

AUTOMATIC TRANSAXLE

SECTION **AT**

MODIFICATION NOTICE:

- The model code numbers of the automatic transaxle assembly have been changed. The comparison table is as follows.

Model code number	New	34X11	36X04	36X05	36X07	34X81 has not been changed.
	Former	34X80	34X69	34X70	34X68	

- The wiring diagrams and Service Data and Specifications (SDS) have been changed.

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Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER (Mechanically activated type)” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. The SRS system composition which is available to NISSAN MODEL N15 is as follows (The composition varies according to the destination and optional equipment.):

- For a frontal collision
The Supplemental Restraint System consists of driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioners (Mechanically activated type), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.
- For a side collision
The Supplemental Restraint System consists of front side air bag module (located in the outer side of front seat), satellite sensor, diagnosis sensor unit (which is one of components of air bags for a frontal collision), wiring harness, warning lamp (which is one of components of air bags for a frontal collision).

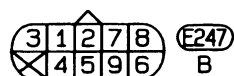
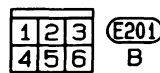
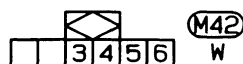
Information necessary to service the system safely is included in the **RS section** of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance should be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the RS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.

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AT-A/T-01

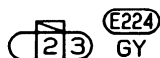
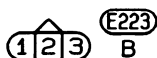
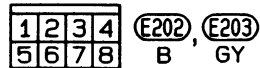
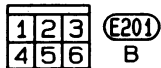
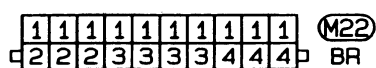
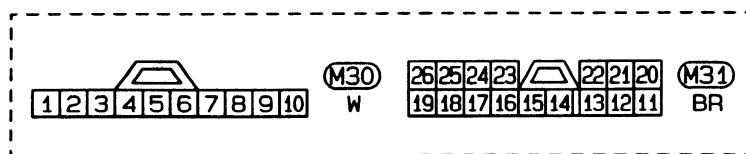
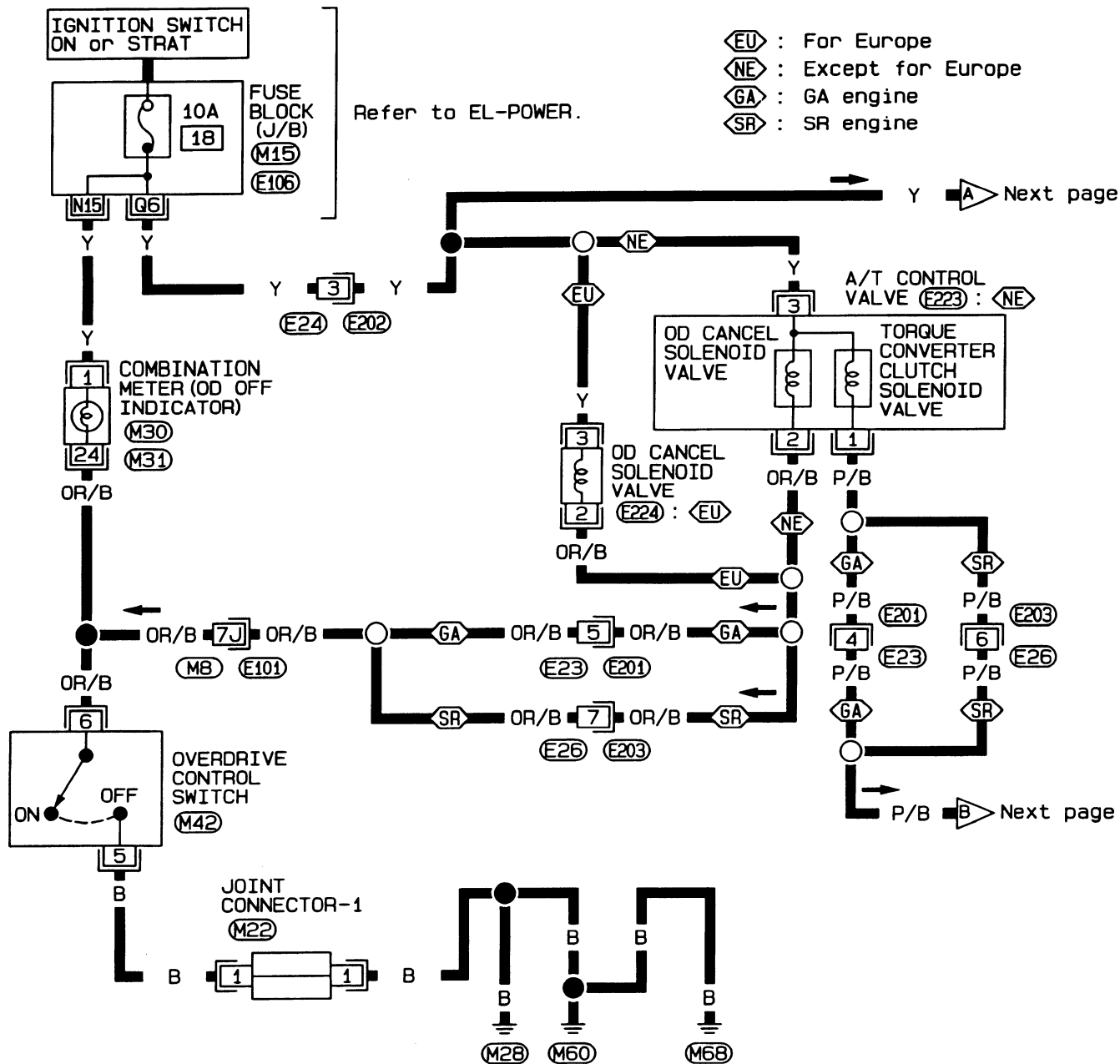


M8 , E101
M15 , E106
F1

TROUBLE DIAGNOSES

Wiring Diagram — AT — RHD

AT-A/T-02



Refer to last page
(Foldout page).

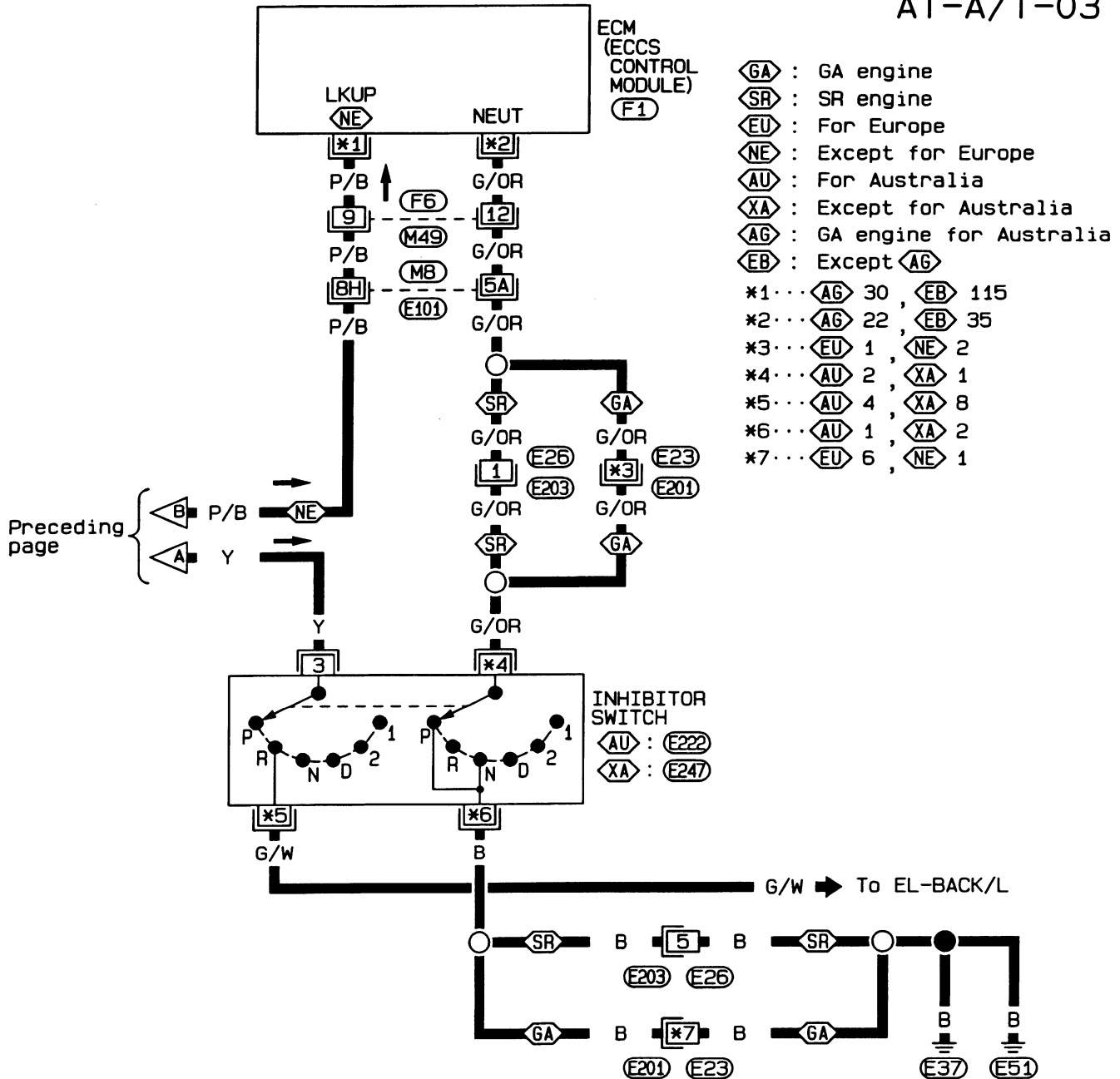
M8, E101

M15, E106

TROUBLE DIAGNOSES

Wiring Diagram — AT — RHD (Cont'd)

AT-A/T-03



1	2	3	4	5	6	7	8	M49
9	10	11	12	13	14	15	16	W

1	2	3	E201
4	5	6	B

1	2	3	4	E203
5	6	7	8	GY

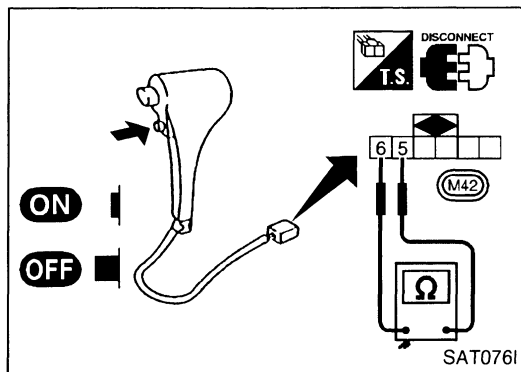
1	2	E222
3	4	GY

3	1	2	7	8	E247
4	5	9	6	B	

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M8, E101

F1

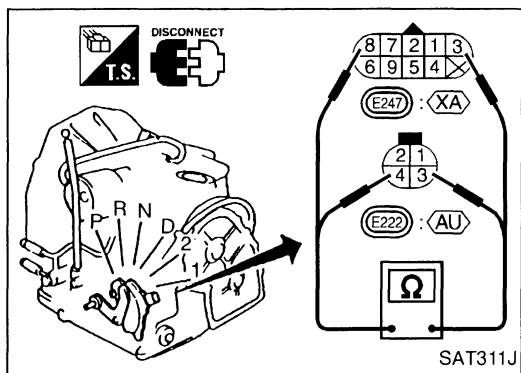


Electrical Components Inspection

OVERDRIVE CONTROL SWITCH

- Check continuity between two terminals.

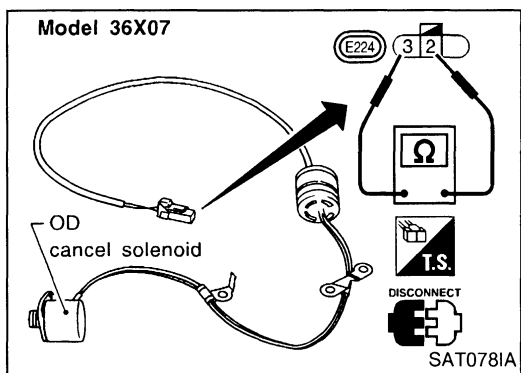
OD switch position	Continuity
ON	No
OFF	Yes



INHIBITOR SWITCH

- Check continuity in "N", "P" and "R" positions.
- With manual shaft held in "N" position, turn manual shaft an equal amount in both directions to see if current flow positions are nearly the same. (When manual lever is in each position, continuity normally exists within 1.5° in either direction.) If current flows outside normal position, or if normal flow position is out of specifications, properly adjust inhibitor switch.

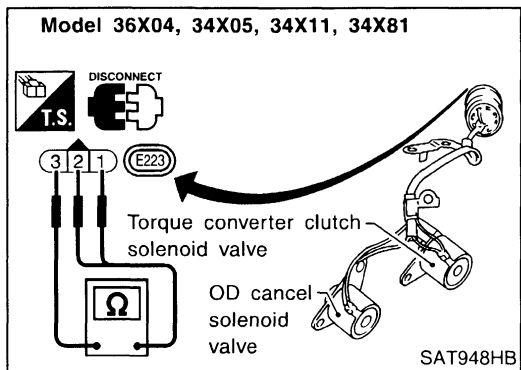
Position	Terminal No.	Continuity
Park/neutral position	③ — ④ , ⑧	No
Reverse position	③ — ④ , ⑧	Yes



OD CANCEL SOLENOID VALVE AND TORQUE CONVERTER CLUTCH SOLENOID VALVE

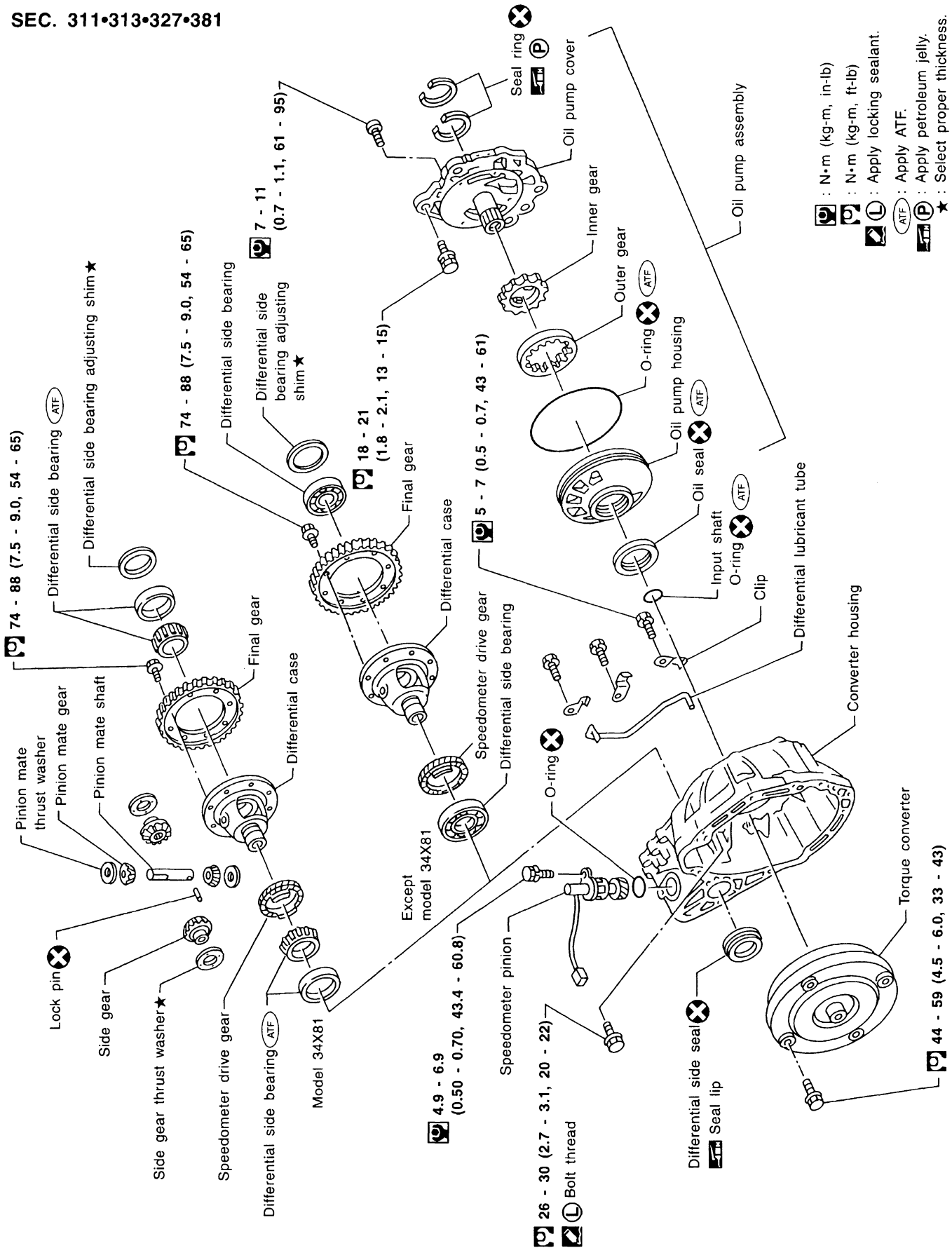
- Check resistance between terminals.

Solenoids	Terminal No.	Resistance
OD cancel solenoid valve	② — ③	Approximately 25Ω
Torque converter clutch solenoid valve	① — ③	



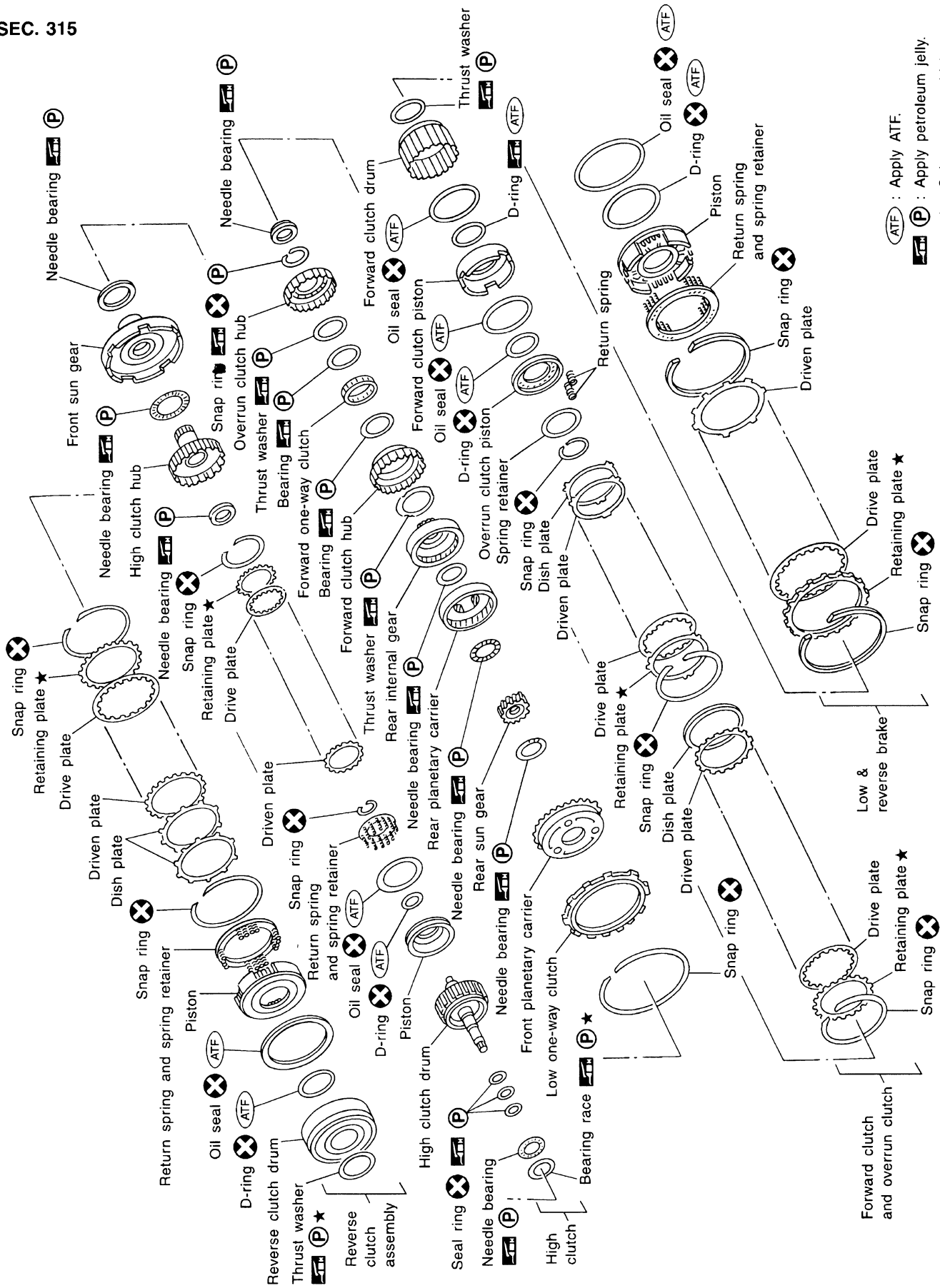
All Models

SEC. 311•313•327•381



GI
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CL
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AT
FA
RA
BR
ST
RS
BT
HA
EL
IDX

All Models (Cont'd)

SEC. 315

ATF : Apply ATF.

 **(P)** : Apply petroleum jelly.

★ : Select proper thickness.

AT

FA



 : N•m (kg-m, in-lb)
 : N•m (kg-m, ft-lb)
 : N•m (kg-m, in-lb)

(ATF) : Apply ATF.
 (P) : Apply petroleum jelly.
 ★ : Select proper thickness.

7 - 9
(0.70 - 0.90, 61 - 78)

SAT313J

Model 34X81

[illegible]

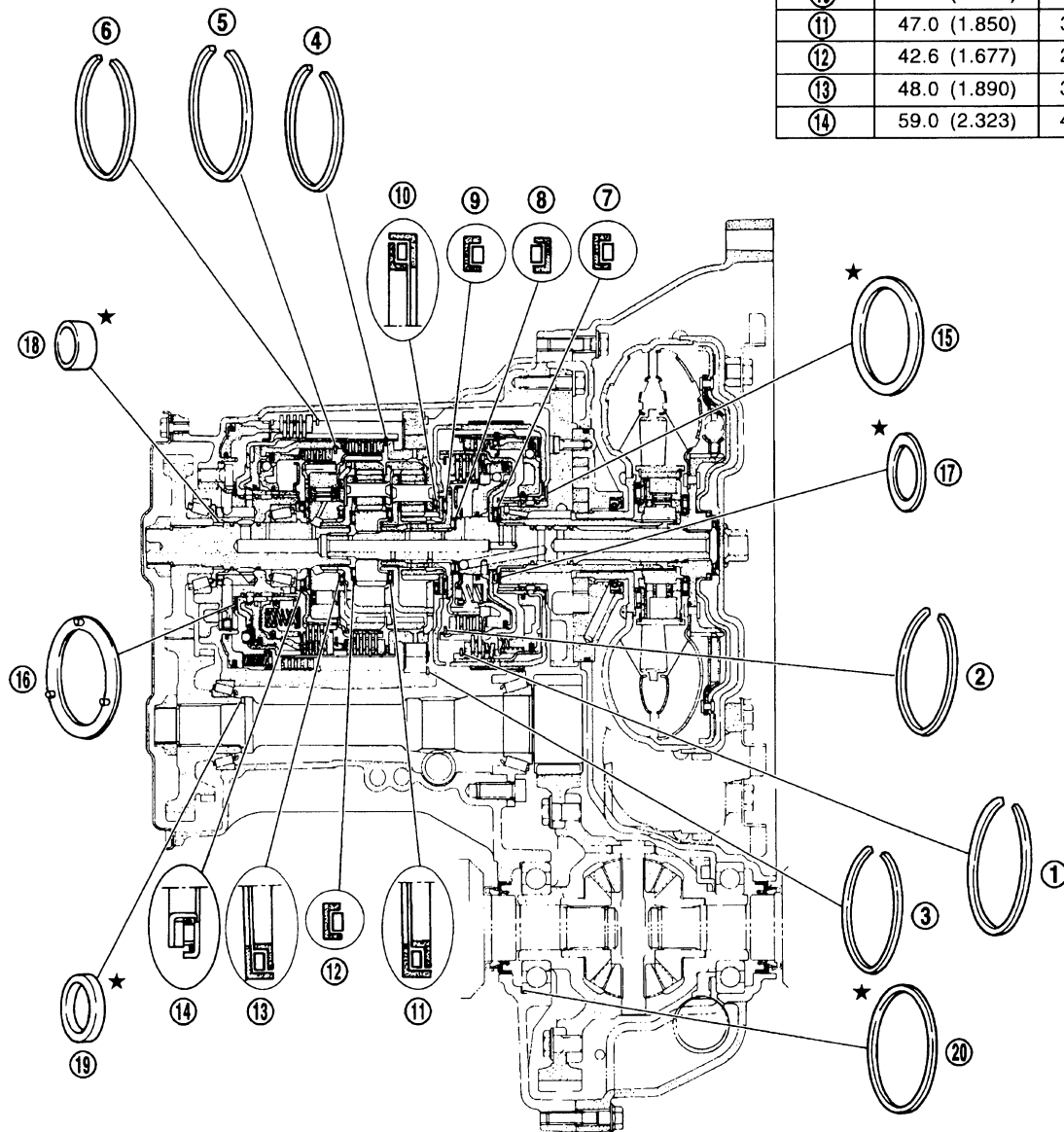
Locations of Adjusting Shims, Needle Bearings, Thrust Washers and Snap Rings — Except for Model 34X81

Outer diameter and color of thrust washers

Item number	Outer diameter mm (in)	Color
(15)	72.0 (2.835)	Black
(16)	78.5 (3.091)	

Outer and inner diameter of needle bearings

Item number	Outer diameter mm (in)	Inner diameter mm (in)
(7)	47.0 (1.850)	32.0 (1.260)
(8)	35.0 (1.378)	20.1 (0.791)
(9)	60.0 (2.362)	42.0 (1.654)
(10)	60.0 (2.362)	45.0 (1.772)
(11)	47.0 (1.850)	30.0 (1.181)
(12)	42.6 (1.677)	26.1 (1.028)
(13)	48.0 (1.890)	33.5 (1.319)
(14)	59.0 (2.323)	42.0 (1.654)



★ : Select proper thickness.

Outer & inner diameter of bearing races, adjusting shims and adjusting spacer

Item number	Outer diameter mm (in)	Inner diameter mm (in)
(17)	48.0 (1.890)	33.0 (1.299)
(18)	29.0 (1.142)	25.0 (0.984)
(19)	34.5 (1.358)	26.1 (1.028)
(20)	79.5 (3.130)	72.0 (2.835)

Outer diameter of snap rings

Item number	Outer diameter mm (in)
(1)	142.0 (5.59)
(2)	113.0 (4.45)
(3)	162.4 (6.39)
(4)	135.4 (5.33)
(5)	126.0 (4.96)
(6)	162.3 (6.39)

MAJOR OVERHAUL

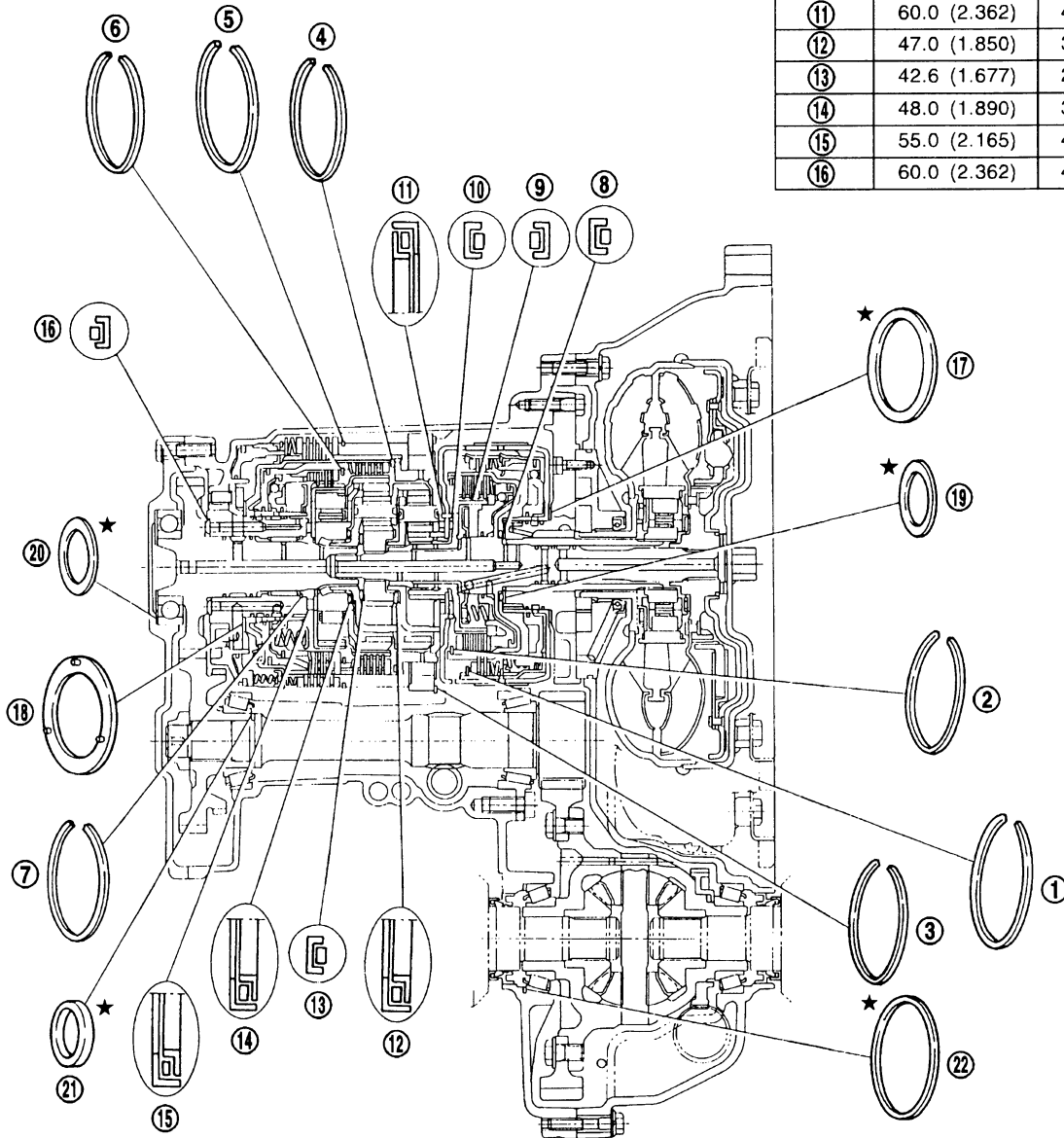
Locations of Adjusting Shims, Needle Bearings, Thrust Washers and Snap Rings — Model 34X81

Outer diameter and color of thrust washers

Item number	Outer diameter mm (in)	Color
(17)	72.0 (2.835)	Black
(18)	78.5 (3.091)	

Outer & inner diameter of needle bearings

Item number	Outer diameter mm (in)	Inner diameter mm (in)
(8)	47.0 (1.850)	32.0 (1.260)
(9)	35.0 (1.378)	20.1 (0.791)
(10)	60.0 (2.362)	42.0 (1.654)
(11)	60.0 (2.362)	45.0 (1.772)
(12)	47.0 (1.850)	30.0 (1.181)
(13)	42.6 (1.677)	26.1 (1.028)
(14)	48.0 (1.890)	33.5 (1.319)
(15)	55.0 (2.165)	40.5 (1.594)
(16)	60.0 (2.362)	40.1 (1.579)



★: Select proper thickness.

Outer & inner diameter of bearing race and adjusting shims

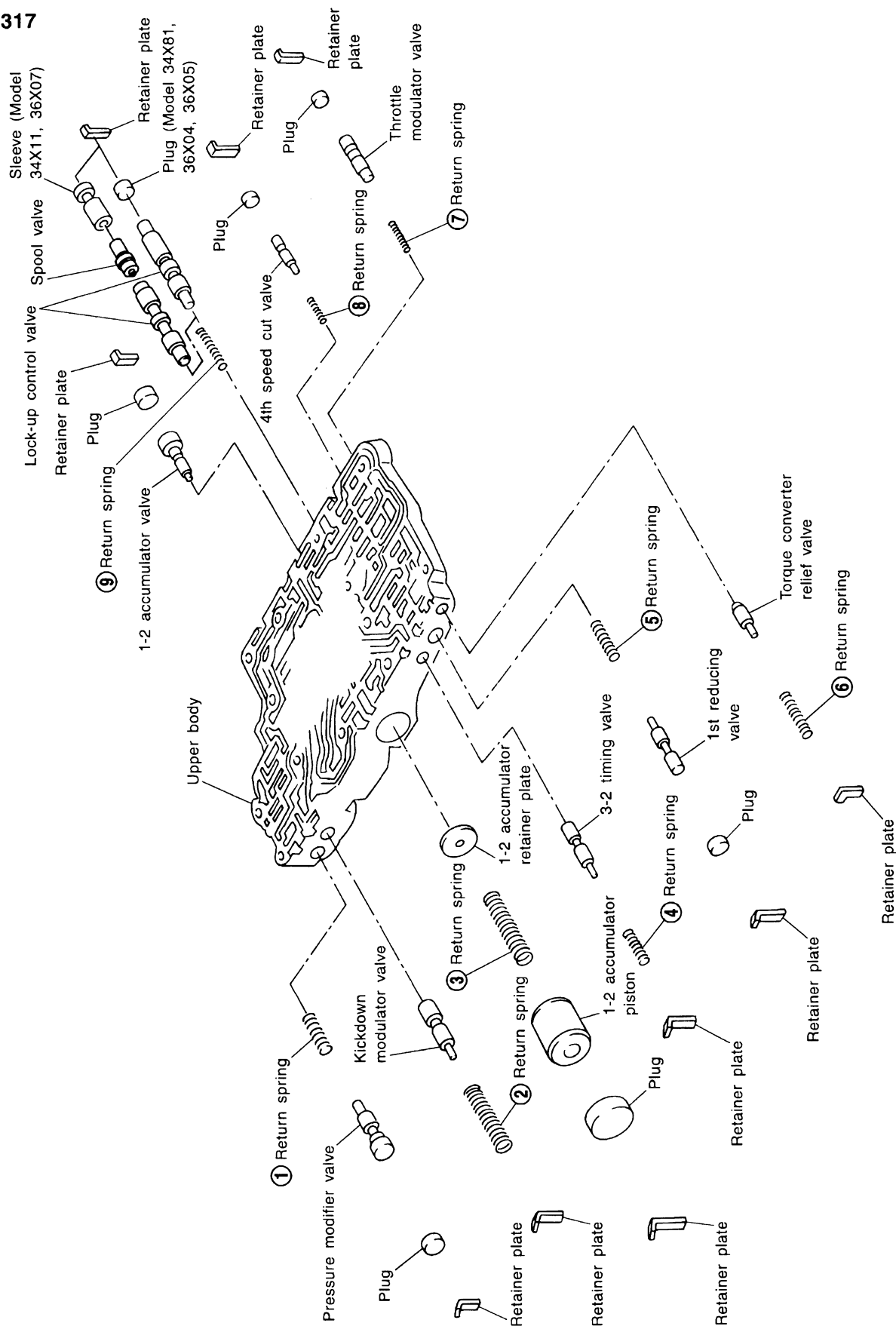
Item number	Outer diameter mm (in)	Inner diameter mm (in)
(19)	48.0 (1.890)	33.0 (1.299)
(20)	72.0 (2.835)	61.0 (2.402)
(21)	34.5 (1.358)	26.1 (1.028)
(22)	68.0 (2.677)	60.0 (2.362)

Outer diameter of snap rings

Item number	Outer diameter mm (in)
(1)	142.0 (5.59)
(2)	113.0 (4.45)
(3)	162.4 (6.39)
(4)	135.4 (5.33)
(5)	162.3 (6.39)
(6)	126.0 (4.96)
(7)	40.5 (1.594)

Control Valve Upper Body

SEC. 317



Apply ATF to all components before their installation.

Numbers preceding valve springs correspond with those shown in Spring Chart of SDS.

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

Applied model	Except Europe and Australia	Europe	Except Europe and Australia	Australia	Australia
	GA15DE	GA16DE			SR20DE
	With catalyzer		Without catalyzer		
Automatic transaxle model	RL4F03A				
Automatic transaxle assembly					
Model code number	36X04	36X07	36X05	34X11	34X81
Transaxle gear ratio					
1st	2.861	2.8611	2.861		
2nd	1.562	1.5622	1.562		
3rd	1.000	1.0000	1.000		
4th	0.697	0.6979	0.697		
Reverse	2.310	2.3103	2.310		
Final drive	3.827	4.0721	3.827		
Recommended oil	Genuine Nissan ATF or equivalent*				
Fluid capacity ℓ (Imp qt)	7.0 (6-1/8)				

*Refer to MA section ("Fluids and Lubricants", "RECOMMEND FLUID AND LUBRICANTS").

Specifications and Adjustments

VEHICLE SPEED WHEN SHIFTING GEARS

Model 36X07

Throttle position	Vehicle speed km/h (MPH)						
	D ₁ → D ₂	D ₂ → D ₃	D ₃ → D ₄	D ₄ → D ₃	D ₃ → D ₂	D ₂ → D ₁	1 ₂ → 1 ₁
Full throttle	48 - 56 (30 - 35)	88 - 96 (55 - 60)	—	133 - 141 (83 - 88)	80 - 88 (50 - 55)	37 - 45 (23 - 28)	45 - 53 (28 - 33)
Half throttle	31 - 39 (19 - 24)	54 - 62 (34 - 39)	102 - 110 (63 - 68)	75 - 83 (47 - 52)	44 - 52 (27 - 32)	7 - 15 (4 - 9)	45 - 53 (28 - 33)

Model 36X04 and 36X05

Throttle position	Vehicle speed km/h (MPH)						
	D ₁ → D ₂	D ₂ → D ₃	D ₃ → D ₄	D ₄ → D ₃	D ₃ → D ₂	D ₂ → D ₁	1 ₂ → 1 ₁
Full throttle	51 - 60 (32 - 37)	94 - 102 (58 - 63)	—	136 - 144 (85 - 89)	85 - 93 (53 - 58)	40 - 48 (25 - 30)	48 - 56 (30 - 35)
Half throttle	30 - 38 (19 - 24)	52 - 60 (32 - 37)	97 - 105 (60 - 65)	67 - 75 (42 - 47)	42 - 50 (26 - 31)	8 - 16 (5 - 10)	48 - 56 (30 - 35)

Model 34X11

Throttle position	Vehicle speed km/h (MPH)						
	D ₁ → D ₂	D ₂ → D ₃	D ₃ → D ₄	D ₄ → D ₃	D ₃ → D ₂	D ₂ → D ₁	1 ₂ → 1 ₁
Full throttle	52 - 60 (32 - 37)	100 - 108 (62 - 67)	—	145 - 153 (90 - 95)	90 - 98 (56 - 61)	40 - 48 (25 - 30)	49 - 57 (30 - 35)
Half throttle	30 - 38 (19 - 24)	53 - 61 (33 - 38)	103 - 111 (64 - 69)	69 - 77 (43 - 48)	42 - 50 (26 - 31)	8 - 16 (5 - 10)	49 - 57 (30 - 35)

Model 34X81

Throttle position	Vehicle speed km/h (MPH)						
	D ₁ → D ₂	D ₂ → D ₃	D ₃ → D ₄	D ₄ → D ₃	D ₃ → D ₂	D ₂ → D ₁	1 ₂ → 1 ₁
Full throttle	58 - 66 (36 - 41)	107 - 115 (66 - 71)	—	160 - 168 (99 - 104)	96 - 104 (60 - 65)	39 - 47 (24 - 29)	48 - 56 (30 - 35)
Half throttle	33 - 41 (21 - 25)	57 - 65 (35 - 40)	105 - 113 (65 - 70)	69 - 77 (43 - 48)	45 - 53 (28 - 33)	8 - 16 (5 - 10)	48 - 56 (30 - 35)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

VEHICLE SPEED WHEN PERFORMING LOCK-UP

Model 36X07

Throttle position	Gear position	Vehicle speed km/h (MPH)
		Lock-up "ON"
Half throttle	D ₄	102 - 110 (63 - 68)

Model 36X04 and 36X05

Throttle position	Gear position	Vehicle speed km/h (MPH)	
		Lock-up "ON"	Lock-up "OFF"
Half throttle	D ₄	112 - 120 (70 - 75)	97 - 105 (60 - 65)

Model 34X11

Throttle position	Gear position	Vehicle speed km/h (MPH)	
		Lock-up "ON"	Lock-up "OFF"
Half throttle	D ₄	116 - 124 (72 - 77)	97 - 105 (60 - 65)

LINE PRESSURE

Model 36X04, 36X05 and 36X07

Engine speed rpm	Line pressure kPa (bar, kg/cm ² , psi)			
	R position	D position	2 position	1 position
Idle	883 (8.83, 9.0, 128)	637 (6.37, 6.5, 92)	1,147 (11.47, 11.7, 166)	1,147 (11.47, 11.7, 166)
Stall	1,765 (17.65, 18.0, 256)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)

Model 34X11

Engine speed rpm	Line pressure kPa (bar, kg/cm ² , psi)			
	R position	D position	2 position	1 position
Idle	883 (8.83, 9.0, 128)	637 (6.37, 6.5, 92)	1,147 (11.47, 11.7, 166)	1,147 (11.47, 11.7, 166)
Stall	1,765 (17.65, 18.0, 256)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)

Model 34X81

Engine speed rpm	Line pressure kPa (bar, kg/cm ² , psi)			
	R position	D position	2 position	1 position
Idle	883 (8.83, 9.0, 128)	637 (6.37, 6.5, 92)	1,147 (11.47, 11.7, 166)	1,147 (11.47, 11.7, 166)
Stall	1,765 (17.65, 18.0, 256)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)	1,275 (12.75, 13.0, 185)

Model 34X81

Throttle position	Gear position	Vehicle speed km/h (MPH)
		Lock-up "ON"
Half throttle	D ₄	105 - 113 (65 - 70)

STALL REVOLUTION

Engine		Stall revolution rpm
GA15DE	Model 36X04	2,400 - 2,700
GA16DE	Model 36X05	2,550 - 2,850
	Model 34X11, 36X07	2,450 - 2,750
SR20DE	Model 34X81	1,850 - 2,150

THROTTLE WIRE ADJUSTMENT

Unit: mm (in)

Throttle wire stroke	40 - 42 (1.57 - 1.65)
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SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

CONTROL VALVES

Control valve return springs

Unit: mm (in)

Parts				Part No.	Free length	Outer diameter
		Model				
Upper body	①	Pressure modifier valve spring	34X11, 34X81, 36X04, 36X05, 36X07	31742-31X64	25.02 (0.9850)	7.9 (0.311)
	②	Kickdown modulator valve spring		31742-31X03	40.5 (1.594)	9.0 (0.354)
	③	1-2 accumulator valve spring	34X11	31742-31X69	51.14 (2.0134)	17.0 (0.669)
			34X81, 36X04, 36X05, 36X07	31742-31X70	50.8 (2.000)	17.0 (0.669)
	④	3-2 timing valve spring		31736-21X00	26.3 (1.035)	7.2 (0.283)
	⑤	1st reducing valve spring		31835-21X08	22.6 (0.890)	7.3 (0.287)
	⑥	Torque converter relief valve spring		31742-31X06	23.5 (0.925)	7.4 (0.291)
	⑦	Throttle modulator valve spring	34X81, 36X07	31742-31X07	29.5 (1.161)	5.5 (0.217)
			34X11, 36X04, 36X05	31742-31X18	29.5 (1.161)	5.5 (0.217)
	⑧	4th speed cut valve spring	34X11, 36X04, 36X05	31756-24X00	30.0 (1.181)	7.0 (0.276)
			36X07	31756-21X02	22.6 (0.890)	7.3 (0.287)
			34X81	31835-21X02	23.2 (0.913)	6.2 (0.244)
	⑨	Lock-up control valve spring		31742-31X08	39.5 (1.555)	5.0 (0.197)
—	Oil cooler relief valve spring		31872-31X00	17.02 (0.6701)	8.0 (0.315)	
Lower body	①	Throttle valve and detent valve spring	34X81	31802-31X06	32.0 (1.260)	10.0 (0.394)
			34X11, 36X04, 36X05, 36X07	31802-31X07	33.0 (1.299)	10.0 (0.394)
	②	Pressure regulator valve spring		31742-31X00	52.24 (2.0567)	15.0 (0.591)
	③	3-4 shift valve spring	36X07	31762-31X00	52.0 (2.047)	8.0 (0.315)
			34X11, 36X04, 36X05	31762-31X13	52.0 (2.047)	7.45 (0.2933)
			34X81	31762-31X11	52.0 (2.047)	8.0 (0.315)
	④	2-3 shift valve spring		31762-31X01	52.7 (2.075)	7.0 (0.276)
	⑤	1-2 shift valve spring		31762-31X02	45.9 (1.807)	5.3 (0.209)
⑥	Overrun clutch control valve spring		31742-31X60	48.9 (1.925)	7.0 (0.276)	

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

CLUTCH AND BRAKES

Model	34X11, 36X04, 36X05, 36X07	34X81		
Reverse clutch				
Number of drive plates	2			
Number of driven plates	2			
Drive plate thickness mm (in)				
Standard	2.0 (0.079)			
Wear limit	1.8 (0.071)			
Clearance mm (in)				
Standard	0.5 - 0.8 (0.020 - 0.031)			
Allowable limit	1.2 (0.047)			
Thickness of retaining plates	Thickness mm (in)	Part number		
	4.4 (0.173)	31537-31X00		
	4.6 (0.181)	31537-31X01		
	4.8 (0.189)	31537-31X02		
	5.0 (0.197)	31537-31X03		
	5.2 (0.205)	31537-31X04		
High clutch				
Number of drive plates	3	4		
Number of driven plates	5	6+1		
Drive plate thickness mm (in)				
Standard	2.0 (0.079)	1.6 (0.063)		
Wear limit	1.8 (0.071)	1.4 (0.055)		
Clearance mm (in)				
Standard	1.4 - 1.8 (0.055 - 0.071)			
Allowable limit	2.4 (0.094)	2.6 (0.102)		
Thickness of retaining plates	Thickness mm (in)	Part number	Thickness mm (in)	Part number
	3.8 (0.150)	31537-32X00	3.8 (0.150)	31537-32X00
	4.0 (0.157)	31537-32X01	4.0 (0.157)	31537-32X01
	4.2 (0.165)	31537-32X02	4.2 (0.165)	31537-32X02
	4.4 (0.173)	31537-32X03	4.4 (0.173)	31537-32X03
	4.6 (0.181)	31537-32X04	4.6 (0.181)	31537-32X04
	4.8 (0.189)	31537-32X05	4.8 (0.189)	31537-32X05
			5.0 (0.197)	31537-32X06

Model	34X11, 36X04, 36X05, 36X07	34X81
Forward clutch		
Number of drive plates	5	
Number of driven plates	5	
Drive plate thickness mm (in)		
Standard	1.8 (0.071)	
Wear limit	1.6 (0.063)	
Clearance mm (in)		
Standard	0.45 - 0.85 (0.0177 - 0.0335)	
Allowable limit	1.85 (0.0728)	
Thickness of retaining plate	Thickness mm (in)	Part number
	3.6 (0.142)	31537-31X60
	3.8 (0.150)	31537-31X61
	4.0 (0.157)	31537-31X62
	4.2 (0.165)	31537-31X63
	4.4 (0.173)	31537-31X64
	4.6 (0.181)	31537-31X65
Overrun clutch		
Number of drive plates	3	
Number of driven plates	4	
Drive plate thickness mm (in)		
Standard	1.6 (0.063)	
Wear limit	1.4 (0.055)	
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
	3.6 (0.142)	31567-31X79
	3.8 (0.150)	31567-31X80
	4.0 (0.157)	31567-31X81
	4.2 (0.165)	31567-31X82
	4.4 (0.173)	31567-31X83

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SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

Model	34X11, 36X04, 36X05, 36X07	34X81
Low & reverse brake		
Number of drive plates	5	
Number of driven plates	5	
Drive plate thickness mm (in)		
Standard	2.0 (0.079)	
Wear limit	1.8 (0.071)	
Clearance mm (in)		
Standard	1.4 - 1.8 (0.055 - 0.071)	
Allowable limit	2.8 (0.110)	
Thickness of retaining plate	Thickness mm (in)	Part number
	3.6 (0.142)	31667-31X16
	3.8 (0.150)	31667-31X17
	4.0 (0.157)	31667-31X18
	4.2 (0.165)	31667-31X19
	4.4 (0.173)	31667-31X20
	4.6 (0.181)	31667-31X21
Brake band		
Anchor end bolt tightening torque N-m (kg-m, in-lb)	3.9 - 5.9 (0.4 - 0.6, 35 - 52)	
Number of returning revolutions for anchor end bolt	2.5±0.125	
Lock nut tightening torque N-m (kg-m, ft-lb)	31 - 36 (3.2 - 3.7, 23 - 27)	

Clutch and brake return springs

Unit: mm (in)

Return spring		Free length	Outer diameter
Forward clutch (Over-run clutch) (16 pcs)	Inner	26.3 (1.035)	7.7 (0.303)
	Outer	26.6 (1.047)	10.6 (0.417)
Reverse clutch (16 pcs)		18.6 (0.732)	8.0 (0.315)
High clutch (12 pcs)		19.7 (0.776)	11.1 (0.437)
Low & reverse clutch (20 pcs)		25.1 (0.988)	7.6 (0.299)

OIL PUMP

Oil pump side clearance mm (in)	0.02 - 0.04 (0.0008 - 0.0016)	
Thickness of inner gears and outer gears	Inner gear	
	Thickness mm (in)	Part number
	9.99 - 10.00 (0.3933 - 0.3937)	31346-31X00
	9.98 - 9.99 (0.3929 - 0.3933)	31346-31X01
	9.97 - 9.98 (0.3925 - 0.3929)	31346-31X02
	Outer gear	
	Thickness mm (in)	Part number
	9.99 - 10.00 (0.3933 - 0.3937)	31347-31X00
	9.98 - 9.99 (0.3929 - 0.3933)	31347-31X01
	9.97 - 9.98 (0.3925 - 0.3929)	31347-31X02
Clearance between oil pump housing and outer gear mm (in)		
Standard	0.08 - 0.15 (0.0031 - 0.0059)	
Allowable limit	0.15 (0.0059)	
Oil pump cover seal ring clearance mm (in)		
Standard	0.10 - 0.25 (0.0039 - 0.0098)	
Allowable limit	0.25 (0.0098)	

INPUT SHAFT

Input shaft seal ring clearance mm (in)	
Standard	0.08 - 0.23 (0.0031 - 0.0091)
Allowable limit	0.23 (0.0091)

PLANETARY CARRIER

Clearance between planetary carrier and pinion washer mm (in)	
Standard	0.15 - 0.70 (0.0059 - 0.0276)
Allowable limit	0.80 (0.0315)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

FINAL DRIVE

Differential side gear clearance

Clearance between side gear and differential case with washer mm (in)	0.1 - 0.2 (0.004 - 0.008)
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Differential side gear thrust washers (Model 36X04)

Thickness mm (in)	Part number
0.75 - 0.80 (0.0295 - 0.0315)	38424-31X00
0.80 - 0.85 (0.0315 - 0.0335)	38424-31X01
0.85 - 0.90 (0.0335 - 0.0354)	38424-31X02
0.90 - 0.95 (0.0354 - 0.0374)	38424-31X03
0.95 - 1.00 (0.0374 - 0.0394)	38424-31X04

Differential side gear thrust washers (Except model 36X04)

Thickness mm (in)	Part number
0.75 - 0.80 (0.0295 - 0.0315)	38424-D2111
0.80 - 0.85 (0.0315 - 0.0335)	38424-D2112
0.85 - 0.90 (0.0335 - 0.0354)	38424-D2113
0.90 - 0.95 (0.0354 - 0.0374)	38424-D2114
0.95 - 1.00 (0.0374 - 0.0394)	38424-D2115

Differential case end play (Except model 34X81)

Differential case end play mm (in)	0 - 0.15 (0 - 0.0059)
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Bearing preload (Model 34X81)

Differential side bearing preload "T" mm (in)	0.04 - 0.09 (0.0016 - 0.0035)
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Turning torque (Model 34X81)

Turning torque of final drive assembly N·m (kg-cm, in-lb)	0.49 - 1.08 (5.0 - 11.0, 4.3 - 9.5)
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Differential side bearing adjusting shims (Except model 34X81)

Thickness mm (in)	Part number
0.48 (0.0189)	38454-M8001
0.56 (0.0220)	38454-M8003
0.64 (0.0252)	38454-M8005
0.72 (0.0283)	38454-M8007
0.80 (0.0315)	38454-M8009
0.88 (0.0346)	38454-M8011
0.96 (0.0378)	38454-M8013
1.04 (0.0409)	38454-M8015

Differential side bearing adjusting shims (Model 34X81)

Thickness mm (in)	Part number
0.40 (0.0157)	31499-21X07
0.44 (0.0173)	31499-21X08
0.48 (0.0189)	31499-21X09
0.52 (0.0205)	31499-21X10
0.56 (0.0220)	31499-21X11
0.60 (0.0236)	31499-21X12
0.64 (0.0252)	31499-21X13
0.68 (0.0268)	31499-21X14
0.72 (0.0283)	31499-21X15
0.76 (0.0299)	31499-21X16
0.80 (0.0315)	31499-21X17
0.84 (0.0331)	31499-21X18
0.88 (0.0346)	31499-21X19
0.92 (0.0362)	31499-21X20
1.44 (0.0567)	31499-21X21

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SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

Table for selecting differential side bearing adjusting shim(s)

Unit: mm (in)	
Dial indicator deflection	Suitable shim(s)
0.31 - 0.35 (0.0122 - 0.0138)	0.40 (0.0157)
0.35 - 0.39 (0.0138 - 0.0154)	0.44 (0.0173)
0.39 - 0.43 (0.0154 - 0.0169)	0.48 (0.0189)
0.43 - 0.47 (0.0169 - 0.0185)	0.52 (0.0205)
0.47 - 0.51 (0.0185 - 0.0201)	0.56 (0.0220)
0.51 - 0.55 (0.0201 - 0.0217)	0.60 (0.0236)
0.55 - 0.59 (0.0217 - 0.0232)	0.64 (0.0252)
0.59 - 0.63 (0.0232 - 0.0248)	0.68 (0.0268)
0.63 - 0.67 (0.0248 - 0.0264)	0.72 (0.0283)
0.67 - 0.71 (0.0264 - 0.0280)	0.76 (0.0299)
0.71 - 0.75 (0.0280 - 0.0295)	0.80 (0.0315)
0.75 - 0.79 (0.0295 - 0.0311)	0.84 (0.0331)
0.79 - 0.83 (0.0311 - 0.0327)	0.88 (0.0346)
0.83 - 0.87 (0.0327 - 0.0343)	0.92 (0.0362)
0.87 - 0.91 (0.0343 - 0.0358)	0.48 (0.0189) + 0.48 (0.0189)
0.91 - 0.95 (0.0358 - 0.0374)	0.48 (0.0189) + 0.52 (0.0205)
0.95 - 0.99 (0.0374 - 0.0390)	0.52 (0.0205) + 0.52 (0.0205)
0.99 - 1.03 (0.0390 - 0.0406)	0.52 (0.0205) + 0.56 (0.0220)
1.03 - 1.07 (0.0406 - 0.0421)	0.56 (0.0220) + 0.56 (0.0220)
1.07 - 1.11 (0.0421 - 0.0437)	0.56 (0.0220) + 0.60 (0.0236)
1.11 - 1.15 (0.0437 - 0.0453)	0.60 (0.0236) + 0.60 (0.0236)
1.15 - 1.19 (0.0453 - 0.0469)	0.60 (0.0236) + 0.64 (0.0252)
1.19 - 1.23 (0.0469 - 0.0484)	0.64 (0.0252) + 0.64 (0.0252)
1.23 - 1.27 (0.0484 - 0.0500)	0.64 (0.0252) + 0.68 (0.0268)
1.27 - 1.31 (0.0500 - 0.0516)	0.68 (0.0268) + 0.68 (0.0268)
1.31 - 1.35 (0.0516 - 0.0531)	0.68 (0.0268) + 0.72 (0.0283)
1.35 - 1.39 (0.0531 - 0.0547)	1.44 (0.0567)
1.39 - 1.43 (0.0547 - 0.0563)	0.72 (0.0283) + 0.76 (0.0299)
1.43 - 1.47 (0.0563 - 0.0579)	0.76 (0.0299) + 0.76 (0.0299)
1.47 - 1.51 (0.0579 - 0.0594)	0.76 (0.0299) + 0.80 (0.0315)
1.51 - 1.55 (0.0594 - 0.0610)	0.80 (0.0315) + 0.80 (0.0315)
1.55 - 1.59 (0.0610 - 0.0626)	0.80 (0.0315) + 0.84 (0.0331)
1.59 - 1.63 (0.0626 - 0.0642)	0.84 (0.0331) + 0.84 (0.0331)
1.63 - 1.67 (0.0642 - 0.0657)	0.84 (0.0331) + 0.88 (0.0346)
1.67 - 1.71 (0.0657 - 0.0673)	0.88 (0.0346) + 0.88 (0.0346)
1.71 - 1.75 (0.0673 - 0.0689)	0.88 (0.0346) + 0.92 (0.0362)
1.75 - 1.79 (0.0689 - 0.0705)	0.92 (0.0362) + 0.92 (0.0362)
1.79 - 1.83 (0.0705 - 0.0720)	0.44 (0.0173) + 1.44 (0.0567)
1.83 - 1.87 (0.0720 - 0.0736)	0.48 (0.0189) + 1.44 (0.0567)
1.87 - 1.91 (0.0736 - 0.0752)	0.52 (0.0205) + 1.44 (0.0567)
1.91 - 1.95 (0.0752 - 0.0768)	0.56 (0.0220) + 1.44 (0.0567)

Bearing preload (Model 34X81)

Reduction pinion gear bearing preload	mm (in)	0.05 (0.0020)
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Reduction pinion gear bearing adjusting shims

Thickness mm (in)	Part number
1.74 (0.0685)	31438-31X16
1.78 (0.0701)	31438-31X17
1.82 (0.0717)	31438-31X18
1.86 (0.0732)	31438-31X19
1.90 (0.0748)	31438-31X20
1.92 (0.0756)	31439-31X60
1.94 (0.0764)	31438-31X21
1.96 (0.0772)	31439-31X61
1.98 (0.0780)	31438-31X22
2.00 (0.0787)	31439-31X62
2.02 (0.0795)	31438-31X23
2.04 (0.0803)	31439-31X63
2.06 (0.0811)	31438-31X24
2.08 (0.0819)	31439-31X64
2.10 (0.0827)	31438-31X60
2.12 (0.0835)	31439-31X65
2.14 (0.0843)	31438-31X61
2.16 (0.0850)	31439-31X66
2.18 (0.0858)	31438-31X62
2.20 (0.0866)	31439-31X67
2.22 (0.0874)	31438-31X63
2.24 (0.0882)	31439-31X68
2.26 (0.0890)	31438-31X64
2.28 (0.0898)	31439-31X69
2.30 (0.0906)	31438-31X65
2.34 (0.0921)	31438-31X66
2.38 (0.0937)	31438-31X67
2.42 (0.0953)	31438-31X68
2.46 (0.0969)	31438-31X69
2.50 (0.0984)	31438-31X70
2.54 (0.1000)	31438-31X71
2.58 (0.1016)	31438-31X72
2.62 (0.1031)	31438-31X73
2.66 (0.1047)	31438-31X74

REDUCTION GEAR

Bearing preload (Model 34X11, 36X04, 36X05, 36X07)

Reduction pinion gear bearing preload	N-m (kg-cm, in-lb)	0.11 - 0.69 (1.1 - 7.0, 0.95 - 6.08)
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SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

Table for selecting reduction pinion gear bearing adjusting shim

Unit: mm (in)

Dimension "T"	Suitable shim(s)
1.77 - 1.81 (0.0697 - 0.0713)	1.74 (0.0685)
1.81 - 1.85 (0.0713 - 0.0728)	1.78 (0.0701)
1.85 - 1.89 (0.0728 - 0.0744)	1.82 (0.0717)
1.89 - 1.93 (0.0744 - 0.0760)	1.86 (0.0732)
1.93 - 1.96 (0.0760 - 0.0772)	1.90 (0.0748)
1.96 - 1.98 (0.0772 - 0.0780)	1.92 (0.0756)
1.98 - 2.00 (0.0780 - 0.0787)	1.94 (0.0764)
2.00 - 2.02 (0.0787 - 0.0795)	1.96 (0.0772)
2.02 - 2.04 (0.0795 - 0.0803)	1.98 (0.0780)
2.04 - 2.06 (0.0803 - 0.0811)	2.00 (0.0787)
2.06 - 2.08 (0.0811 - 0.0819)	2.02 (0.0795)
2.08 - 2.10 (0.0819 - 0.0827)	2.04 (0.0803)
2.10 - 2.12 (0.0827 - 0.0835)	2.06 (0.0811)
2.12 - 2.14 (0.0835 - 0.0843)	2.08 (0.0819)
2.14 - 2.16 (0.0843 - 0.0850)	2.10 (0.0827)
2.16 - 2.18 (0.0850 - 0.0858)	2.12 (0.0835)
2.18 - 2.20 (0.0858 - 0.0866)	2.14 (0.0843)
2.20 - 2.22 (0.0866 - 0.0874)	2.16 (0.0850)
2.22 - 2.24 (0.0874 - 0.0882)	2.18 (0.0858)
2.24 - 2.26 (0.0882 - 0.0890)	2.20 (0.0866)
2.26 - 2.28 (0.0890 - 0.0898)	2.22 (0.0874)
2.28 - 2.30 (0.0898 - 0.0906)	2.24 (0.0882)
2.30 - 2.32 (0.0906 - 0.0913)	2.26 (0.0890)
2.32 - 2.34 (0.0913 - 0.0921)	2.28 (0.0898)
2.34 - 2.37 (0.0921 - 0.0933)	2.30 (0.0906)
2.37 - 2.41 (0.0933 - 0.0949)	2.34 (0.0921)
2.41 - 2.45 (0.0949 - 0.0965)	2.38 (0.0937)
2.45 - 2.49 (0.0965 - 0.0980)	2.42 (0.0953)
2.49 - 2.53 (0.0980 - 0.0996)	2.46 (0.0969)
2.53 - 2.57 (0.0996 - 0.1012)	2.50 (0.0984)
2.57 - 2.61 (0.1012 - 0.1028)	2.54 (0.1000)
2.61 - 2.65 (0.1028 - 0.1043)	2.58 (0.1016)
2.65 - 2.69 (0.1043 - 0.1059)	2.62 (0.1031)
2.69 - 2.73 (0.1059 - 0.1075)	2.66 (0.1047)

Bearing preload (Except model 34X81)

Output shaft bearing preload N·m (kg-cm, in-lb)	0.25 - 0.88 (2.5 - 9.0, 2.2 - 7.8)
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Output shaft bearing adjusting spacers (Except model 34X81)

Thickness mm (in)	Part number
6.26 (0.2465)	31437-31X16
6.30 (0.2480)	31437-31X17
6.34 (0.2496)	31437-31X18
6.38 (0.2512)	31437-31X19
6.42 (0.2528)	31437-31X20
6.46 (0.2543)	31437-31X21
6.50 (0.2559)	31437-31X22
6.54 (0.2575)	31437-31X23
6.58 (0.2591)	31437-31X24
6.62 (0.2606)	31437-31X60
6.64 (0.2614)	31437-31X78
6.66 (0.2622)	31437-31X61
6.68 (0.2630)	31437-31X79
6.70 (0.2638)	31437-31X62
6.72 (0.2646)	31437-31X80
6.74 (0.2654)	31437-31X63
6.76 (0.2661)	31437-31X81
6.78 (0.2669)	31437-31X64
6.80 (0.2677)	31437-31X82
6.82 (0.2685)	31437-31X65
6.84 (0.2693)	31437-31X83
6.86 (0.2701)	31437-31X66
6.88 (0.2709)	31437-31X84
6.90 (0.2717)	31437-31X67
6.92 (0.2724)	31437-31X46
6.94 (0.2732)	31437-31X68
6.96 (0.2740)	31437-31X47
6.98 (0.2748)	31437-31X69
7.00 (0.2756)	31437-31X48
7.02 (0.2764)	31437-31X70
7.06 (0.2780)	31437-31X71
7.10 (0.2795)	31437-31X72
7.14 (0.2811)	31437-31X73
7.18 (0.2827)	31437-31X74
7.22 (0.2843)	31437-31X75

OUTPUT SHAFT

Seal ring clearance

Output shaft seal ring clearance mm (in)	
Standard	0.10 - 0.25 (0.0039 - 0.0098)
Allowable limit	0.25 (0.0098)

End play (Model 34X81)

Output shaft end play	mm (in)	0 - 0.5 (0 - 0.020)
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SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

Table for selecting output shaft bearing adjusting spacer

Unit: mm (in)	
Dimension "T"	Suitable spacer
6.29 - 6.33 (0.2476 - 0.2492)	6.26 (0.2465)
6.33 - 6.37 (0.2492 - 0.2508)	6.30 (0.2480)
6.37 - 6.41 (0.2508 - 0.2524)	6.34 (0.2496)
6.41 - 6.45 (0.2524 - 0.2539)	6.38 (0.2512)
6.45 - 6.49 (0.2539 - 0.2555)	6.42 (0.2528)
6.49 - 6.53 (0.2555 - 0.2571)	6.46 (0.2543)
6.53 - 6.57 (0.2571 - 0.2587)	6.50 (0.2559)
6.57 - 6.61 (0.2587 - 0.2602)	6.54 (0.2575)
6.61 - 6.65 (0.2602 - 0.2618)	6.58 (0.2591)
6.65 - 6.68 (0.2618 - 0.2630)	6.62 (0.2606)
6.68 - 6.70 (0.2630 - 0.2638)	6.64 (0.2614)
6.70 - 6.72 (0.2638 - 0.2646)	6.66 (0.2622)
6.72 - 6.74 (0.2646 - 0.2654)	6.68 (0.2630)
6.74 - 6.76 (0.2654 - 0.2661)	6.70 (0.2638)
6.76 - 6.78 (0.2661 - 0.2669)	6.72 (0.2646)
6.78 - 6.80 (0.2669 - 0.2677)	6.74 (0.2654)
6.80 - 6.82 (0.2677 - 0.2685)	6.76 (0.2661)
6.82 - 6.84 (0.2685 - 0.2693)	6.78 (0.2669)
6.84 - 6.86 (0.2693 - 0.2701)	6.80 (0.2677)
6.86 - 6.88 (0.2701 - 0.2709)	6.82 (0.2685)
6.88 - 6.90 (0.2709 - 0.2717)	6.84 (0.2693)
6.90 - 6.92 (0.2717 - 0.2724)	6.86 (0.2701)
6.92 - 6.94 (0.2724 - 0.2732)	6.88 (0.2709)
6.94 - 6.96 (0.2732 - 0.2740)	6.90 (0.2717)
6.96 - 6.98 (0.2740 - 0.2748)	6.92 (0.2724)
6.98 - 7.00 (0.2748 - 0.2756)	6.94 (0.2732)
7.00 - 7.02 (0.2756 - 0.2764)	6.96 (0.2740)
7.02 - 7.04 (0.2764 - 0.2772)	6.98 (0.2748)
7.04 - 7.06 (0.2772 - 0.2780)	7.00 (0.2756)
7.06 - 7.09 (0.2780 - 0.2791)	7.02 (0.2764)
7.09 - 7.13 (0.2791 - 0.2807)	7.06 (0.2780)
7.13 - 7.17 (0.2807 - 0.2823)	7.10 (0.2795)
7.17 - 7.21 (0.2823 - 0.2839)	7.14 (0.2811)
7.21 - 7.25 (0.2839 - 0.2854)	7.18 (0.2827)
7.25 - 7.29 (0.2854 - 0.2870)	7.22 (0.2843)

BEARING RETAINER

Seal ring clearance

Bearing retainer seal ring clearance mm (in)	
Standard	0.10 - 0.25 (0.0039 - 0.0098)
Allowable limit	0.25 (0.0098)

TOTAL END PLAY

Total end play mm (in)	
	0.25 - 0.55 (0.0098 - 0.0217)

Bearing races for adjusting total end play

Thickness mm (in)	Part number
0.6 (0.024)	31435-31X01
0.8 (0.031)	31435-31X02
1.0 (0.039)	31435-31X03
1.2 (0.047)	31435-31X04
1.4 (0.055)	31435-31X05
1.6 (0.063)	31435-31X06
1.8 (0.071)	31435-31X07
2.0 (0.079)	31435-31X08

REVERSE CLUTCH END PLAY

Reverse clutch end play mm (in)	
	0.65 - 1.00 (0.0256 - 0.0394)

Thrust washers for adjusting reverse clutch end play

Thickness mm (in)	Part number
0.65 (0.0256)	31508-31X00
0.80 (0.0315)	31508-31X01
0.95 (0.0374)	31508-31X02
1.10 (0.0433)	31508-31X03
1.25 (0.0492)	31508-31X04
1.40 (0.0551)	31508-31X05

ACCUMULATOR

O-ring

Unit: mm (in)		
Accumulator	Inner diameter (Small)	Inner diameter (Large)
S/R accumulator	26.9 (1.059)	44.2 (1.740)
N-D accumulator	34.6 (1.362)	39.4 (1.551)

SERVICE DATA AND SPECIFICATIONS (SDS)

Specifications and Adjustments (Cont'd)

Return spring

Unit: mm (in)

Accumulator	Free length	Outer diameter
S/R accumulator spring	56.4 (2.220)	21.0 (0.827)
N-D accumulator spring	43.5 (1.713)	28.0 (1.102)

BAND SERVO

Return spring

Unit: mm (in)

Return spring	Free length	Outer diameter
2nd servo return spring	32.5 (1.280)	25.9 (1.020)
OD servo return spring	31.0 (1.220)	21.7 (0.854)

REMOVAL AND INSTALLATION

Unit: mm (in)

Distance between end of converter housing and torque converter	Except model 34X81 21.1 (0.831) or more
	Model 34X81 15.9 (0.626) or more

GI

MA

EM

LC

EC

FE

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