

# 1. GENERAL INFORMATION

1

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

### ⚠ WARNING

*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.*

### ⚠ WARNING

*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.*

### ⚠ WARNING

*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.*

### ⚠ WARNING

- *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.*

### ⚠ WARNING

*Gasoline is extremely flammable and is explosive under certain 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.*

### ⚠ WARNING

*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.*

### ⚠ 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 advisable to thoroughly wash your hands with soap and water as soon as possible after handling used oil.*

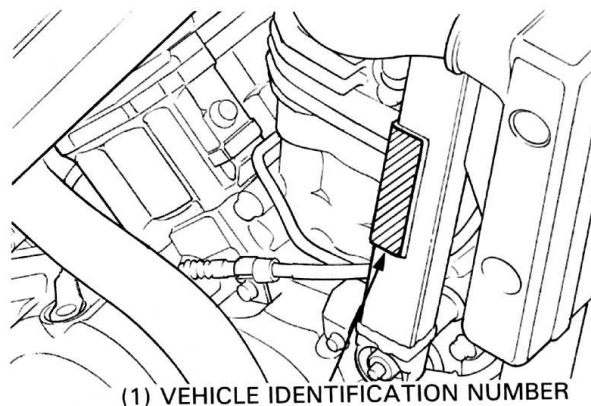
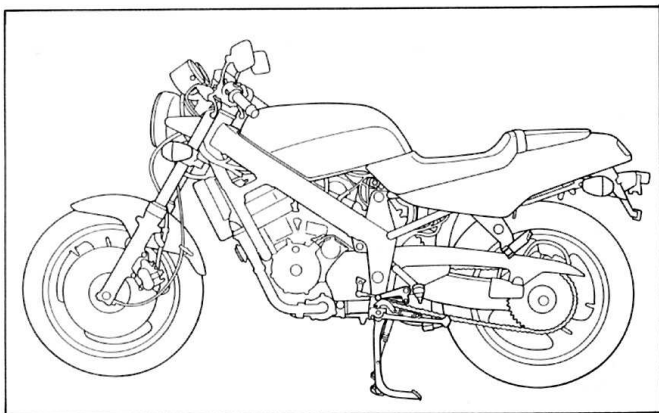
## SERVICE RULES

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.
2. Use the special tools designed for this product to avoid damage and incorrect assembly.
3. Use only metric tools when servicing the vehicle. Metric bolts, nuts, and screws are not interchangeable with English fasteners.
4. 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.
6. Clean parts in non-flammable or high flash point solvent upon disassembly. Lubricate any sliding surfaces before re-assembly.
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.

## GENERAL INFORMATION

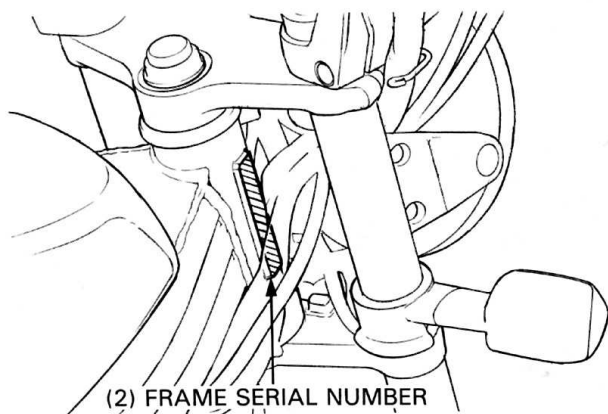
### MODEL IDENTIFICATION

'88 SHOWN: After '88 Similar:



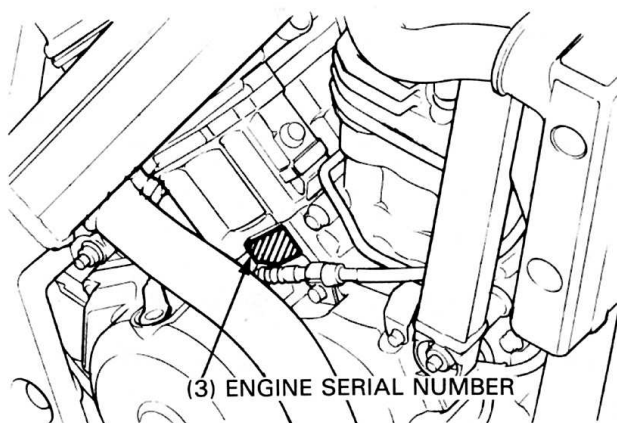
(1) VEHICLE IDENTIFICATION NUMBER

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



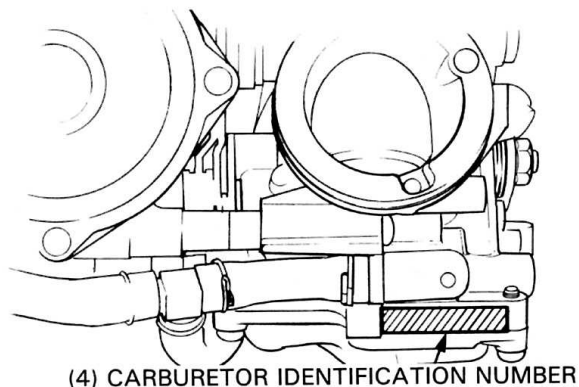
(2) FRAME SERIAL NUMBER

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



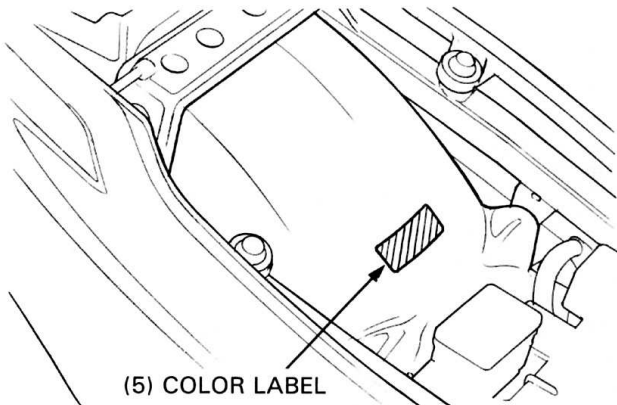
(3) ENGINE SERIAL NUMBER

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



(4) CARBURETOR IDENTIFICATION NUMBER

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



(5) COLOR LABEL

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

ITEM		SPECIFICATIONS	
DIMENSIONS	Overall length	2,085 mm (82.1 in)	
	Overall width	750 mm (29.5 in)	
	Overall height	1,075 mm (42.3 in)	
	Wheelbase	1,430 mm (56.3 in)	
	Seat height	778 mm (30.6 in)	
	Foot peg height	355 mm (14.0 in)	
	Ground clearance	155 mm (6.1 in)	
	Dry weight	168 kg (370.3 lb)	
	Curb weight	184 kg (405.6 lb)	
FRAME	Type	Twin tube diamond, aluminium	
	Front suspension, travel	Telescopic fork, 130 mm (5.12 in)	
	Rear suspension, travel	Swingarm, 120 mm (4.72 in)	
	Gross vehicle weight rating	291 kg (642 lb)	
	Maximum weight capacity	156 kg (345 lb)	
	Front tire size	110/80-17 57H Tubeless type	
	Rear tire size	150/70-17 69H Tubeless type	
	Cold tire pressure	Up to 90 kg (200 lb) load	Front Rear
		Up to maximum weight capacity	Front Rear
	Front brake, lining swept area		225 kPa (2.25 kg/cm <sup>2</sup> , 33 psi) 225 kPa (2.25 kg/cm <sup>2</sup> , 33 psi) 225 kPa (2.25 kg/cm <sup>2</sup> , 33 psi) 250 kPa (2.50 kg/cm <sup>2</sup> , 36 psi)
	Rear brake, lining swept area		Hydraulic single disc, 262 x 2 cm <sup>2</sup> (40.6 x 2 sq in)
	Fuel capacity		Hydraulic single disc, 200 x 2 cm <sup>2</sup> (31.0 x 2 sq in)
	Fuel reserve capacity		12.0 lit (3.18 US gal, 2.64 Imp gal)
	Caster angle		2.0 lit (2.10 US qt, 1.76 Imp qt)
	Trail length		27°
	Fork oil capacity		111 mm (4.37 in)
ENGINE	Type		Water cooled twin, 4-stroke SOHC (Single Over Head Camshaft) engine
	Cylinder arrangement		2 Cylinders 52° V
	Bore and stroke		79.0 x 66.0 mm (3.11 x 2.60 in)
	Displacement		647 cc (39.4 cu-in)
	Compression ratio		9.4 : 1
	Valve train		Silent, multi-link chain drive and OHC with rocker arms
	Oil capacity		2.8 lit (2.94 US qt, 2.46 Imp qt)
	Coolant capacity		2.3 lit (2.43 US qt, 2.02 Imp qt)
	Lubrication system		2.2 lit (2.32 US qt, 1.94 Imp qt)
	Air filtration		1.6 lit (1.51 US qt, 1.41 Imp qt)
	Cylinder compression		2.2 lit (2.32 US qt, 1.94 Imp qt)
	Intake valve		Forced pressure and wet sump
	Exhaust valve		Paper filter
	Valve clearance (cold)		1,324 ± 196 kPa (13.5 ± 2 kg/cm <sup>2</sup> , 192 ± 28 psi)
	Engine weight		10° BTDC —
	Idle speed		40° ABDC —
			40° BBDC —
			10° ATDC —
			at 1 mm lift
			0.15 ± 0.02 mm (0.006 ± 0.0008 in)
			0.20 ± 0.02 mm (0.008 ± 0.0008 in)
			80 kg (176 lb)
			1,200 ± 100 rpm

## GENERAL INFORMATION

[ ]: California model

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

## 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)
		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)	Special bolt
Cylinder head cover bolt	4	6	10 (1.0, 7.2)	
Camshaft holder bolt	6	8	23 (2.3, 17)	
nut	2	8	23 (2.3, 17)	
6 mm bolt	4	6	10 (1.0, 7.2)	Socket bolt
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)	
Clutch lock nut	1	18	130 (13.0, 94)	
Right crankcase cover bolt	15	6	10 (1.0, 7.2)	
Left crankcase cover bolt	9	6	10 (1.0, 7.2)	Apply clean engine oil to the O-ring
Oil filter cartridge	1	20	10 (1.0, 7.2)	
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)	
Flywheel bolt	1	12	130 (13.0, 94)	
Starter one way clutch	6	8	30 (3.0, 22)	
Oil control bolt	1	10	23 (2.3, 17)	Torx bolt, NOTE 1
Oil pipe bolt	2	7	10 (1.0, 7.2)	
Connecting rod cap nut	4	8	34 (3.4, 25)	
Crankcase bolt	14	8	27 (2.7, 20)	
	6	6	12 (1.2, 9)	NOTE 2
Shift drum stopper plate bolt	1	6	26 (2.6, 19)	
Insulator band screw	4	5	4 (0.4, 2.9)	
Timing hole cap	1	14	10 (1.0, 7.2)	
Crankshaft hole cap	14	30	15 (1.5, 11)	NOTE 3
Oil pump driven sprocket bolt	1	6	15 (1.5, 11)	
Valve adjusting screw lock nut	6	7	23 (2.3, 17)	
Cylinder stud bolt 8 mm	2	8	20—30 (2.0—3.0, 14—22)	
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)	NOTE 2
Front engine mounting bolt	1	10	40 (4.0, 29)	
Rear upper engine mounting bolt	1	10	40 (4.0, 29)	
— 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)	NOTE 3
Thermostatic switch	1	16	18 (1.8, 13)	
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)	
Brake reservoir screw	4	4	1.5 (0.2, 1.4)	Flange bolt
Bleed valve	2	7	6 (0.6, 4.3)	
Front caliper mounting bolt	2	8	27 (2.7, 20)	
Front caliper pin bolt	2	10	28 (2.8, 20)	
Pad pin	2	10	17 (1.7, 12)	
Pad pin plug	2	10	2.5 (0.25, 1.8)	NOTE 1
Front brake disc retaining bolt	6	8	40 (4.0, 29)	
Rear brake reservoir mounting screw	1	6	9 (0.9, 6.5)	
Rear brake disc retaining bolt	4	8	35 (3.5, 25)	
— retaining bolt lock nut	1	8	9 (0.9, 7)	
Rear caliper mounting bolt	2	8	27 (2.7, 20)	
Rear caliper pivot bolt	1	8	22 (2.2, 16)	
Brake torque rod bolt	2	10	35 (3.5, 25)	
Handlebar pinch bolt	2	8	27 (2.7, 20)	
Ignition switch mounting bolt	2	8	25 (2.5, 18)	
Fork pinch bolt (upper)	2	7	11 (1.1, 8)	NOTE 2
Fork pinch bolt (lower)	2	10	50 (5.0, 36)	
Fork tube cap	2	—	23 (2.3, 17)	
Fork socket bolt	2	8	17 (1.7, 12)	
Steering bearing adjustment nut	1	26	20 (2.0, 14)	
Steering stem nut	1	24	105 (10.5, 76)	Flange nut
Front axle bolt	1	14	60 (6.0, 43)	Staked nut
Front axle pinch bolt	4	8	22 (2.2, 16)	
Rear wheel nut	1	18	120 (12.0, 87)	
Eccentric bearing carrier lock nut	1	35	165 (16.5, 120)	
Shock absorber upper mounting bolt	1	12	65 (6.5, 47)	
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)	
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 2: Apply clean engine oil to the threads.

NOTE 3: Apply sealant to the threads.

## TOOLS

## SPECIAL

Description	Tool number	Alternate tool	Tool number	Refer to section
Oil pressure gauge	07506-3000000	NOTE 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		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			
—bearing remover set	07936-3710600			
—remover weight	07741-0010201	Remover weight	07936-3710200	
Valve guide driver attachment (IN)	07943-MF50100			9
Valve guide driver attachment (EX)	07943-MF50200			9
Valve guide reamer, 5.5 mm (IN)	07984-2000001		07984-200000B (U.S.A. only)	9
Valve guide reamer, 6.6 mm (EX)	07984-ZE20001		07984-ZE2000B	9
Steering stem driver	07946-MB00000			12
Lock nut wrench	07908-KE90000			12
Bearing remover set	07946-MJ00000			13
—driver head	07946-MJ00200			
—driver shaft	07946-MJ00100	Driver handle	07949-3710001	
Spherical bearing driver	07946-KA30200	NOTE 2		13
Ball race remover set	07946-KM90001*	Adjustable bearing puller	07736-A01000A (U.S.A. only)	12
—driver attachment A	07946-KM90100			
—driver attachment B	07946-KM90200			
—driver shaft assembly	07946-KM90300			
—bearing remover A	07946-KM90401*			
—bearing remover B	07946-KM90500			
—assembly base	07946-KM90600			
Fork seal driver	07947-KA50100			
—driver attachment	07947-KF00100			
Shock absorber compressor	07967-KE10000			13
Main bearing driver attachment	07HMF-MM90400			11
Oil seal driver	07965-KE80100			13
Digital multitester	KS-AHM-32-003	U.S.A. only		15
Christie battery charger	MC-1012/2			
Honda battery tester	07GMJ-0010000			

\*: New for this model.

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

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



## GENERAL INFORMATION

### COMMON

Description	Tool number	Alternate tool	Tool number	Refer to section
Float level gauge	07401—0010000	NOTE 1	07933—3290001	4
Lock nut wrench, 17 x 27 mm	07716—0020300			7
Gear holder	07724—0010100	NOTE 2		7
Flywheel holder	07725—0040000	NOTE 1		8
Torx bit	07703—0010100			8, 18
Rotor puller	07733—0020001			8
Valve guide remover, 5.5 mm	07742—0010100			9
Valve guide remover, 6.6 mm	07742—0010200			9
Attachment, 24 x 26 mm	07746—0010700			13
Attachment, 32 x 35 mm	07746—0010100			13
Attachment, 42 x 47 mm	07746—0010300			11, 12,
				13
Attachment, 52 x 55 mm	07746—0010400			11, 12
Attachment, 62 x 68 mm	07746—0010500			13
Pilot, 15 mm	07746—0040300			13
Pilot, 17 mm	07746—0040400			13
Pilot, 20 mm	07746—0040500			11, 12
Pilot, 25 mm	07746—0040600			11
Extension bar	07716—0020500	NOTE 1		12
Lock nut wrench, 30 x 32 mm	07716—0020400			12
Pilot, 35 mm	07746—0040800			13
Pilot, 40 mm	07746—0040900			13
Pilot, 22 mm	07746—0041000			11, 13
Bearing remover shaft	07746—0050100			13
Bearing remover head, 20 mm	07746—0050600			12
Driver	07749—0010000			11, 12,
				13
Valve spring compressor	07757—0010000	Valve spring compressor	07957—3290001	9

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

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

### VALVE SEAT CUTTERS (NOT AVAILABLE IN U.S.A.)

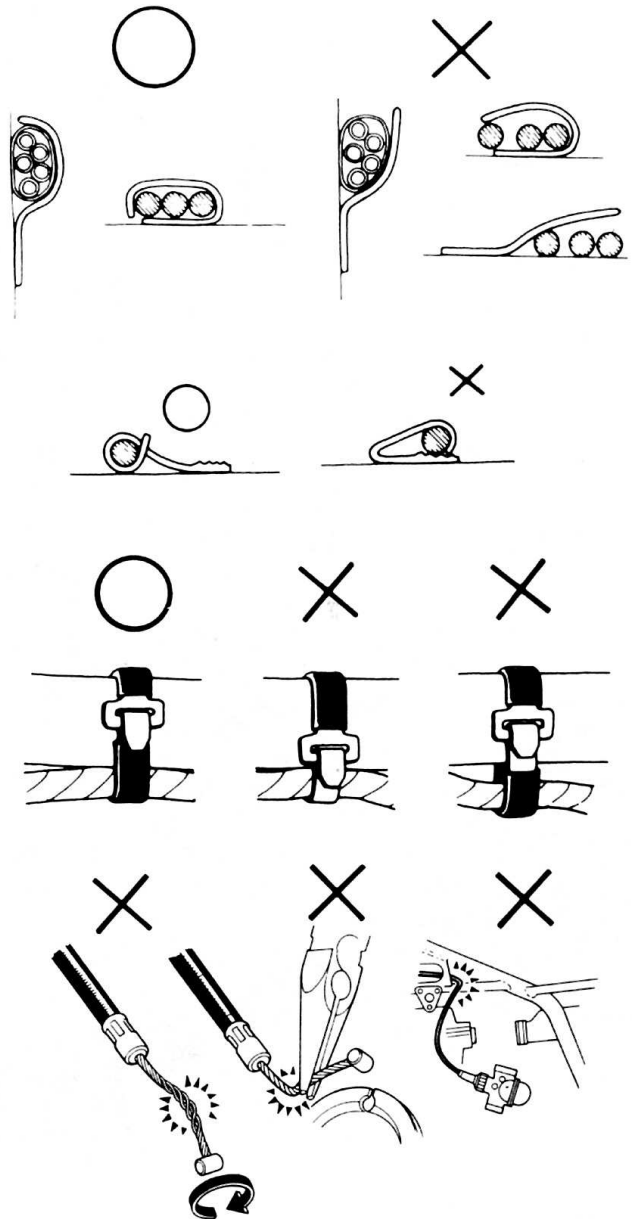
Description	Tool number	Remarks
Valve seat cutter, 27.5 mm	07780—0010200	45° IN
Valve seat cutter, 35 mm	07780—0010400	45° EX
Valve seat cutter, 28 mm	07780—0012100	32° IN
Valve seat cutter, 35 mm	07780—0012300	32° EX
Valve seat cutter, 30 mm	07780—0014000	60° IN
Valve seat cutter, 37.5 mm	07780—0014100	60° EX
Cutter holder, 5.5 mm	07781—0010101	Valve guide IN
Cutter holder, 6.6 mm	07781—0010201	Valve guide EX



## CABLE & HARNESS ROUTING

Note the following when routing cables and wire harnesses:

- A loose wire, harness or cable can be a safety hazard. After clamping, check each wire to be sure it is secure.
- Do not squeeze wires against welds or clamps.
- Secure wires and wire harnesses to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wires or wire harnesses.
- Route harnesses so they are neither pulled taut nor have excessive slack.
- Protect wires and harnesses with electrical tape or a tubing if they contact a sharp edge or corner. Clean the attaching surface thoroughly before applying tape.
- Do not use a wire or harness with broken insulation. Repair by wrapping them with protective tape or replace them.
- Route wire harnesses to avoid sharp edges or corners. Also avoid the projected ends of bolts and screws.
- Keep wire harnesses away from the exhaust pipes and other hot parts.
- Be sure grommets are seated in their grooves properly.
- After clamping, check each harness to be certain that it does not interfere with any moving or sliding parts.
- After routing, check that the wire harnesses are not twisted or kinked.
- Wire harnesses routed along the handlebars should not be pulled taut, have excessive slack, be pinched by or interfere with adjacent or surrounding parts in all steering positions.
- Do not bend or twist the control cables.  
Damaged control cables will not operate smoothly and may stick or bind.



O: CORRECT  
X: INCORRECT

