FICH MANUAL SERVICE MANUAL



88-91 NT650 HAWK" GT

C HONDA MOTOR CO., LTD: 1991

HOW TO USE THIS MANUAL

Follow the Maintenance Schedule (Section 3) recommendations to ensure that the vehicle is in peak operating condition and the emission levels are within the standards set by the U.S. Environmental Protection Agency and California Air Resources Board. Performing the first scheduled maintenance is very important. It compensates for the initial wear that occurs during the break-in period.

Sections 1 through 3 apply to the whole motorcycle, while sections 4 through 18 describe parts of the motorcycle, grouped according to location.

Find the section you want on this page, then turn to the table of contents on page 1 of that section.

Most sections start with an assembly or system illustration, service information and troubleshooting for the section. The subsequent pages give detailed procedures.

If you don't know the source of the trouble, go to section 20, Troubleshooting.

All information, illustrations, directions and specifications included in this publication are based on the latest product information available at the time of approval for printing. HONDA MOTOR CO., LTD. reserves the right to make changes at any time without notice and without incurring any obligation whatever. No part of this publication may be reproduced without written permission.

HONDA MOTOR CO., LTD. SERVICE PUBLICATIONS OFFICE

CONTENTS

	GENERAL INFORMATION	1
	LUBRICATION	2
	MAINTENANCE	3
	FUEL SYSTEM	4
	COOLING SYSTEM	5
	ENGINE REMOVAL/INSTALLATION	6
E E	CLUTCH/GEARSHIFT LINKAGE	7
ENGINE	ALTERNATOR/STARTER CLUTCH	8
	CYLINDER HEAD/VALVES	9
	CYLINDER/PISTON	10
	CRANKSHAFT/TRANSMISSION	11
s	FRONT WHEEL/SUSPENSION/STEERING	12
CHASSIS	REAR WHEEL/SUSPENSION	13
5	HYDRAULIC BRAKES	14
	BATTERY/CHARGING SYSTEM	15
AL	IGNITION SYSTEM	16
TRIC	ELECTRIC STARTER	17
ELEC	LIGHTS/METERS/SWITCHES	18
	WIRING DIAGRAM	19
Ī	TROUBLESHOOTING	20
	INDEX	21

21. INDEX

8-3

Engine Removal

Flywheel Installation

(California model only) 3-11

Removal

Evaporative Emission Control System

Battery/Charging System	15-1	Front wheel/Suspension/Steering	12-1
Battery	15-4	Brake Caliper	14-11
Bearing Replacement	13-9	Master Cylinder	14-8
Brake Fluid	3-13	Wheel	12-7
Replacement/Bleeding	14-3	Fuel System	4-1
Brake Light Switch	3-14	Line	3-4
Pad Wear	3-14	Fuel Pump	18-9
Pads/Discs	14-5	Relay	18-8
Pedal	14-17	Fuel Tank	4-3
System		Gearshift Linkage	7-8
Cable & Harness Routing	1-9	General Information	
Camshaft Installation	9-17	Safety	
Removal	9-3	Handlebar Switches	
Carburetor Assembly	4-9	Handlebars	
Choke	3-5	Headlight	
Disassembly	4-5	Aim	
Idle Speed	3-9	Bracket	
Installation	4-13	High Altitude Adjustment (U.S.A. Only)	
Removal	4-5	Hydraulic Brakes	
Separation/Assembly	4-12	Ignition System	
Synchronization	3-8	Coil	
Charging System	15-7	Switch/Meter	
Clutch/Gearshift Linkage	7-1	() '' () [[[[[[[[[[[[[[[[[[10000000
		System Inspection	
Clutch Diode	17-7	Timing	
Installation	7-11	Left Crankcase Cover Installation	
Removal	7-4	Removal	
System		Lights/Meters/Switches	
Control Cable Lubrication	2-10	Lubrication	
Coolant Replacement	5-3	Points	
Cooling System 3-1	Control of the Contro	Maintenance	
Crankcase		Schedule	
Assembly		Model Identification	
Breather	3-6	Muffler/Exhaust Pipe	
Separation	11-3	Neutral Switch	
Crankshaft/Transmission	11-1	Nuts, Bolts, Fasteners	
Crankshaft/Connecting Rod	11-4	Oil Filter Change	
Cylinder Head/Valves	9-1	Oil Pressure Check	
Cylinder/Piston	10-1	Switch	
Cylinder	10-2	Oil Pump/Relief Valve	
Compression	3-10	Pilot Screw Adjustment	
Cylinder Head Assembly	9-14	Piston	10-3
Cover Installation	9-20	Installation	10-5
Cover Removal	9-3	Ring Installation	10-5
Installation	9-15	Primary Drive Gear	7-10
Cylinder Heads	9-7	Pulse Generator	16-4
Installation	10-6	Purge Control Valve Inspection	
Drive Chain	3-12	(California model only)	4-15
Eccentric Bearing Carrier Installation	13-12	Radiator Coolant	3-9
Removal	13-6	Radiator/Cooling Fan	5-5
Electric Starter	17-1	Rear Wheel/Suspension	
Emission Control Information Labels	1-18	Rear Brake Caliper	
Systems	1-16	Master Cylinder	
Engine Removal/Installation	6-1	Rear Cowling	
Installation	6-5	Wheel	
Oil Change	2-3	Regulator/Rectifier	
Oil Level	2-3	Right Crankcase Cover Installation	
		•	

3-5

4-4

Case

(California model only) 4-16

Alternator 15-10

Alternator/Starter Clutch

Air Vent Control Valve Inspection

INDEX

Right Crankcase Cover Removal	7-3 13-25	Turn Signal Relay Valve Clearance Guide Replacement	18-10 3-7 9-11
(California model only) 3-11	, 4-17	Seat Inspection/Refacing	9-12
Service Information	A. S. GREE	Water Pump	5-7
Alternator/Starter Clutch	8-1	Wheels/Tires	3-17
Battery/Charging System	15-1	Wiring Diagram	19-1
Clutch/Gearshift Linkage	7-1	9 9	
Cooling System	5-1		
Crankshaft/Transmission	11-1		
Cylinder Head/Valves	9-1		
	10-1		
Cylinder/Piston Electric Starter	17-1		
	6-2		
Engine Removal/Installation	12-1		
Front Wheel/Suspension/Steering	4-1		
Fuel System	270-201		
Hydraulic Brakes	14-1		
Ignition System	16-1		
Lights/Meters/Switches	18-1		
Lubrication	2-1		
Maintenance	3-1		
Rear Wheel/Suspension	13-1		
Service Rules	1-1		
Shock Absorber			
Side Stand	1175		
Spark Plug	3-6		
Specifications	1-3		
Spindle			
Sprocket			
Starter Clutch	8-4		
Motor	17-3		
Relay Switch	17-6		
Steering Head Bearings	3-18		
Stem			
Suspension			
Swingarm			
Switches Location	100		
System Testing	5-2		
Temperature Gauge	18-8		
Sensor	18-7		
Thermostat	5-3		
Thermostatic Switch	18-7		
Throttle Operation	3-4		
Tools	1-7		
Torque Values	1-5		
Transmission	11-9		
Assembly/Installation	11-15		
Troubleshooting	45.0		
Battery/Charging System	15-3		
Clutch/Gearshift Linkage	7-2		
Cooling System	5-1		
Crankshaft/Transmission	11-2		
Cylinder Head/Valves	9-2		
Cylinder/Piston	10-1		
Electric Starter	17-1		
Front Wheel/Suspension/Steering	12-2		
Fuel System	4-2		
Hydraulic Brakes	14-2		
Ignition System	16-2		
Lights/Meters/Switches	18-2		
Lubrication	2-2		
Rear Wheel/Suspension	13-2		

21-2 (282)

1. GENERAL INFORMATION

GENERAL SAFETY	1-1	TOOLS	1-7
SERVICE RULES	1-1	CABLE & HARNESS ROUTING	1-9
MODEL IDENTIFICATION	1-2	EMISSION CONTROL SYSTEMS	1-16
SPECIFICATIONS	1-3	EMISSION CONTROL INFORMATION	
TORQUE VALUES	1-5	LABELS	1-18

GENERAL SAFETY

AWARNING

If the engine must be running to do some work, make sure the area is well-ventilated. Never run the engine in an enclosed area. The exhaust contains poisonous carbon monoxide gas that may cause loss of consciousness and lead to death.

AWARNING

The battery generates hydrogen gas which can be highly explosive. Do not smoke or allow flames or sparks near the battery, especially while charging it.

AWARNING

Inhaled asbestos fibers have been found to cause respiratory disease and cancer. Never use an air hose or dry brush to clean brake assemblies. Use an OSHA-approved vacuum cleaner or alternate method approved by OSHA designed to minimize the hazard caused by airborne asbestos fibers.

AWARNING

- The rear shock absorber contains nitrogen under high pressure. Do not allow fire or heat near the shock absorber.
- Before disposal of the shock absorber, release the nitrogen.

AWARNING

Gasoline is extremely flammable and is explosive under cetain conditions work in a well ventilated area with the engine stopped. Do not smoke or allow flames or sparks in the work area or where gasoline is stored.

AWARNING

The battery electrolyte contains sulfuric acid. Protect your eyes, skin and clothing. In case of contact, flush thoroughly with water and call a doctor if electrolyte gets in your eyes.

A WARNING

Do not remove the radiator cap when the engine is hot. The coolant is under pressure and severe scalding could result. The engine must be cool before servicing the cooling system.

CAUTION:

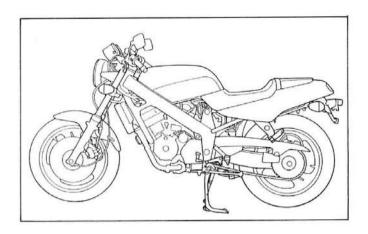
Used engine oil may cause skin cancer if repeatedly left in contact with the skin for prolonged periods. Although this is unlikely unless you handle used oil on a daily basis, it is still adviseable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.

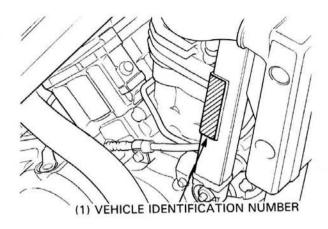
SERVICE RULES

- 1. Use genuine HONDA or HONDA-recommended parts and lubricants or their equivalents. Parts that don't meet HONDA's design specifications may damage to the vehicle.
- Use the special tools designed for this product to avoid damage and incorrect assembly.
- Use only metric tools when servicing the vehicle. Metric bolts, nuts, and screws are not interchangeable with English fasteners.
- Install new gaskets, O-rings, cotter pins, and lock plates when reassembling.
- 5. When tightening bolts or nuts, begin with the larger-diameter or inner bolts first. Then tighten to the specified torque diagonally in 1-5 steps, unless a particular sequence is specified.
- Clean parts in non-flammable or high flash point solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
- 7. After reassembly, check all parts for proper installation and operation.
- 8. Route all wires as shown on pages 1-9 through 1-14. Cable and Harness Routing.

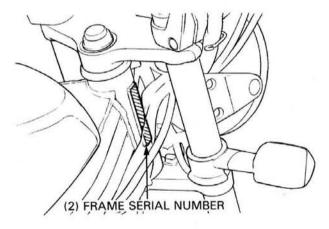
MODEL IDENTIFICATION

'88 SHOWN: After '88 Similar:

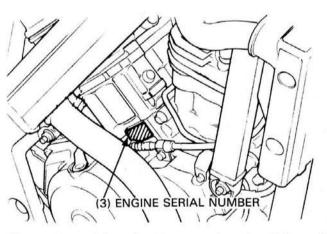




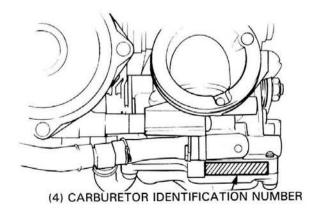
The vehicle identification number (VIN) is attached to the right side of the down tube.



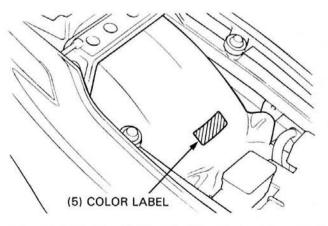
The frame serial number is stamped on the right side of the steering head.



The engine serial number is stamped on the right crankcase below the rear cylinder.



The carburetor identification numbers are on the carburetor body intake side.



The color label is attached to the rear fender under the seat.

When ordering a color coded part, always specify its designated color code.

SPECIFICATIONS

[]: California model

	ITE	M	SPECIFIC	ATIONS
CARBURE- TION	Carburetor type Identification number Pilot screw initial setting Float level		Constant Velocity dual carburetor VDGKA [VDGLA] See page 4-14 9.2 mm (0.36 in)	
DRIVE TRAIN	Clutch Transmission Primary reduction Final reduction Gear ratio I Gear ratio III Gear ratio IV Gear shift pattern		Cable operating, multi-plate, wet 5-speed 1.888 (36/68) 2.750 (16/44) 2.769 (13/36) 1.882 (17/32) 1.450 (20/29) 1.174 (23/27) 0.965 (29/28) Left foot operated return system, 1—N—2—3—4—5	
ELECTRICAL	Ignition Ignition timing "F" mark Full advance Starting system Alternator Battery capacity		Digitalized full transistor ignition 10° BTDC at idle 31° BTDC at 7,000 ± 200 rpm Starter motor 240 W/5,000 rpm 12 V 8 Ah MF Battery	
	Spark plug		NGK	ND
		Standard	DPR8EA-9	X24EPR-U9
	-	For cold climate (Below 5°C, 41°F)	DPR7EA-9	X22EPR-U9
		For extended high speed riding	DPR9EA-9	X27EPR-U9
	Spark plug gap Firing order Fuse/Main fuse TS Headlight (high/low beam) Tail/brakelight Front turn signal/running light Rear turn signal light Instrument light Oil pressure warning light High beam indicator Turn signal indicator Neutral indicator		0.80-0.90 mm (0.031-0.035 in) Front-(232°)-Rear-(488°)-Front 10 A x 6, 15 A x 1/30 A 12 V-60/55 W 12 V-2/32 cp x 2 SAE No. 1157 12 V-32/3 cp SAE No. 1034 12 V-32 cp SAE No. 1073 12 V-3.4 W x 1, 1.7 W x 2 12 V-3.0 W 12 V-3.0 W 12 V-3.0 W 12 V-3.0 W	
LIGHTS				

TORQUE VALUES

The torque specifications listed under "Engine" and "Frame" are for specific tightening points. If a specification is not listed, follow the standard torque values below.

STANDARD TORQUE VALUES

TYPE	TORQUE N·m (kg-m, ft-lb)	TYPE	TORQUE N·m (kg-m, ft-lb)
5 mm bolt, nut	5 (0.50, 3.6)	5 mm screw	4 (0.40, 2.9)
6 mm bolt, nut	10 (1.0, 7.2)	6 mm screw, 6 mm	
8 mm bolt, nut	22 (2.2, 16)	bolt with 8 mm head	9 (0.9, 6.5)
10 mm bolt, nut	35 (3.5, 25)	6 mm flange bolt, nut	12 (1.2, 9)
12 mm bolt, nut	55 (5.5, 40)	8 mm flange bolt, nut	27 (2.7, 20)
	600 HOVE - 100 MARCH - 100 MARCH 100	10 mm flange bolt, nut	40 (4.0, 29)

ENGINE

Item	Q'ty	Thread dia. (mm)	Torque N•m (kg-m, ft-lb)	Remark
Spark plug	4	12	14 (1.4, 10)	
Cylinder head cover bolt	4	6	10 (1.0, 7.2)	Special bolt
Camshaft holder bolt	6	8	23 (2.3, 17)	7
nut	2	8	23 (2.3, 17)	
6 mm bolt	4	6	10 (1.0, 7.2)	
Cylinder head nut	8	10	48 (4.8, 35)	
bolt	4	8	23 (2.3, 17)	
8 mm nut	4	8	23 (2.3, 17)	
6 mm bolt	2	6	10 (1.0, 7.2)	Socket bolt
Camshaft sprocket bolt	4	7	23 (2.3, 17)	NOTE 1
Clutch lock nut	1	18	130 (13.0, 94)	Staked nut.
Right crankcase cover bolt	15	6	10 (1.0, 7.2)	
Left crankcase cover bolt	9	6	10 (1.0, 7.2)	T
Oil filter cartridge	1	20	10 (1.0, 7.2)	Apply clean engine oil to the O-ring
Oil drain bolt	1	14	35 (3.5, 25)	
Neutral switch	1	10	12 (1.2, 9)	
Oil pressure switch	1		12 (1.2, 9)	NOTE 4
Primary drive gear bolt	1	12	90 (9.0, 65)	UBS bolt, NOTE 2
Flywheel bolt	1	12	130 (13.0, 94)	Left hand threads, NOTE 2
Starter one way clutch	6	8	30 (3.0, 22)	Torx bolt, NOTE 1
Oil control bolt	1	10	23 (2.3, 17)	Washing School School of
Oil pipe bolt	2	7	10 (1.0, 7.2)	Special bolt
Connecting rod cap nut	4	8	34 (3.4, 25)	
Crankcase bolt	14	8	27 (2.7, 20)	NOTE 2
	6	6	12 (1.2, 9)	NOTE 2
Shift drum stopper plate bolt	1	6 6	26 (2.6, 19)	NOTE 1
Insulator band screw	4	5	4 (0.4, 2.9)	NOTE 2
Timing hole cap	1	14	10 (1.0, 7.2)	NOTE 3
Crankshaft hole cap	14	30	15 (1.5, 11)	NOTE 3
Oil pump driven sprocket bolt	1	6	15 (1.5, 11)	NOTE 1
Valve adjusting screw lock nut	6	7	23 (2.3, 17)	
Cylinder stud bolt 8 mm	2	8	20-30 (2.0-3.0,	NOTE 1, Refer section 10.
10 mm	8	10	30-50 (3.0-5.0, 22-36)	NOTE 1, Refer section 10.

NOTE 1: Apply a locking agent to the threads.

NOTE 2: Apply clean engine oil to the threads.

NOTE 3: Apply molybdenum disulfide grease to the threads.

NOTE 4: Apply sealant to the threads.

GENERAL INFORMATION

FRAME

Item	Q'ty	Thread dia. (mm)	Torque N•m (kg-m, ft-lb)	Remark
Front engine bracket bolt	4	8	28 (2.8, 20)	
Front engine mounting bolt	1	10	40 (4.0, 29)	
Rear upper engine mounting bolt	1	10	40 (4.0, 29)	NOTE 2
-mounting bolt lock nut	1	22	55 (5.5, 40)	
-mounting bolt adjusting bolt	1	22	11 (1.1, 8)	
Gearshift arm bolt	1	6	12 (1.2, 9)	
Thermostatic switch	1	16	18 (1.8, 13)	NOTE 3
Exhaust pipe joint nut	4	8	27 (2.7, 20)	
Muffler band bolt	1	8	27 (2.7, 20)	
Muffler mounting bolt	2	8	27 (2.7, 20)	
Fuel tank mounting bolt : Front	1	6	12 (1.2, 9)	
: Rear	1	8	22 (2.2, 16)	
Fuel filter bracket bolt	1	6	22 (2.2, 16)	
Front brake master cylinder holder	2	6	12 (1.2, 9)	
Brake oil bolt	4	10	30 (3.0, 22)	2
Brake reservoir screw	4	4	1.5 (0.2, 1.4)	
Bleed valve	2	7	6 (0.6, 4.3)	
Front caliper mounting bolt	2	8	27 (2.7, 20)	Flange bolt
Front caliper pin bolt	2	10	28 (2.8, 20)	Trange Boit
Pad pin	2	10	17 (1.7, 12)	- T
Pad pin plug	2	10	2.5 (0.25, 1.8)	
Front brake disc retaining bolt	6	8	40 (4.0, 29)	NOTE 1
Rear brake reservoir mounting screw	1	6	9 (0.9, 6.5)	NOTE
Rear brake disc retaining bolt	4	8	35 (3.5, 25)	
-retaining bolt lock nut	1	8		
Rear caliper mounting bolt	2	8	9 (0.9, 7)	
Rear caliper pivot bolt	1	8	27 (2.7, 20)	
Brake torque rod bolt	2	10	22 (2.2, 16)	
Handlebar pinch bolt	2	8	35 (3.5, 25)	
Ignition switch mounting bolt	2	8	27 (2.7, 20)	
Fork pinch bolt (upper)	2	7	25 (2.5, 18)	
Fork pinch bolt (lower)	2	* management	11 (1.1, 8)	NOTE 2
Fork tube cap	2	10	50 (5.0, 36)	NOTE 2
Fork socket bolt	2	8	23 (2.3, 17)	NOTE 1
	1		17 (1.7, 12)	NOTE 1
Steering bearing adjustment nut	0.000	26	20 (2.0, 14)	NOTE 2
Steering stem nut Front axle bolt	1 1	24	105 (10.5, 76)	Flange nut
	1000	14	60 (6.0, 43)	
Front axle pinch bolt Rear wheel nut	4	8	22 (2.2, 16)	
	1	18	120 (12.0, 87)	0.1.1.
Eccentric bearing carrier lock nut	1	35	165 (16.5, 120)	Staked nut
Shock absorber upper mounting bolt	1	12	65 (6.5, 47)	Flange bolt
Shock absorber lower mounting bolt	1	10	45 (4.5, 33)	Cap nut
Shock absorber damper rod lock nut	1	14	62 (6.2, 45)	NOTE 1
Swingarm adjusting bolt	1	26	15 (1.5, 11)	
Swingarm adjusting bolt lock nut	1	26	65 (6.5, 47)	
Swingarm pivot nut	1	14	65 (6.5, 47)	
Eccentric bearing carrier pinch bolt	1	16	75 (7.5, 54)	
Sprocket mounting bolt	6	8	43 (4.3, 31)	
Foot peg bracket bolt	4	8	27 (2.7, 20)	
Sub-frame mounting bolt	4	10	40 (4.0, 29)	
Side stand pivot bolt	1	10	38 (3.8, 27)	
Side stand bracket bolt	2	8	28 (2.8, 20)	1999 W. 197 - 1991
Center stand mounting bolt	2	10	55 (5.5, 40)	Using a box wrench.
Ignition switch mounting bolt	2	6	25 (2.5, 18)	Torx bolt

NOTE 1: Apply a locking agent to the threads. NOTE 3: Apply sealant to the threads.

NOTE 2: Apply clean engine oil to the threads.

TOOLS

SPECIAL

Description	Tool number	Alternate tool	Tool number	Refer to section
Oil pressure gauge	07506-3000000	TNOTE 1		2
Oil pressure gauge attachment	07510-4220100			2
Oil filter wrench	07HAA-PJ70100			2
Vacuum gauge	07404-0030000	—Vacuum gauge	M937B-021-XXXXX	3
Valve adjusting wrench	07908-KE90000		07908-KE90100	
Vacuum/Pressure pump	A937X-041-XXXXX	Vacuum pump	ST-AH-260-MC7	4
		Pressure pump	ST-AH-255-MC7	4
Snap ring pliers	07914-3230001	—NOTE 1	AND COLUMNS IN SEC.	2, 13
, , ,				14
Steering stem socket	07916-3710100			12
Clutch center holder	07923-KE10000		07HGB-001000A	7
Bearing remover set	07936-3710001			11
-remover handle	07936-3710100			115(15)
-bearing remover set	07936-3710600			
-remover weight	07741-0010201	Remover		
Temover weight	07741-0010201	weight	07936-3710200	
Valve guide driver attachment		Weight	07000 0710200	
(IN)	07943-MF50100			9
Valve guide driver attachment	07545 WII 50100			
(EX)	07943-MF50200			9
Valve guide reamer, 5.5 mm	07545 - WII 50200	1	07984-200000B	
(IN)	07984-2000001	1 1	(U.S.A. only)	9
Valve guide reamer, 6.6 mm	07984-2000001		07984-ZE2000B	3
(EX)	07984-ZE20001		07304-2620008	9
Steering stem driver	07946-MB00000			12
Lock nut wrench	07908-KE90000			12
Bearing remover set	07946-MJ00000	1		13
-driver head	07946-MJ00200	1		13
-driver shaft	07946-MJ00100	— Driver handle	07949-3710001	
Spherical bearing driver	07946-KA30200	NOTE 2	07343-3710001	13
Ball race remover set	07946-KM90001*	Adjustable bear-	07736-A01000A	12
-driver attachment A	07946-KM90100	ing puller	(U.S.A. only)	12
-driver attachment B	07946-KM90200	-ing puller	(O.S.A. Only)	
-driver shaft assembly	07946-KM90300	1		
bearing remover A	07946-KM90401*	1		
-bearing remover B	07946-KM90500	1		
-assembly base	07946-KM90600			
Fork seal driver	07947-KA50100			
-driver attachment	07947-KF00100			12
Shock absorber compressor	07967-KE10000	1		13
Main bearing driver attachment	07HMF-MM90400			11
Oil seal driver	07965-KE80100	II C A		13
Digital multitester	KS-AHM-32-003	U.S.A. only		15
Christie battery charger	MC-1012/2	H I		
Honda battery tester	07GMJ-0010000	P.		

^{*:} New for this model.

NOTE 1: Equivalent commercially available in U.S.A.

NOTE 2: Not available in U.S.A.