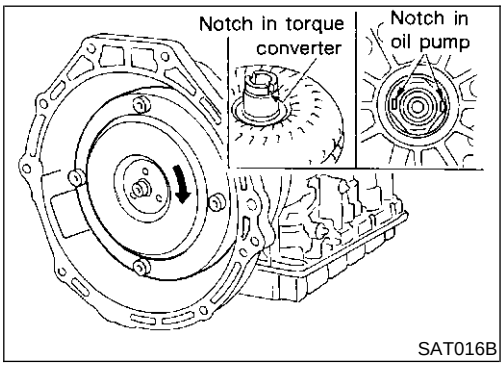
d. Tighten bolts while inserting 4.0 mm (0.157 in) dia. pin vertically into locating holes in PNP switch and manual shaft.



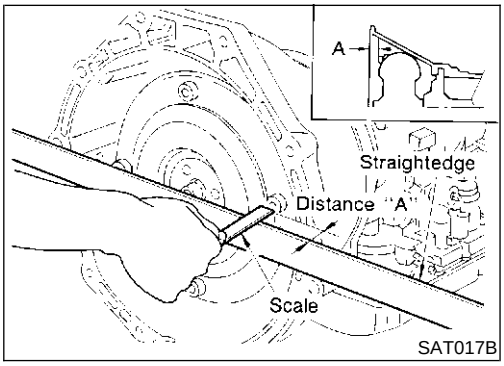
13. Install torque converter.

a. Pour ATF into torque converter.

- **Approximately 2 liters (2-1/8 US qt, 1-3/4 Imp qt) of fluid are required for a new torque converter.**
- **When reusing old torque converter, add the same amount of fluid as was drained.**



b. Install torque converter while aligning notches and oil pump.



c. Measure distance A to check that torque converter is in proper position.

Distance "A":

25.0 mm (0.984 in) or more

General Specifications

NBAT0160

Applied model		VQ35DE engine	
		2WD	4WD
Automatic transmission model		RE4R01A	
Transmission model code number		4EX79	4EX80
Stall torque ratio		2.0 : 1	
Transmission gear ratio	1st	2.785	
	2nd	1.545	
	Top	1.000	
	OD	0.694	
	Reverse	2.272	
Recommended fluid		Nissan Matic “D” (Continental U.S. and Alaska) or Genuine Nissan Automatic Transmission Fluid (Canada)*1	
Fluid capacity		8.5ℓ (9 US qt, 7-1/2 Imp qt)	

*1: Refer to MA-12, “Fluids and Lubricants”.

Shift Schedule

NBAT0178

VEHICLE SPEED WHEN SHIFTING GEARS THROTTLE POSITION

NBAT0178S01

Throttle position	Vehicle speed km/h (MPH)						
	$D_1 \rightarrow D_2$	$D_2 \rightarrow D_3$	$D_3 \rightarrow D_4$	$D_4 \rightarrow D_3$	$D_3 \rightarrow D_2$	$D_2 \rightarrow D_1$	$1_2 \rightarrow 1_1$
Full throttle	55 - 59 (34 - 37)	105 - 113 (65 - 70)	174 - 184 (108 - 114)	170 - 180 (106 - 112)	102 - 110 (63 - 68)	43 - 47 (27 - 29)	43 - 47 (27 - 29)
Half throttle	37 - 41 (23 - 25)	71 - 79 (44 - 49)	129 - 139 (80 - 86)	81 - 91 (50 - 57)	33 - 41 (21 - 25)	12 - 16 (7 - 10)	43 - 47 (27 - 29)

VEHICLE SPEED WHEN PERFORMING AND RELEASING LOCK-UP

NBAT0178S02

Throttle position	Overdrive control switch [Shift position]	Vehicle speed km/h (MPH)	
		Lock-up “ON”	Lock-up “OFF”
Full throttle	ON [D_4]	174 - 184 (108 - 114)	170 - 180 (106 - 112)
	OFF [D_3]	104 - 114 (65 - 71)	101 - 111 (63 - 69)
Half throttle	ON [D_4]	151 - 161 (94 - 100)	106 - 116 (66 - 72)
	OFF [D_3]	85 - 95 (53 - 59)	82 - 92 (51 - 57)

Stall Revolution

NBAT0163

Stall revolution rpm	2,440 - 2,640

Line Pressure

NBAT0164

Engine speed rpm	Line pressure kPa (kg/cm^2, psi)	
	D, 2 and 1 positions	R position
Idle	422 - 461 (4.3 - 4.7, 61 - 67)	667 - 706 (6.8 - 7.2, 97 - 102)
Stall	1,020 - 1,098 (10.4 - 11.2, 148 - 159)	1,422 - 1,500 (14.5 - 15.3, 206 - 218)

Return Springs

NBAT0165

Unit: mm (in)

Parts				Item		
				Part No.*	Free length	Outer diameter
Control valve	Upper body	1	Torque converter relief valve spring	31742-41X23	38.0 (1.496)	9.0 (0.354)
		2	Pressure regulator valve spring	31742-41X24	44.02 (1.7331)	14.0 (0.551)
		3	Pressure modifier valve spring	31742-41X19	31.95 (1.2579)	6.8 (0.268)
		—	Accumulator control valve spring	—	—	—
		4	Shuttle shift valve D spring	31762-41X01	25.0 (0.984)	7.0 (0.276)
		5	4-2 sequence valve spring	31756-41X00	29.1 (1.146)	6.95 (0.2736)
		6	Shift valve B spring	31762-41X01	25.0 (0.984)	7.0 (0.276)
		7	4-2 relay valve spring	31756-41X00	29.1 (1.146)	6.95 (0.2736)
		8	Shift valve A spring	31762-41X01	25.0 (0.984)	7.0 (0.276)
		9	Overrun clutch control valve spring	31762-41X03	23.6 (0.929)	7.0 (0.276)
		10	Overrun clutch reducing valve spring	31742-41X14	38.9 (1.531)	7.0 (0.276)
		11	Shuttle shift valve S spring	31762-41X04	51.0 (2.008)	5.65 (0.2224)
		12	Pilot valve spring	31742-41X13	25.7 (1.012)	9.0 (0.354)
		13	Torque converter clutch control valve spring	31742-41X22	18.5 (0.728)	13.0 (0.512)
	Lower body	1	Modifier accumulator piston spring	31742-27X70	31.4 (1.236)	9.8 (0.386)
		2	1st reducing valve spring	31756-60X00	29.5 (1.161)	7.0 (0.276)
		3	3-2 timing valve spring	31742-41X06	23.0 (0.906)	6.7 (0.264)
		4	Servo charger valve spring	31742-41X06	23.0 (0.906)	6.7 (0.264)
Reverse clutch			—	31505-41X07	—	—
High clutch			10 pcs	31521-41X03 (Assembly)	24.2 (0.9528)	11.6 (0.457)
Forward clutch (Overrun clutch)			20 pcs	31521-41X04 (Assembly)	35.77 (1.4083)	9.7 (0.382)
Low & reverse brake			18 pcs	31655-41X00 (Assembly)	22.3 (0.878)	11.2 (0.441)
Band servo			Spring A	31605-4AX03	45.6 (1.795)	34.3 (1.350)
			Spring B	31605-41X01	29.7 (1.169)	27.6 (1.087)
Accumulator			Accumulator A	31605-41X02	43.0 (1.693)	18.0 (0.709)
			Accumulator B	31605-41X14	47.6 (1.874)	26.5 (1.043)
			Accumulator C	31605-41X09	45.0 (1.772)	29.3 (1.154)
			Accumulator D	31605-41X06	58.4 (2.299)	17.3 (0.681)

*: Always check with the Parts Department for the latest parts information.

Accumulator O-ring

NBAT0166

Accumulator	Diameter mm (in)			
	A	B	C	D
Small diameter end	29 (1.14)	32 (1.26)	45 (1.77)	29 (1.14)
Large diameter end	45 (1.77)	50 (1.97)	50 (1.97)	45 (1.77)

Clutches and Brakes

NBAT0167

REVERSE CLUTCH

NBAT0167S01

Code number		4EX79	4EX80
Number of drive plates		3	
Number of driven plates		3	
Thickness of drive plate mm (in)	Standard	1.90 - 2.05 (0.0748 - 0.0807)	
	Wear limit	1.80 (0.0709)	
Clearance mm (in)	Standard	0.5 - 0.8 (0.020 - 0.031)	
	Allowable limit	1.2 (0.047)	
Thickness of retaining plate		Thickness mm (in)	Part number*
		4.6 (0.181) 4.8 (0.189) 5.0 (0.197) 5.2 (0.205) 5.4 (0.213)	31537-42X20 31537-42X21 31537-42X22 31537-42X23 31537-42X24

*: Always check with the Parts Department for the latest parts information.

HIGH CLUTCH

NBAT0167S02

Code number		4EX79	4EX80
Number of drive plates		5	
Number of driven plates		6	
Thickness of drive plate mm (in)	Standard	1.52 - 1.67 (0.0598 - 0.0657)	
	Wear limit	1.40 (0.0551)	
Clearance mm (in)	Standard	1.8 - 2.2 (0.071 - 0.087)	
	Allowable limit	3.2 (0.126)	
Thickness of retaining plate		Thickness mm (in)	Part number*
		4.0 (0.157) 4.2 (0.165) 4.4 (0.173) 4.6 (0.181) 4.8 (0.189) 5.0 (0.197)	31537-41X63 31537-41X64 31537-41X65 31537-41X66 31537-41X67 31537-41X68

*: Always check with the Parts Department for the latest parts information.

FORWARD CLUTCH

NBAT0167S03

Code number		4EX79		4EX80	
Number of drive plates		7		8	
Number of driven plates		7		8	
Thickness of drive plate mm (in)	Standard	1.52 - 1.67 (0.0598 - 0.0657)			
	Wear limit	1.40 (0.0551)			
Clearance mm (in)	Standard	0.35 - 0.75 (0.0138 - 0.0295)			
	Allowable limit	2.15 (0.0846)		2.35 (0.0925)	
Thickness of retaining plate		Thickness mm (in)	Part number*	Thickness mm (in)	Part number*
		4.6 (0.181) 4.8 (0.189) 5.0 (0.197) 5.2 (0.205) 5.4 (0.213) 5.6 (0.220)	31537-42X13 31537-42X14 31537-42X15 31537-4AX00 31537-4AX01 31537-4AX02	4.2 (0.165) 4.4 (0.173) 4.6 (0.181) 4.8 (0.189) 5.0 (0.197) 5.2 (0.205) 5.4 (0.213)	31537-42X11 31537-42X12 31537-42X13 31537-42X14 31537-42X15 31537-4AX00 31537-4AX01

*: Always check with the Parts Department for the latest parts information.

OVERRUN CLUTCH

NBAT0167S04

Code number		4EX79	4EX80
Number of drive plates		3	
Number of driven plates		5	
Thickness of drive plate mm (in)	Standard	1.90 - 2.05 (0.0748 - 0.0807)	
	Wear limit	1.80 (0.0709)	
Clearance mm (in)	Standard	1.0 - 1.4 (0.039 - 0.055)	
	Allowable limit	2.0 (0.079)	
Thickness of retaining plate		Thickness mm (in)	Part number*
		4.2 (0.165) 4.4 (0.173) 4.6 (0.181) 4.8 (0.189) 5.0 (0.197)	31537-41X80 31537-41X81 31537-41X82 31537-41X83 31537-41X84

*: Always check with the Parts Department for the latest parts information.

Clutches and Brakes (Cont'd)

LOW & REVERSE BRAKE

NBAT0167S05

Code number		4EX79	4EX80
Number of drive plates		8	
Number of driven plates		8	
Thickness of drive plate mm (in)	Standard	1.90 - 2.05 (0.0748 - 0.0807)	1.52 - 1.67 (0.0598 - 0.0657)
	Wear limit	1.40 (0.0551)	
Clearance mm (in)	Standard	0.8 - 1.1 (0.031 - 0.043)	
	Allowable limit	2.7 (0.106)	
Thickness of retaining plate		Thickness mm (in)	Part number*
		7.6 (0.299)	31667-41X07
		7.8 (0.307)	31667-41X08
		8.0 (0.315)	31667-41X00
		8.2 (0.323)	31667-41X01
		8.4 (0.331)	31667-41X02
		8.6 (0.339)	31667-41X03
		8.8 (0.346)	31667-41X04
		9.0 (0.354)	31667-41X05
		9.2 (0.362)	31667-41X06
		9.4 (0.370)	31667-41X09
		9.6 (0.378)	31667-41X10

*: Always check with the Parts Department for the latest parts information.

BRAKE BAND

NBAT0167S06

Anchor end bolt nut tightening torque	40 - 51 N·m (4.1 - 5.2 kg-m, 30 - 38 ft-lb)
Anchor end bolt tightening torque	4 - 6 N·m (0.4 - 0.6 kg-m, 35 - 52 in-lb)
Number of returning revolution for anchor end bolt	2.5

Oil Pump and Low One-way Clutch

NBAT0168

Unit: mm (in)

Oil pump clearance	Cam ring — oil pump housing	Standard	0.01 - 0.024 (0.0004 - 0.0009)
	Rotor, vanes and control piston — oil pump housing	Standard	0.03 - 0.044 (0.0012 - 0.0017)
Seal ring clearance		Standard	0.10 - 0.25 (0.0039 - 0.0098)
		Allowable limit	0.25 (0.0098)

Total End Play

NBAT0169

Total end play "T_1"	0.25 - 0.55 mm (0.0098 - 0.0217 in)	
Thickness of oil pump cover bearing race	Thickness mm (in)	Part number*
	0.8 (0.031)	31435-41X01
	1.0 (0.039)	31435-41X02
	1.2 (0.047)	31435-41X03
	1.4 (0.055)	31435-41X04
	1.6 (0.063)	31435-41X05
	1.8 (0.071)	31435-41X06
	2.0 (0.079)	31435-41X07

*: Always check with the Parts Department for the latest parts information.

Reverse Clutch Drum End Play

NBAT0170

Reverse clutch drum end play "T_2"	0.55 - 0.90 mm (0.0217 - 0.0354 in)	
Thickness of oil pump thrust washer	Thickness mm (in)	Part number*
	0.9 (0.035)	31528-21X01
	1.1 (0.043)	31528-21X02
	1.3 (0.051)	31528-21X03
	1.5 (0.059)	31528-21X04
	1.7 (0.067)	31528-21X05
	1.9 (0.075)	31528-21X06

*: Always check with the Parts Department for the latest parts information.

Removal and Installation

NBAT0171

Manual control linkage	Number of returning revolutions for lock nut	2
	Lock nut tightening torque	4.4 - 5.9 N·m (0.45 - 0.60 kg-m, 39.1 - 52.1 in-lb)
Distance between end of converter housing and torque converter		25.0 mm (0.984 in) or more

Shift Solenoid Valves

NBAT0217

Gear position	1	2	3	4
Shift solenoid valve A	ON (Closed)	OFF (Open)	OFF (Open)	ON (Closed)
Shift solenoid valve B	ON (Closed)	ON (Closed)	OFF (Open)	OFF (Open)

Solenoid Valves

NBAT0218

Solenoid valves	Resistance (Approx.) Ω	Terminal No.
Shift solenoid valve A	20 - 40	3
Shift solenoid valve B	20 - 40	2
Overrun clutch solenoid valve	20 - 40	4
Line pressure solenoid valve	2.5 - 5	6
Torque converter clutch solenoid valve	10 - 20	7

A/T Fluid Temperature Sensor

NBAT0219

Remarks: Specification data are reference values.

Monitor item	Condition	Specification	
A/T fluid temperature sensor	Cold [20°C (68°F)] ↓ Hot [80°C (176°F)]	Approximately 1.5V ↓ Approximately 0.5V	Approximately 2.5 kΩ ↓ Approximately 0.3 kΩ

Turbine Revolution Sensor

NBAT0232

Terminal No.		Resistance
1	2	2.4 - 2.8 kΩ
2	3	No continuity
1	3	No continuity

Revolution Sensor

NBAT0220

Terminal No.		Resistance
1	2	500 - 650Ω
2	3	No continuity
1	3	No continuity

Dropping Resistor

NBAT0221

Resistance	11.2 - 12.8Ω