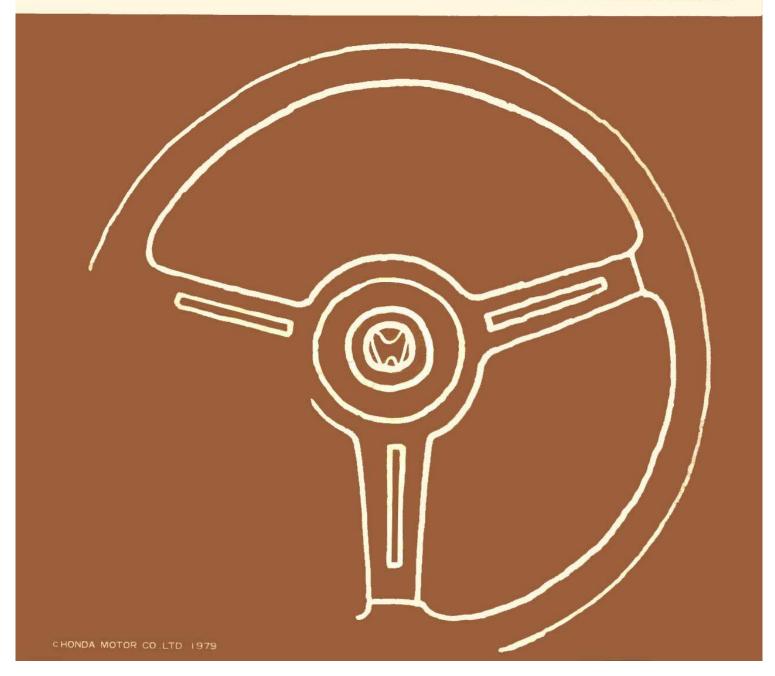
# SHOP MANUAL

HONDA ACCORD

SUPPLEMENT



## INTRODUCTION

#### How To Use This Manual

This supplement contains information for the 1980 Accord. Refer to the base Shop Manual (No. 6267102) for service procedures and data not included in this supplement.

The first page of each section is marked with a black tab that lines up with one of the thumb index tabs on the front and back covers. You can quickly find the first page of each section without looking through a full table of contents. The symbols printed at the top corner of each page can also be used as a quick reference system.

#### Each section includes:

- 1. A table of contents, or an exploded view index showing:
  - Parts disassembly sequence.
  - Bolt torques and thread sizes:
  - Page references to descriptions in text.
- 2. Disassembly/assembly procedures and tools.
- 3. Inspection.
- 4. Testing/troubleshooting.
- 5. Repair.
- 6. Adjustments.

#### Special Information

WWW.

Indicates a strong possibility of severe personal injury or loss of life instructions are not followed.

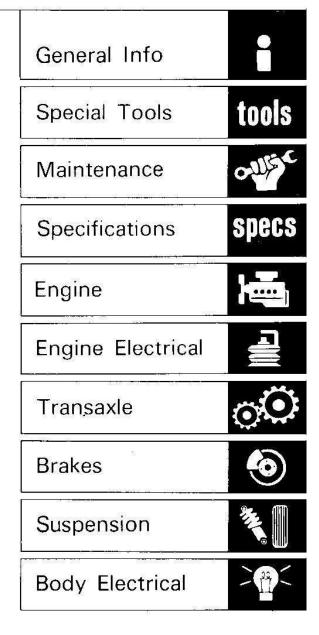
CAUTION: Indicates a possibility of personal injury or equipment damage if instructions are not followed,

NOTE: Gives helpful information to make the job easier.

CAUTION: Detailed descriptions of standard workshops procedures, safety principles and service operations are not included. Please note that this manual does contain warnings and cautions against some specific service methods which could cause PERSON-AL INJURY, or could damage a vehicle or make it unsafe. Please understand that these warnings cannot cover all conceivable ways in which service, whether or not recommended by Honda Motor might be done, or of the possible hazardous consequences of each conceivable way, nor could Honda Motor investigate all such ways. Anyone using service procedures or tools, whether or not recommended by Honda Motor, must satisfy himself thoroughly that neither personal safety nor vehicle safety will be jeopardized.

All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at any time without notice. No part of this publication may be reproduced, stored in retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher. This includes text, figures and tables.

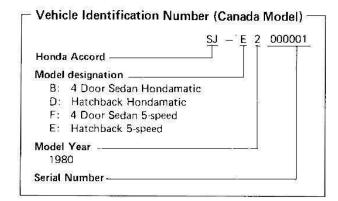
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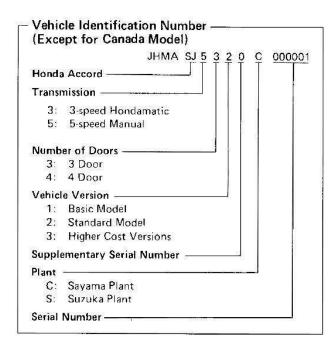


# **General Information**

Chassis and Engine codes ......1-2

# Chassis and Engine Codes





Engine Type —			1 2 0000
Serial Number ———	14.00		
Transmission Numbe	r (Manual)	T	
i ditaliliasion igaliloc	i (imailuai)	GK	5000001
		2015	Service and the service of
Transmission Type ——	urers.	_Ï	
Transmission Type —— Serial Number ————		T	

Transmission Type Serial Number ----

 $\underline{AK} - \underline{5000001}$ 

# tools

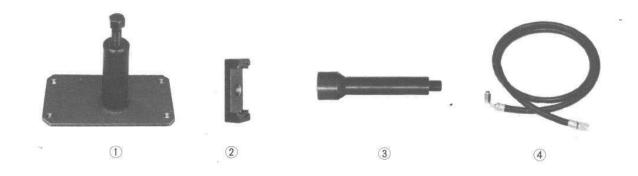
# **Special Tools**

Special T	ools (Newly	y Provided)	2-2
Special T	ools (Comr	non with	
Other Mo	odel)		2-2

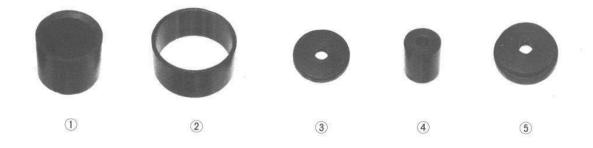
# **Special Tools**

NOTE: Following tools are added to service 1980 model Accord. Refer to base manual for other special tools.

No. Tool Number		Description	Q'ty	Remarks				
1	07933-6890200	Transmission Housing Puller	1	Hondamatic Transmission				
2	07960-6890100	Clutch Spring Compressor Attachment	1	Hondamatic Transmission				
3	07965-6920101	Front Hub Dis/Assembly Tool	1	Front Hub and Brake Roto				
4	07406-0020200	Oil Pressure Gauge Attachment/Hose	2 or 3	Hondamatic Transmission				



o.	Tool Number	Description	Q'ty	Remarks
1	07965-6920200	Front Hub Dis/Assembly Tool B	1	Front Hub
2	07965-6920300	Front Hub Dis/Assembly Tool C	1	Front Hub
3	07965-6920400	Front Hub Dil/Assembly Tool D	1	Front Hub
4	07965-6920500	Front Hub Dis/Assembly Tool E	1	Front Hub
5	07965-6920600	Front Hub Dis/Assembly Tool F	1	Front Hub

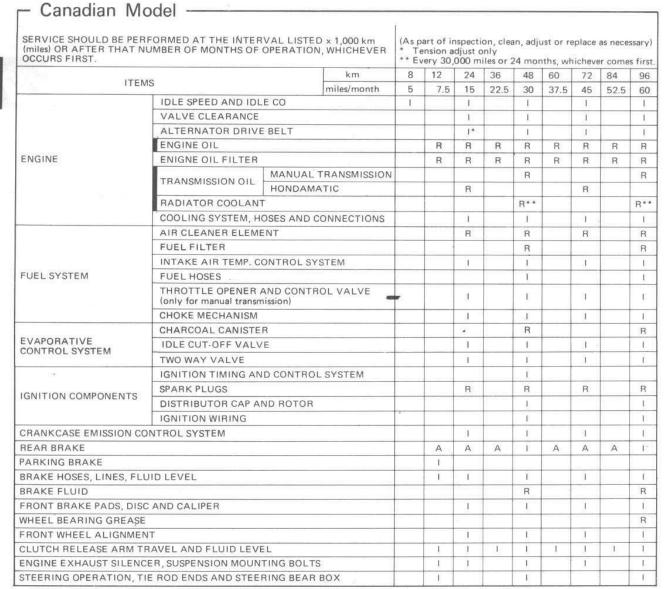




## Maintenance

Required	Maintenance	Schedule	. 3-2
Maintena	nce Specifica	itions	. 3-4

## Required Maintenance Schedule



I - AFTER INSPECTION, CLEAN, ADJUST, REPAIR OR REPLACE IF NECESSARY R - REPLACE A - ADJUST

#### CAUTION

- If the vehicle is operated under severe conditions; driving in severe cold condition, short distance driving or driving in dusty
  condition, change engine oil and engine oil filter every 3,000 miles (5,000 km) or 3 months, whichever comes first.
- Disc brakes should be serviced every 15 months or 15,000 miles (24,000 km), however, in areas using a high concentration of road salt or other corrosive materials more frequent servicing may be required.

REMARK: DAY TO DAY CARE (such as oil or coolant check and replenishment) should be done practically according to the pages 59 to 67 of Owner's Manual.



SERVICE AT THE INTERVAL LISTED x 1,000 MILES (OR KM)		(As part of Inspection, clean, adjust or replace as necessary)  * Tension Adjust Only  ** Every 30,000 miles (48,000 km) or 24 months, whichever comes first.										
	ITEMS		miles (x 1,000)	5	7.5	15	22.5	30	37.5	45	52.5	60
	I I EIVIO		Km (x 1,000)	8	12	24	36	48	60	72	84	96
	IDLE SPEED AND ID	LE CO	72	1		1		1		-1	· ·	1
	VALVE CLEARANCE					1		1		- 1		1
	ALTERNATOR DRIV	E BELT				1*		1.		I		- 1
	ENGINE OIL				R	R	R	R	R	R	R	R
ENGINE	ENGINE OIL FILTER				R	R	R	R	R	R	R	R
	TRANSMISSION OIL	MANU.	AL					R				R
	THANSMISSION OIL	HOND	AMATIC			R				R		
	RADIATOR COOLAN	Т						R**				R**
	COOLING SYSTEM H	OSES AN	D CONNECTIONS			1		1		1	21	1
	AIR CLEANER ELEM	ENT	11			R		R		R		R
	FUEL FILTER						R			- 11	R	
	INTAKE AIR TEMP, CONTROL SYSTEM				1		1		1		1	
	FUEL HOSES						1				1	
FUEL SYSTEM	THROTTLE CONTRO	LLING U	NIT			1		1		1		1
	CHOKE MECHANISM					1		- 1		1		- 1
EVAPORATIVE EMISSION	CHARCOAL CANISTER							R				R
SYSTEM	EVAP. EMISSION CONTROL DEVICES		EVICES			1		1		- 1		i i
	IGNITION TIMING AND CONTROL SYSTEM										1	
IGNITION COMPONENTS	SPARK PLUGS				R		R		R		R	
Idiel Holy Colin Cherrio	DISTRIBUTOR CAP AND ROTOR						- 1				1	
	IGNITION WIRING							1				1
CRANK CASE EMISSION CO	NTROL SYSTEM					1				1		1
	BRAKE HOSES, LINE	S. FLUID	LEVEL		1	1		T		1		1
	BRAKE FLUID ***	CONTRACTOR DESCRIPTION						B				R
	REAR BRAKE			+	A	А	A		A	А	A	1
	FRONT BRAKE PADS	S DISC AL	ND CALIPER	+		1	-			I	-	1
	PARKING BRAKE	, 5.00 / 1	TO ONE!! ET!	+	1:	-				- '-		-
	CLUTCH RELEASE A AND FLUID LEVEL	RM TRA	VEL		Ţ	1	1	1	I	1	1	1
FRAME	ENGINE EXHAUST S MOUNTING BOLTS	ILENCER	, SUSPENSION		Ĺ	1		1		3		ا
	WHEEL ALIGNMENT	(FRONT)				1		E		1		1
	STEERING OPERATION STEERING GEAR BO		ROD ENDS,		E			E	5			1
	WHEEL BEARING GR	REASE										R
	POWER STEERING S'	YSTEM			1	1	1	- 1	1	1	1	-1
	POWER STEERING D	RIVE BEI	_T		1*	1	1	12	Ĩ	1	- 3	- 1
	POWER STEERING O	IL			1	1	1	1	1	1	1	1.

I - AFTER INSPECTION, CLEAN, ADJUST, REPAIR OR REPLACE IF NECESSARY R - REPLACE A - ADJUST

#### CAUTION:

- If vehicle is operated under severe conditions; driving in severe cold condition, short distance driving, driving in dusty condition, or long distance driving towing a trailer, change engine oil and engine oil filter every 3,000 miles (5,000 km) or 3 months, whichever comes first.
- Disc brakes should be serviced every 15 months, or 15,000 miles (24,000 km), however, in area using a high concentration of road salt or other corrosive materials more frequent servicing may be required.
- \*\*\* Every 30,000 miles (48,000 km) or 30 months whichever comes first.
  - REMARK: DAY TO DAY CARE (such as oil, coolant level check, replenishment) should be done practically according to the page 55 through 61 of Owner's Manual.

# Maintenance Specifications/Settings

SU	BJECT	ITEMS OR CONDITIONS	REQUIREMENTS		
	1id	Manual transmission	6 ± 2° BTDC		
	Ignition timing (At idle)	Hondamatic (in gear)	6 ± 2° BTDC		
	Makin alasas	Intake	0.12-0.17 mm (0.0047-0.0067 in.)		
	Valve clearance	Below 38° C (100° F) Exhaust	0.25-0.30 mm (0.0098-0.0118 in.)		
	Idle speed	Manual transmission (At neutral)	800 ± 50 min <sup>-1</sup> (rpm)		
	(With headlights off and cooling fan off)	Hondamatic (in gear)	800 ± 50 min <sup>-1</sup> (rpm)		
	Idle Co	Manual and Hondamatic	2% max.		
	Choke fast idle	Manual transmission	2,100-2,700 min <sup>-1</sup> (rpm)		
	Choke fast idle	Hondamatic	2,000-2,600 min <sup>-1</sup> (rpm)		
ENGINE	Pulser Generator	Resistance	600-800 ohms		
	Ignition coil Resistance Primary		1.78-2.08 ohms		
	ignition con	Resistance Secondary	8,800-13,200 ohms		
	Spark plug	Type: NGK: BPR5ES *BPR6ES Denso: W16EXR-U *W20EXR-U Champion: RN-10Y *RN-8Y * For extended high speed driving	Gap: 0.7-0.8 mm (0.028-0.032 in.)		
	Compression	300 min <sup>-1</sup> (rpm) and wide-open throttle	1,128 kPa (11.5 kg/cm², 164 psi)		
	Alternator belt	Belt deflection with 10 kg (22 lb) tension	12-17 mm (0.48-0.67 in.)		
	Ignition wire	Resistance	25,000 ohms maximum		
	Radiator cooling fan	Fan operating temperature	Above 90 ± 1.5°C (194 ± 3°F)		
CRANKCASE EMISSION CONTROLS	Intake manifold	Fixed orifice passage	1.4 mm (0.055 in.) dia, drill bit		
	Idle cut-off valve	Valve open (vacuum)	38-80 mmHg (1.5-3.1 in, Hg)		
	Two-way valve	Pressurize	35-70 mm Hg (1.4-2.8 in. Hg)		
8 9	SCOCIEDO DE RECUSER DE MONTES CENTRE	Draw	5-15 mm Hg (0,2-0.6 in, Hg)		
	Charcoal canister	Draws	Partial open throttle		
EVAPORATIVE EMISSION CONTROLS	Air intake control	COLD (cranking) (air cleaner below 37° C (99° F))	Valve stays up		
	NORMER - 60/CHR (1996/88/1997/1997/1991)	HOT (air cleaner 25°C (77°F) nominal)	Valve door down		
		Throttle Opener Throttle return time	2 to 4 seconds		
	Throttle control	Throttle Opener Engine speed control (Manual Transmission)	1,000-2,000 min <sup>-1</sup> (rpm)		



	SUBJECT	ITEMS OR CONDITIONS	REQUIREMENTS		
CLUTCH	Manual transmission	Pedal free play	20-30 mm (0.8-1.2 in.)		
0.01011	Manual transmission	Release fork free play	2.0-2.6 mm (0.08-0.10 in.)		
	Tires	Pressure (front/rear) (cold)	170 kPa (1.7 kg/cm² , 24 psi)		
SUSPENSION	Wheel alignment	Front Camber Caster Toe-out Kingpin inclination	40' 1°30' 1 mm (0.04 in.) 12°10' ± 30'		
E		Rear Toe-in	1 mm (0.04 in.)		
	Pedal	Free play	1 to 5 mm (0.04 to 0.2 in.)		
	Pedal	Pedal-to-floor clearance	184 mm (7.24 in.)		
	D. J. J. J.	Pad wear limit	1.0 mm (0.039 in.) min. thickness		
BRAKES	Pad and shoe	Shoe lining wear limit	2.0 mm (0.079 in.) min. thickness		
	Drum	Absolute refinishing limit	181 mm (7.126 in.) maximum diameter		
	Rotor disc	Absolute refinishing limit	10.5 mm (0.413 in.) minimum thickness		

	SUBJECT	ITEMS OR CONDITIONS		REQUIREMENTS			
		Manual transmission		6 ± 2° BTDC			
	Ignition timing (At idle)	Hondamatic (in gear)		6 ± 2° BTDC			
	Valve clearance	Below 38°C (100°F) -	Intake	0.12-0.17 mm (0.0047-0.0067 in.)			
· lo	Valve clearance	Below 38 C (100 F) -	Exhaust	0.25-0.30 mm (0.0098-0.0118 in.)			
	Idle speed	Manual transmission (At	neutral)	800 ± 50 min <sup>-1</sup> (rpm)			
	(With headlights off and cooling fan off)	Hondamatic (in gear)		800 ± 50 min <sup>-1</sup> (rpm)			
	Idle CO	Manual and Hondamatic		3% max.			
NGINE	Choke fast idle	Manual transmission		2,100-2,700 min <sup>-1</sup> (rpm)			
NGINE	Choke fast idle	Hondamatic		2,000-2,600 min <sup>-1</sup> (rpm)			
3	Spark plug	Type: NGK BPR5ES, *BPR6ES Denso W-16EXR-U, *W-20EXR-U * For extended high speed driving		NGK BPR5ES, *BPR6ES Denso W-16EXR-U, *W-20EXR-U		Gap: 0.7-0.8 mm (0.028-0.032 in.)	
	Compression	300 rpm and wide-open	throttle	1,127 kPa (11.5 kg/cm², 164 psi)			
	Alternator belt	Belt deflection with 10 kg (22 lb) tension		The real control of the control of t		12-17 mm (0.48-0.67 in.)	
	Ignition wire	Resistance		25,000 ohms maximum			
	Radiator cooling fan	Fan operating temperature		Above 90 ± 1.5°C (194 ± 3°F)			

# Maintenance Specifications/Settings

SU	BJECT	ITEMS OR CONDITIONS	REQUIREMENTS				
CRANKCASE EMISSION CONTROLS (Only for Swedish Model)	Intake manifold	Fixed orifice passage	1.4 mm (0.055 in.) dia. drill bit				
EVAPORATIVE EMISSION CONTROLS	Idle cut-off valve	Valve open (Vacuum)	38-80 mm Hg. (1.5-3.1 in. Hg)				
(Only for Swedish Model)	One-way valve	Valve open (Vacuum)	20-43 mm Hg. (0.8-1.7 in, Hg)				
EXHAUST EMISSION CONTROLS (Only for Swedish Model)	Air intake control	COLD (cranking) (air cleaner below 37°C (99°F))	Valve stays up				
		HOT (air cleaner 25°C (77°F) nominal)	Valve door down				
		Throttle Opener Throttle return time	2—4 seconds				
	Throttle control	Throttle Opener Engine speed control (Manual Transmission)	1,000-2,000 min <sup>-1</sup> (rpm)				
CLUTCH	Manual transmission	Pedal free play	20-30 mm (0.8-1,2 in.)				
CLOTCH	Maridar transmission	Release fork free play	2.0-2.6 mm (0.08-0.10 in.)				
SUSPENSION	Tires	Pressure (front/rear) (cold)	170 kPa (1.7 kg/cm², 24 psi)				
	Wheel alignment	Front Camber Caster Toe-out Kingpin inclination	40' 1°20' 1 mm (0.04 in.) 12°10' ± 30'				
	-85	Rear Toe-in	1 mm (0.04 in.)				
	Pedal	Free play	1-5 mm (0.0394-0.1969 in.)				
	coda	Pedal-to-floor clearance	184 mm (7.24 in.)				
BRAKES	Pad and shoe	Pad wear limit	1.0 mm (0.04 in.) min. thickness				
J. A. C. S.	, ad and anot	Shoe lining wear limit	2.0 mm (0.08 in.) min. thickness				
	Drum	Absolute refinishing limit	181 mm (7.126 in.) maximum diamete				
	Rotor disc	Absolute refinishing limit	10.5 mm (0.413 in.) minimum thickne				



## Australian Model and General Export Model-

Only the maintenance specifications and settings for above two models different from those of the European model are listed.

For the other items not given here, refer to the European model maintenance specifications and settings.

SU	BJECT	ITEMS OR CONDITIONS	REQUIREMENTS		
ENGINE	Type:  NGK BP5ES, *BP6ES  Denso W-16EX-20EX-U  * For extended high speed driving		Spark plug NGK BP5ES, *BP6ES Denso W-16EX-20EX-U		0.7-0.8 mm (0.028-0.032 in.)
CRANKCASE EMISSION CONTROLS	Intake manifold	Fixed orifice passage	1.0 mm (0.039 in.) dia. drill bit		
EVAPORATIVE	Idle cut-off valve	Valve open (Vacuum)	38-80 mm Hg (1.5-3.1 in. Hg)		
EMISSION CONTROLS	One-Way valve	Valve open (Vacuum)	20-43 mm Hg (0.8-1.7 in, Hg)		
	Air intake control	COLD (cranking) (air cleaner below 37°C (99°F))	Valve stays up		
EXHAUST EMISSION		HOT (air cleaner 25° C (77° F) nominal)	Valve door down		
CONTROLS	Throttle Opener Throttle return time		2—4 seconds		
	Throttle control	Throttle Opener  Engine speed control (Manual Transmission)	1,000-2,000 min <sup>-1</sup> (rpm)		

# **Specifications**



Standard	d and	Service	Limits	*			4-	2
Design S	Specif	ications .			_		 5-	1

## Standard and Service Limit

<ul> <li>Engine</li> </ul>		
	MEASUREMENT	STANDARD
Water pump	Capacity	135½/min/5,000 min <sup>-1</sup> (rpm) (35.7 US gal, 29.7 lmp gal/min/5,000 rpm)

riorida	matic Transmission ——		Unit: mm (in.)
	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Hydraulic pressure	Line pressure at 1,000 min <sup>-1</sup> (rpm)	638-834 kPa (6.5-8.5 kg/cm², 92-121 psi)	540 kPa (5.5 kg/cm³, 78 psi)
	D clutch pressure at 1,000 min <sup>-1</sup> (rpm)	638-834 kPa (6.5-8.5 kg/cm², 92-121 psi)	540 kPa (5.5 kg/cm², 78 psi)
	L clutch pressure at 1,000 min <sup>-1</sup> (rpm)	638-834 kPa (6.5-8.5 kg/cm², 92-121 psi)	540 kPa (5.5 kg/cm² , 78 psi)
	OD clutch pressure at 1,000 min <sup>-1</sup> (rpm)	638-834 kPa (6.5-8.5 kg/cm², 92-121 psi)	540 kPa (5.5 kg/cm² , 78 psi)
itall rpm	Check with car on level ground	2,600 min <sup>-1</sup> (rpm)	2,300-2,900 min <sup>-1</sup> (rpm)
Forque converter	Thickness, turbine washer contact area Stator ring I.D. Stator side plate thickness Cover bushing I.D. Thrust washer thickness 22 x 52 x 3	16.9-17.0 (0.6654-0.6693) 49.000-49.025 (1.9291-1.9301) 5.95-6.00 (0.2343-0.2362) 16.000-16.018 (0.6299-0.6306) 2.920-3.000 (0.1150-0.1181)	16.5 (0.6496) - 5.90 (0.232) 16.1 (0.6339) 2.87 (0.1130)
Clutch	Clutch initial clearance Clutch return spring free length Clutch disc thickness Clutch plate thickness Clutch end plate thickness Mark 1 Mark 2 Mark 3 Mark 4 Mark 5	0.4-0.7 (0.016-0.028) 26.8 (1.055) 1.9-2.0 (0.075-0.079) 1.95-2.05 (0.077-0.081) 2.2-2.3 (0.087-0.091) 2.5-2.6 (0.098-0.102) 2.8-2.9 (0.110-0.114) 3.1-3.2 (0.122-0.126) 3.4-3.5 (0.134-0.138)	25.3 (0.996) Until grooves worn out Discoloration Discoloration Discoloration Discoloration Discoloration Discoloration
<b>Fransmission</b>	Diameter of needle bearing contact area on main and stator shaft Diameter of needle bearing contact area on mainshaft D gear Dimension of needle bearing contact area on mainshaft L gear collar Dimension of needle bearing contact area on countershaft (L side) Dimension of OD gear needle bearing contact area on countershaft Dimension of D gear needle bearing contact area on countershaft Dimension of D gear needle bearing contact area on countershaft Dimension of needle bearing contact area on countershaft reverse gear collar Reverse idler shaft diameter Reverse idler shaft holder diameter Mainshaft 2nd gear/countershaft reverse gear I.D. Countershaft 2nd gear I.D.	19.980–19.993 (0.7866–0.7871) 31.975–31.991 (1.2589–1.2595) 25.980–25.993 (1.0228–1.0233) 32.984–33.000 (1.2986–1.2992) 31.975–31.991 (1.2589–1.2595) 27.980–27.993 (1.1016–1.1021) 29.980–29.993 (1.1803–1.1808) 13.994–14.000 (0.5509–0.5512) 14.000–14.018 (0.5512–0.5519) 38.000–38.016 (1.4961–1.4967) 36.000–36.016 (1.4173–1.4179) 33.000–33.016 (1.2992–1.2998)	Damage or dent  Damage or dent
	Mainshaft 2nd gear/countershaft 3rd gear end play Mainshaft L gear end play Reverse idler gear end play Countershaft reverse gear end play	0.1-0.2 (0.004-0.008) 0.15-0.27 (0.006-0.011) 0.05-0.30 (0.002-0.012) 0.10-0.25 (0.004-0.010)	



Horidar	natic Transmission (cont'	α,	Unit: mm (in		
	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT		
Transmission	Thrust washer thickness (mainshaft D gear)	2.95-3.05 (0.1161-0.1201)	_		
	11 (11 (11 (11 (11 (11 (11 (11 (11 (11	3.05-3.15 (0.1201-0.1240)	770		
		3,15-3.25 (0.1240-0.1280)	=		
		3,25-3.35 (0.1280-0.1319)	_		
		3.35-3.45 (0.1319-0.1358)	_		
	Thrust washer thickness (mainshaft R side		1.0		
	bearing)	3.95-4.05 (0.1555-0.1594)	Damage or dent		
	Thrust washer thickness (mainshaft L gear)	2.43-2.50 (0.0957-0.0984)	Damage or dent		
	Thrust washer thickness (countershaft OD gear)	2.95-3.05 (0.1161-0.1201)			
		3.05-3.15 (0.1201-0.1240)	_		
		3.15-3.25 (0.1240-0.1280)	===		
	2	3.25-3.35 (0.1280-0.1319)	_		
		3.35-3.45 (0.1319-0.1358)			
	Thrust washer thickness (countershaft D gear)	2.35-2.45 (0.0925-0.0965)			
	July 1	2.45-2.55 (0.0965-0.1004)	_		
	98	2.55-2.65 (0.1004-0.1043)			
	Spacer collar length (mainshaft D gear)	25.35-25.40 (0.9980-1.0000)	_		
	Mainshaft L gear collar length	22.50-22.55 (0.8858-0.8878)	===		
	Mainshaft L gear collar flange thickness	2.5-2.6 (0.0984-0.1024)	Damage or dent		
	Countershaft reverse gear collar length	14.0-14.1 (0.5512-0.5551)	Daniage or dent		
	Countershaft reverse gear collar flange	7.110 3.111 10.000.12 30.000.11			
	thickness	2.45-2.50 (0.0965-0.0984)	Damage or dent		
	Mainshaft and countershaft feed pipe O.D.	2.40 2.00 10.0000 0.00047	Carriego or derit		
	(at 20 mm from end)	7.97-7.98 (0.3138-0.3142)	7.9 (0.311)		
	Mainshaft sealing ring	7.37 - 7.30 (0.3130 - 0.3142)	7.5 (0.511)		
	Thickness	1.975-1.995 (0.0778-0.0785)	1.8 (0.071)		
178	O.D.	31.7-32.0 (1.2480-1.2598)	31.0 (1.220)		
	Mainshaft bushing I.D.	8.000-8.015 (0.3150-0.3156)	8.1 (0.319)		
	Countershaft bushing I.D.	8.000-8.015 (0.3150-0.3156)	8.1 (0.319)		
	Mainshaft sealing ring groove width	2.05-2.10 (0.0807-0.0827)	2,2 (0.087)		
Regulator valve	Sealing ring contact area diameter	32.000-32.025 (1,2598-1,2608)	32.5 (1.2795)		
body					
Shifting device	Reverse shift fork thickness	5.8-5.9 (0.2284-0.2323)	5.2 (0.205)		
and parking	Parking brake ratchet pawl	-	Wear or other defect		
orake control	Parking gear	<del>-</del>	Wear or other defect		
Servo body	Shift fork shaft bore I.D.	14.000-14.005 (0.5512-0.5514)	822		
*	79	14.006-14.010 (0.5514-0.5516)	-		
		14.011-14.015 (0.5516-0.5518)	<u>~</u>		
	Shift fork shaft valve bore I.D.	37.000-37.039 (1.4567-1 4582)	37.045 (1.4585)		
Valve body	Check valve spring free length	39.6 (1.559)	34 (1.339)		
	Oil pump gear side clearance	0.03-0.05 (0.0012-0.0020)	0.08 (0.003)		
	Oil pump gear-to-body clearance	Drive: 0.110-0.165	E 51		
	18	(0.0043-0.0065)			
		Driven: 0.100-0.175	S==		
		(0.0039-0.0069)			
	Stator cam needle bearing bore I.D.	24.000-24.021 (0.9449-0.9457)	Damage or dent		
	Stator cam needle bearing contact area O.D.	19.980-19.993 (0.7866-0.7871)	Damage or dent		
	Oil pump driven gear I.D.	14.016-14.034 (0.5518-0.5525)	Damage or dent		
	Oil pump shaft O.D.	13.982-13.988 (0.5505-0.5507)	Damage or dent		

# specs

Canadian	Model 5-2
European	Model5-5

	ITE	MS		METRIC	ENGLISH	NOTE
DIMENSION	Overall Length	Hatchbac	k	4,145 mm	163.2 in.	
	TO SET THE PROPERTY OF THE PRO	Sedan	-20	4,365 mm	171.9 in.	
	Overall Width	Hatchbac	k/Sedan	1,640 mm	64.6 in.	
	Overall Height	Hatchbac	k	1,335 mm	52.6 in.	
	=	Sedan		1,355 mm	53.3 in.	
	Wheelbase	Hatchbac	k/Sedan	2,380 mm	93.7 in.	
	Tread F/R	Hatchbac	k/Sedan	1,400/1,390 mm	55.1/54.7 in.	
	Ground Clearance	Hatchbac	k/Sedan	165 mm	6.49 in.	
	Seating Capacity	Hatchbac	k/Sedan	4		
	Overhang F/R	Hatchbac	k	860/905 mm	33.9/35.6 in.	include bumper
		Sedan		860/1,125 mm	33.9/44.3 in.	5
	Curb weight	Hatchbac	k 3-SP	940 kg	2,073 lb.	3-SP: 3 speed manual
	5		5-SP	935 kg	2,060 lb.	transmission with Honda
		Sedan	3-SP	972 kg	2,143 lb.	matic
			5-SP	959 kg	2,115 lb.	
	Weight Distribution (f	(R) Hatchba	ck 3-SP	570/370 kg	1,257/816 lb.	5-SP: 5 speed manual
			5-SP	565/370 kg	1,244/816 lb.	transmission
		Sedan	3-SP	568/404 kg	1,252/891 lb.	Care Manager Control
			5-SP	555/404 kg	1,224/891 lb.	
	Carrying (loading) We	ight Capacity		45 kg	. 99 lb.	
ENGINE	Туре		Water cooled, 4	cycle O.Ħ.C.		
	Cylinder Arrangement		4-cylinder in lin	ie, transverse		
	Bore and Stroke			77.0 x 86.0 mm	3.03 x 3.39 in.	24
236	Displacement			1,602 cm <sup>3</sup>	97.8 cu. in.	21
	Compression Ratio		8.4 :	1	MAX 8.6:1	
					MIN 8.2:1	
	Carburetor Type		Downo	Iraft		
	Carburetor, Venturi Dia. P/S			Venturi dia. 20/26 mm	0.787/1.024 in.	P: Primary
						S: Secondary
	Valve Train			Timing belt driven, sing	le overhead camshaft	
	Lubrication System		Trochoid			
	Ruel Required		Low lead regular gasoline with 91			
	AND THE PROPERTY OF			research octane n	umber or higher.	and who are an are
	Engine Weight			105 kg	231.5 lb.	Include oil and coolant
TRANSMISSION	Clutch	3-SP		Torque Co	nverter	
		5-SP		Single plate dry, d	iaphragm spring	
	Transmission	3-SP		3 forward speed 1 reverse	with torque converter	
		5-SP		Synchronized 5 fo	rward 1 reverse	
				5-SP	3-SP	
	Primary Reduction			1,000	2.700	
	Gear Ratio	1		3.181	2.047	5
		11		1.842	1.370	
		111		1.200	0.969	
		IV		0.896	S-11.20000	18
		V		0.718	=	
		Reverse		3.000	1.954	
	Final Reduction	3-SP		Single helical	gear, 3.105	
		5-SP		Single helical	gear, 4.384	
	Clutch Facing Area			160 cm <sup>2</sup>	24.8 sq. in.	



	ITEMS		METRIC	ENGLISH	NOTE
STEERING SYSTEM	Overall Ratio P Turns, lock-to-lock	ower Steering ower Steering ower Steering	Inte 17.3 16.3 3 3 385 mm 1,4 lit.	d Pinion egral 3 : 1 2 : 1	r-dl =
SUSPENSION SYSTEM	Type, F Type, R Shock Absorber F/R		Independent, Mac'Ph	erson strut, coil spring erson strut, coil spring c, hydraulic	
WHEEL ALIGNMENT	caster F	ront Rear Front Front Rear	0° 1° out 1 mm in 1 mm	40' 10' 30' out 0.04 in. in 0.04 in.	
BRAKE SYSTEM	Type, F Type, R Lining Surface Area F/R Effective Disc Dia. Effective Brake Drum I.D. Parking Brake Kind and Ty		Power assisted leading-tra 36.1/56 cm <sup>2</sup> 187 mm 180 mm	assisted disc brake type ailing shoe and drum type 5.6/8.9 sq. in. 7.4 in. 7.1 in. , rear two wheel brakes	Q'ty 4 Q'ty 4
TIRES	F/R		155 SR13		
ELECTRICAL SYSTEM	Battery  Starting Motor Generator Fuses Main Fuse Headlight Meter/Gauge Illumination Front Turn Signal Lights/P (Combination) Illumination Light (Steerin Side Marker Lights (front a Warning/Indicator Lights Interior Light Rear Turn/Stop/Taillight Turn Signal Indicator Light Turn Signal Indicator Light Tail Gate Light Back-up Light Licence Plate Lights Glove Box Light	osition Lights	-17. 12V-1.4 KW 12V-50 AH 12V-10A x 7, 15 55A 12V-37.5/50W, 12V-3.4/1.2W 12V-32CP/3CP 12V-2W 12V-2CP (SAE 12V-1.2W 12V-8W	37.5W (SAE 4002/4001) (SAE 1157) 194) /3CP (SAE 1156/1157)	Steering
SERVICE DATA (Engine)	Ignition Timing 3 5 Valve Timing I	-SP -SP N open N close X open	6° BTDC 6° BTDC 10° ATDC 40° ABDC 40° BBDC 10° BTDC		(at Idling)

	ITEMS "	METRIC	ENGLISH	NOTE
SERVICE DATA	Spark Plug	NGK Denso	CHAMPION	
(Engine)	2.7	BPR5ES W16EX	R-U RN-10Y	Standard
		*BPR6ES *W20EXR-U *RN-8Y		
		*For extended high speed driving		
	Spark Plug Gap	0.7-0.8 mm	0.028-0.031 in.	
	Idling Speed (with headlights off and	and the second second	1.400.000.000.000.000.000.000.000.000.00	
	cooling fan off.)			
	3-SP	800 ± 50 r	min <sup>-1</sup> (rpm)	(in gear)
	5-SP		min <sup>-1</sup> (rpm)	(At neutral)
	Engine Oil Capacity/Adding Engine Oil	3.8/3,0 lit.	4.0/3.7 US. qt.	
			3.3/3.1 Imp. qt.	
	Transmission Oil Capacity/Adding Trans.	2.6/2.4 lit.	2.8/2.5 US. qt.	Capacity:
	Oil		2.3/2.1 Imp. qt.	mean designed value.
	Fuel Tank Capacity/Remaining Gasoline	50/0.5 lit.	13.2/0.1 US. Gal.	Adding:
	Capacity		11.0/0.1 Imp. Gal.	eng. oil-replace oil
	Coolant Capacity/Adding Coolant	7.2/4.6 lit.	1.9/1.2 US. Gal.	filter.
			1.8/1.0 Imp. Gal.	
	Alternator Belt Tension	12-17 mm	0.47-0.67 in.	
	(Applied load)	(9-11 kg)	(19.9-24.3 lb.)	
	Valve Clearance Intake/Exhaust Cold IN	0.15 <sup>+</sup> 0.02 mm	0.006 + 0.0008 in.	
	EX	0.28 <sup>+</sup> 0.02 mm	0.011 <sup>+ 0.0008</sup> in.	4436V **
	Compression Pressure	1,127 ± 196 kPa (11.5 ± 2 kg/cm <sup>2</sup> , 164 ± 28		at 300 ± 50 min <sup>-1</sup> (rpm
396	Engine Oil	API Service SE		
	Transmission Oil	API Service SE		
	Automatic Transmission Fluid	DEXRON ®		
	Automatic Oil Capacity	4.9 lit.	5.2 US. qt.	
			4.3 Imp. qt.	
	Adding Fluid	2,5 lit.	2.6 US. qt.	0
			2.2 Imp qt.	
Chassis)	Tire Pressure F/R	170/170 kPa (1.7/1	.7 kg/cm² , 24/24 psi)	
no manuración (FIDA	Brake Fluid	DOT 3 or 4 Ty	pe SAE J1703	
11	Brake Pedal Free Play	1-5 mm	0.04-0.2 in.	
86	Brake Pedal-to-Floor clearance	184 mm	7.24 in.	
	Brake Pad Wearing Limit	1.0 mm	0.04 in,	
	Brake Shoe Wearing Limit	2.0 mm	0.08 in.	
	Clutch Pedal Free Play	20-30 mm	0.78-1.18 in.	



	IT.	EMS	METRIC	ENGLISH	NOTE
DIMENSION	Overall Length	Hatchback	4,125 mm	162.4 in.	
	Name the supplier of the state and	Sedan	4,365 mm	171.9 in.	
	Overall Width	Hatchback/Sedan	1,620 mm	63.8 in.	
	Overall Height	Hatchback	1,335 mm	52.6 in.	
		Sedan	1,355 mm	53.3 in.	
	Wheelbase	Hatchback/Sedan	2,380 mm	93.7 in.	
	Tread F/R	Hatchback/Sedan	1,400/1,390 mm	55.1/54.7 in.	
	Ground Clearance	Hatchback/Sedan	165 mm	6.49 in.	
	Seating Capacity		5		
	Overhang F/R	Hatchback	860/905 mm	33.9/35.6 in.	include bumper
	D 20 20 20	Sedan	860/1,125 mm	33.9/44.3 in.	1093 MARKET HADE NO NO NO NO
	Curb weight H	atchback 3/5-SP	905 kg [915 kg]	1,996 lb. [2,017 lb.]	3-SP: 3 speed manual
	Se	edan 3/5—SP	935 kg [945 kg]	2,062 lb. [2,084 lb.]	transmission with Honda
			* For power steering		matic
			has to be		
	Weight Distribution	(F/R) Hatchback 3/5—SP	545/360 kg [555/360 kg]	1,202/794 lb. [1,224/794 lb.]	5-SP: 5 speed manual transmission
	-1	Sedan 3/5-SP	545/390 kg [555/390 kg]	1,202/860 lb. [1,224/860 lb.]	
			* For power steering t	ype 13 kg (29 lb.) has	
			to be added to the from	nt distribution weight.	
	Gross Weight	Hatchback	1,360 kg	2,998 lb.	[ ] only for Swedish
	1.51	Sedan	1,390 kg	3,064 lb.	model
26	Max Permissible Wei	ght	1,390 kg	3,065 lb.	81
			(1,360 kg)	(2,999 lb.)	only for Germany
	Carrying (loading) W	eight Capacity	45 kg	99 lb.	
ENGINE	Type		Water cooled,	4-cycle O.H.C.	
	Cylinder Arrangeme	nt	4-cylinder in line, transverse		All and a second
	Bore and Stroke		77.0 x 86.0 mm	3.03 x 3.39 in.	11
	Displacement		1,602 cm <sup>3</sup>	97.75 cu. in.	
	Compression Ratio		8.4		Max 8.6:1
			40.000.00		Min 8.2 : 1
	Carburetor Type		Down	ndraft	CONTRACTOR WI
	Carburetor, Venturi	Dia. P/S	Venturi dia. 20/26 mm	0.787/1.025 in.	P: Primary S: Secondary
	Valve Train		Timing belt driven, sin	gle overhead camshaft	78
	Lubrication System		Trochoi		
	Fuel Required		Salmanna, Salman	line with 91 research,	
	The second state of the second state of the second		octane numb	er or higher.	24 (2)
	Engine Weight		105 kg	231 lb.	Include oil and coolant

	ITEM	AS .	METRIC	ENGLISH	NOTE
TRANSMISSION	Clutch	3-SP	Torque	converter	
		5-SP	Single plate dry	y diaphram spring	
	Transmission	3-SP	3 speed forward 1 reve	rse with torque converter	
		5-SP	Synchronized 5	forward 1 reverse	
			5-SP	3-SP	
	Primary Reduction		1.000	2.700	
	Gear Ratio	1	3.181	2.047	
		11.	1.842	1.370	
		1.11	1.200	0.969	
		IV	0.896	_	
		V	0.718		
		Reverse	3.000	1.954	
	Final Reduction	3-SP	Single helic	al gear, 3.105	
		5-SP		cal gear, 4,384	
	Clutch Facing Area		160 cm <sup>3</sup>	24.8 sq. in.	
STEERING	Type		Rack a	and Pinion	
SYSTEM	Type		111111111111111111111111111111111111111	tegral	
STOTEM	Power Steering Overall Ratio		1000		
	Power Steering		17.3 : 1 16.2 : 1		
	Turns, lock-to-lock		3.3		
	Turns, lock-to-lock	Power Steering		3.1	
	Steering Wheel Dia.	rower Steering	385 mm	15 in.	
	Power Steering	a Oil Cananity	1,4 lit.	1.5 US, qt., 1.3 Imp. qt.	
	Power Steering Oil	g On Capacity		The second secon	
	The state of the second st		HONDA Genuine Power Steering Fluid		
SUSPENSION	Type, F		Independent Mac'Pherson strut, coil spring		
SYSTEM	Type, R		Independent Mac'Pherson strut, coil spring		
	Shock Absorber F/R	/8/	Telescop	ic, hydraulic	
WHEEL	Wheel Alignment				
ALIGNMENT	camber	Front	0	°40′	
		Rear	0	° 10′	
	caster	Front	1	°30′	
	Toe	Front	out 1 mm	out 0.04 in,	
		Rear	in 1 mm	in 0.04 in.	
	Kingpin Inclination		13	2° 10′	
BRAKE SYSTEM	Type, F		Self-adjusting power assisted disc brake type		
0.0.11.1	Type, R			railing shoe and drum type	
	Lining Surface Area F.	/R	36.1/56 cm <sup>2</sup>	5.6/8.9 sq. in.	(Pad and Shoe)
	Effective Disc Dia		187 mm	7.4 in.	Q'ty 4
	Effective Brake Drum	I D	180 mm	7.1 in.	Q'ty 4
	Parking Brake Kind and Type		Mechanical Expanding, rear two wheel brakes		Second Second
TIRES	F/R		155SR13		
MOCANIMACO CONTROLO			1000	33113	
ELECTRICAL	Battery		12V-45AH		for English, France, and
SYSTEM	SCORE OFF MARKS		12V-47AH		Belgian model
	Starting Motor		12V-0.8KW		
	Generator		12V-50AH		
	Fuses			7, 15A × 5, 20A × 1	(Only for English Mode
	Sento 522			9, 15A x 5, 20A x 1	
	Main Fuse		55A	OH CHANGEON	
	Headlight *		12V-55W, 6	0/55W	



	ITI	EMS	METRIC	ENGLISH	NOTE
ELECTRICAL	Meter/Gauge Illumin	ation Light	12V-3.4/1.2	2W	embel in in in
SYSTEM	Front Turn Signal Li	ghts/Position Light	12V-21/5W		
	Illumination Light		12V-1.2W		
	Side Turn Signal Lights (Front)		12V-4W		
	Warning/Indicator Lights		12V-1.2W		
	Interior Light (Steering)		12V-8W		
	Rear Turn/Stop/Tail		12V-21/21/	75W	
	Turn Signal Indicator		12V-1.2W	-	
	Tail Gate Light	Light	12V-5W		
	Back-up Light		12V-21W		
	Licence Plate Lights		12V-5W		
	Glove Box Light		12V-2W		
SERVICE DATA	Ignition Timing	3-SP	6°	BTDC	
(Engine)	ignition running	5-SP	1170	BTDC	(at Idling)
(Liigitie)	Valve Timing	IN open		ATDC	(or ramy)
	valve i inning	IN close	P SSL	ABDC	
			300.0	BBDC	
	EX open EX close			BTDC	
	Spark plug	EX Close	NGK BPR5ES	Denso W16EXR-U	STANDARD
	Spark plug		*BPR6ES	*W20EXR-U	STANDANO
6			1000011000000	high speed driving	
	Spark Plug Gap		0.7-0.8 mm	0.028 - 0.031 in.	
	Idling Speed (with he	adlights off and	0.7-0.6 11111	0.026 - 0.031 III.	
	cooling fan off.)	saungins on and			
5.96	cooming ran orr.)	3-SP	800 + 50	min <sup>-1</sup> (rpm)	In gear
-25	5—SP			min <sup>-1</sup> (rpm)	At neutral
	Engine Oil Capacity/	11. dip (12.1 dip (12.1 dip) (12.	3.8/3.0 lit.	4.0/3.2 US, qt.	Capacity:
	Lingine On Capacity/	Adding Engine on	5.6/5.0 111.	3.3/2.6 Imp. qt.	mean designed value
	Transmission Oil Cap	acity/Adding Trans	2.6/2.4 lit.	2.8/2.5 US. qt.	Adding:
	Oil	acity/Adding Trans.	2.0/2.4 110.	2.3/2.1 Imp. qt.	eng. oil-replace oil filt
	Fuel Tank Capacity/	Remaining Gasoline	50/0.5 lit.	13.2/0.1 US, Gal.	origi ori ropidos ori
	Capacity	remaining Gasonne	50/0.5 110.	11.0/0.1 Imp. Gal	
	Coolant Capacity/Ac	Idina Coolant	7.2/4.6 lit.	1.9/1.2 US. Gal.	
	Coordin Capacity/AC	iding coolaire	7.274.0 111.	1.8/1.0 Imp. Gal.	
	Alternator Belt Tens	ion	12-17 mm	0.47 -0.67 in.	
	(Applied load)		(9-11 kg)	(19.9–24.3 lb.)	in the second se
	(Applied load)		130 65		
	Valve Clearance Intake/Exhaust (Cold)		0.15/0.28 + 0.02 mm	0.006/0.011 <sup>+ 0.0008</sup> in.	
	Compression Pressur	е	1,128 ± 196 kPa (11.5 ± 2 kg/cm², 164 ± 28 psi)		at 300 ± 50 min <sup>-1</sup> (rpm
	Engine Oil		API Service SE		
	Transmission Oil		API Service SE		
	Automatic Transmis	sion Fluid	25 10 100	RON ®	
	Automatic Capacity		4.9 lit.	5.2 US, qt.	
	The Wart was			4,3 Imp. qt.	
	Adding Fluid		2.5 lit.	2.6 US. qt.	1 2
				2.2 Imp. qt.	
(Chassis)	Tire Pressures F/R		170/170 kPa (1.7/1	1.7 kg/cm² , 24/24 psi)	
	Brake Fluid		DOT 3 or 4 Type	SEA J 1703	
	Brake Pedal Free Pla	У	1-5 mm	0.04-0.2 in.	
	Brake Pedal-to-Floor	Clearance	184 mm	7.24 in.	15
	Brake Pad Wearing L	imit	1.0 mm	0,04 in.	
	Brake Shoe Wearing	Limit	2.0 mm	0.08 in.	
	Clutch Pedal Free PI	av	20-30 mm	0.78-1.18 in.	

NOTE: Only the design specifications for models below different from those of the European model are listed. For the other items not given here, refer to the European model design specification.

. 1	ITEMS	METRIC	ENGLISH	NOTE
DIMENSION	Curb Weight Hatchback 3/5-SP Sedan 3/5-SP	931 kg 960 kg	2,052 lb. 2,116 lb.	3-SP: 3 speed manual transmission with Honda-
	Weight Distribution Hatchback 3/5-	be added SP 559/372 kg	ype 13 kg (29 lbs) has to 1,232/820 lb.	matic 5-SP: 5 speed manual
,	Sedan 3/5- Maximum Loaded Vehicle Weight Hatchback 3/5-SP Sedan 3/5-SP	1,351 kg	1,243/873 lb. 2,978 lb. 3,042 lb.	
ELECTRICAL SYSTEM	Battery Fuses Headlight	10A x 7, 15A	-40AH A × 4, 20A × 1 /50W, 37.5W	
SERVICE DATA (Engine)	Spark Plug	NGK BP5ES *BP6ES * For extended	Denso W16EX-U *W20EX-U d high speed driving	Standard

	ITEMS	METRIC	ENGLISH	NOTE
ELECTRICAL SYSTEM	Battery Fuse Headlight	10A x 7, 15	-40AH A x 4, 30A x 1 /50W, 37.5W	ä
TIRES	F/R	155SR13	3, 6.15-13	
SERVICE DATA (Engine)	Refer to the Australian model.			

# **Engine Removal Installation**

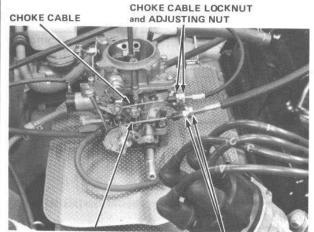


## **Engine Removal/Installation**

 Remove choke and throttle cables by loosening locknut and cable adjusting nut, then slip cable end out of throttle bracket and carburetor linkage.

#### CAUTION:

- Take care not to bend cables when disconnecting.
- Do not use pliers when disconnecting cable end from carburetor linkage to prevent damaging cable.

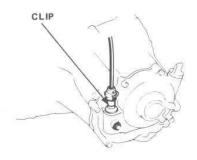


THROTTLE CABLE

THROTTLE CABLE LOCKNUT and ADJUSTING NUT

 Remove cable clip, then pull the speedometer cable out of holder.

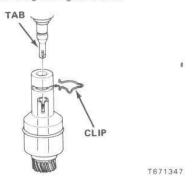
CAUTION: Do not remove holder because speedometer gear may fall into transmission housing.



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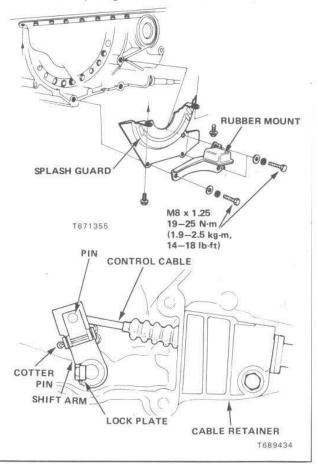
#### **During Installation:**

- Align tab on cable end with slot in holder.
- Install clip so bent leg is on groove side.



After installing, pull speedometer cable to make sure it is secure.

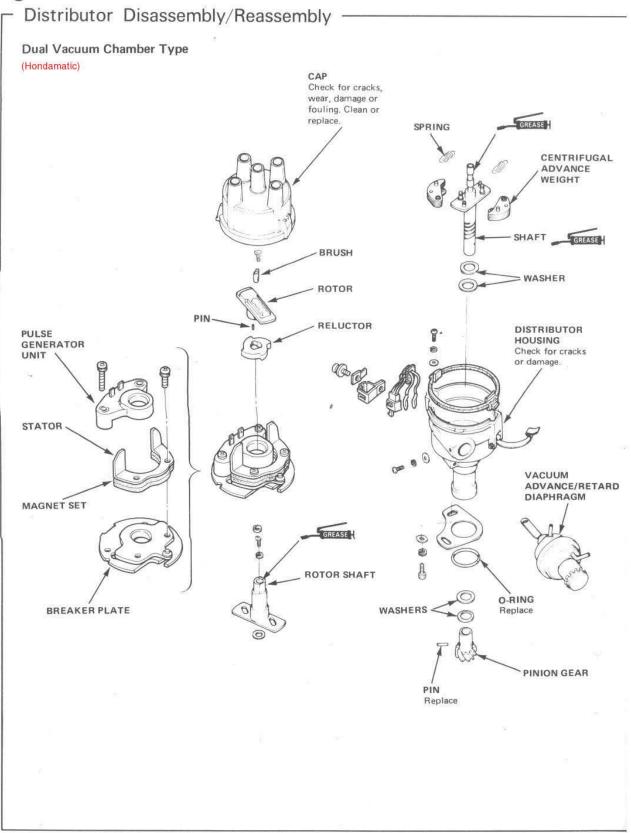
26. On Hondamatic Transmission Cars: Remove splash guard and shift cable.



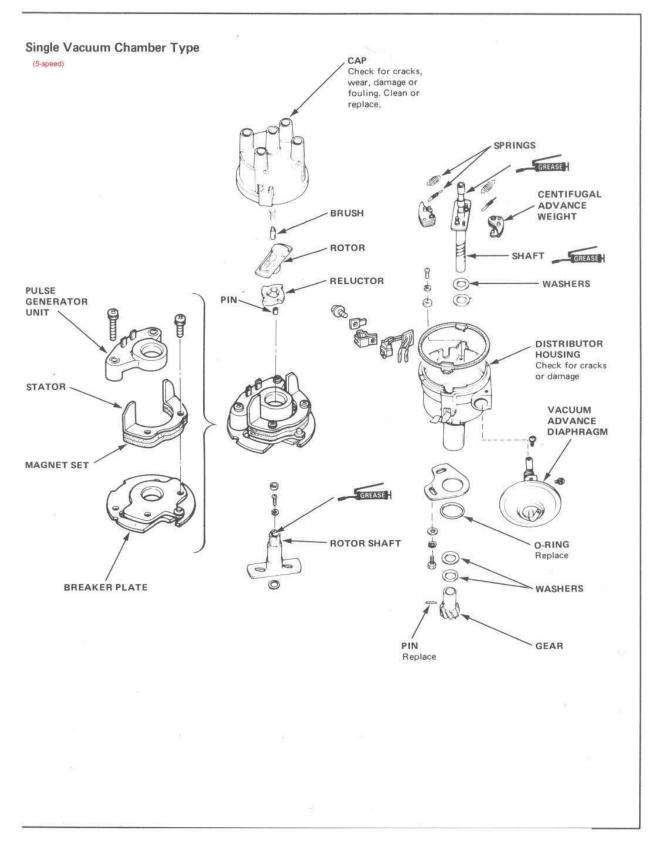
# **Engine Electrical**



## Ignition







## **Manual Transmission**

Main/Countershaft	
Reassembly/Measurement	32-2
Gearshift Mechanism	
Disassembly/Reassembly	32-5



### **Manual Transmission**

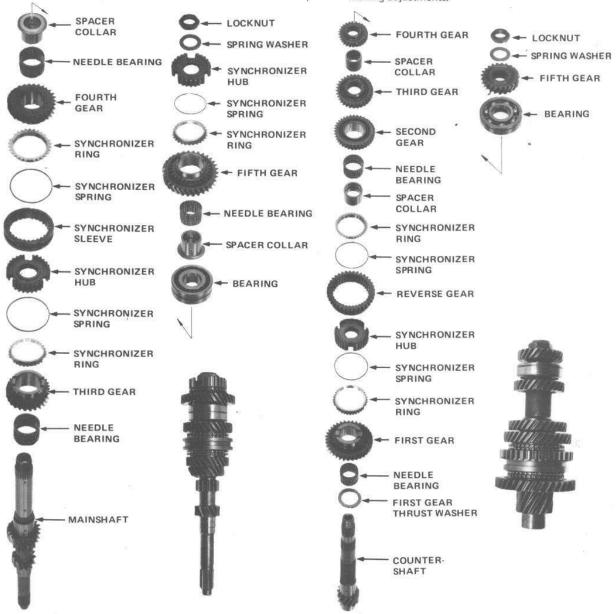
#### Main/Countershaft Reassembly/Measurement

- Remove both mainshaft and countershaft bearings from transmission housing.
- Assemble mainshaft and countershaft including bearings and fifth gear components.
- Install mainshaft/countershaft assembly into clutch housing.
- Install the mainshaft holder to prevent the shafts from turning and shift transmission into gear,
- Torque the countershaft and mainshaft locknuts to 70−100 N·m (7.0−10.0 kg·m, 51−72 lb·ft) before checking clearances.

CAUTION: Insufficient gear clearances can be caused by overtorquing the countershaft or main-shaft locknuts, usually with an uncalibrated impact air wrench. Whenever the locknuts are installed, a calibrated torque wrench must be used.

Remove the transmission shafts from the clutch housing and measure the clearances described on next two pages.

NOTE: Make all measurements before changing thrust washers or spacer collars. Recheck after making adjustments.





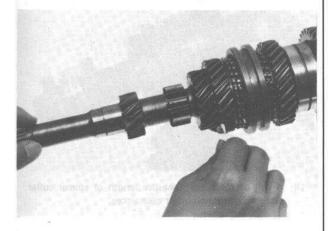
Measure clearance between shoulder on third gear and shoulder on second gear.

Third Gear Clearance

Standard (New): 0.03-0.18 mm

(0.0012-0.0071 in.)

Service Limit: 0.3 mm (0.012 in.)



If out of limit, replace third gear if necessary after all other measurements are complete.

Measure clearance between spacer collar and shoulder on fourth gear.

Fourth Gear Clearance

Standard (New): 0.03-0.18 mm

(0.0012-0.0071 in.)

Service Limit: 0.3 mm (0.012 in.)



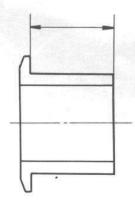
 If clearance is not within service limit, measure length of spacer collar after all other measurements are complete.

Fourth Gear Spacer Collar Length

Standard (New): 27.03-27.08 mm

(1.064-1.066 in.)

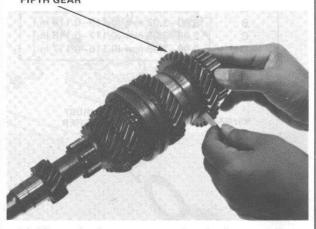
Service Limit: 27.02 mm (1.063 in.)



If out of limit, replace spacer collar.

 Measure clearance between spacer collar and shoulder on fifth gear.

Standard (New): 0.03-0.1 mm (0.0012-0.004 in.) FIFTH GEAR



 If out of tolerance, measure length of spacer collar, after all other measurements are complete.

Fifth Gear Spacer Collar Length

Standard (New): 27.03-27.08 mm

(1.064-1.066 in.)

Service Limit: 27.02 mm (1.063 in.)

If out of limit, replace spacer collar.

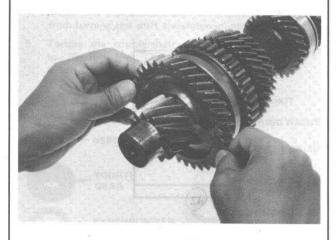
(cont'd)

## **Manual Transmission**

## - Main/Countershaft Reassembly/ Measurement (cont'd)

Measure clearance between first gear thrust washer and shoulder on first gear.

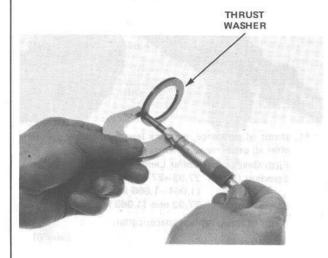
First Gear Clearance Standard (New): 0.03-0.08 mm (0.0012-0.003 in.)



If out of tolerance, change thickness of first gear thrust washer after measuring all other clearances.

#### Replacement Thrust Washers

CLASS	THICKNESS		
Α	3.02-0.04 mm (0.119-0.120 in.)		
В	3.00-3.02 mm (0.118-0.119 in.)		
С	2.98-3.00 mm (0.117-0.118 in.)		
D	2.96-2.98 mm (0.116-0.117 in.)		



 Measure clearance between shoulder on third gear and shoulder on second gear.

Second Gear Clearance

Standard (New): 0.03-0.1 mm (0.0012-0.004 in.)



 If out of tolerance, measure length of spacer collar after measuring all other clearances.

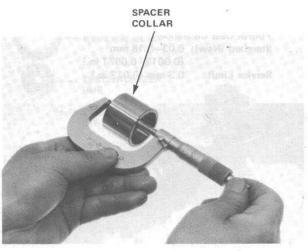
Second Gear Spacer Collar Length

Standard (New): 30.53-30.55 mm

(1.202-1.203 in.)

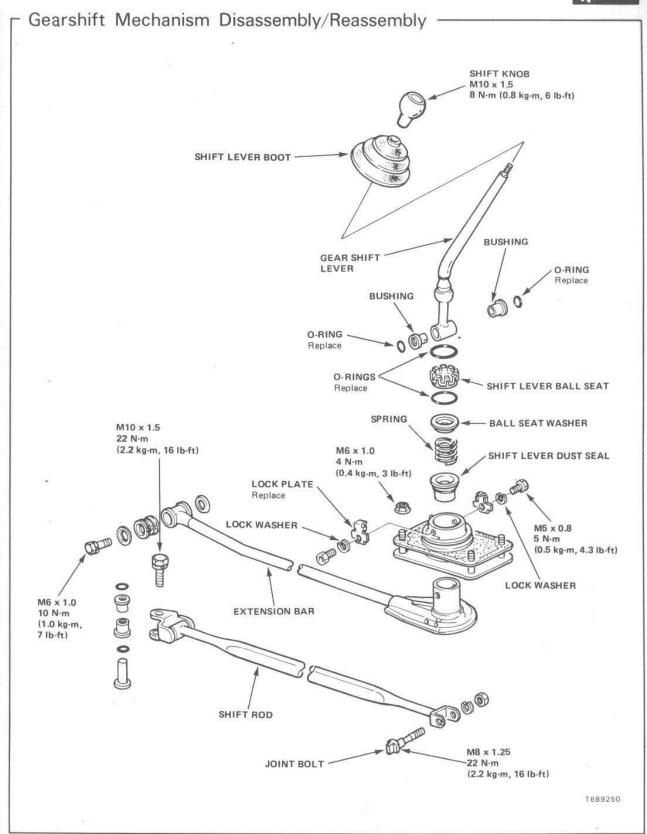
Service Limit: 30.52 mm (1.2016 in.)

If out of limit, replace spacer collar.



15. After all clearances have all been checked and adjusted, reassemble transmission mainshaft and countershaft and recheck all clearances. If clearances are correct, disassemble fifth gear components and reinstall bearings in transmission housing.





## **Hondamatic**

Troubleshooting	33-2
Testing	
Index	33-4
Torque Converter	
Neutral/Back-up Light Switch	33-41
Gear Selector	
Road Teat	33-45

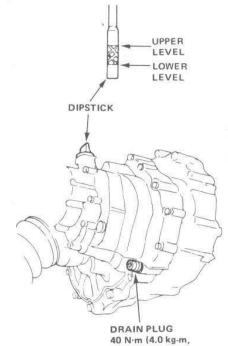


#### **Hondamatic**

#### - Maintenance

#### Checking Fluid

With car on level ground, unscrew transmission dipstick and check level of fluid immediately after (within one minute) engine is shut off. Add DEXRON type automatic transmission fluid to upper level if necessary. Do not screw dipstick in to check fluid level.



#### Changing Fluid

Change fluid at 24,000 km (15,000 miles) and every 72,000 km (45,000 miles) thereafter. Use only:

29 lb-ft)

Dexron® Automatic Transmission Fluid.

Capacity: 2.5 (2.6 US qt, 2.2 Imp. qt) at change 4.9l (5.2 US qt, 4.3 Imp. qt) at assembly.

Remove drain plug and drain transmission. Reinstall drain plug with new washer, and refill with new fluid through dipstick hole, to upper

NOTE: Drain and refill quantity will be slightly less than capacity above, because some fluid always remains in recesses of the housing. So, check the dipstick after adding about 2 litres (2 quarts), to be sure you don't overfill.

Trouble	Pressure Test	Check or Cause
Car does not move in all gears  No LINE pressure  Low and unstable LINE pressure  Normal LINE pressure	1, 2 3, 4, 5, 6 7, 8, 9, 10,	<ol> <li>Defective drive plate.</li> <li>Sticking or broken pump.</li> <li>Check fluid level.</li> <li>Clogged pump strainer.</li> <li>Worn pump gears.</li> <li>Sticking or broken regulator valve or spring.</li> </ol>
Car does not move in L but move in D and OD	12, 13, 14, 15, 16	<ol> <li>Sticking servo shaft.</li> <li>Sticking or seized reverse hubspline.</li> <li>Broken mainshaft.</li> <li>Disconnected control cable.</li> <li>Broken control cable.</li> <li>Defective LOW gear system.</li> </ol>
Car does not move in D but move in L and OD	17, 18, 19, 20, 21	
Car does not move in OD but move in L and D	22, 23, 24, 25, 26	Sticking LOW clutch piston or broken O-ring.     Sticking LOW clutch check
Car does not move in R but move in L, D and OD.	27, 28, 29	valve. 15. Broken LOW clutch feed pip or O-ring.
Poor acceleration and engine slips at start.  L, D and OD stall rpm is too high.  L stall rpm is too high but D and OD normal.  D stall rpm is too high but L and OD normal.  OD stall rpm is too high but L and OD normal.  Stall rpm is too high but L and D normal.  Stall rpm is too low.  Stall rpm is normal.	3, 4, 5, 6, 31 13, 14, 15, 16 18, 19, 20, 21 23, 24, 25, 26 30, 31, 32 3, 32	<ol> <li>Worn LOW clutch discs.</li> <li>Defective DRIVE gear system</li> <li>Sticking DRIVE clutch piston or broken O-ring.</li> <li>Sticking DRIVE clutch check valve.</li> <li>Broken DRIVE clutch feed pipe or O-ring.</li> <li>Worn DRIVE clutch discs.</li> <li>Defective OD gear system.</li> <li>Sticking OD clutch piston or broken O-ring.</li> <li>Sticking OD clutch check valve</li> <li>Broken OD clutch feed pipe or O-ring.</li> <li>Worn OD clutch discs.</li> <li>Sticking servo piston.</li> <li>Defective REVERSE gear system.</li> <li>Worn reverse selector spline.</li> <li>Check ignition timing, carburator, compression pressure,</li> </ol>
Engine slips at L → D. Engine slips at	21, 33	
D→OD.	5	<ul> <li>31. Throttle control cable not adjusted properly.</li> <li>32. Defective torque converter one-way clutch.</li> <li>33. Sticking DRIVE clutch orifice.</li> <li>34. Sticking OD clutch orifice.</li> </ul>

level.



#### Stall Speed Test -

Trouble	Probable Cause	
Stall rpm high in L, D, OD & R	Fluid level, oil pump, clogged oil strainer, pressure regulator	
Stall rpm high in D & R	Slippage of drive clutch	
Stall rpm high in L	Slippage of low clutch	
Stall rpm low in L, D, OD & R	<ul> <li>Engine output low, throttle control cable misadjusted.</li> <li>Slippage of torque converter one-way clutch.</li> </ul>	

- 1. Engage parking brake and block front wheels.
- 2. Connect tachometer, and start engine.
- After engine has warmed up to normal operating temperature, shift into Drive.
- Fully depress brake pedal and accelerator for 6 to 8 seconds, and note engine speed.

CAUTION: Do not test stall speed for more than 10 seconds at a time.

Allow 2 minutes for cooling, then repeat same test in Low and Reverse.

Stall speed in OD, D, L and R must be the same, and must also be within limits:

Stall Speed RPM:

Specification: 2,600 min<sup>-1</sup> (rpm)

Service Limit: 2,300-2,900 min<sup>-1</sup> (rpm)

#### Pressure Test

Trouble	Probable Cause	
No or low LINE pressure.	Torque converter, oil pump pressure regulator, torque con verter check valve.	
No or low pres- sure in L	Low clutch	
	200000000000000000000000000000000000000	
in D	Drive clutch	
in OD	OD clutch	
in R	Servo piston, drive clutch	

Test pressure with engine at normal operating temperature, idling at 750 min<sup>-1</sup> (rpm).

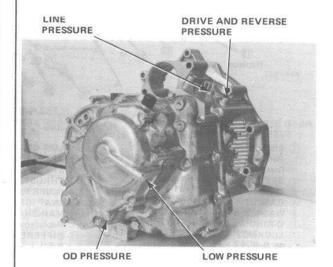
Hook up gauge at locations shown.

Hondamatic Fluid Pressure:

Specification: 638-834 kPa (6.5-8.5 kg/cm2,

92-121 psi)

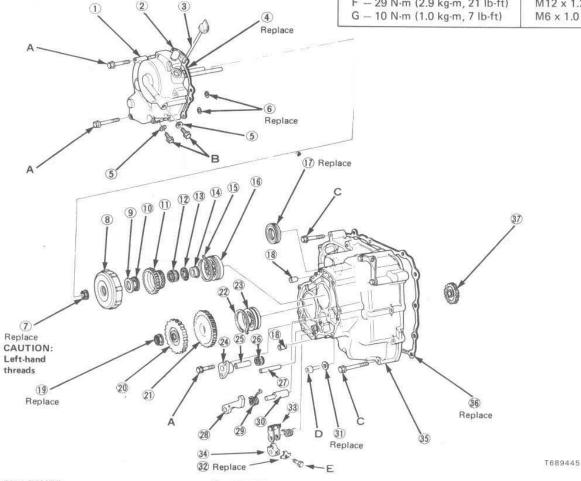
Service Limit: 540 kPa (5.5 kg/cm<sup>2</sup>, 78 psi)



#### Index -

- Clean all parts thoroughly in solvent, dry with compressed air, and blow out all oil passages.
- · Lube all parts with ATF during reassembly.
- · Repalce all lock plates.

Torque Value	Bolt Size
A - 12 N·m (1.2 kg·m, 9 lb-ft)	M6 x 1.0
B - 18 N·m (1.8 kg·m, 13 lb·ft)	M8 x 1.25
C - 27 N·m (2.7 kg·m, 20 lb-ft)	M8 x 1.25
D - 40 N⋅m (4.0 kg-m, 29 lb-ft)	M14 x 1.5
E - 14 N·m (1.4 kg-m, 10 lb-ft)	M6 x 1.0
F - 29 N·m (2.9 kg-m, 21 lb-ft)	M12 x 1.25
G - 10 N·m (1.0 kg-m, 7 lb-ft)	M6 x 1.0

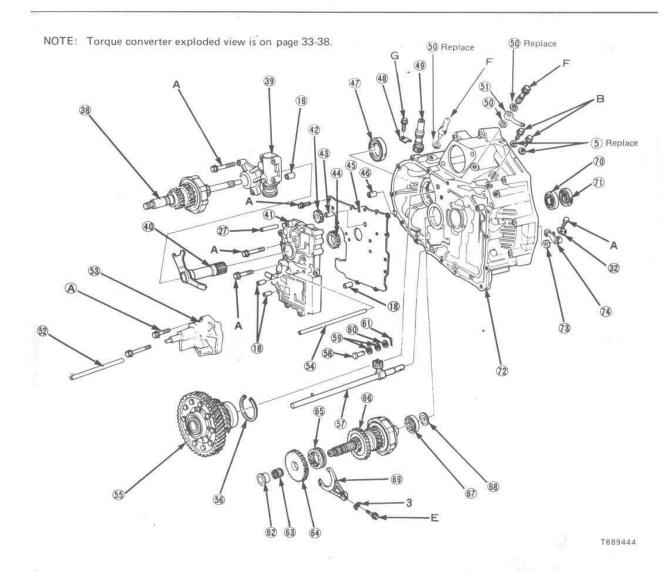


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- 2 BREATHER TUBE
- 3 DIPSTICK 4 GASKET
- 5 WASHER 8 mm
- 6 O-RING 6 x 23 mm
- 7 LOCKNUT 95 N·m (9.5 kg·m, 69 lb-ft)
- 8 LOW CLUTCH Removal, page 33-6 Disassembly, page 33-20 Reassembly, page 33-22
- 9 THRUST WASHER 26 mm
  10 THRUST NEEDLE BEARING
- 10 THRUST NEEDLE BEARING 31 x 47 x 2 mm

- 1 LOW GEAR
- 12 NEEDLE BEARING
- 31 x 36 x 18,5 mm (3) THRUST NEEDLE BEARING
- 14 INNER RACE
- 15 SNAP RING 68 mm
- 16 MAINSHAFT BEARING Replacement, page 33-28
- DIFFERENTIAL OIL SEAL Replacement, page 33-28
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- 95 N·m (9.5 kg·m, 69 lb-ft)
- 20 PARKING GEAR
- 21 COUNTERSHAFT LOW GEAR
- 22 SNAP RING 62 mm 23 COUNTERSHAFT BEARING
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- NEEDLE BEARING
- 27 STOP PIN
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- PARKING PAWL SPRING
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- 33 PARKING PAWL LEVER
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- 37 REVERSE IDLER GEAR





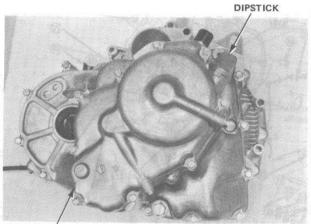
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- **40 STATOR SHAFT** Removal, page 33-9
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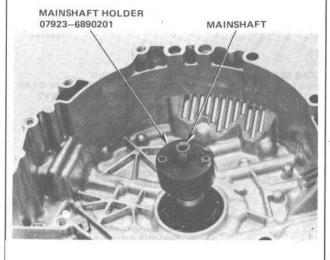
## Transmission Housing Removal -

- 1. Remove dipstick.
- 2. Remove bolts from end cover, then remove cover.

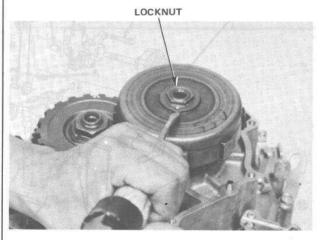


END COVER

- 3. Shift transmission to PARK.
- 4. Lock mainshaft using Mainshaft Holder.



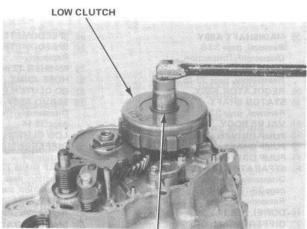
Pry staked edge of locknut out of notch in low clutch.



Remove mainshaft locknut using 22mm socket wrench, then remove low clutch.

#### CAUTION:

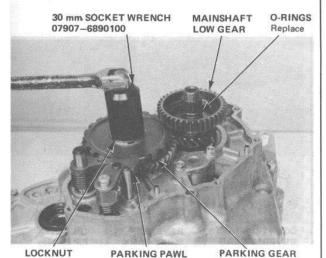
- Locknut has left-hand threads.
- Replace 20 x 1.9 mm O-rings whenever low clutch is removed (see step 10).



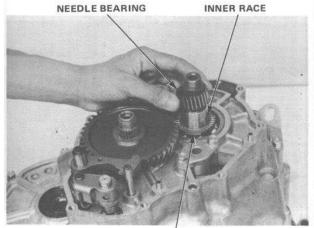
22mm SOCKET



- Pry staked edge of locknut out of notch in countershaft parking gear.
- Remove countershaft locknut using 30mm socket wrench.
- 9. Shift transmission out of PARK.
- 10. Remove parking gear and mainshaft low gear, then remove 20  $\times$  1.9 mm O-rings.

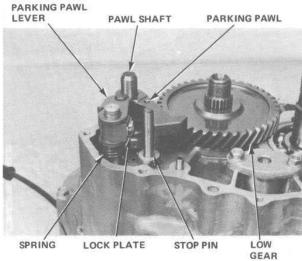


11. Remove needle bearing, thrust needle bearing and inner race from mainshaft.

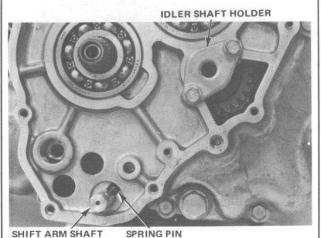


THRUST NEEDLE BEARING

- Remove parking pawl, then remove spring, parking pawl shaft and stop pin.
- 13. Remove countershaft low gear.
- Bend down tab on lock plate and remove bolt from shift arm shaft, then remove parking pawl lever and spring.



- Shift control cable in or out until spring pin on shift arm shaft is positioned as shown.
- 16. Remove idler shaft holder.

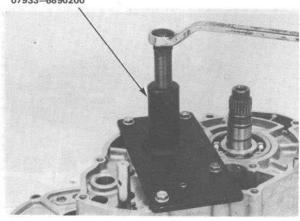


(cont'd)

#### Transmission Housing Removal - Mainshaft/Countershaft Removal (cont'd)

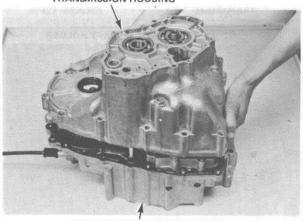
- 17. Remove 14 bolts holding transmission to torque converter housing.
- 18. Install Transmission Housing Puller using four 6mm bolts.
- 19. Remove housing by screwing in tool bolt.

#### TRANSMISSION HOUSING PULLER 07933-6890200



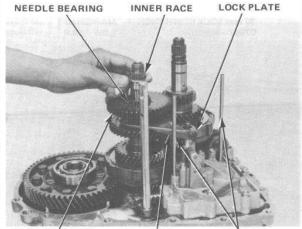
20. Remove tool and lift off housing.

#### TRANSMISSION HOUSING



TORQUE CONVERTER HOUSING

- 1. Remove inner race, needle bearing, and countershaft reverse gear.
- 2. Bend down tab on lock plate and remove bolt from reverse shift fork.
- 3. Then remove shift fork and selector sleeve as a unit.
- 4. Remove oil feed pipes.

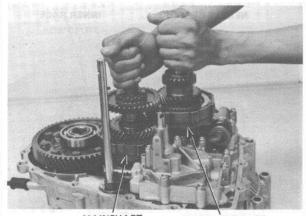


COUNTERSHAFT REVERSE GEAR

REVERSE SHIFT FORK

OIL FEED PIPE

5. Lift mainshaft and countershaft out together as an assembly.



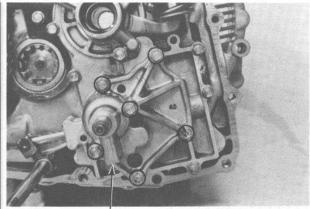
MAINSHAFT ASSY

COUNTERSHAFT



#### Valve Body Removal

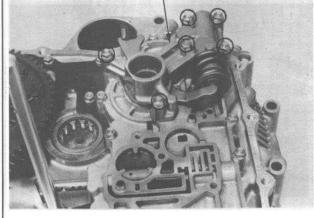
1. Remove servo assembly (6 bolts).



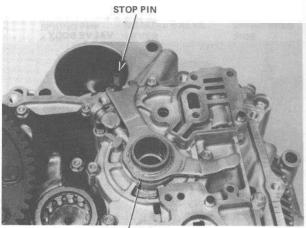
SERVO ASSY

2. Remove regulator assembly (6 bolts).



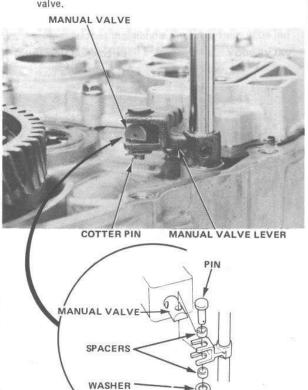


- 3. Remove stop pin.
- Tap stator shaft out from torque converter side of housing.



STATOR SHAFT

Remove cotter pin, pin and spacers from manual valve.

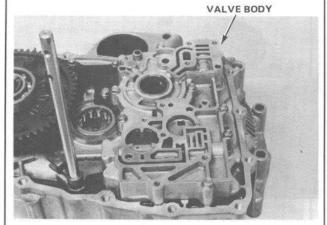


COTTER PIN

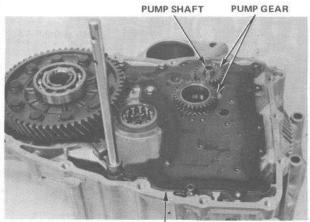
(cont'd)

## Valve Body Removal (cont'd)

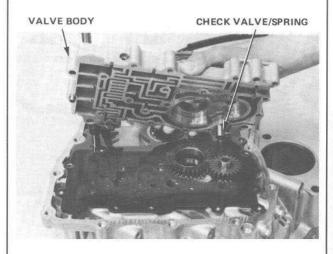
Remove valve body, being carefull not to drop the torque converter check valve and spring.



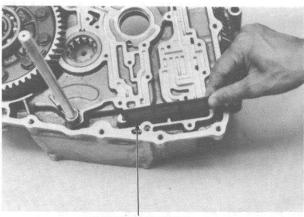
- 7. Remove pump gear and spring.
- 8. Remove separator plate.



SEPARATOR PLATE



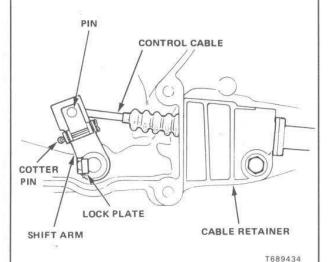
9. Remove oil pump strainer.



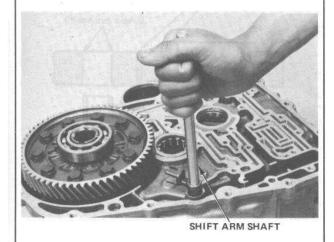
OIL PUMP STRAINER

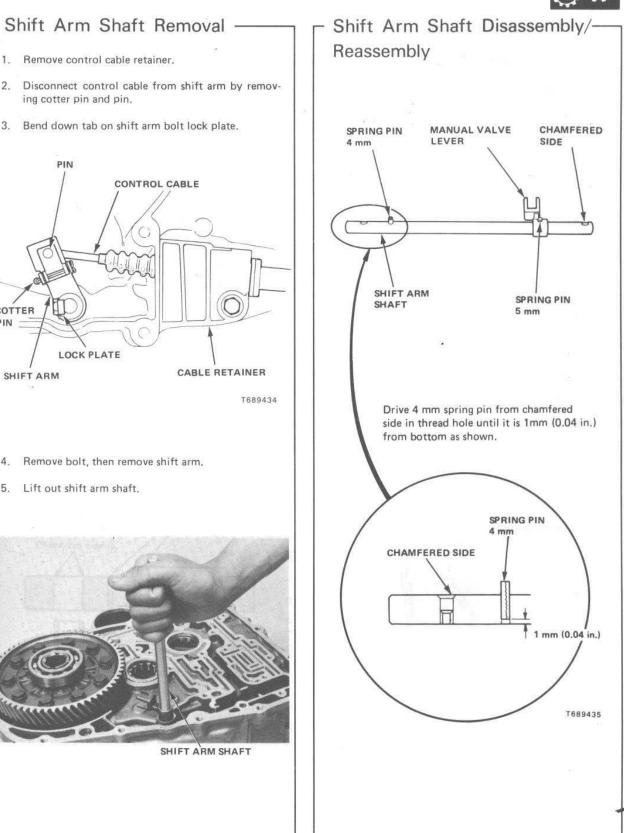


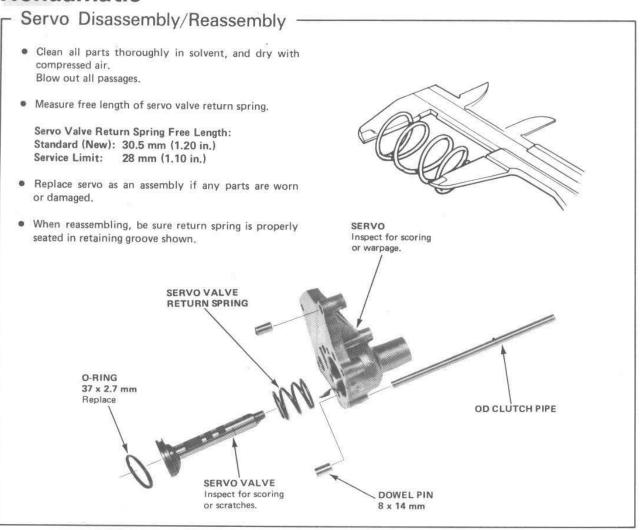
- 1. Remove control cable retainer.
- Disconnect control cable from shift arm by removing cotter pin and pin.
- 3. Bend down tab on shift arm bolt lock plate.

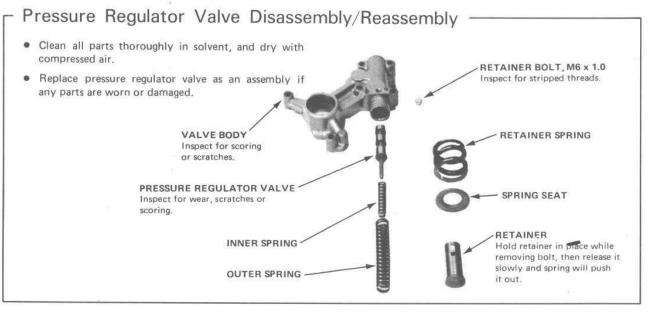


- 4. Remove bolt, then remove shift arm.
- 5. Lift out shift arm shaft.

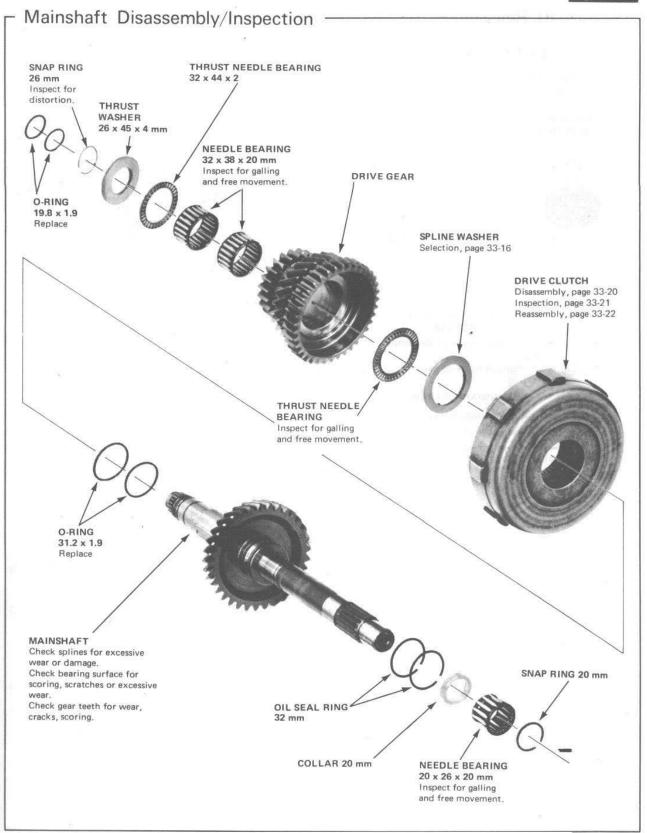






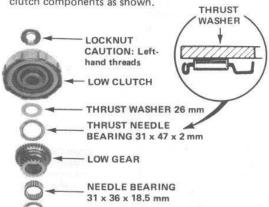






#### - Mainshaft Reassembly/Measurement

- Lubricate all parts with ATF during reassembly.
- Remove mainshaft bearing from transmission housing.
- Assemble mainshaft including bearing and low clutch components as shown.



THRUST NEEDLE BEARING

INNER RACE 26 mm



WASHER 26 x 45 x 4 mm

THRUST NEEDLE BEARING

DRIVE GEAR

NEEDLE BEARING 32 x 38 x 20 mm

THRUST NEEDLE BEARING

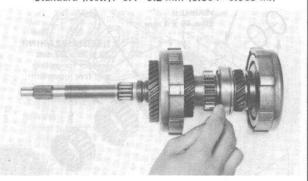
DRIVE CLUTCH

SPLINE WASHER

 Torque mainshaft locknut to 30 N·m (3.0 kg·m, 22 lb-ft).  Measure clearance between 26 x 45 x 4mm thrust washer and thrust needle bearing.

Clearance:

Standard (New): 0.1-0.2 mm (0.004-0.008 in.)



- If measurement is within tolerance and gears are not worn or damaged, remove locknut, low clutch components and bearing from mainshaft.
- If measurement is out of tolerance, figure the additional thickness required to bring clearance back within tolerance. Then disassemble mainshaft.
- Based on what you figured in step 6, select the correct spline washer listed below.

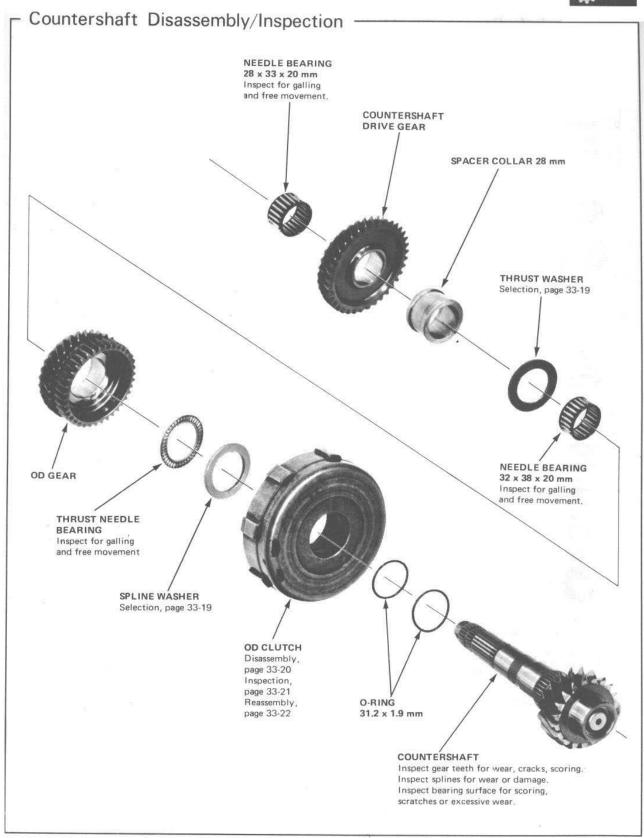
Class	Thickness	
Α	2.95-3.05 mm (0.116-0.120 in.)	
В	3.05-3.15 mm (0.120-0.124 in.)	
C	3.15-3.25 mm (0.124-0.128 in.)	
D	3.25-3.35 mm (0.128-0.132 in.)	
E	3.35-3.45 mm (0.132-0.136 in.)	
	A B C D	



SPLINE WASHER

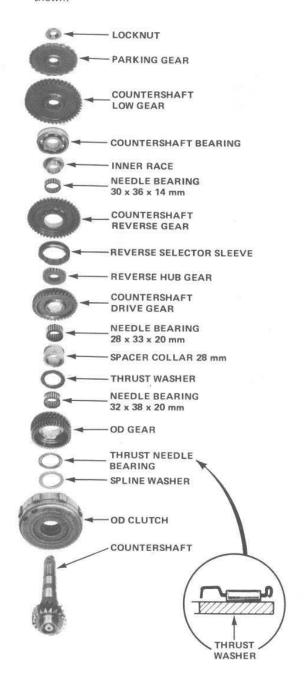
 After mainshaft has been reassembled, tighten locknut and recheck clearance. If clearance is within tolerance, remove locknut, low clutch components and bearing.





#### Countershaft Reassembly/Measurement

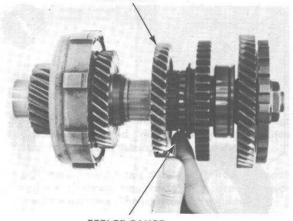
- · Lubricate all parts with ATF during reassembly.
- Remove countershaft bearing from transmission housing.
- Assemble countershaft including bearing, parking gear, low gear and reverse gear components as shown.



- Torque countershaft locknut to 30 N·m (3.0 kg·m, 22 lb-ft).
- Measure clearance between reverse hub gear and countershaft drive gear with a feeler gauge.

Drive Gear Clearance: Standard: 0.1-0.2 mm (0.004-0.008 in.)

COUNTERSHAFT DRIVE GEAR

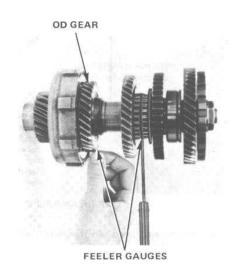


FEELER GAUGE

With the feeler gauge measured in step 4 inserted between hub gear and drive gear, measure clearance between OD gear and thrust washer.

OD Gear Clearance:

Standard: 0.1-0.2 mm (0.004-0.008 in.)



33-18

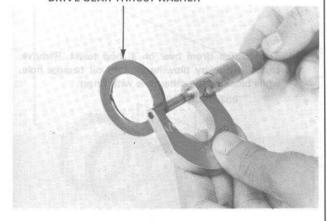


- If measurement are within tolerance, and gears are not worn or damaged, remove locknut, parking and low gears, bearing and reverse gear components.
- If any measurement are out of tolerance, figure the additional thickness required to bring each clearance back within tolerance. Then disassemble countershaft.
- Based on what you figured in step 7, select the correct thrust washer or spline washer listed below.

#### Replacement Drive Gear Thrust Washers

Class	Thickness	
Α	2.35-2.45 mm (0.093-0.096 in.)	
В	2.45-2.55 mm (0.096-0.100 in.)	
C	2.55-2.65 mm (0.100-0.104 in.)	

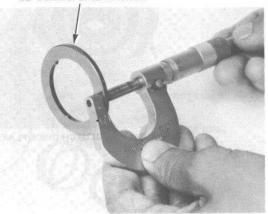
#### DRIVE GEAR THRUST WASHER



#### Replacement OD Gear Spline Washers

Class	Thickness	
Α	2.95-3.05 mm (0.116-0.120 in.)	
В	3.05-3.15 mm (0.120-0.124 in.)	
C	3.15-3.25 mm (0.124-0.128 in.)	
D	3.25-3.35 mm (0.128-0.132 in.)	
E	3.35-3.45 mm (0.132-0.136 in.)	

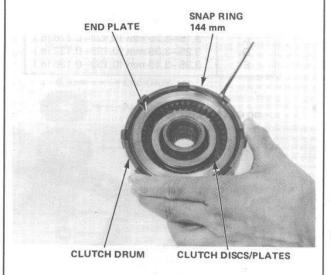
#### OD GEAR SPLINE WASHER



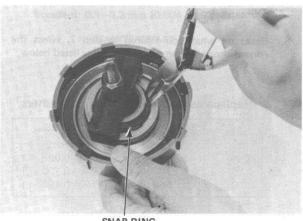
 After countershaft has been reassembled, retighten locknut and recheck clearances. If clearances are within tolerance, remove locknut, parking and low gears, countershaft bearing and reverse gear components.

## Low/Drive/OD Clutch Disassembly/Inspection

- 1. Remove snap ring.
- 2. Remove end plate, clutch discs and plates.

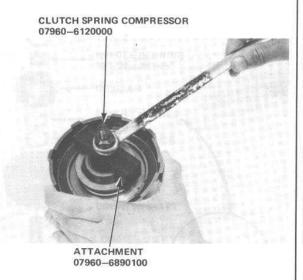


4. Remove snap ring. Remove Clutch Sping Compressor. Remove spring retainer and spring.

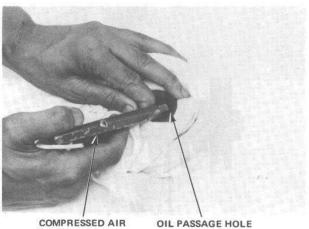


SNAP RING 40 mm

3. Install Clutch Spring Compressor and compress clutch return spring.

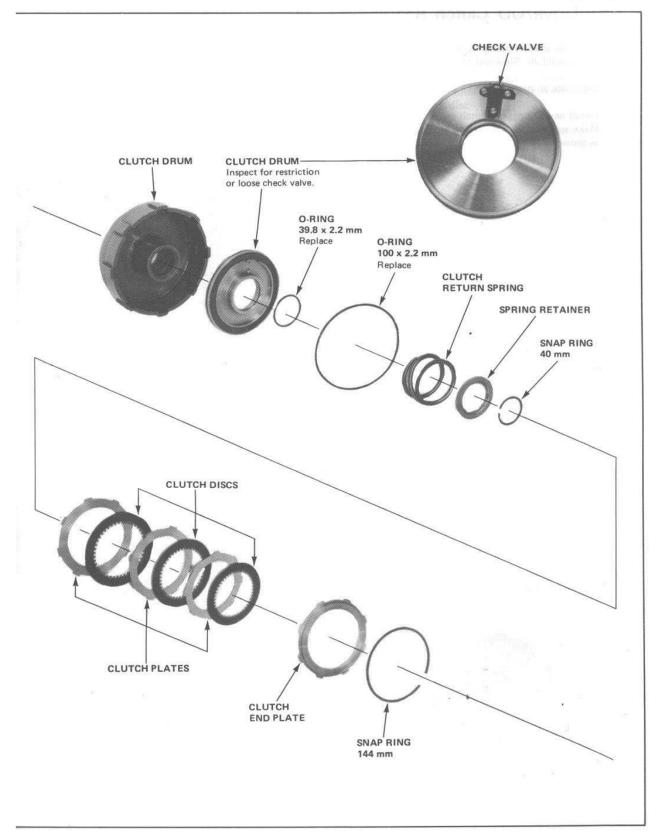


5. Turn clutch drum over on a shop towel. Remove clutch piston by blowing air into oil passage hole while blocking the other hole with finger.



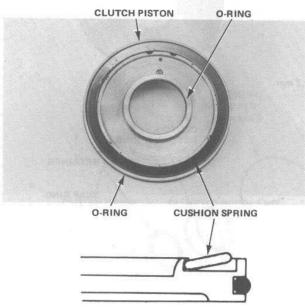
COMPRESSED AIR HOSE NOZZLE





## - Low/Drive/OD Clutch Reassembly

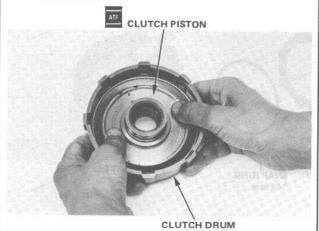
- Clean all parts thoroughly in solvent, and dry with compressed air. Blow out all passages.
- 2. Lubricate all parts with ATF before reassembly.
- Install new O-rings on clutch piston.
   Make sure that cushion spring is properly positioned as shown.



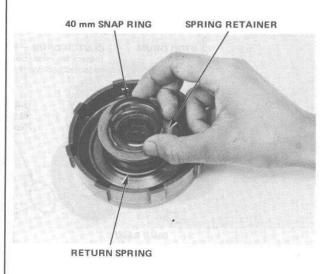
 Install clutch piston in clutch drum. Apply pressure and rotate to ensure proper seating.

NOTE: Lubricate piston O-rings before installing piston in clutch.

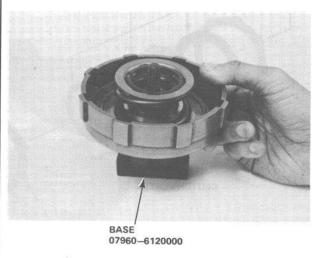
CAUTION: Do not pinch O-ring by forcing piston installation.



- 5. Install clutch return spring and spring retainer.
- 6. Position 40 mm snap ring on spring retainer.

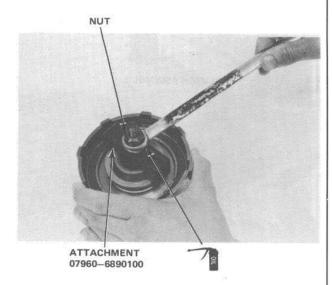


7. Assemble Spring Compressor on clutch drum.

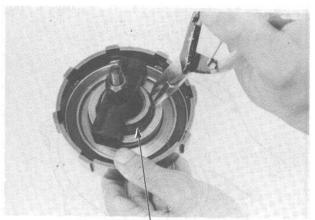




 Compress spring until retainer is below the snap ring groove in hub.



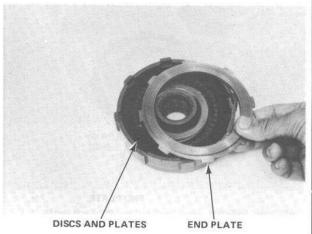
 Install snap ring in hub groove, Remove Clutch Spring Compressor.



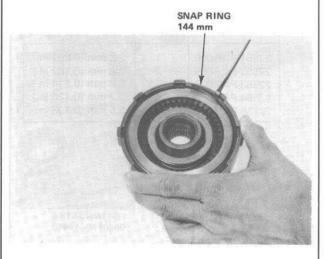
40 mm SNAP RING

- 10. Soak clutch discs thoroughly in transmission fluid.
- Starting with a clutch plate, alternately install clutch plates and discs. Install clutch end plate with flat side towards disc.

NOTE: Before installing plates and discs, make sure inside of clutch drum is free of dust and foreign material.



12. Install 144 mm snap ring.

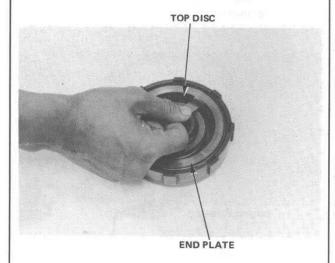


(cont'd)

## - Low/Drive/OD Clutch Reassembly (cont'd) -

 Carefully measure clearance between clutch end plate and top disc. Do not damage disc.

End Plate-to-Top Disc Clearance: Service Limit: 0.4-0.7 mm (0.016-0.028 in.)



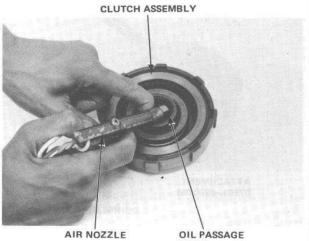
 If not within service limit, select a new clutch end plate from following table.

Part No.	Plate No.	Thickness
22551-PA9-000	1	2.3 mm (0.091 in.)
22552-PA9-000	2	2.6 mm (0.102 in.)
22553-PA9-000	3	2.9 mm (0.114 in.)
22554-PA9-000	4	3.2 mm (0.126 in.)
22555-PA9-000	5	3.5 mm (0.138 in.)



T671713

 Check clutch engagement by blowing air into oil passage in clutch drum hub. Remove air pressure and check that clutch releases.



HOLE



#### Differential Assembly Removal - Differential Seal Installation

If differential is to be removed, use driver and attachment shown.



TORQUE CONVERTER HOUSING

ATTACHMENT 07947-6340500

For differential disassembly, inspection, and reassembly, see page 34-4.

#### Differential Seal Removal

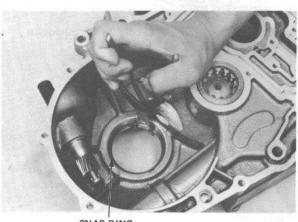
(Torque converter housing)

Remove 72 mm snap ring, then drive out seal with a drift or punch.



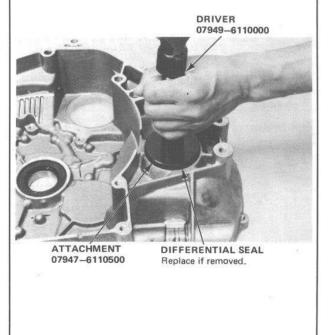
(Torque converter housing)

1. Install differential 72 mm snap ring if removed.



SNAP RING 72 mm

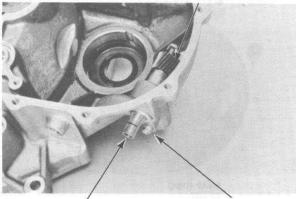
2. After the differential has been installed, and the torque converter and transmission housings have been assembled, drive in a new seal as shown.



#### Speedometer Drive Gear -Replacement

- 1. Remove differential assembly, see page 33-25.
- Remove bolt and lock plate, then remove speedometer drive gear.

#### SPEEDOMETER DRIVE GEAR

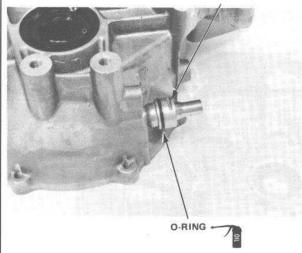


M6 x 1.0 10 N·m (1.0 kg-m, 7 lb-ft)

LOCK PLATE

- 3. Install new O-ring in groove in gear holder.
- Install speedometer drive gear with lock plate groove directed as shown.

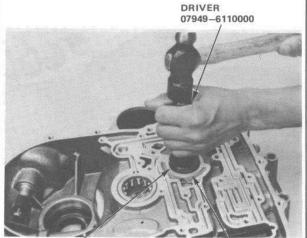
#### LOCK PLATE GROOVE



- Align lock plate with groove in gear holder, then install bolt and torque to 10 N·m (1.0 kg·m, 7 lb-ft).
- Apply oil to gear and make sure that gear rotates freely.

#### 

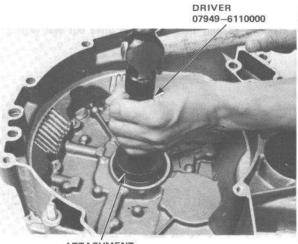
 Drive out mainshaft bearing/seal, using driver and attachment shown.



ATTACHMENT 07947-6340500

MAINSHAFT BEARING Replace if removed.

Drive in mainshaft bearing as shown, until it bottoms in housing.



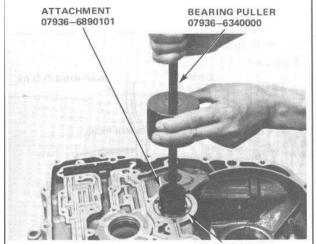
ATTACHMENT 07947-6340200

Install mainshaft seal flush with housing, using same tools.



### 

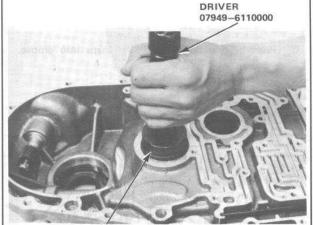
1. Remove bearing as shown.



COUNTERSHAFT BEARING Replace with new bearing if removed.

2. Install new needle bearing.

CAUTION: Support housing with a wood block.



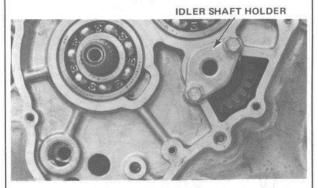
ATTACHMENT 52 x 55 07746-0010400

Bearing face should be below housing surface.

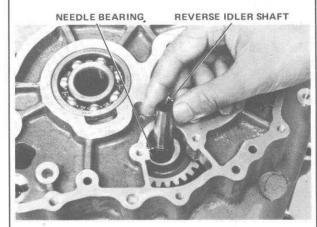


# Reverse Idler Gear Removal/Installation (Transmission housing)

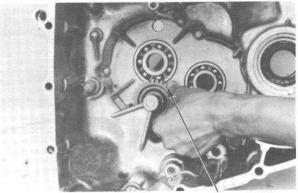
1. Remove idler shaft holder.



Push out idler gear shaft and bearing from inside transmission housing.



3. Then remove idler gear.



REVERSE IDLER GEAR Inspect teeth for wear.

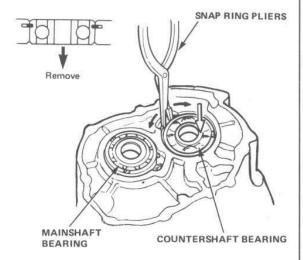
4. Install in reverse order.

# Differential Seal Replacement -(Transmission housing) 1. Drive out seal with drift or punch. 2. Drive new seal in. DRIVER 07949-6110000 ATTACHMENT 07947-6110500

# Mainshaft/Countershaft Bearings - Replacement (Transmission housing)

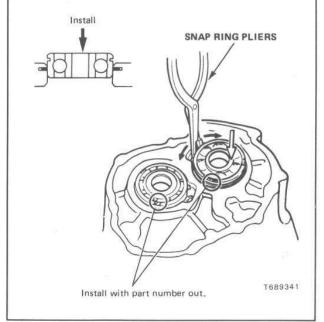
 Expand each snap ring with snap ring pliers, then push bearing out by hand.

NOTE: Do not remove rings from case unless cleaning is necessary.

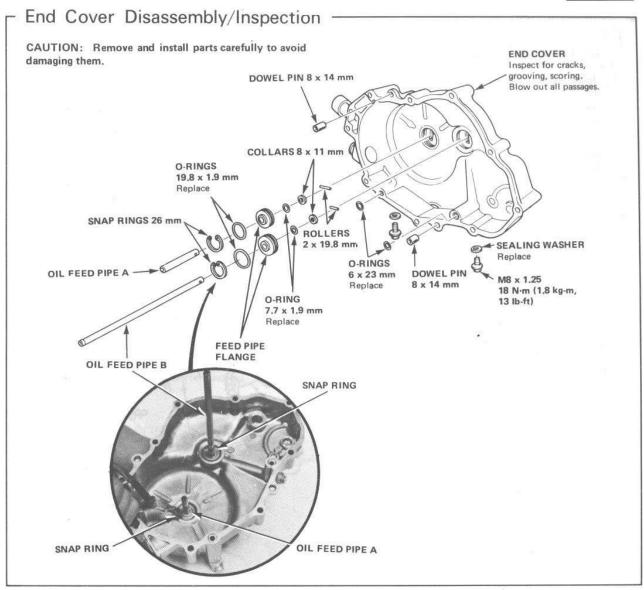


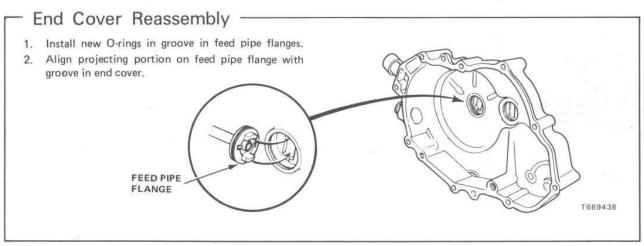
T689339, T689340

- 2. Expand snap ring with snap ring pliers, insert new bearing part-way into housing, then release pliers.
- 3. Push bearing down until ring snaps into groove.









#### Transmission Reassembly

NOTE: Lubricate all parts with ATF during reassembly.

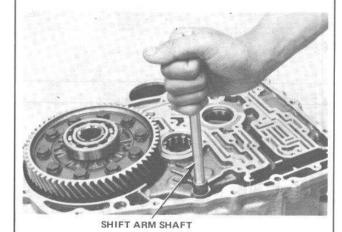
 Install differential assembly. If torque converter housing, transmission housing and/or differential side bearings were replaced, the differential side clearance must be checked as shown on page 34-8.

DRIVER 07949-6110000



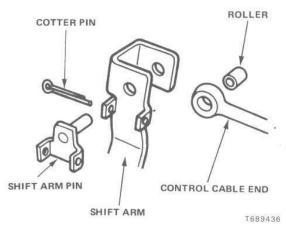
ATTACHMENT 07947-6340500

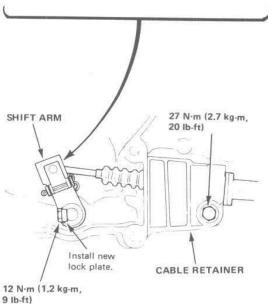
2. Install shift arm shaft.



Install shift arm and new lock plate on other end of shaft. Tighten bolt to torque shown, then bend tab over against bolt head.

- 4. Insert roller into control cable end.
- Align cable end with shift arm hole and insert shift arm pin, then secure it with new cotter pin.
- Install cable retainer and bolt, then tighten bolt to torque shown.

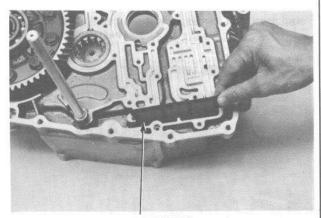




T689434

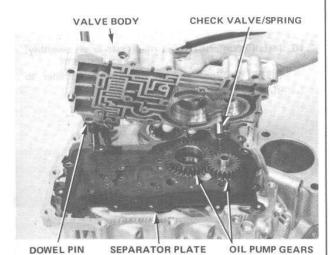


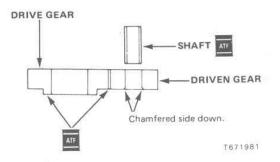
7. Install oil pump strainer with flanged side up.



OIL PUMP STRAINER

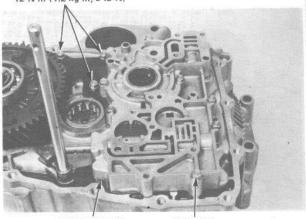
- Install separator plate, dowel pin, pump gears and shaft.
- Install torque converter check valve and spring, then install valve body on converter housing.





Torque valve body with 6mm bolts to 12 N·m (1.2 kg-m, 9 lb-ft), then tighten separator plate to same torque using three 6 mm bolts.

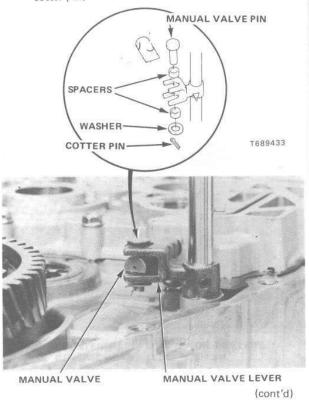
SEPARATOR PLATE BOLTS M6 x 1.0 12 N·m (1.2 kg-m, 9 lb-ft)



VALVE BODY

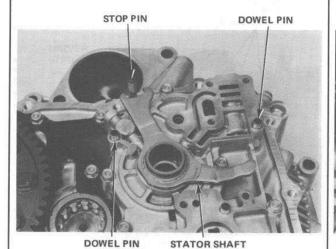
M6 x 1.0 12 N·m (1.2 kg·m, 9 lb-ft)

 Put spacer on each side of manual valve stem, then attach valve to lever with pin. Secure with new cotter pin.

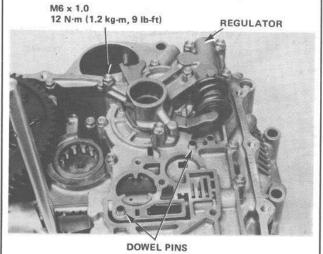


## Transmission Reassembly (cont'd) -

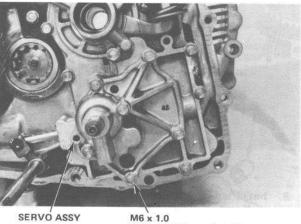
- 12. Install stator shaft and stop pin.
- 13. Install two dowel pins.



14. Install regulator and tighten five bolts to torque shown.



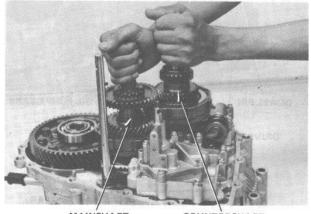
15. Install servo. Use correct length bolt in each hole, and torque in criss-cross pattern.



12 N·m (1.2 kg·m, 9 lb-ft)

16. Install countershaft and mainshaft as an assembly.

NOTE: Do not tap on shafts with hammer to drive in.



MAINSHAFT

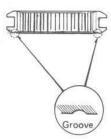
COUNTERSHAFT



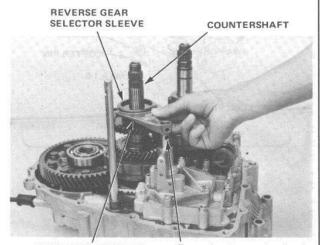
 Assemble reverse shift fork and selector sleeve, then install them as an assembly on countershaft.

NOTE: Install sleeve with grooved side down; fork with unmarked side up.

 Install reverse shift fork over servo valve stem. Align hole in stem with hole in fork as shown.



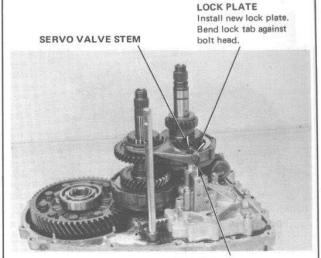
T671987



REVERSE SHIFT FORK Un-marked side up.

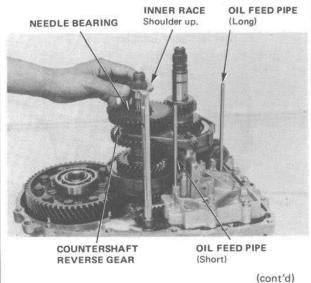
Turn valve stem so chamfered hole faces bolt.

 Install bolt and new lock plate. Bend lock tab over against bolt head.



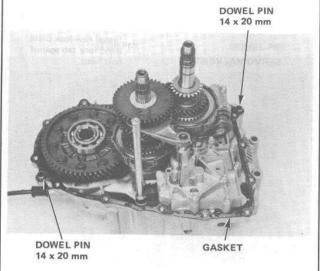
M6 x 1.0 12 N·m (1.2 kg·m, 9 lb-ft)

- 20. Install countershaft reverse gear, needle bearing, and inner race on countershaft.
- 21. Install oil feed pipes.



#### Transmission Reassembly (cont'd) -

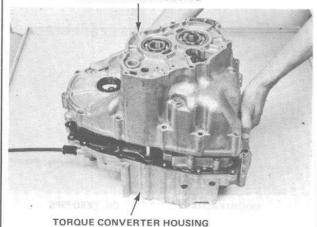
22. Install new gasket and two dowel pins.



23. Install transmission housing over torque converter housing.

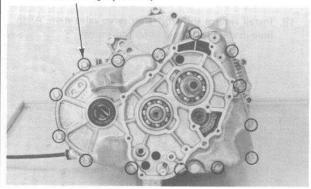
NOTE: Be sure spring pin on shift arm shaft aligns with hole in transmission housing while operating shift arm, and reverse idler gear meshes with mainshaft gear, or housing will not go on.



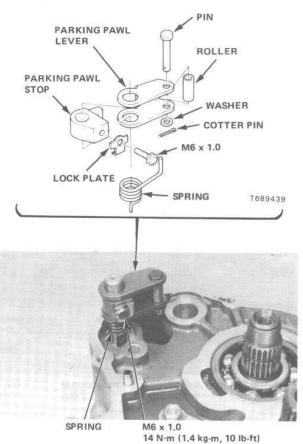


 Install fourteen bolts and tighten them in crisscross pattern.

(14) M8 x 1.25 27 N-m (2.7 kg-m, 20 lb-ft)



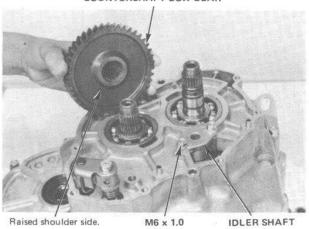
- Install parking pawl lever and spring on shift arm shaft.
- Install bolt and new lock plate. Bend lock tab over against bolt head.





- 27. Install countershaft low gear with raised shoulder side towards bearing.
- 28. Install idler shaft holder.



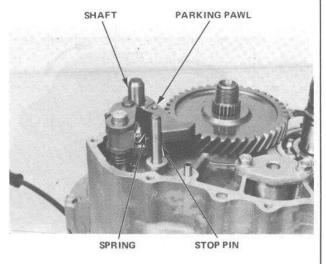


M6 x 1.0 12 N·m

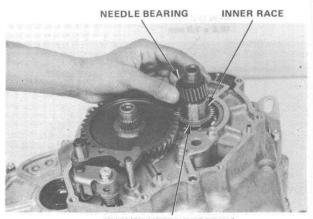
(1.2 kg-m, 9 lb-ft)

HOLDER

29. Install parking pawl, spring, shaft and stop pin.

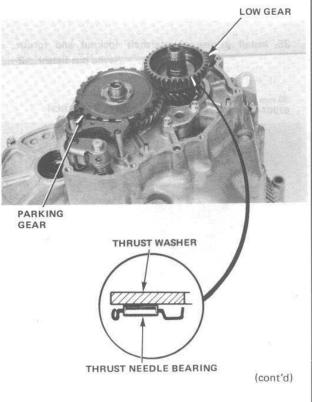


30. Install thrust needle bearing, inner race, needle bearing on mainshaft.



THRUST NEEDLE BEARING

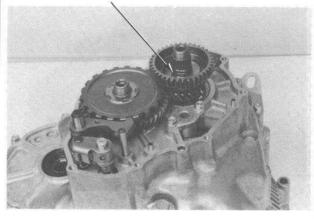
- 31. Install low gear and parking gear as an assembly.
- 32. Install thrust needle bearing and 26 mm thrust washer as shown.



## Transmission Reassembly (cont'd) -

33. Install two new O-rings in groove in mainshaft.

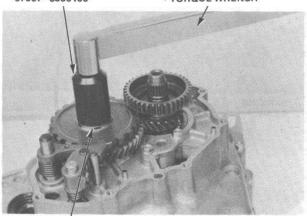
NEW O-RINGS 19.8 x 1.9 mm



- 36. Stake base of locknut into slot in parking gear.
- SLOT IN GEAR LOCKNUT
- 34. Shift transmission to PARK by pushing control cable all the way in.
- 35. Install a new countershaft locknut and torque.

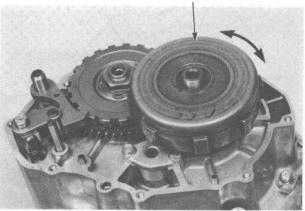
30 mm SOCKET WRENCH 07907-6890100

TORQUE WRENCH



LOCKNUT 95 N·m (9.5 kg-m, 69 lb-ft) Replace Install low clutch over low gear.
 Rotate low clutch until fully engaged.

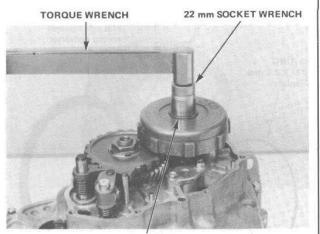






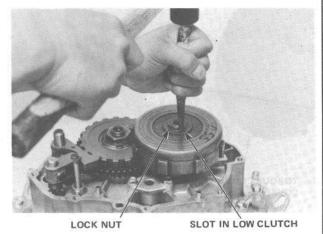
- 38. Install mainshaft holder.
- 39. Install a new mainshaft locknut and torque.

CAUTION: Locknut has left-hand threads.

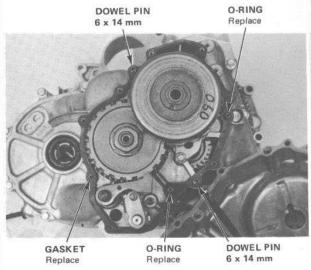


LOCKNUT 95 N·m (9.5 kg-m, 69 lb-ft) Replace CAUTION: Left-hand threads.

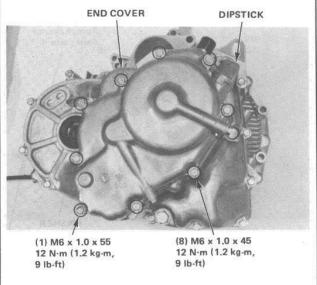
- Make sure low clutch rotates freely without rotating low gear.
- 41. Stake base of locknut into slot in low clutch.



Install new gasket, two new O-rings and two dowel pins.

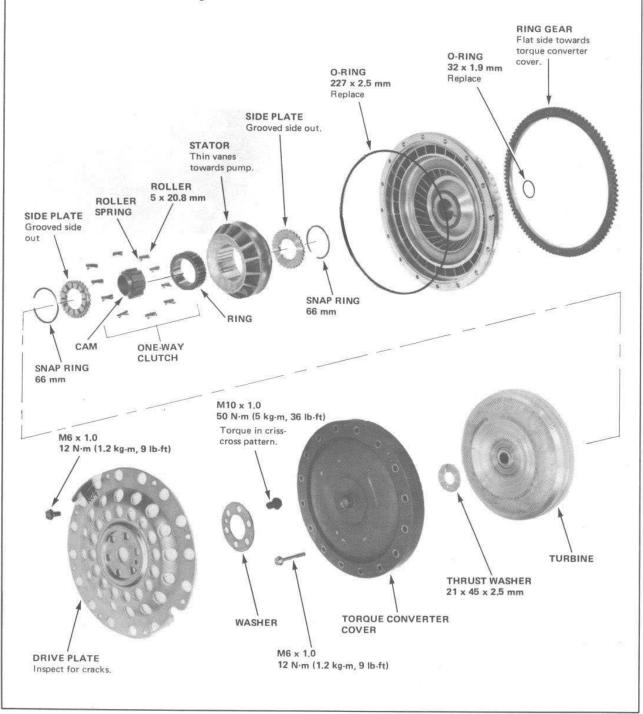


43. Install end cover.



#### Torque Converter Disassembly -

- Before disassembly, scribe an alignment mark across the edge of converter, so you can reassemble cover and pump in same position.
- Clean all parts in solvent, dry with compressed air, and blow out all passages.
- Inspect thrust surfaces for scoring and wear.



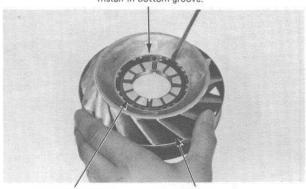


#### - Torque Converter Reassembly

1. Install first snap ring and side plate in stator.

NOTE: Stator side plates are identical and interchangeable.

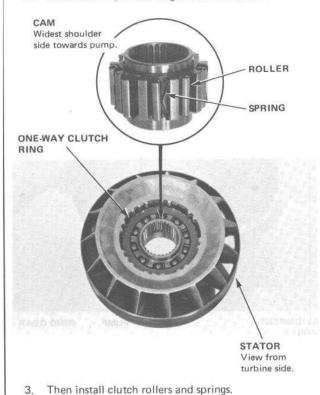
66 mm SNAP RING Install in bottom groove.



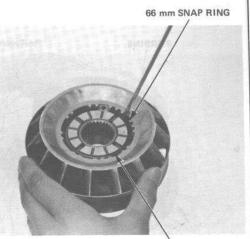
Install side plate with grooved side facing out.

STATOR Thinner vane side is torque converter pump side.

2. Install one-way clutch ring and cam in stator.



4. Install the seconds stator side plate and snap ring.



SIDE PLATE Grooved side out.

 Insert a stator shaft into stator from pump side and check operation of one-way clutch. Clutch should only turn in a counterclockwise direction.



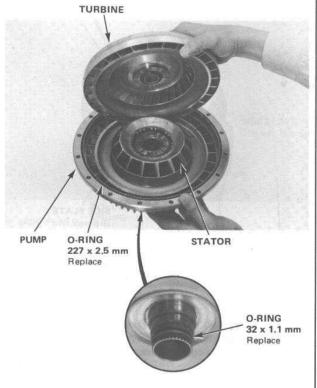


Thinner vanes on pump side of stator.

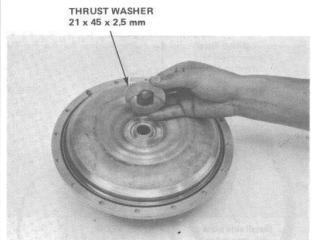
(cont'd)

## Torque Converter Reassembly (cont'd)

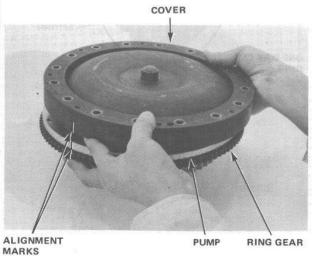
 Thoroughly clean grooves on both sides of pump for large and small O-rings. Then install new O-rings, and place turbine on top of pump.



7. Install 2.5 mm thrust washer in turbine.



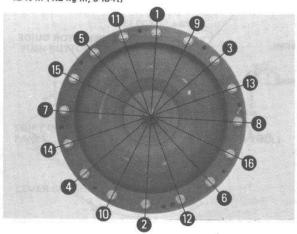
Install torque converter cover on pump, being careful to line up alignment marks.





Install ring gear with flat side towards torque converter cover, and torque cover bolts in sequence shown.

M6 x 1.0 12 N·m (1.2 kg·m, 9 lb-ft)



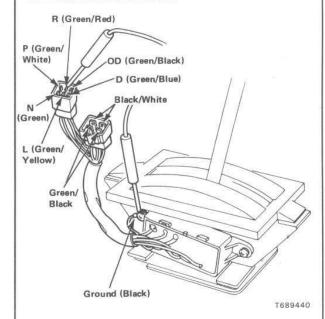
#### 10. After installation, check:

- Selector lever position (page 33-44).
- Line pressure (page 33-3).
- Drive clutch pressure (page 33-3).
- Stall rpm (page 33-3).

#### Neutral/Back-up Switch Check

Move selector lever to each position to check continuity of combined neutral safety (inhibitor) and back-up light swtich.

Replace the switch if there is no continuity between terminals shown on the chart.

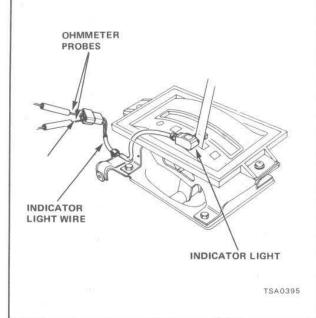


Shift		Wire	Color	
Lever	BI/W	G/BI	BI/W	G/BI
P	0		o	
R		0-		-0
N	0			

Shift		Wire Color														
Lever	ВІ	G/Y	G/Bu	G	G/R	G/W	G/BI									
Р	0-					-0										
R	0-			200	-0											
N	0-			-0												
D	0-		-0													
OD	0-						-0									
L	0	_0														

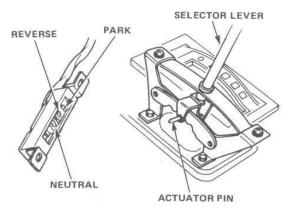
## **Hondamatic**

Check for continuity between indicator light connector terminals as shown. If there is no continuity, check for burned out bulb or open circuit.



#### Neutral/Back-up Switch Installation

- 1. Position the switch slider to neutral, as shown.
- 2. Shift selector lever to neutral.

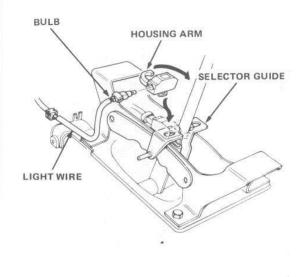


TSA0395

3. Tighten switch with two bolts and lockwashers.

## - Shift Indicator Light Check — F Shift Indicator Light Installation

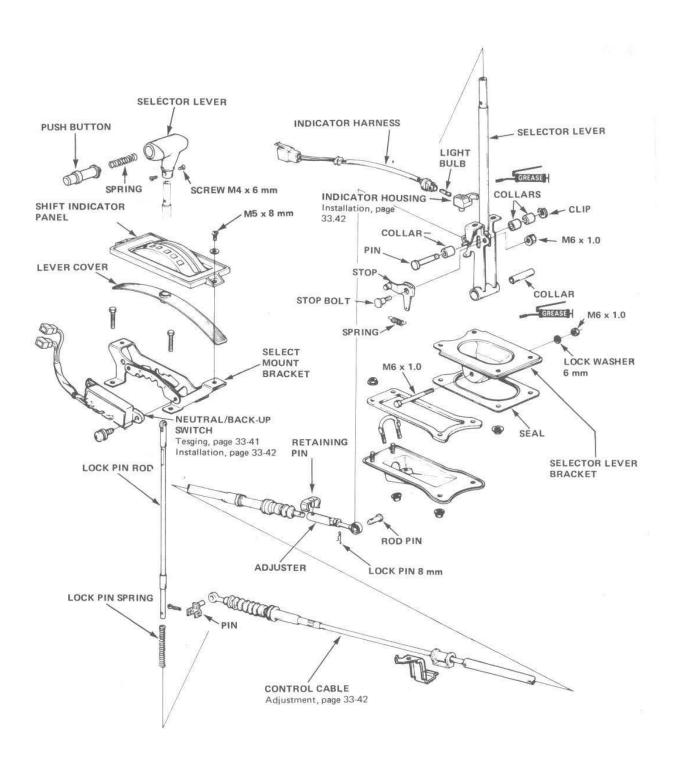
1. Install indicator light bulb in housing, and plug the connector into the wire harness.



T692658

2. Insert foot on light housing into slot in selector guide, then turn housing 90° so arm hooks around lever as shown.

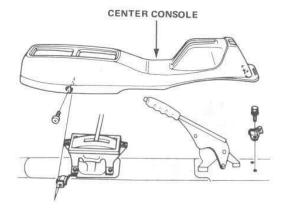




## **Hondamatic**

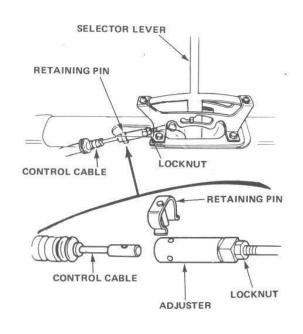
#### Control Cable Adjustment

- Start engine. Shift to reverse to see if reverse gear engages. If not, refer to troubleshooting on page 33-2.
- 2. With engine off, remove center console.

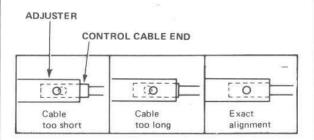


T692143

Shift to Reverse; then remove retaining pin from end of control cable.



Check that the hole in the cable end is perfectly aligned with the holes in the adjuster.



- If not perfectly aligned, loosen locknuts on adjuster and adjust the adjuster as required.
- 6. Tighten the locknuts.
- 7. Install control cable and secure with retaining pin.

NOTE: If you feel the pin binding as you reinstall it, the cable is still out of adjustment and must be readjusted again.

- 8. To check adjustment:
  - Attach pressure gauge to low clutch pack.
  - Start engine and shift into low gear while idling with brakes applied,
  - Pull the shift lever backwards as far as possible

     using reasonable force.
  - There should be no change in line pressure. If pressure drops, readjust the control cable and retest.
- Start engine and check shift lever in all gears. If any gear does not work properly, refer to troubleshooting on page 33-2.



#### Road Test -

After transmission is installed:

- Make sure the floor mat does not interfere with accelerator pedal travel. Fully depress accelerator pedal and check carburetor to make sure throttle level is fully opened.
- 2. Release accelerator pedal and check cable to be sure it has slight play or slack.
- Apply parking brake and check wheels. Move shift selector to \* (2) while depressing brake pedal: Start engine, depress accelerator pedal, and release it suddenly. Engine should not stall.
- Move selector lever to L (1), \* (2), OD and R positions, and check to be sure car moves normally in each gear. Check under acceleration, cruise and coast.
- On upgrade and downgrade, apply brakes to stop car. Move selector lever to P, then release brake pedal and see if park position will hold car.

NOTE: Always apply parking brake or brake pedal before shifting out of Park to another gear.

( ): Canada model

## **Differential**

lr	ıdex								*			•		٠		٠		•					34	- 2	/
Ir	spect	ion	/[	)	is	a	S	S	е	n	nk	ol	У	1.	i.e	. * :	e e	**		ē			34	-4	1
R	easse	mb	ly		2012		83					20					19		*		 69)		34	- 5	



## Differential (Hondamatic Transmission)

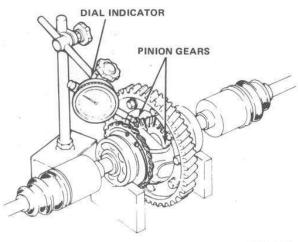
SEAL SNAP RING 72mm Replacement, page 33-25 Selection, page 34-8 DIFFERENTIAL ASSY Removal, page 33-25 Installation, page 34-7 TRANSMISSION HOUSING Removal, page 33-8 Installation, page 33-34 SEAL Replacement page 33-28 TORQUE CONVERTER HOUSING Removal, page 33-8 Assembly, page 33-30 GASKET Replace BALL BEARING Replacement, page 34-3 Inspect for free movement. PINION GEARS THRUST WASHER SIDE GEARS M10 x 1.25 CARRIER 103 N·m (10.3 kg-m, 74 lb-ft) Disassembly, page 34-4 Reassembly, page 34-5 Inspect for cracks. PIN 5 x 10 mm RING GEAR SNAP RING Removal/Installation, page 34-6 Inspect for excessive **PINION SHAFT** THRUST WASHER Inspect for scoring and burrs. PINION GEAR Backlash measurement, page 34-3 SPRING PIN Removal, page 34-4 SPEEDOMETER Installation, DRIVE GEAR page 34-5 Removal, page 34-4 BALL BEARING Installation, page 34-6 Replacement, page 34-3 Inspect for excessive wear Inspect for free movement. T689442



#### Backlash Inspection -

- Place differential assembly on V-blocks and install both axles.
- 2. Check backlash of both pinion gears.

Standard (New): 0.05-0.25 mm (0.002-0.010 in.)

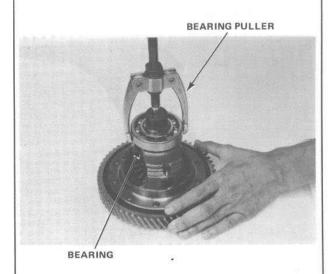


T689170X

If out of tolerance, disassemble differential and select new thrust washers as shown on page 34-5.

#### Bearing Replacement —

1. Remove bearings using a standard bearing puller.



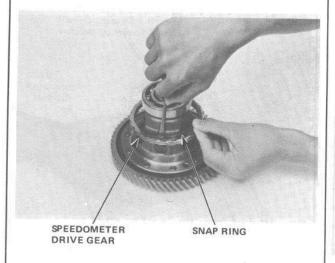
2. Install new bearings.



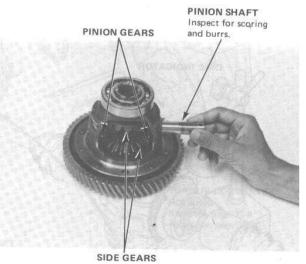
# Differential (Hondamatic Transmission)

## Differential Inspection/Disassembly

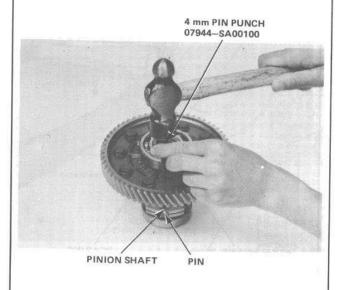
 Remove snap ring with screwdriver, then remove speedometer drive gear.



Remove pinion shaft, pinion gears, thrust washers and side gears.



2. Drive out pin with pin punch.



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



#### Differential Reassembly -

1. Install the side gears in differential carrier.

CAUTION: Coat all gears with molykote on all sides.

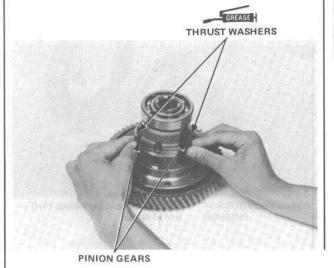


SIDE GEAR

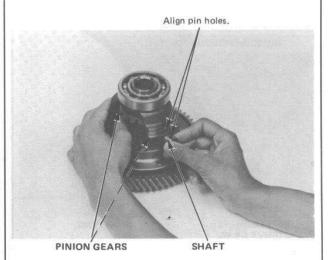
 Set pinion gears in place exactly opposite each other in mesh with side gears, then install a thrust washer behind each one. Washers must be of equal thickness.

#### **Thrust Washers**

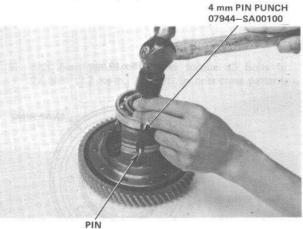
PART NUMBER	THICKNESS
41351-689-000	0.7 mm (0.028 in.)
41352-689-000	0.8 mm (0.031 in.)
41353-689-000	0.9 mm (0.035 in.)
41354-689-000	1.0 mm (0.039 in.)



- Rotate gears as shown until shaft holes in pinion gears line up with shaft holes in carrier.
- Insert pinion shaft and align pin holes in one end with matching hole in carrier.



5. Drive in pin with pin punch.



6. Check backlash of both pinion gears again.

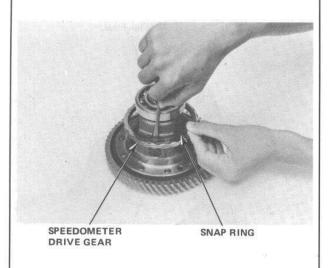
#### Standard (New): 0.05-0.25 mm (0.002-0.010 in.)

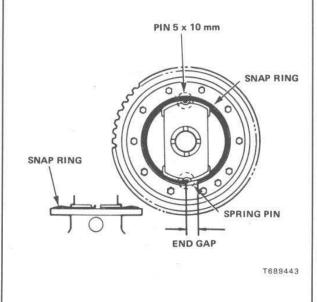
- If still out of tolerance, replace both pinion gears, then recheck backlash.
- If still out of tolerance, replace side gears, and re-check backlash.
- If still out of tolerance, replace carrier assembly.

(cont'd)

## Differential (Hondamatic Transmission)

7. Install speedometer drive gear with chamfered side towards carrier, then secure it with snap ring as shown.

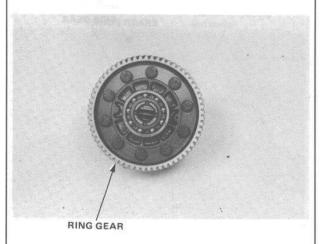




- Differential Reassembly (cont'd) - Ring Gear Removal/Installation -

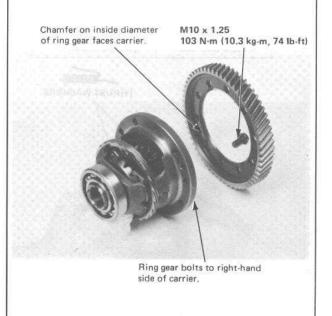
1. Remove ring gear and inspect teeth for excessive

CAUTION: The ring gear bolts have left-hand



2. Install ring gear. Torque bolts to 103 N·m (10,3 kg-m, 74 lb-ft).

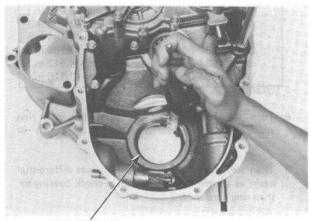
CAUTION: Ring gear bolts have left-hand threads.





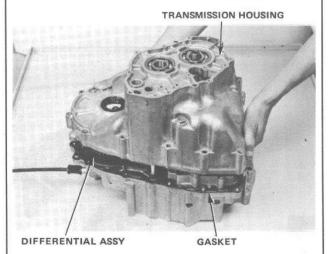
#### Installation

1. Install 72 mm snap ring for differential bearing in torque converter housing. Do not install seal from other side yet.

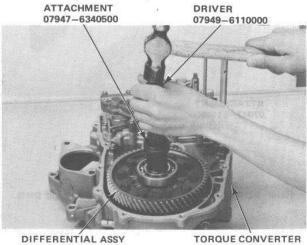


SNAP RING 72 mm

- 3. Install all transmission gear assemblies in torque converter housing. Refer to page 33-32.
- 4. Place new gasket on torque converter housing and install both dowel pins, then carefully lower the transmission housing into place.

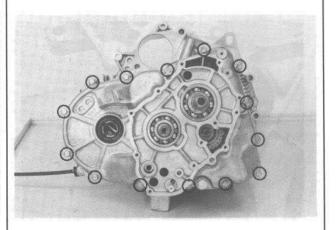


2. Tap on differential assembly with driver and attachment to seat snap ring in torque converter housing.



TORQUE CONVERTER HOUSING

5. Bolt housings together and torque all bolts to 27 N·m (2.7 kg-m, 20 lb-ft) in criss-cross pattern.



(cont'd)

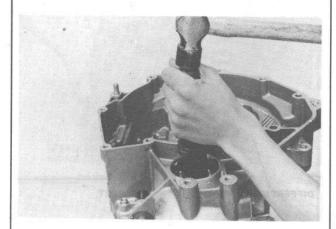
## Differential (Hondamatic Transmission)

Installation (cont'd) -

#### Side Clearance Measurement

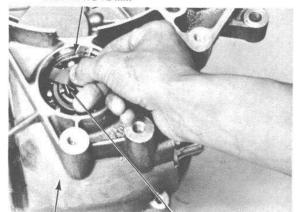
NOTE: If torque converter housing, transmission housing, differential carrier, or differential bearings were replaced, the differential side clearance must be measured.

Use driver and attachment to seat differential assembly in transmission housing.



Measure clearance between snap ring and outer race of bearing in torque converter housing.

SNAP RING 72 mm



TORQUE CONVERTER HOUSING

FEELER GAUGE

If out of limits, select new snap ring from following talbe and install.

Side Clearance: 0.15 mm (0.006 in.) Max.

THICKNESS
2.45 mm (0.096 in.)
2.55 mm (0.100 in.)
2.65 mm (0.104 in.)
2.75 mm (0.108 in.)
2.85 mm (0.112 in.)
2.95 mm (0.116 in.)

- Turn transmission over and seat new snap ring against torque converter housing as shown in step 2.
- Then turn transmission back over, seat differential again as shown in step 6, and re-check bearing-tosnap ring clearance.
- 10 Apply oil to a new differential seal and install it in torque converter housing with special tool.



ATTACHMENT 07947-6110500

Refer to page 33-34 for assembly of remaining parts.

## **Brake**

Master	Cylinder	٠	•	٠				٠		v		·	2	40-2
Check	Valve													40-4



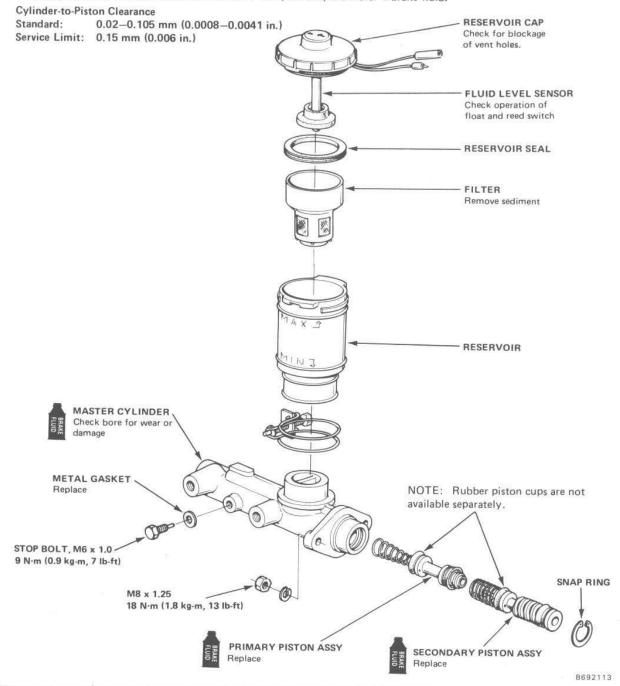
## Master Cylinder

## Disassembly/Inspection/Reassembly

CAUTION: Do not spill brake fluid on painted surfaces as it may damage finish; wash off immediately if spilled.

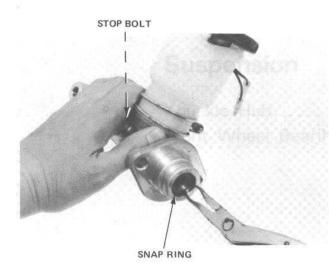
#### NOTE:

- Clean all parts in brake fluid and air dry.
- Blow out all passages with compressed air.
- Replace both piston assemblies whenever disassembled.
- During assembly lubricate all parts with brake fluid; use only DOT-3 or 4 brake fluid.



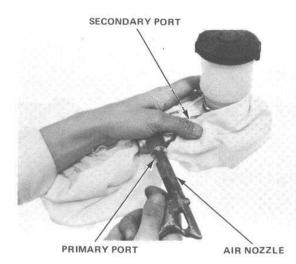


- 1. Remove snap ring.
- 2. Remove stop bolt.



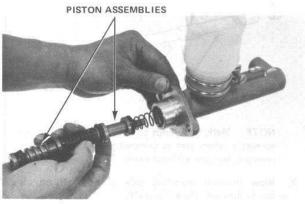
Wrap a shop rag over open end of cylinder, plug secondary port, then carefully remove pistons with compressed air.

WARNING Do not use high air pressure.



- Clean all parts thoroughly with BRAKE FLUID only.
- Lubricate new piston assemblies with brake fluid, then install in master cylinder.

NOTE: To ease assembly, rotate pistons while inserting.



 With pointed end of Cup Guide Tool inserted in end of secondary piston, press down on cylinder as shown, to compress primary piston spring, then install stop bolt.

NOTE: Replace piston stop bolt metal gasket with new one.



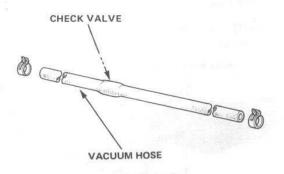
7. Install snap ring securely.

NOTE: Master cylinder push rod-to-piston clearance must be checkd and adjustments made if necessary, before installing master cylinder (page 40.17 of base manual).

## Check Valve

#### Testing -

 Disconnect both ends of brake booster vacuum hose; check valve is inside hose and cannot be removed.



NOTE: Mark hose ends so they can be reinstalled correctly when test is completed if hose ends are reversed, booster will not work.

- Blow through manifold side of hose. If no air passes through, the valve is OK.
- Blow through hose from booster side. If air passes through, the valve is OK.

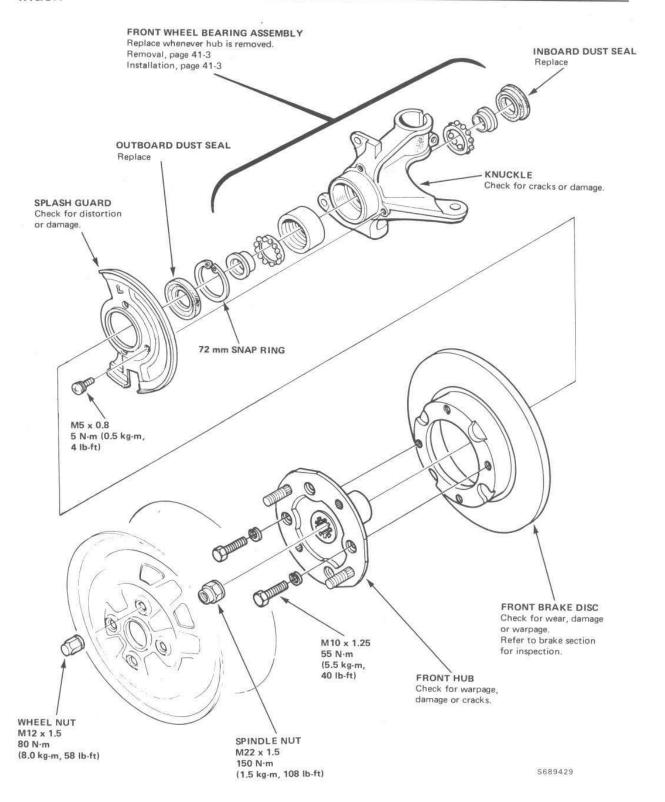
## Suspension

Knuckle/Hub	)										•	×	×	٠	×	٠	×	×	×	*		::	4	1	_	2
Front Wheel		E	3	e	3	a	r	i	n	C	1			×				20					4	1	-	3



## Knuckle/Hub

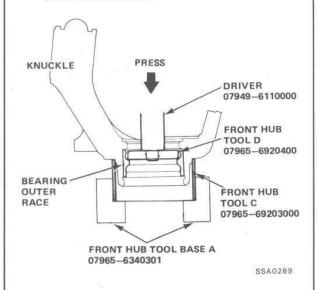
Index -



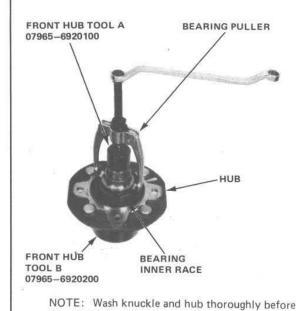


#### Removal -

- Rmove splash guard and 72 mm snap ring, then remove outboard bearing.
- Flip knuckle over and remove inboard dust seal, inboard bearing inner race and inboard bearing.
- Press bearing outer race out of knuckle uisng special tools as shown.



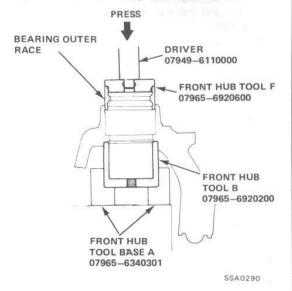
- 4. Remove outboard bearing inner race from hub using special tools and a bearing puller.
- 5. Then, remove outboard dust seal from hub.



#### Installation -

 Press bearing outer race into knuckle using special tools.

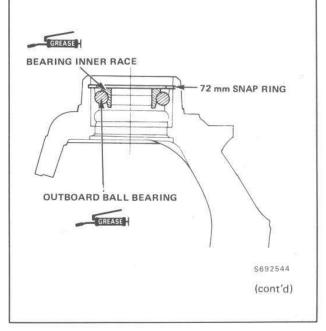
CAUTION: Maximum press load: 2.5 tons.



Install outboard ball bearing and its inner race in knuckle.

NOTE: Pack both wheel bearings with grease before installation. Also apply grease to outer race and both inner races.

3. Install 72 mm snap ring in knuckle groove securely.

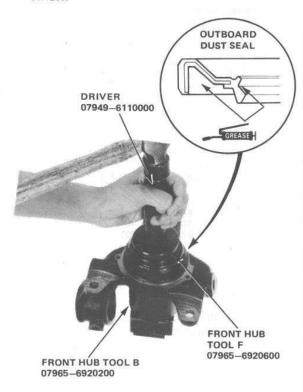


reassembly.

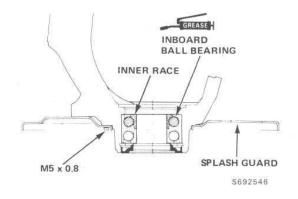
## Front Wheel Bearings

#### Installation (cont'd)

- Pack grease in groove and around lip of outboard dust seal.
- Drive outboard dust seal into knuckle, using special tools and hammer, until it is flush with knuckle surface.

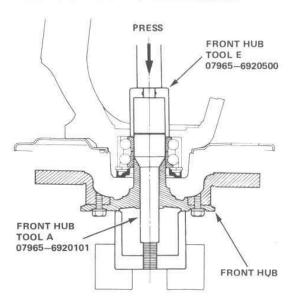


Instal splash guard, then turn knuckle upside down and install inboard ball bearing and its inner race.

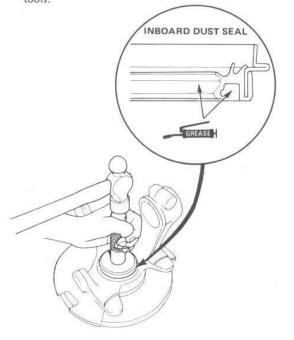


- 7. Bolt brake disc to front hub.
- Place front hub in special tool fixture, then set knuckle in position and apply downward pressure with hydraulic press.

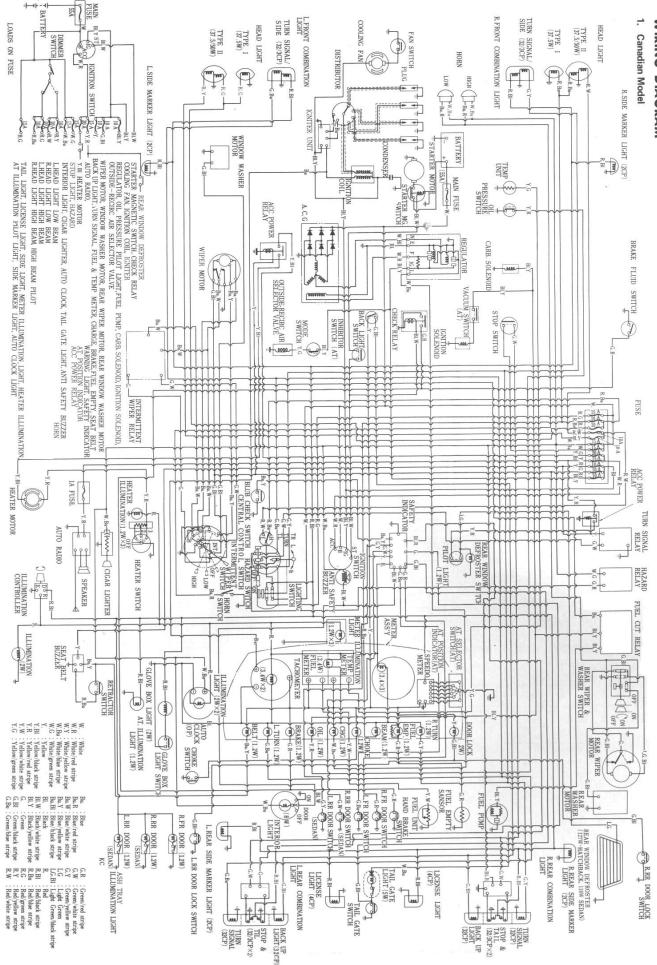
CAUTION: Maximum press load: 2.5 tons.

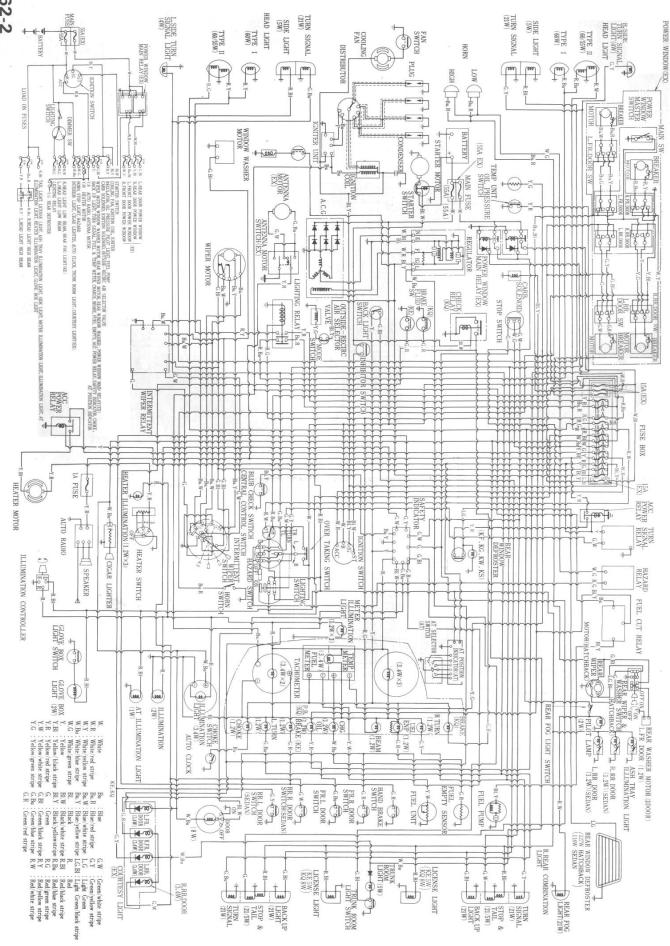


- Pack grease in groove and around sealing lip of inboard dust seal.
- Drive inboard dust seal into knuckle using special tools.



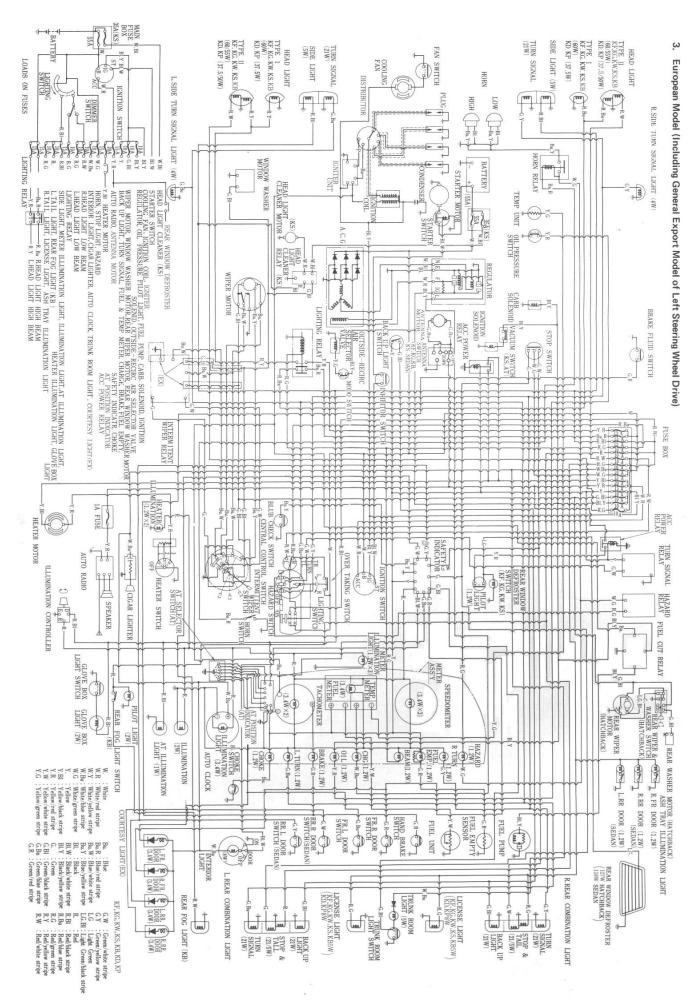
# Electrical System WIRING DIAGRAM

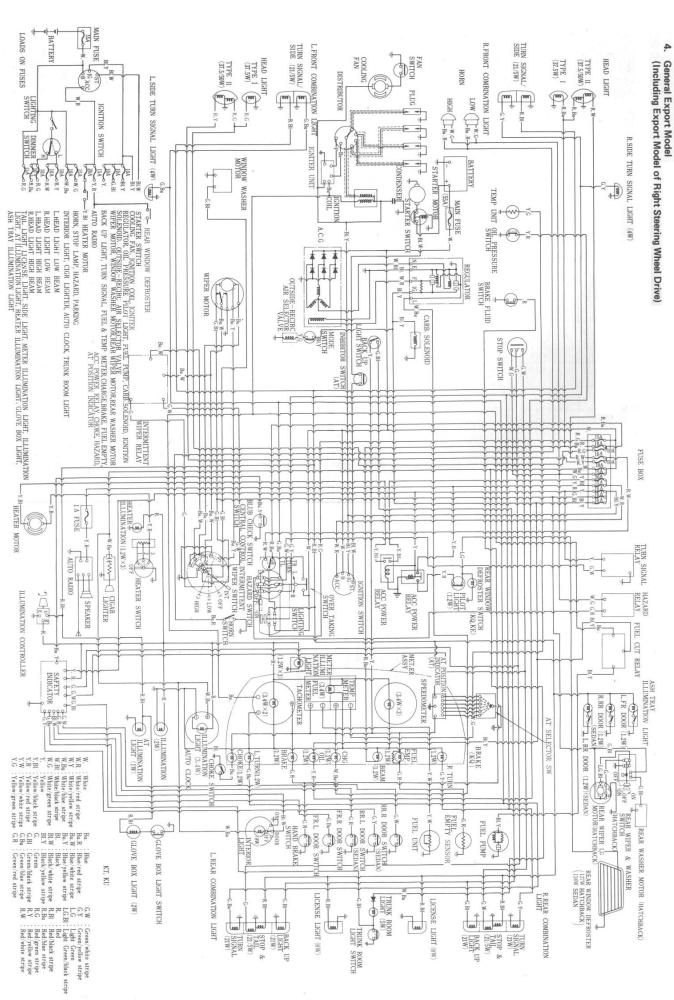




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**England and Australian Models** 







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⊕SM B3008202 PRINTED IN JAPAN