

CBR250FOUR (MC14)



NH-138
NO.1

CBR250FG (MC14-1000014~1015467)



NH-1
NO.2



PB-1270-U
NO.3

CBR250FG-YA (MC14-1000060~1015767)

CBR250R(H) (MC17) 1987



NH-206-M
NO.4



NH-196
NO.5

CBR250RH (MC17-1000006~1025449)



NH-196
NO.6

CBR250R(J) (MC19) 1988



PB-184M-U
NO.7

CBR250RJ (MC19-1000006~1023630)



PB-190
NO.8



NH-193P
NO.9

CBR250RJ (MC19-1011439~1023630)

CBR250R(K) (MC19) 1989



PB-184M-U
NO.10



NH-193P
NO.11

CBR250RK (MC19-1050006~1067954)



NH-193P
NO.12

CBR250RR(L) (MC22) 1990-1991



NH-193P
NO.1



PB-184M
NO.2

CBR250RRL (MC22-1000001~1020576)



PB-193P
NO.3



PB-184M
NO.4

CBR250RR(N) (MC22)



NH-193P
NO.5

CBR250RRN (MC22-1050001~1056770)

1992-1993



NH-237P
NO.6

CBR250RR(R) (MC22)



NH-196
NO.7

CBR250RRR (MC22-1100001~)

1994-1996*



R-210C
NO.8

*Any CBR250RR(R) Bought new after 1996 was actually built in 96 and labelled the CBR250RR(R-II)

CBR250R,RR

INDEX

Maintenance Information	1
Inspection Adjustment	2
ENGINE	
Oil lubrication system	3
Fuel system	4
Cooling system	5
Engine attach/detachment	6
Cylinder head valve	7
Crank case	8
Cylinder, piston, crankshaft	9
Clutch, AC generator	10
Gear shift linkage	11
Transmission	12
FRAME	
Front wheel suspension steering	13
Rear wheel, brake, suspension	14
Braking system (Disc Brake)	15
Exhaust pipe, rear fender	16
ELECTRICAL SYSTEM	
Battery, alternator	17
Ignition system	18
Self starter system	19
Light, meters, switches	20
SUPPLEMENTAL	
CBR250R(H)	21
CBR250R(J)	22
CBR250R(K)	23
CBR250R(L)	24
CBR250R(R)	25

CBR250R,RR

- **Preface**

This service manual includes the service information for Honda CBR250FOUR and CBR25OR. However, only the part which differs from 250FOUR is described for 25OR. Amended points from CBR25OR(H) are described for CBR25OR(J), so for CBR25OR(K). Differences such as the outlook are not mentioned as they do not affect the maintenance.

Section 1 - includes general cautions for maintenance work. Please use this manual after reading the section.

Section 2 - describes about procedures for inspection and adjustments. Please conduct regular inspection by following the procedure.

Section 3 - and onwards describes procedures for inspection and assembly/disassembly of individual parts.

In the first pages of each sections, you find the figures, maintenance information, troubleshooting charts for your convenience.

Please note:

The contents may change without prior notice due to modifications of the model.

• **SERVICE INFORMATION**

Location of Serial number and color labels	1-1	Exclusive / Common tools	1-16
Specifications	1-2	Applying Oil	1-19
Summary of structure	1-3	Circuit Diagram	1-20
General cautions	1-6	Wiring	1-21
Tightening Torque	1-14	Troubleshooting	1-24

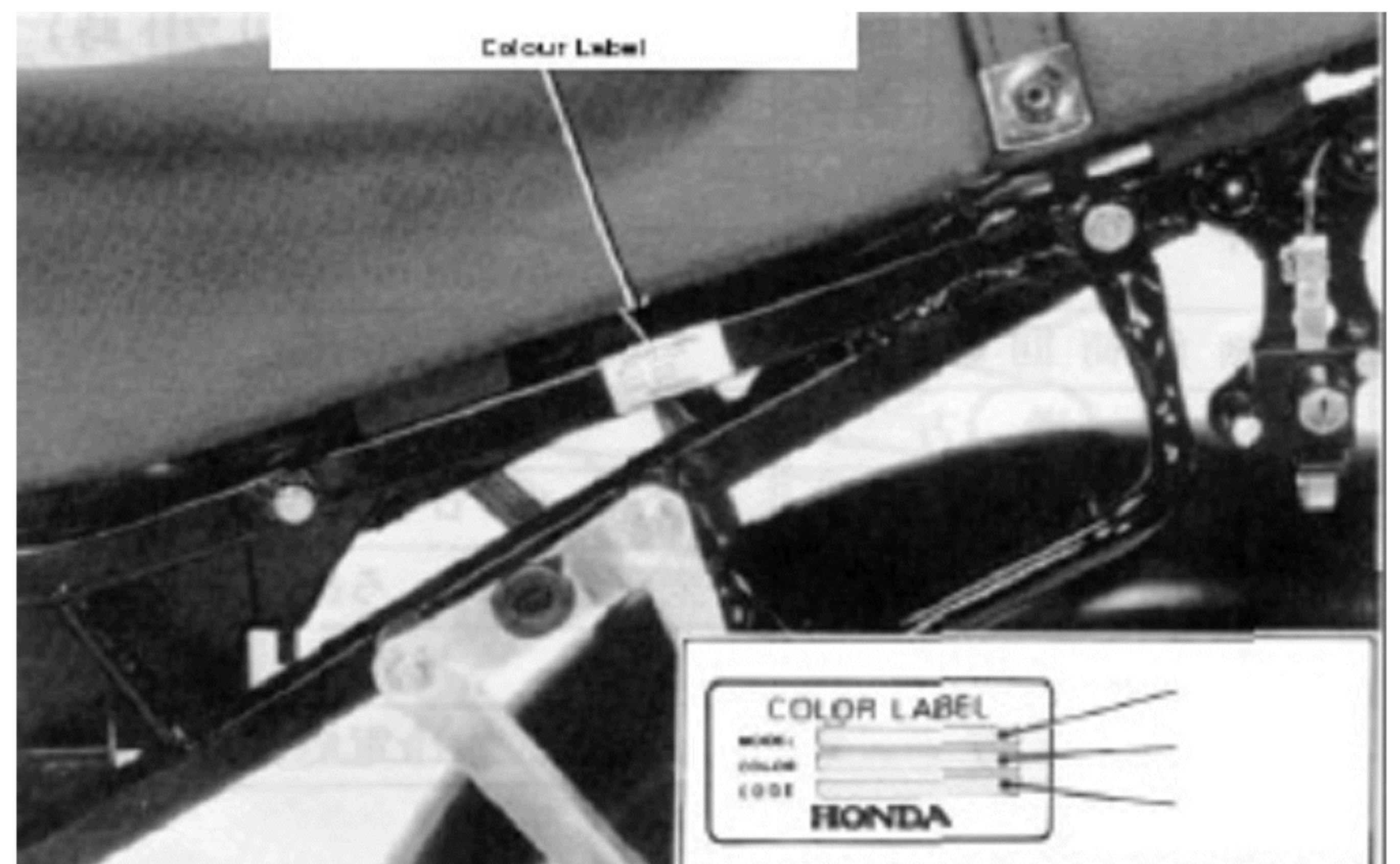
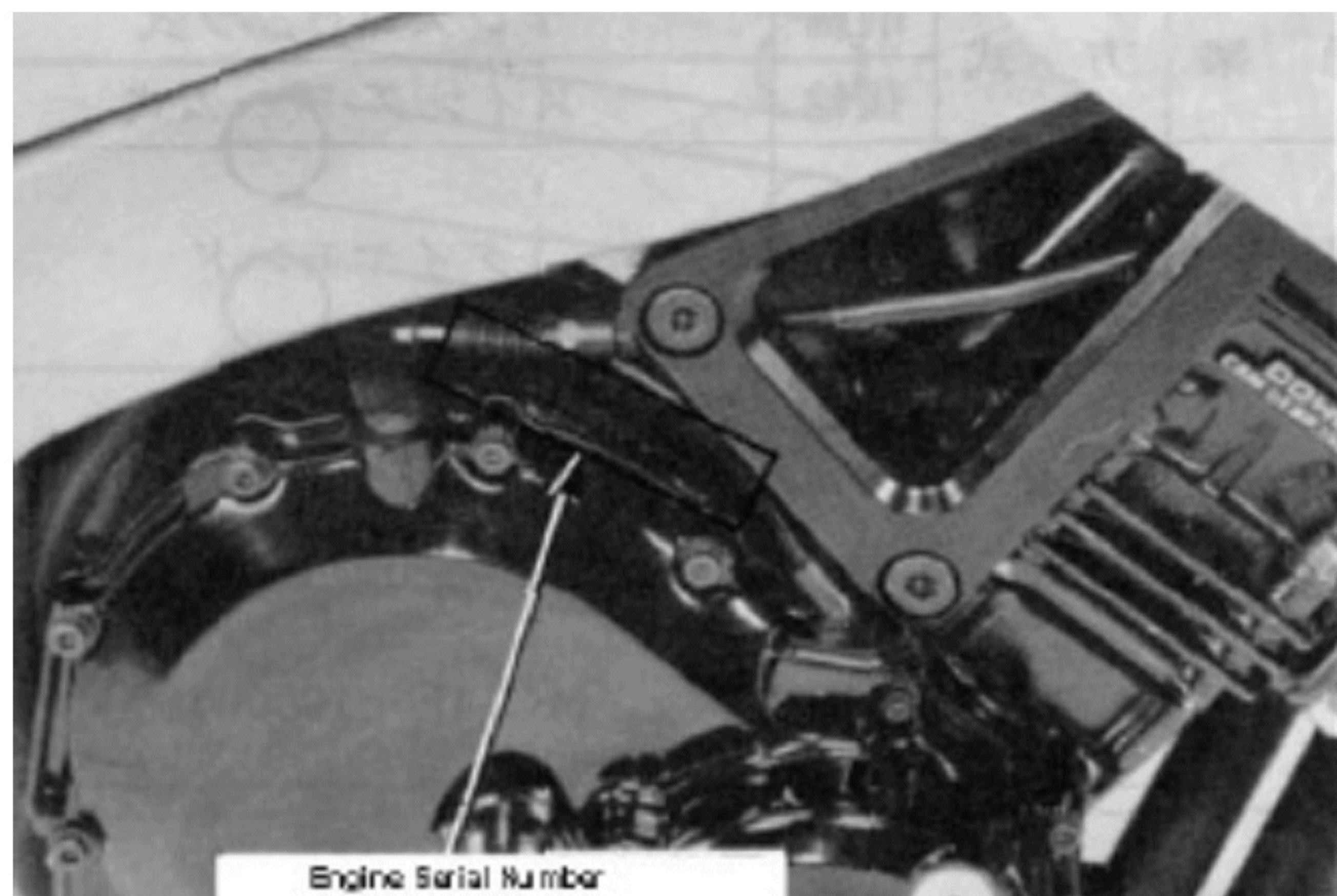
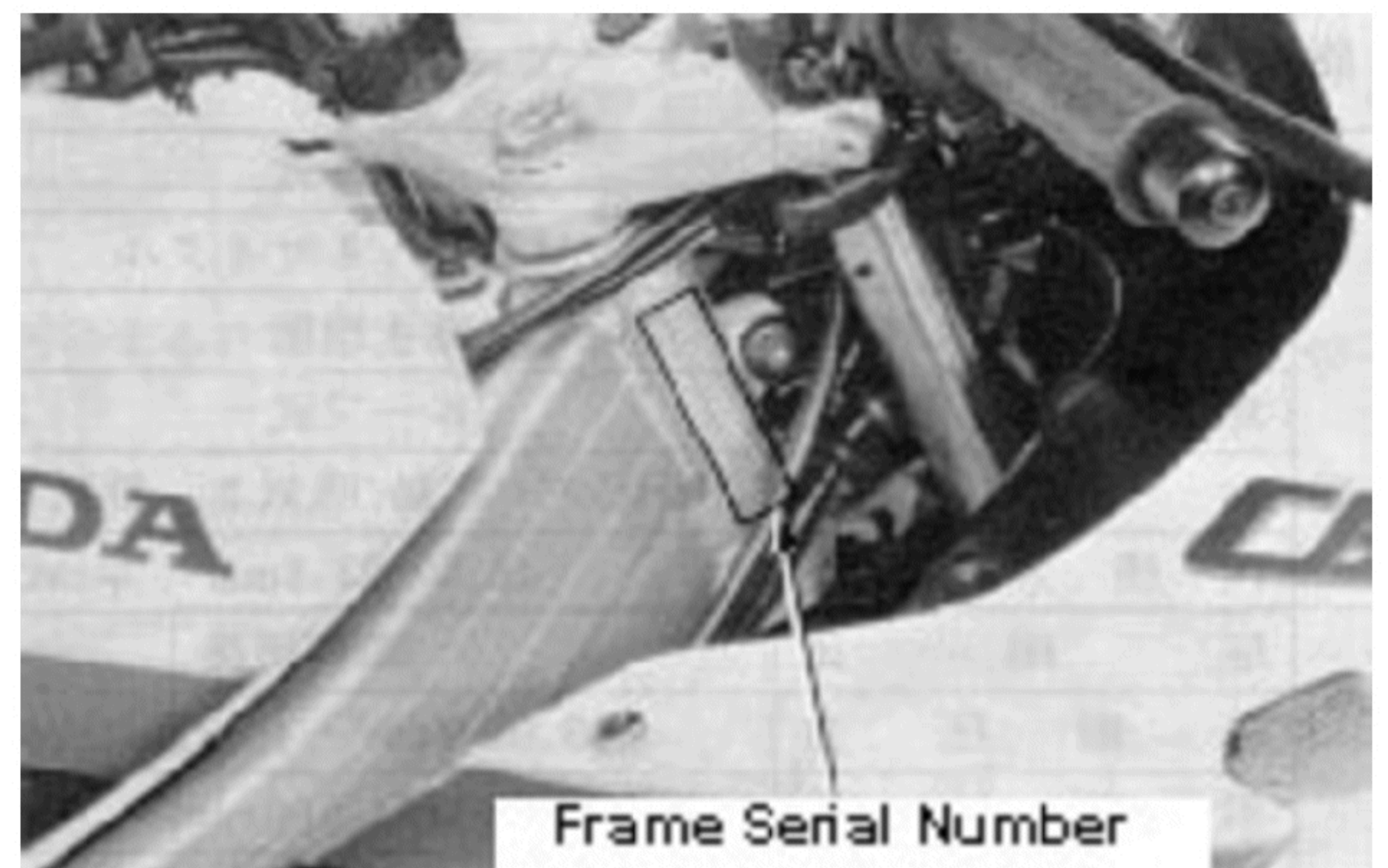
• **LOCATION OF SERIAL NUMBER AND COLOR LABELS**

Top right figure:----- Frame Serial Number Label

Bottom left figure:----- Engine Serial Number Label

Bottom right figure:----- Colour label

When ordering the colored part, use the model name and the color code.



● Specifications

Item		Specification		
Model Code		Honda MC14		
Length		2.000mm		
Width		0.685m		
Height		1.120m		
Wheel-base		1.370m		
Power-plant model		MC14E		
Total displacement		0.249 litres		
Fuel type		Petrol		
Vehicle empty weight	Front Axle	77 kg		
	Rear Axle	76 kg		
	Total	153 kg		
Maximum capacity		2 people		
Vehicle gross weight	Front Axle	97 kg		
	Rear Axle	166 kg		
	Total	263 kg		
Tyre	Front	100/80 – 17 52H		
	Rear	130/70 – 17 62H		
Minimum clearance		0.140m		
Braking Distance		14.0m (50km/h)		
Minimum turning radius		2.6m		
Powerplant	Starter type		Electric	
	Type of engine		Petrol 4 Stroke	
	Cylinders		2 abreast	
	Configuration		Inline 4 cylinder	
	Valve operation		DOHC	
	Bore X Stroke		48.5 x 33.8mm	
	Compression ratio		11.0	
	Compression Pressure		13.0kg/cm ² - 400rpm	
	Maximum output		45 PS / 14,500 rpm	
	Maximum torque		2.5 kg-m / 10,500 rpm	
	Valve operation time	Intake Valve	Open	10° BTDC (1mm lifted)
			Close	40° ABDC (1mm lifted)
		Exhaust Valve	Open	30° BBDC (1mm lifted)
			Close	10° BTDC (1mm lifted)
	Valve Clearance	In	0.16mm (cold)	
		Out	0.23mm (cold)	
	Idle Speed		1,500rpm	
	Lubrication		Forced Pressure	
	Oil filter		Total flow	
	Oil pump		Trochoid Rotor	
Oil capacity		2.7 litres		
Cooling System		Liquid cooled		

● Specifications

Item		Specification		
Fuel system	Air filter	Type	Viscous Paper	
	Carburetor	Fuel Capacity	14.0 litres	
		Carburetor	VG01	
		Piston size	28mm	
		Venturi diameter	25mm	
		Ignition Timing	20° BTDC / 1,500 rpm	
		Spark Plug	NGK	C8EH – 9, C9EH - 9
			ND	U24FE 9, U27FE 9
		Plug Gap	0.8 – 0.9 mm	
	Battery	12V 8AH		
	Clutch	Type	Multi-wet plate	
		Operation	Mechanical	
	Transmission	Primary Reduction	2.966	
		Type	Constant Mesh	
		Gear ratio	1st	2.733
2nd			2.000	
3rd			1.590	
4th			1.333	
5th			1.153	
6th	1.035			
Reduction : First	Gear type	Chain		
	Reduction ratio	3.071		
Tyre Pressure	Front	26° 00'		
	Rear	97mm		
Steering system	Steering stem angle	Left	35°	
		Right	35°	
Braking system	Front	Hydraulic Disc		
	Rear	Hydraulic Disc		
Shock absorbing system	Suspension	Front wheel	Telescopic fork	
		Rear wheel	Swing arm	
Frame	Type	Diamond		

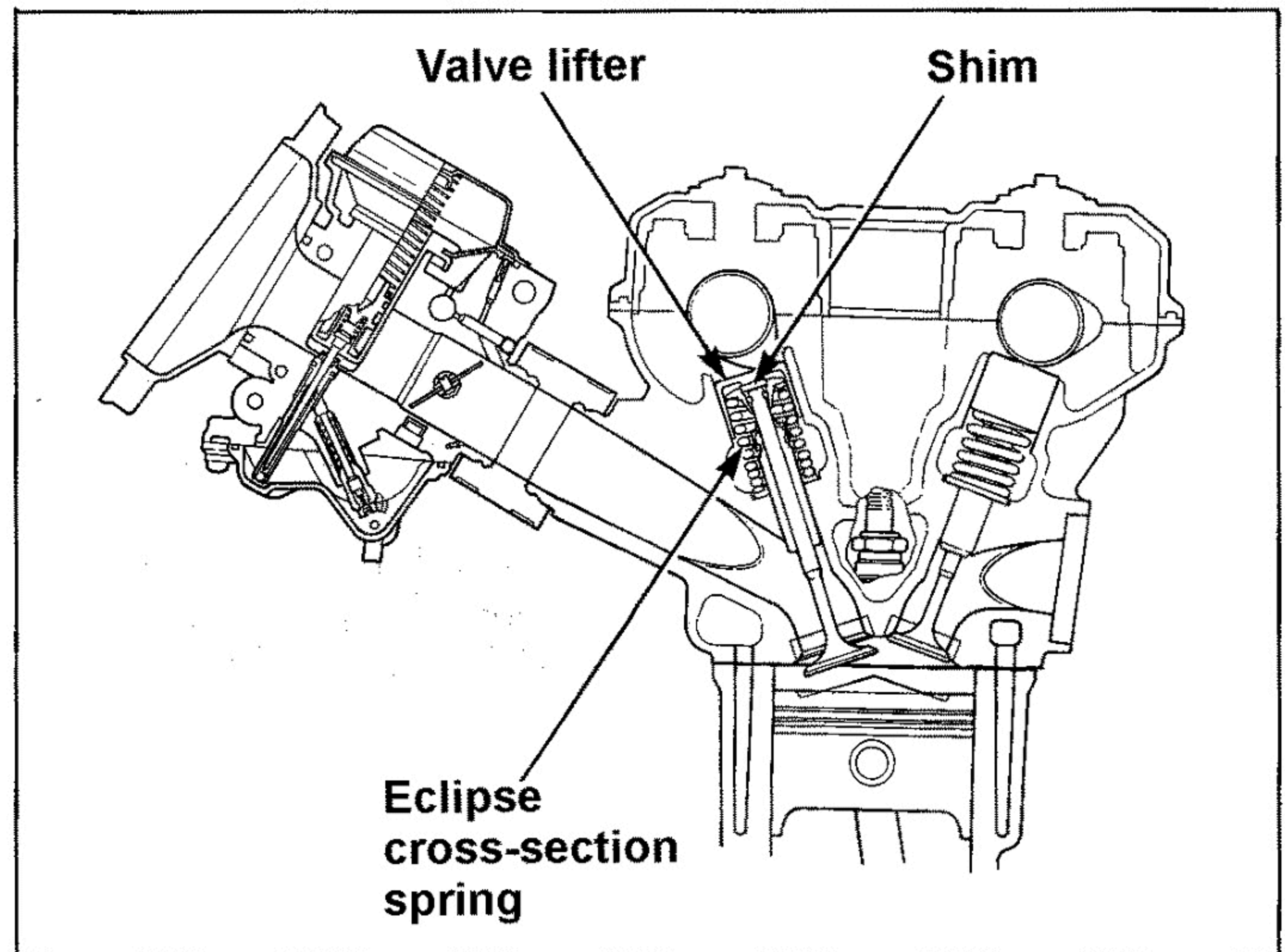
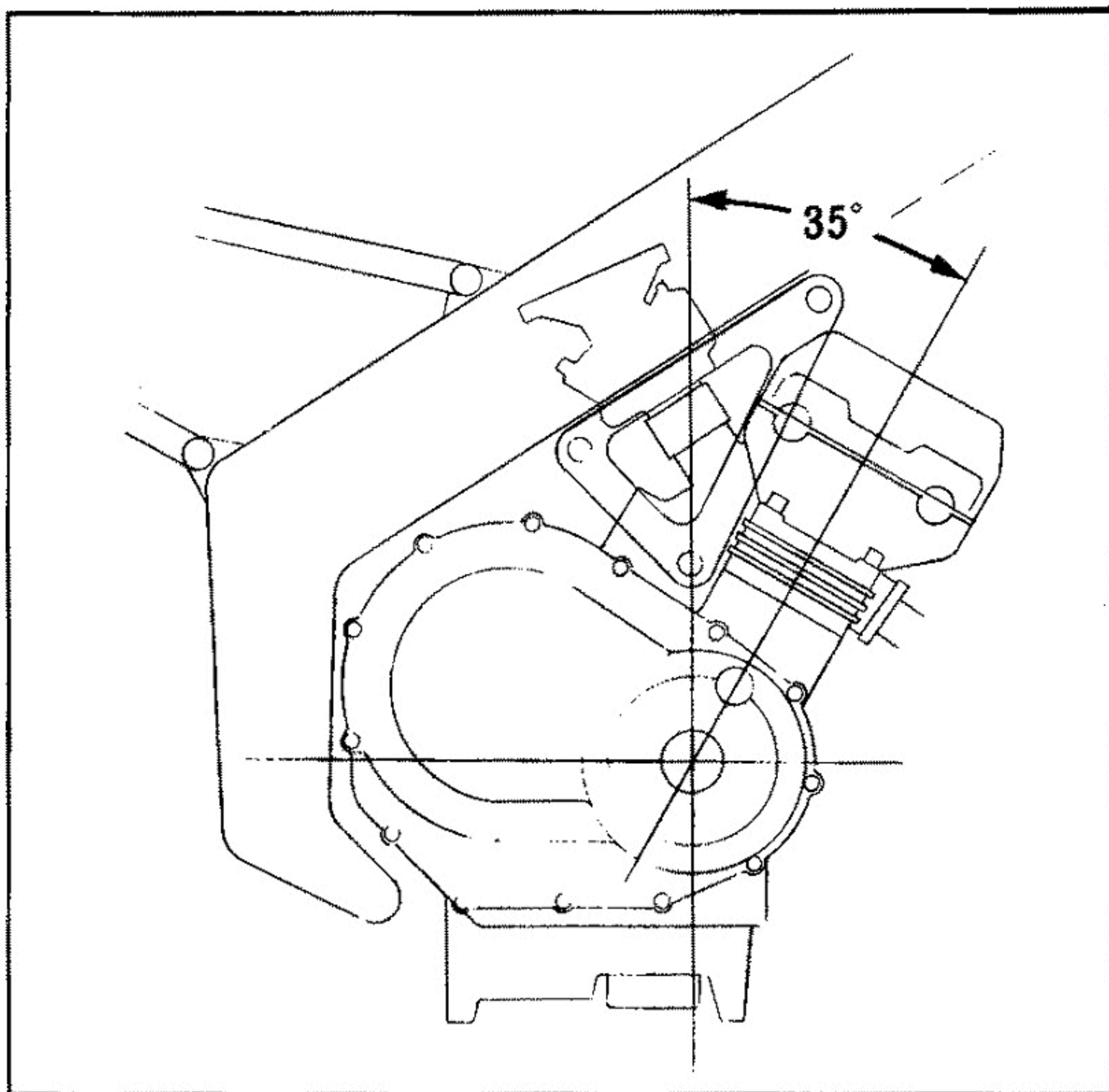
Structure Description

Engine

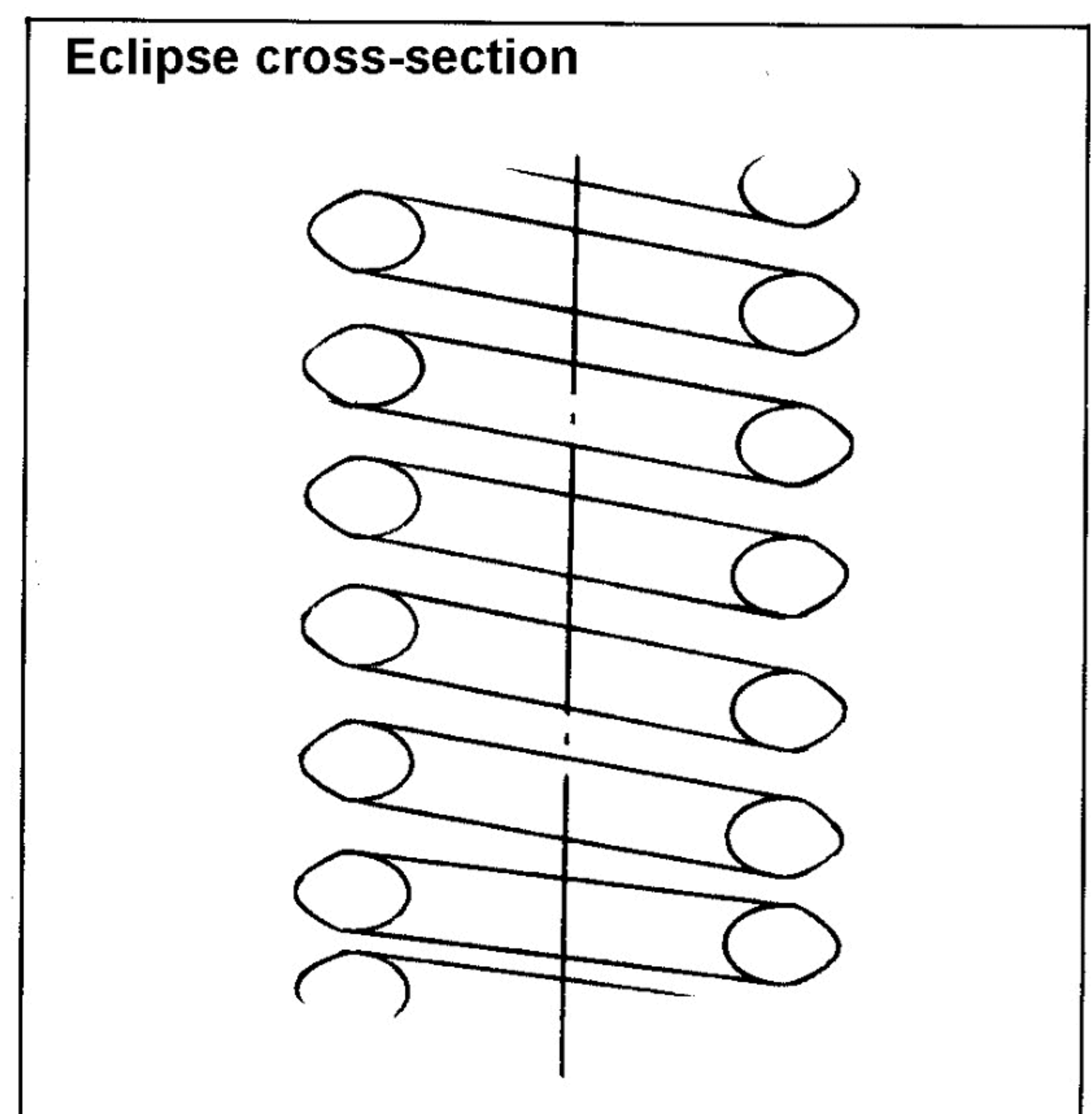
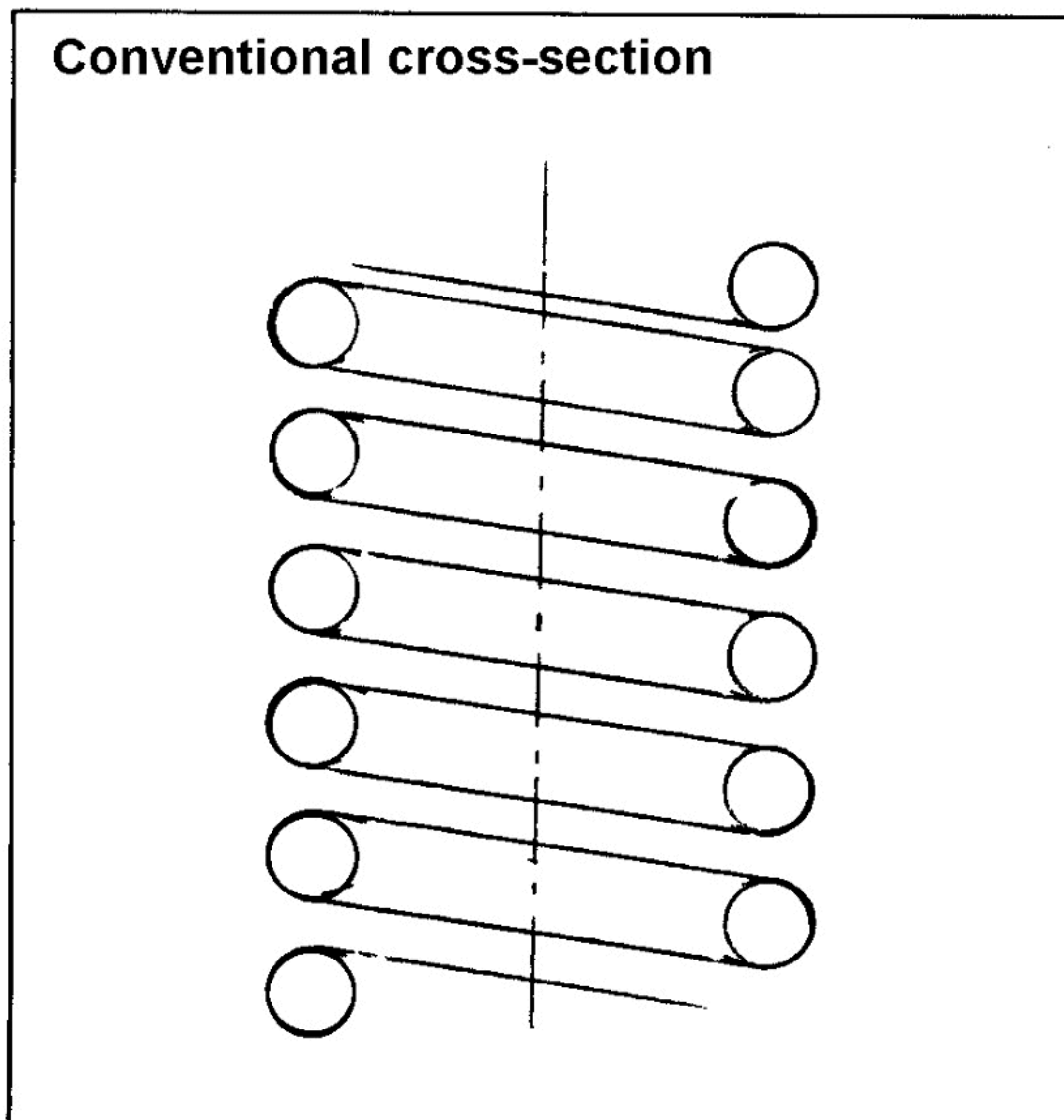
The vehicle is equipped with a water cooled inline 4 cylinder engine. The engine is inclined forward- 35° . This inclination enables an improved straight intake manifold port, which allows smooth flow of air-fuel mixture gas.

Gear drive system was applied to the cam shaft instead of chain drive system. The gear system is optimised for high speed operation.

In order to provide smooth valve operation at high speed, the engine has lower shim design. Also, carbon hardened connecting rods used to reduce friction loss.



To provide smooth valve operation in high speed, the valve spring was computer designed to endure higher stress.

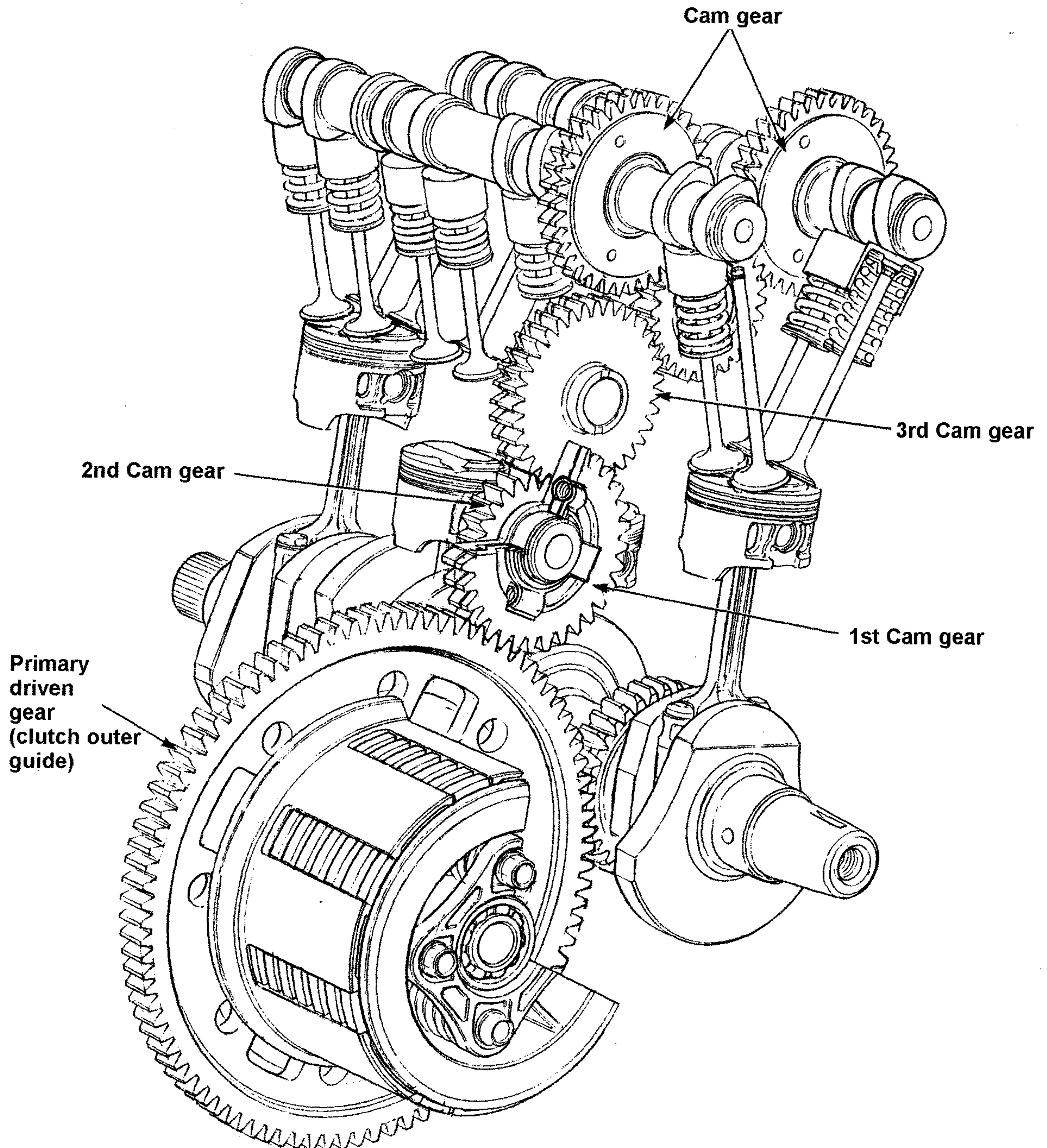


In order to reduce friction loss and to operate valves in accurate timing, gear driven cam system is applied.

The figure below shows the linkage between the crankshaft and the cam gears.

The crankshaft power is transmitted to the cam gear through the primary driven gear (clutch outer gear), which is on the same axle for the transmission main shaft.

This mechanism is quite different from the V-gear drive system, which the crankshaft directly drives cam gears.

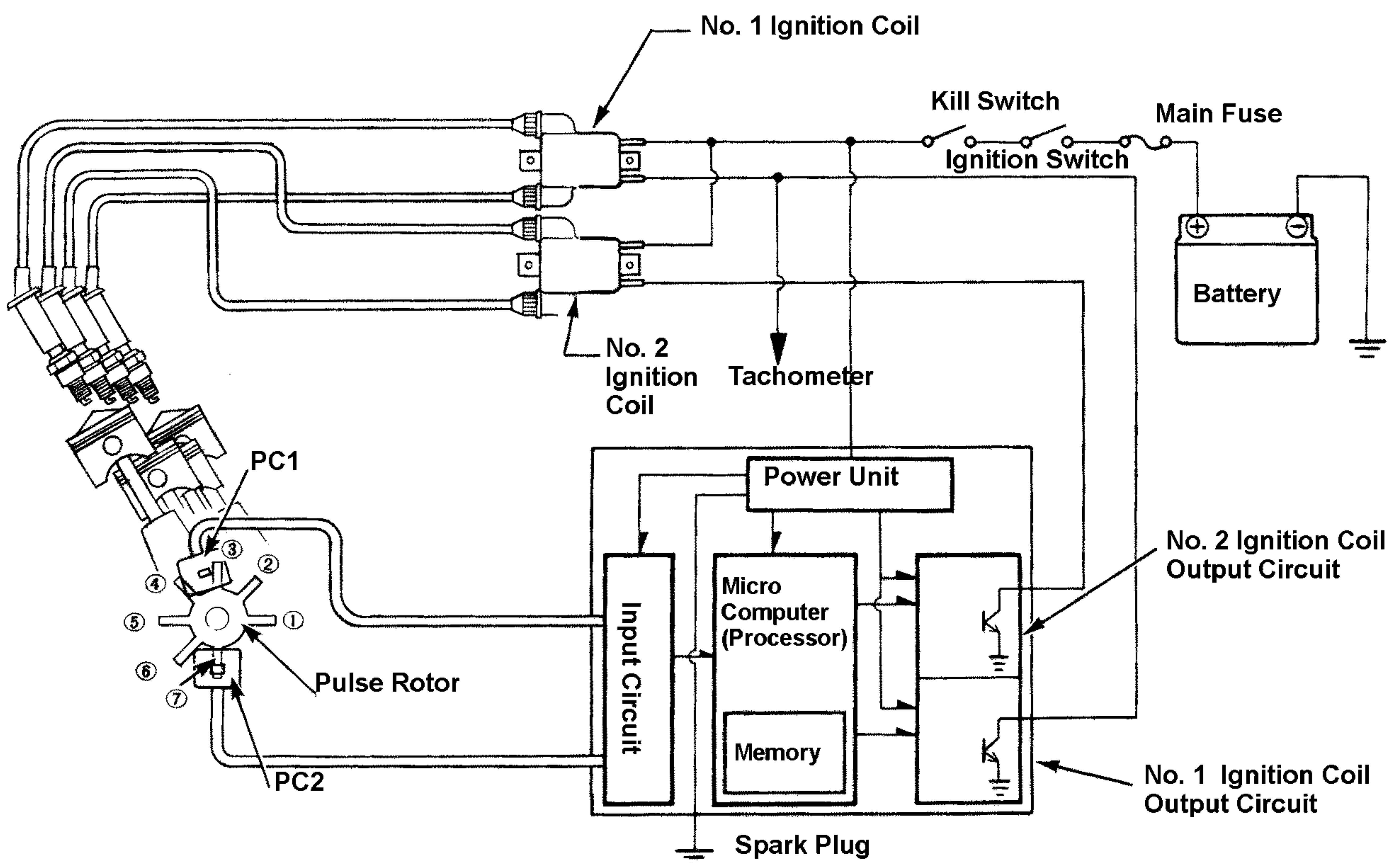


Ignition System

A newly designed digital ignition unit with a built-in micro computer provides best ignition throughout its operating speed range.

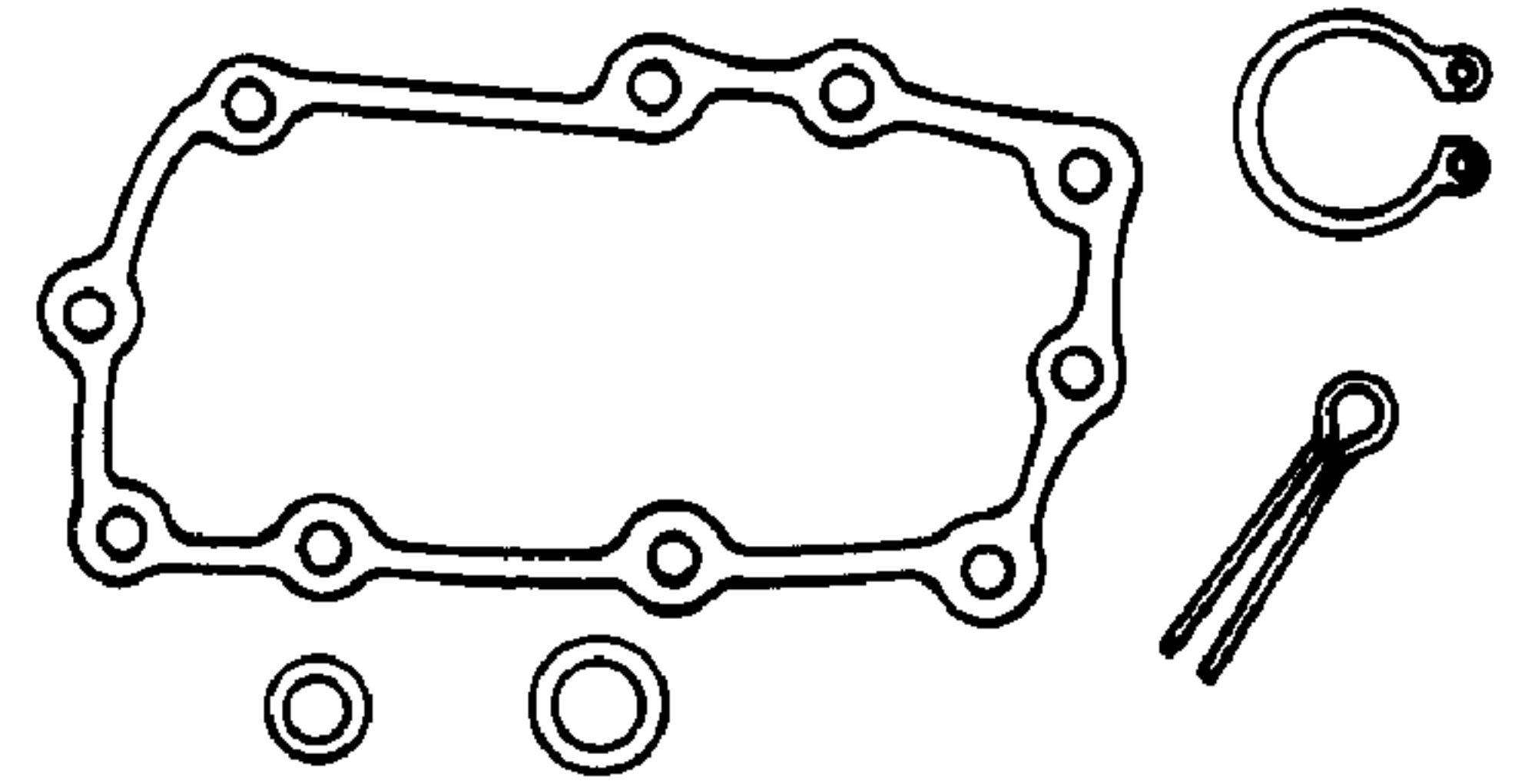
A pulse rotor has seven projections. From (1) – (7) have 45° separation and 90° for (7) to (1). The engine rpm and crank position for each cylinder are detected from the relative position of the seven projections and two pulser coils. The two pulser coils are installed so as to have 15° inclination from level line for PC2 end, compared to PC1. This angular offset is to detect crank positions.

The time when the pulse rotor's projection passes the PC1 pulser coil is referred as "O-reference". By detecting the time required to have the projection at the pulser coil again, the engine rpm is determined and the micro computer determines ignition timing.

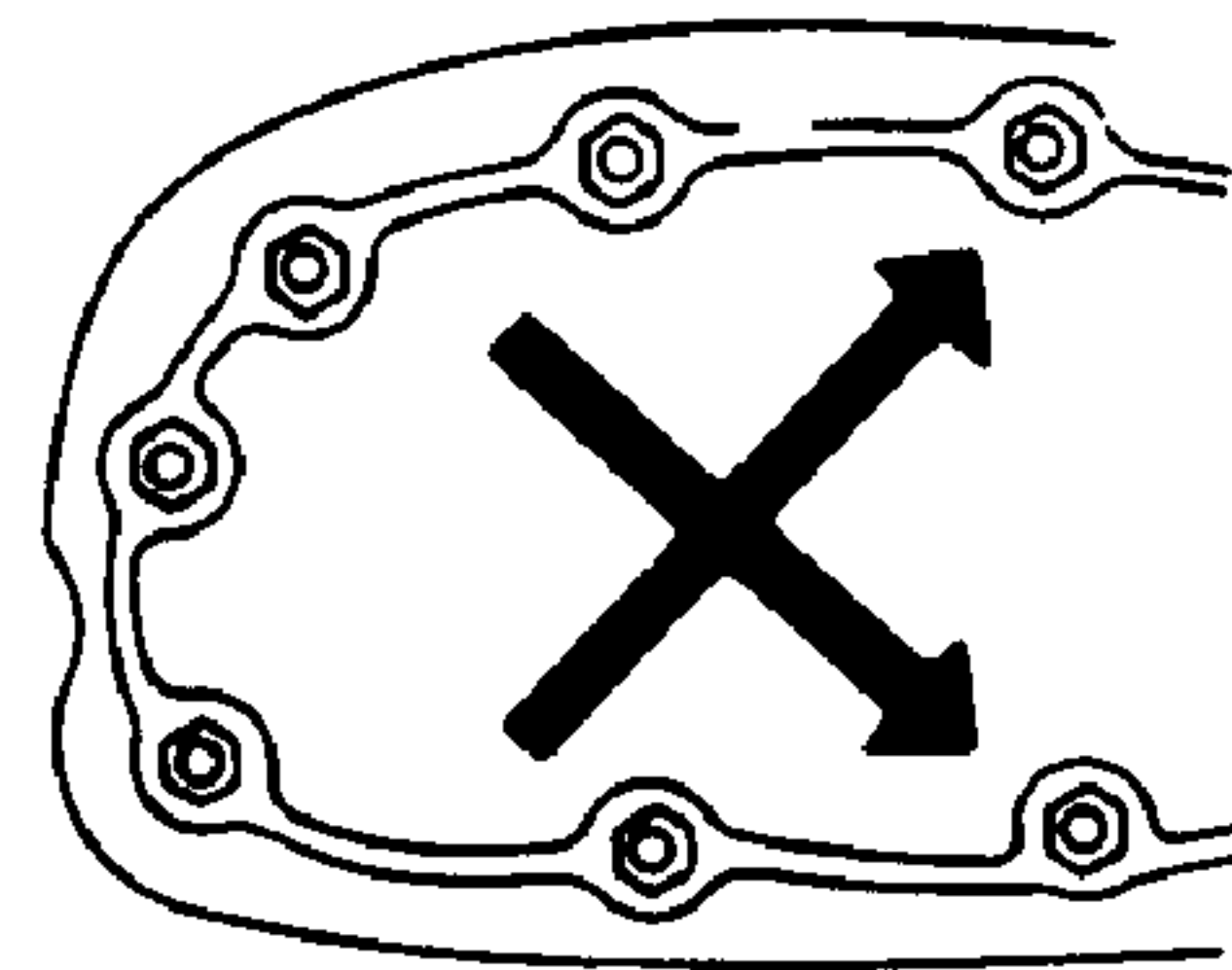


General Caution

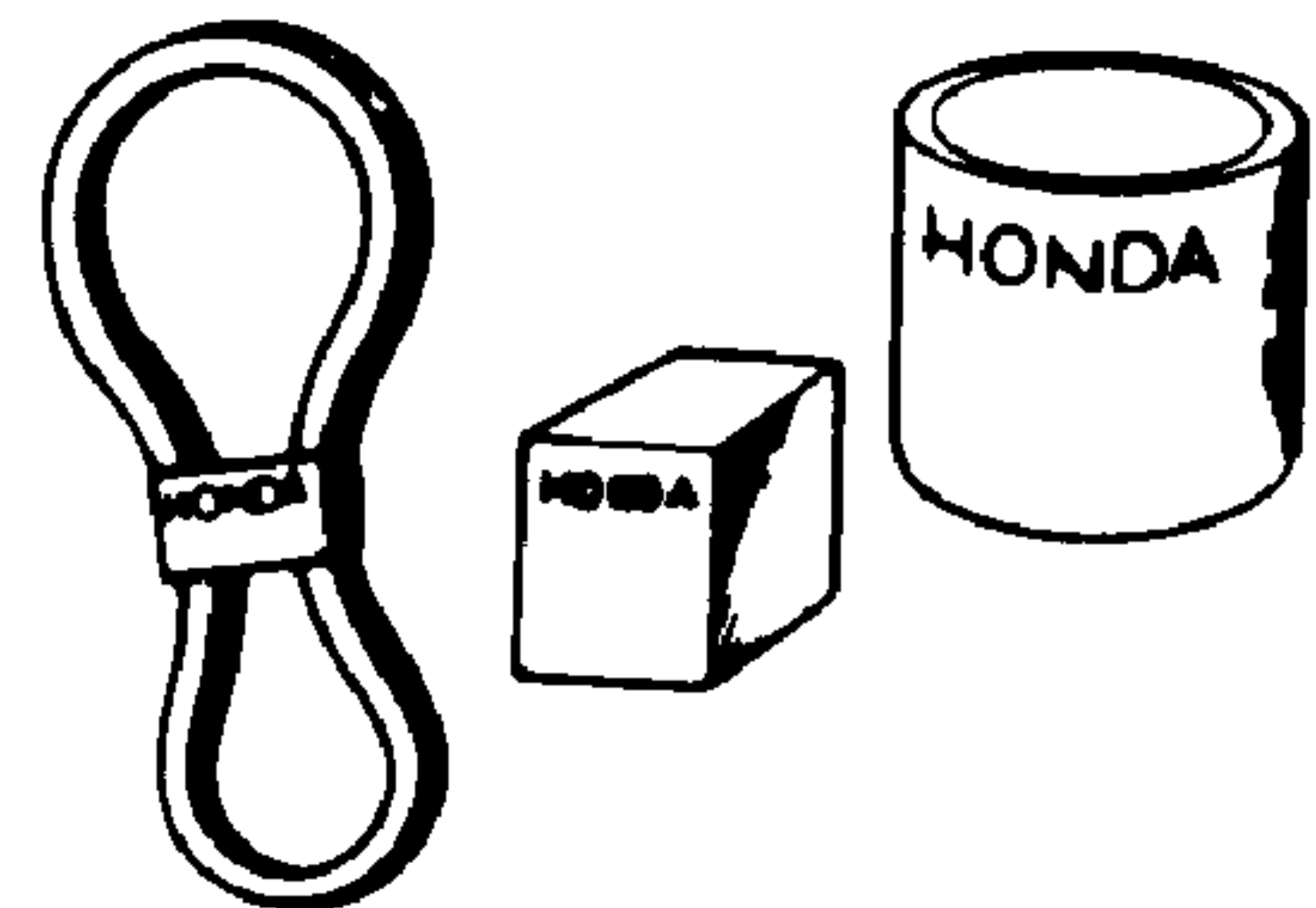
- Replace gaskets, O-Rings, circlips and cotter pins when they are removed.



- When screwing, temporarily tighten screws/bolts.
Screw bigger diameter first, then smaller diameter.
Inner ones first, then outer ones. Tighten in criss-cross way whenever possible.
Apply designated torque.



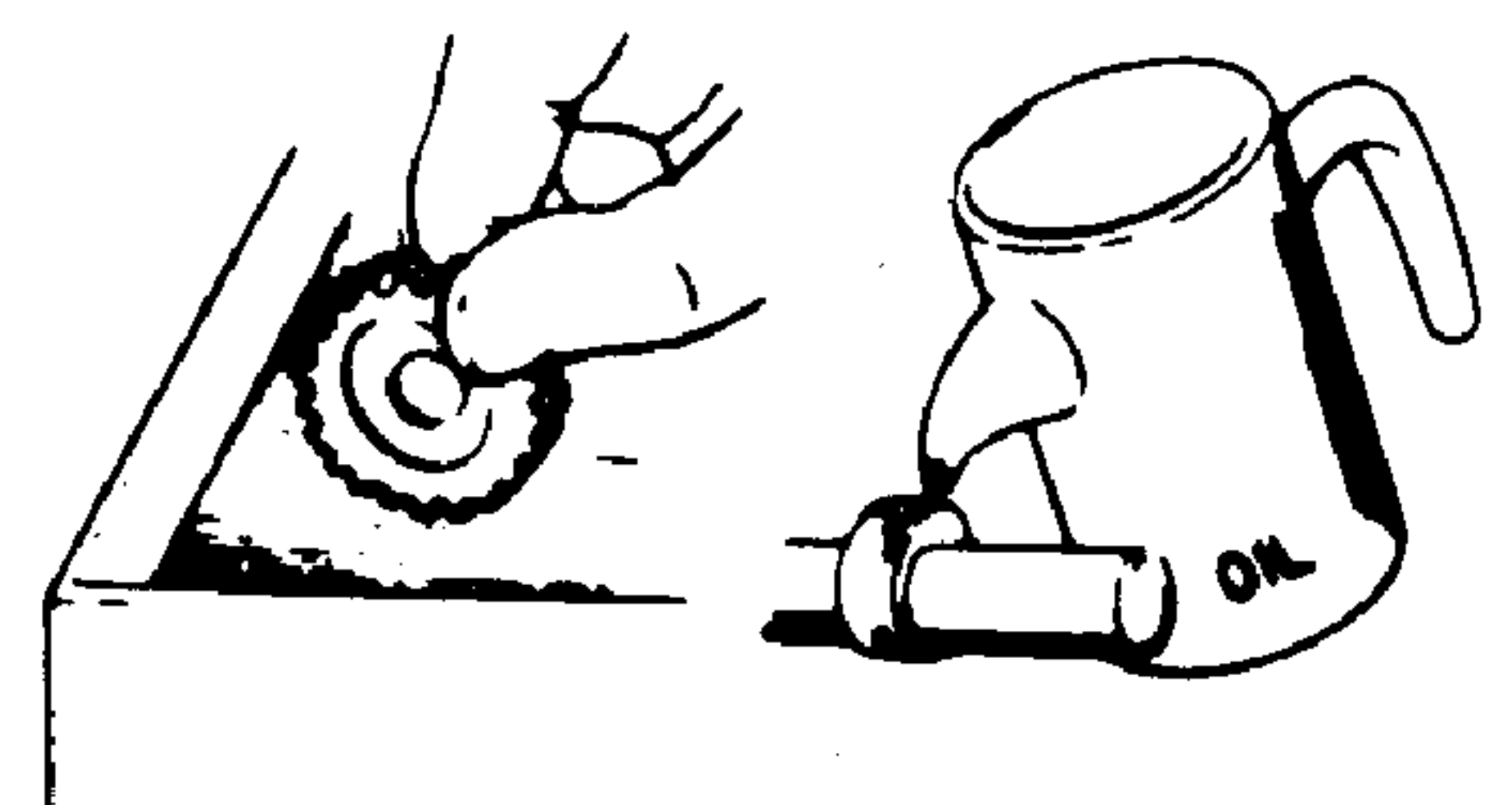
- Use genuine Honda or recommended parts, lubricants, and other products.



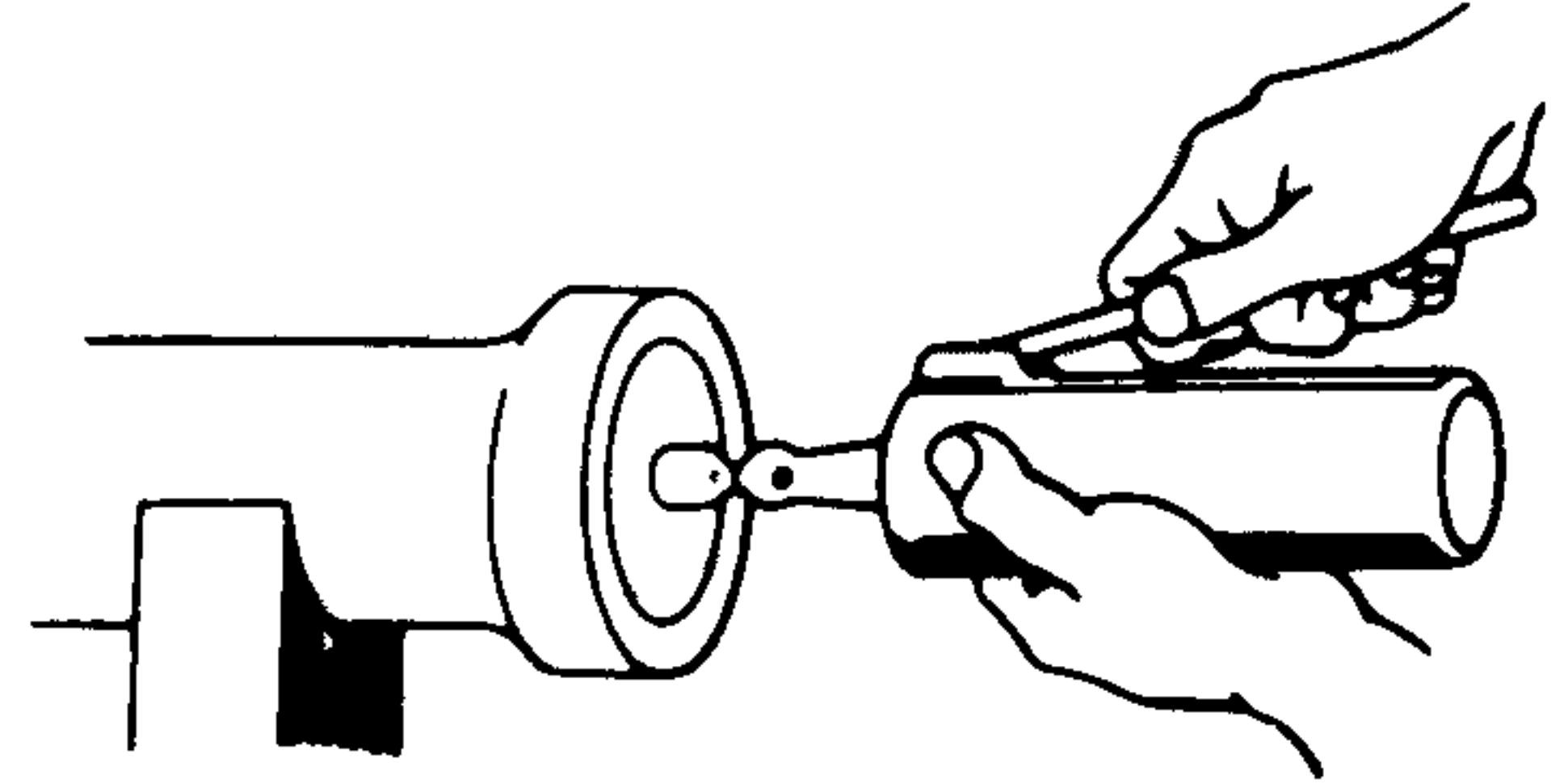
- Use special / common tools as instructed.



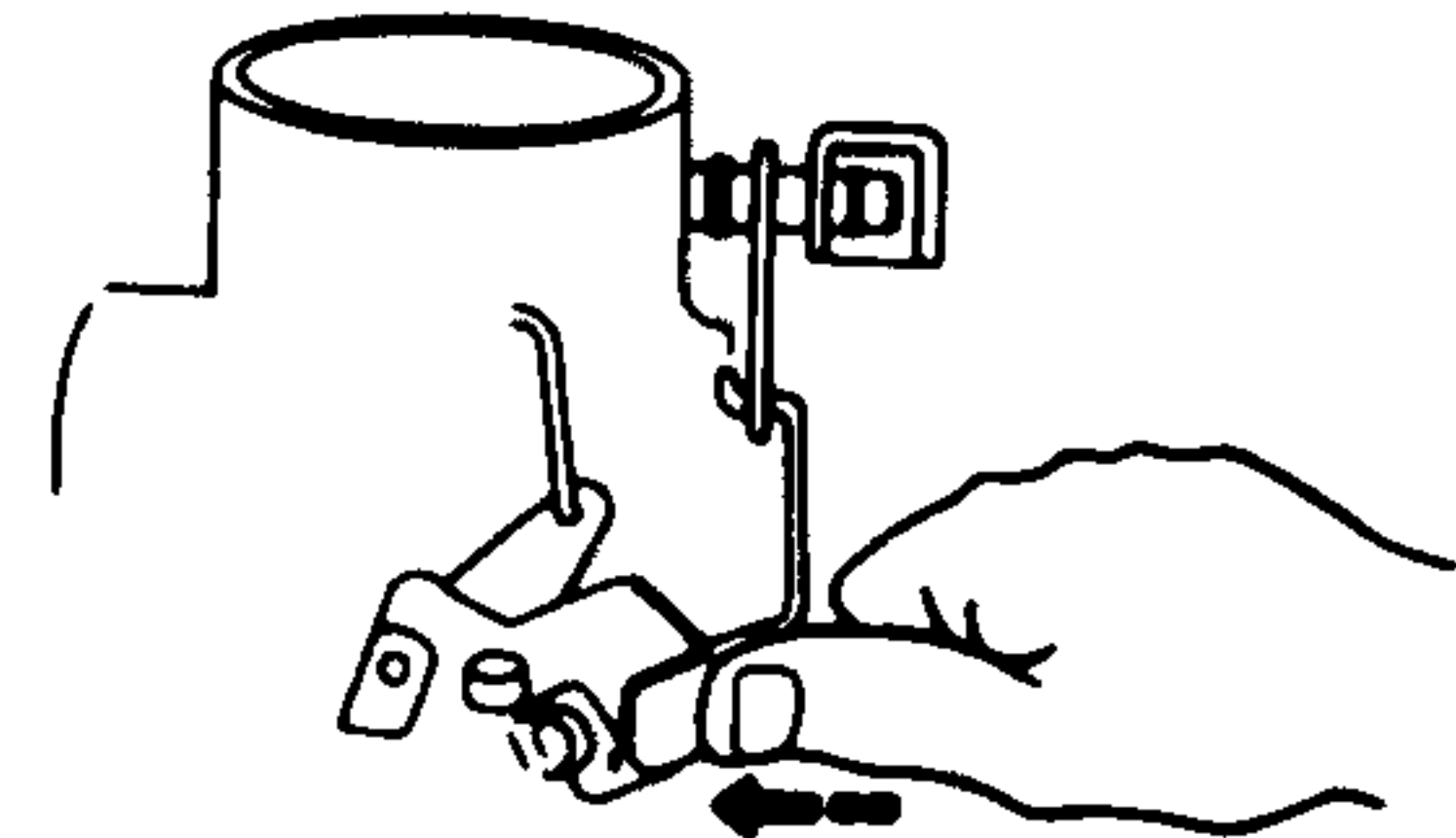
- Disassembled parts are to be cleaned before the inspection/measurement.
Apply oil to contact area when installing them.



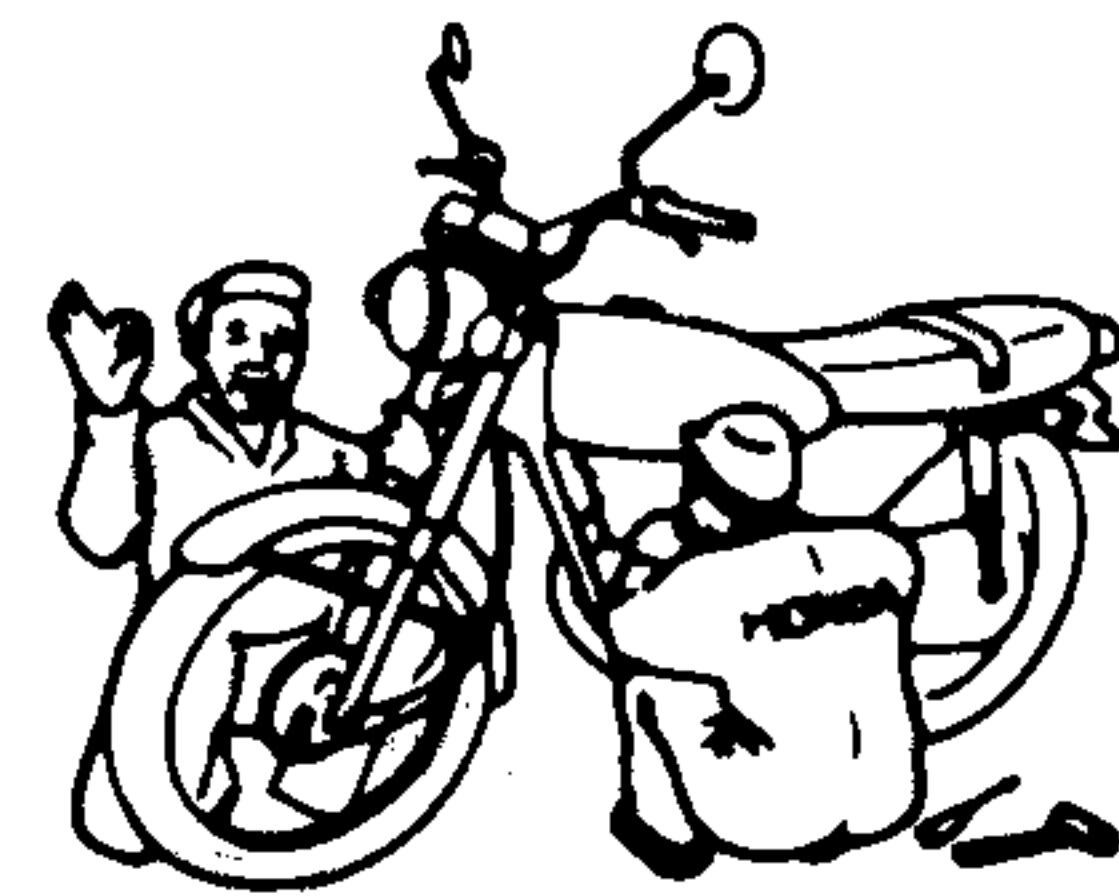
- Apply grease or equivalent to designated parts.



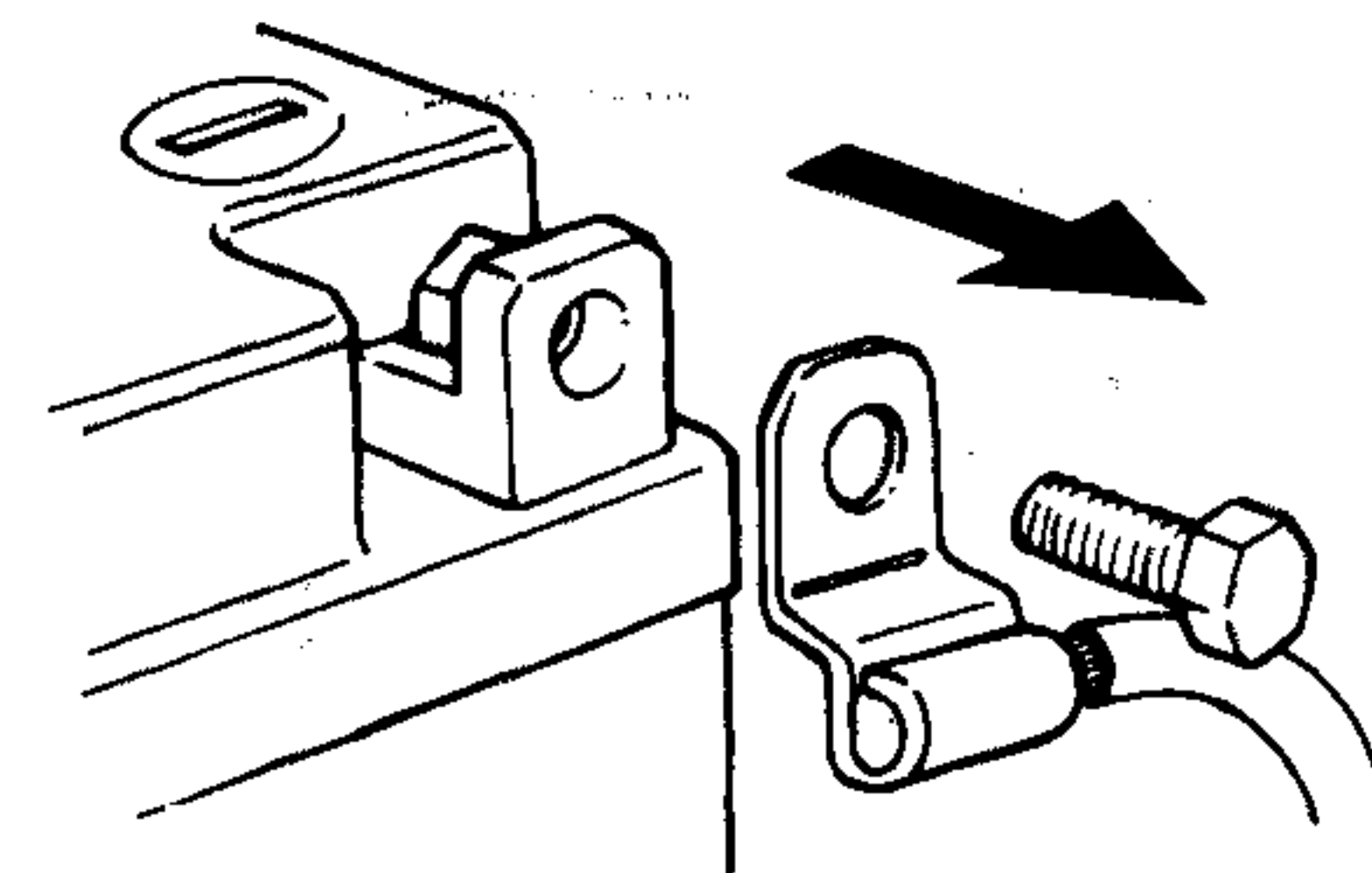
- After assembling, check the operation and fittings.



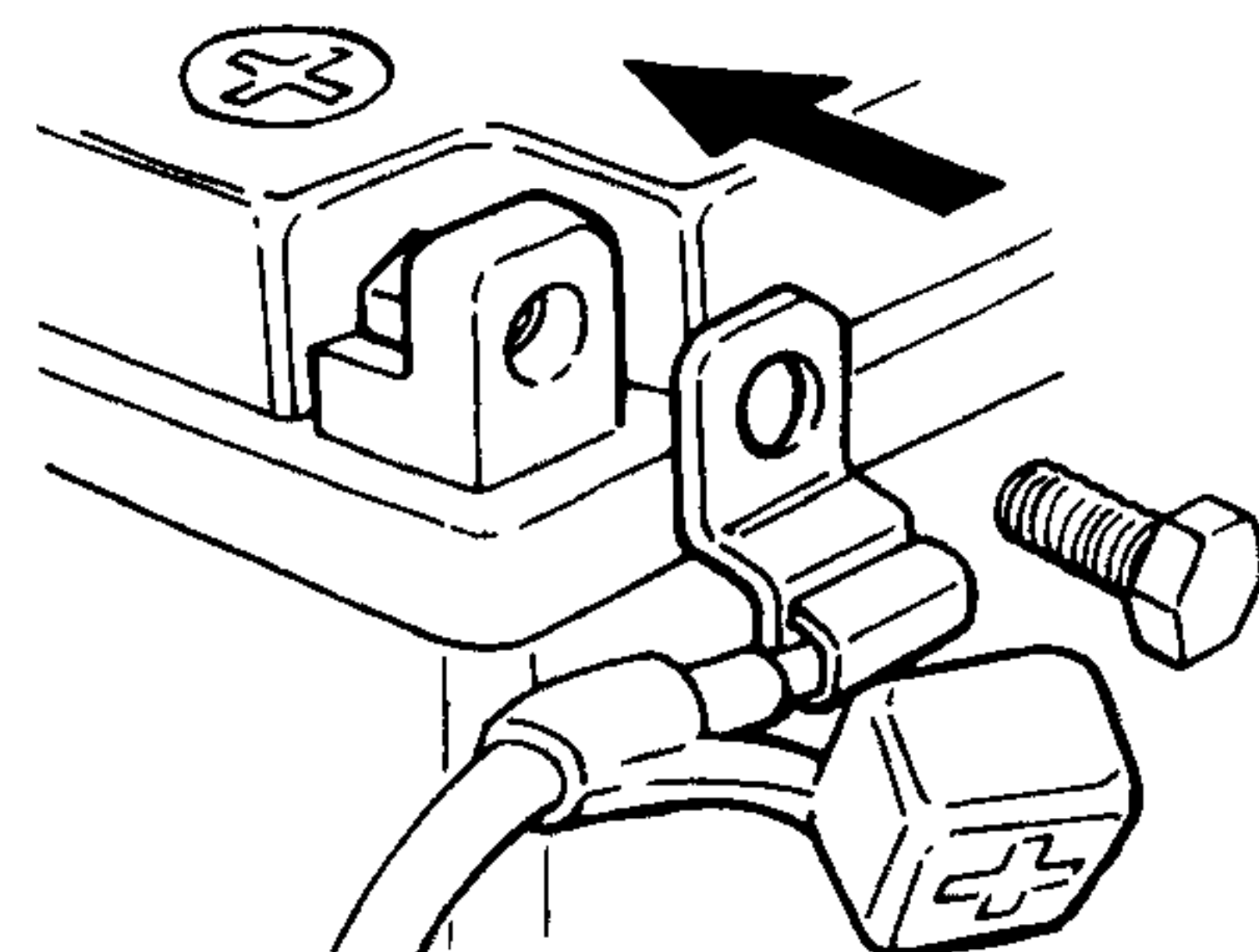
- When multiple people are working at the same time, always confirm each other's safety.



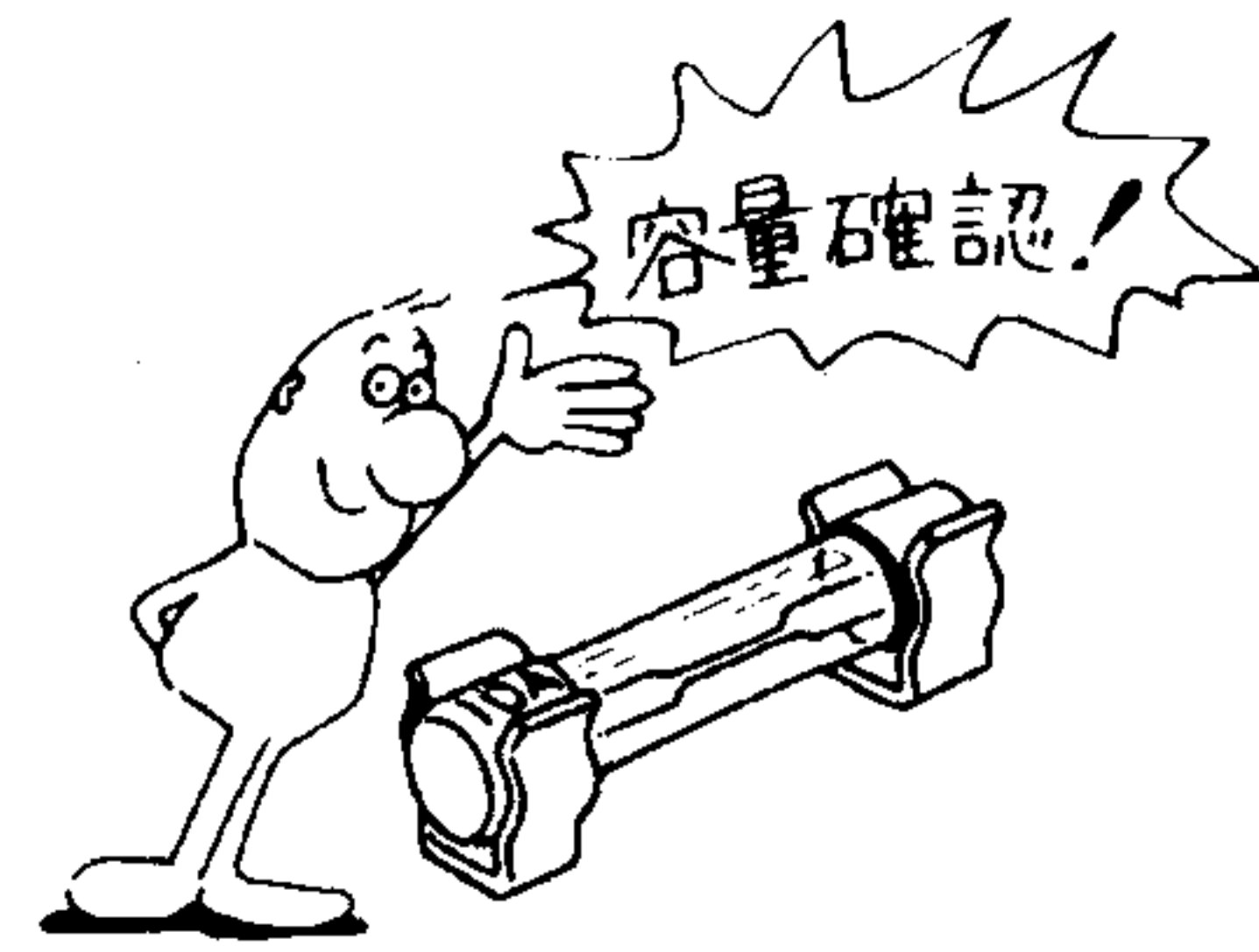
- Disconnect (-) lead from the battery prior to servicing the vehicle.
- Do not touch the frame with a wrench or any other metal tools.



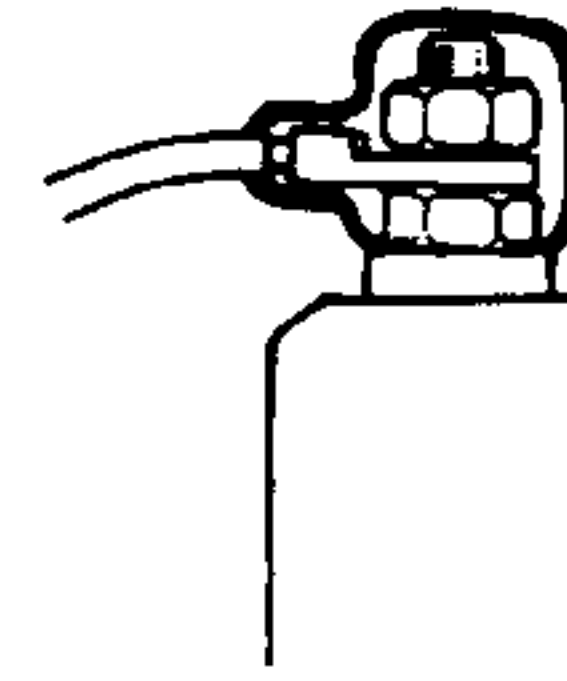
- After servicing the vehicle, check each connection, fittings and routing.
- If the battery has been disconnected, connect (+) lead first.
- Apply grease to the terminals after connecting leads.
- Attach covers to the terminals.



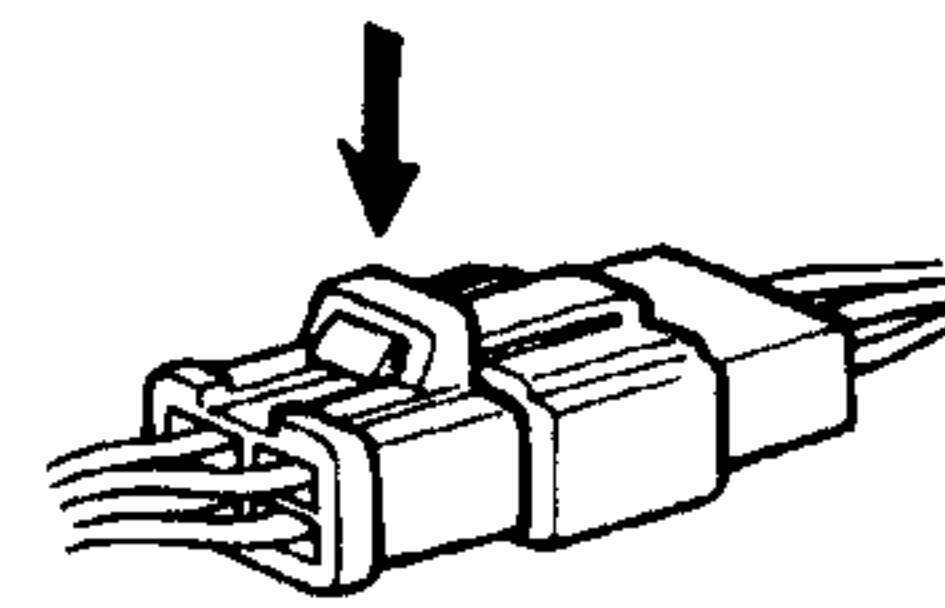
- If a fuse has blown, inspect and fix the cause and install the new fuse with the correct capacity.



- Apply covers to terminals after servicing.



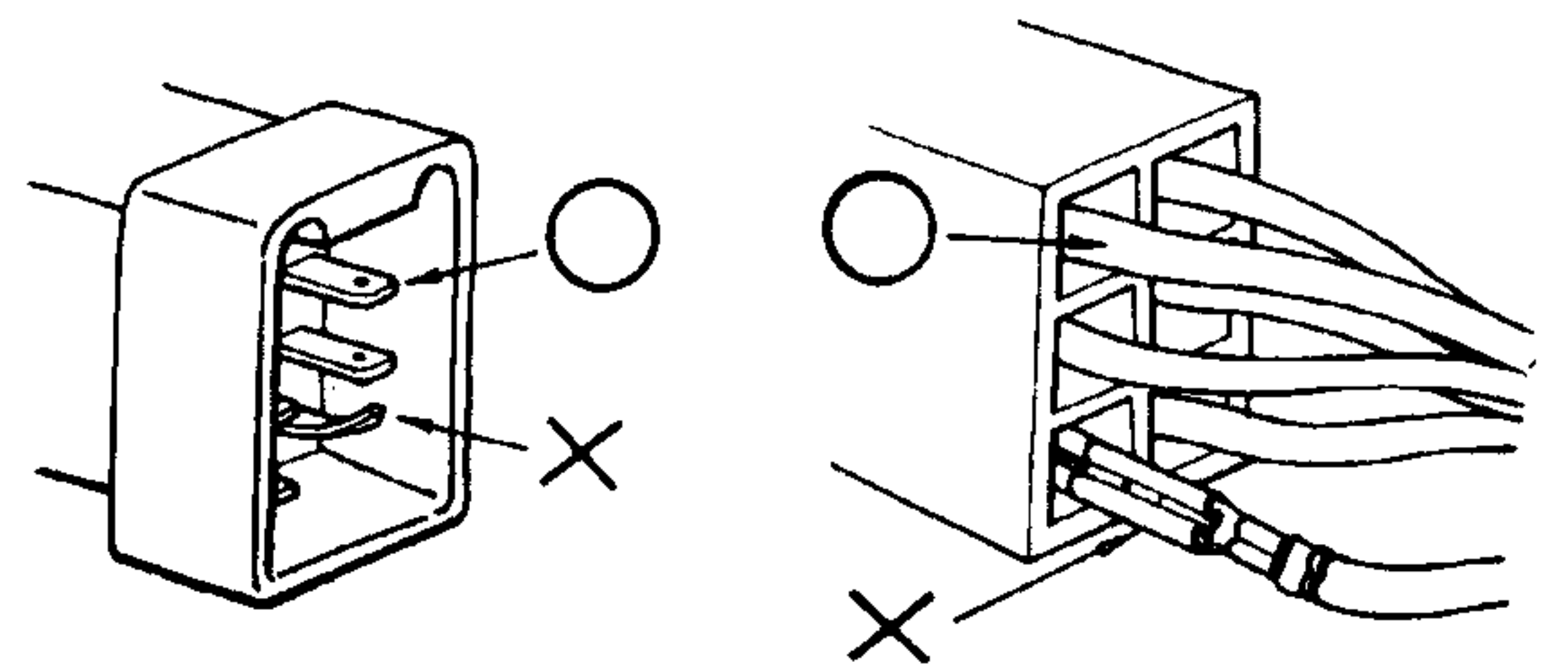
- When disconnecting locked couplers, unlock before disconnecting.



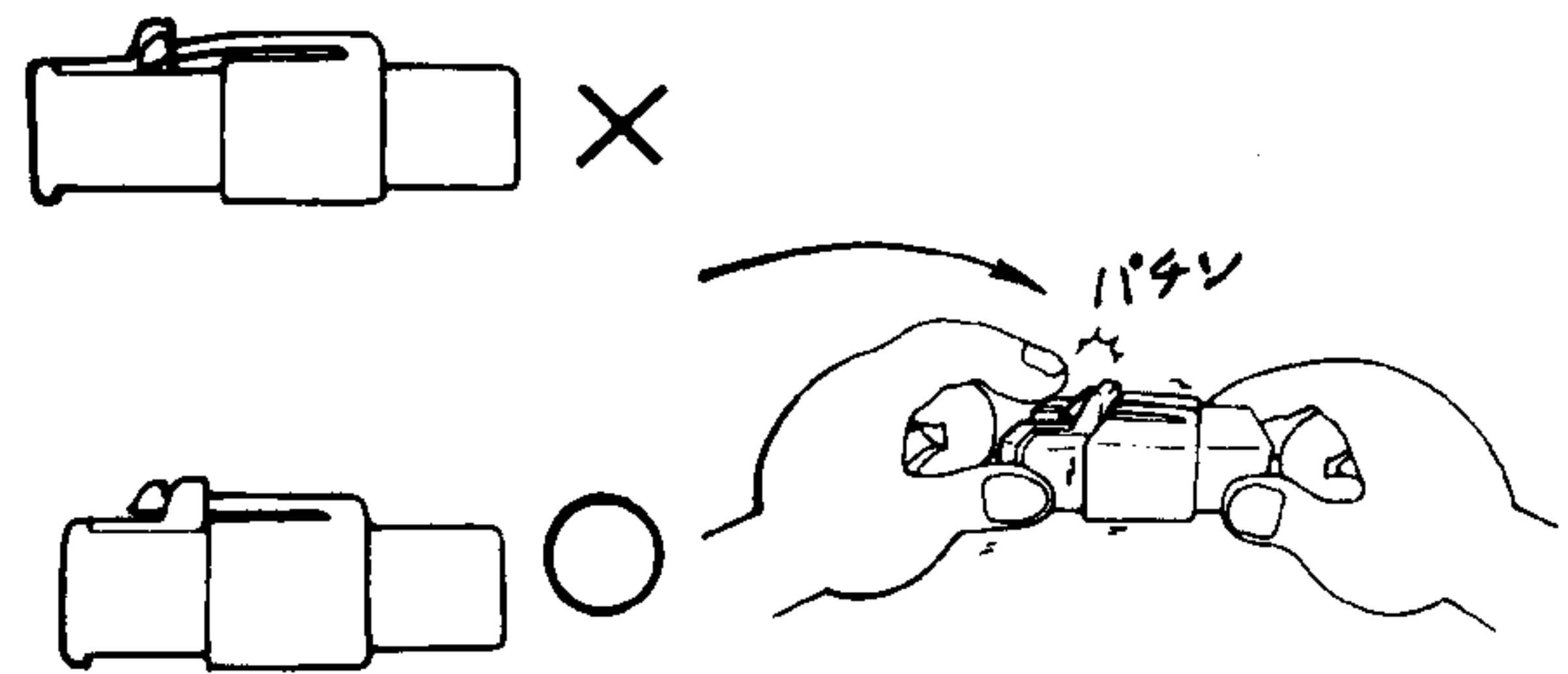
- When disconnecting couplers, hold the coupler body.
Do not pull the wire harness.



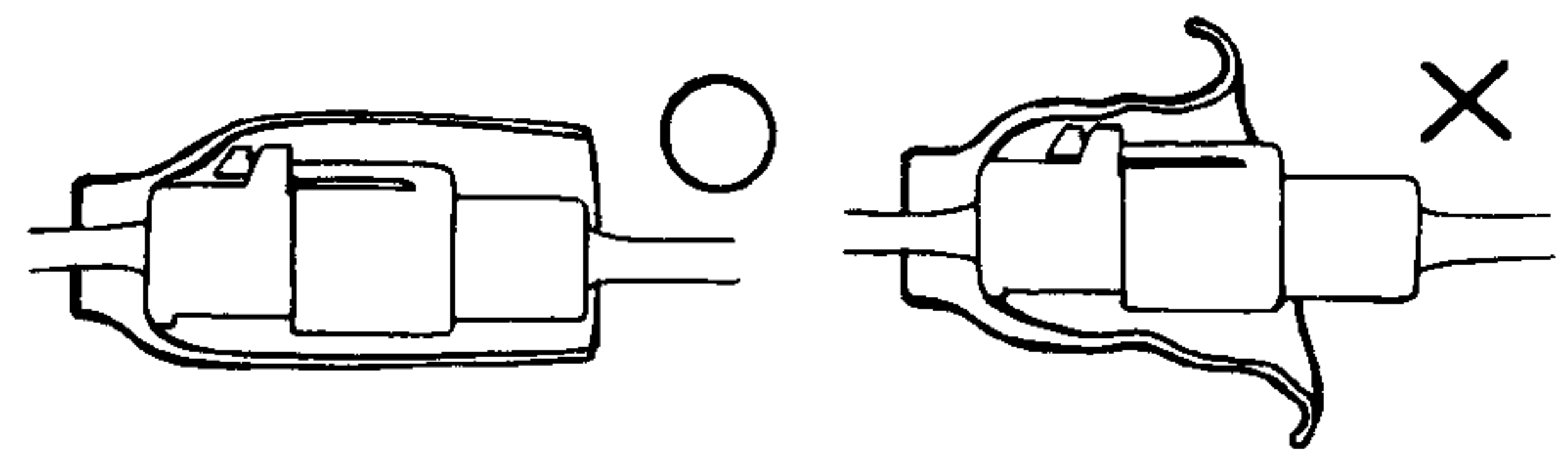
- Before connecting couplers, make sure there is no damage or any abnormalities on the terminals.



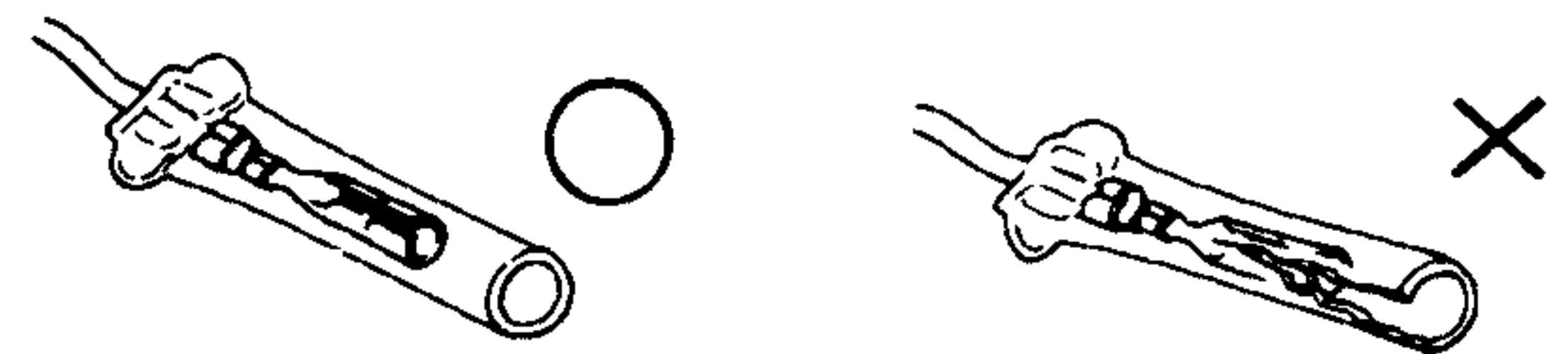
- Firmly insert couplers.
- Check couplers are locked if the couplers have locks.
- Check all harnesses are connected.



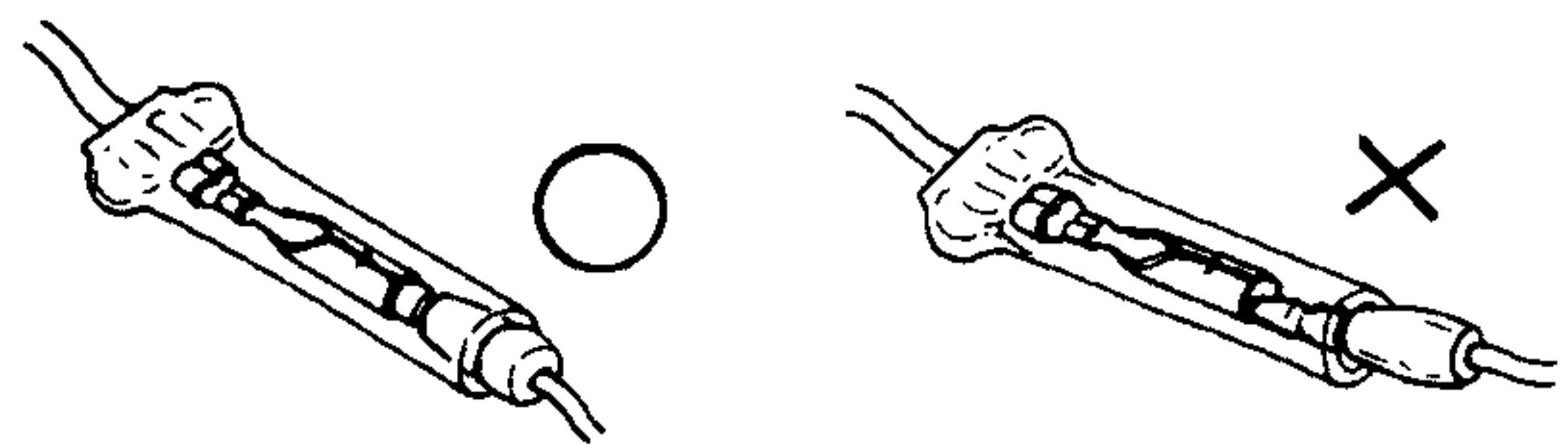
- Coupler covers should cover whole coupler unit without any peels.



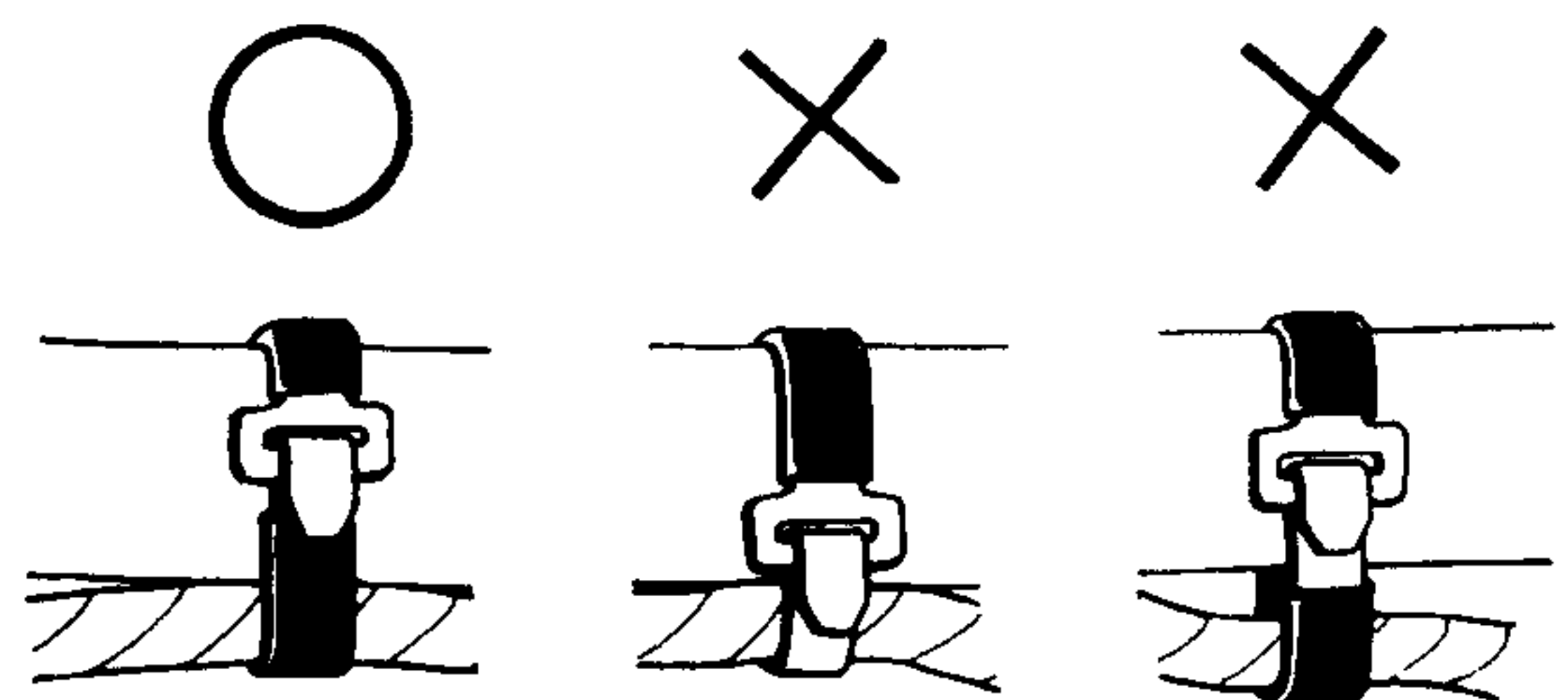
- Connector covers should not be damaged and female terminals should not be loose.



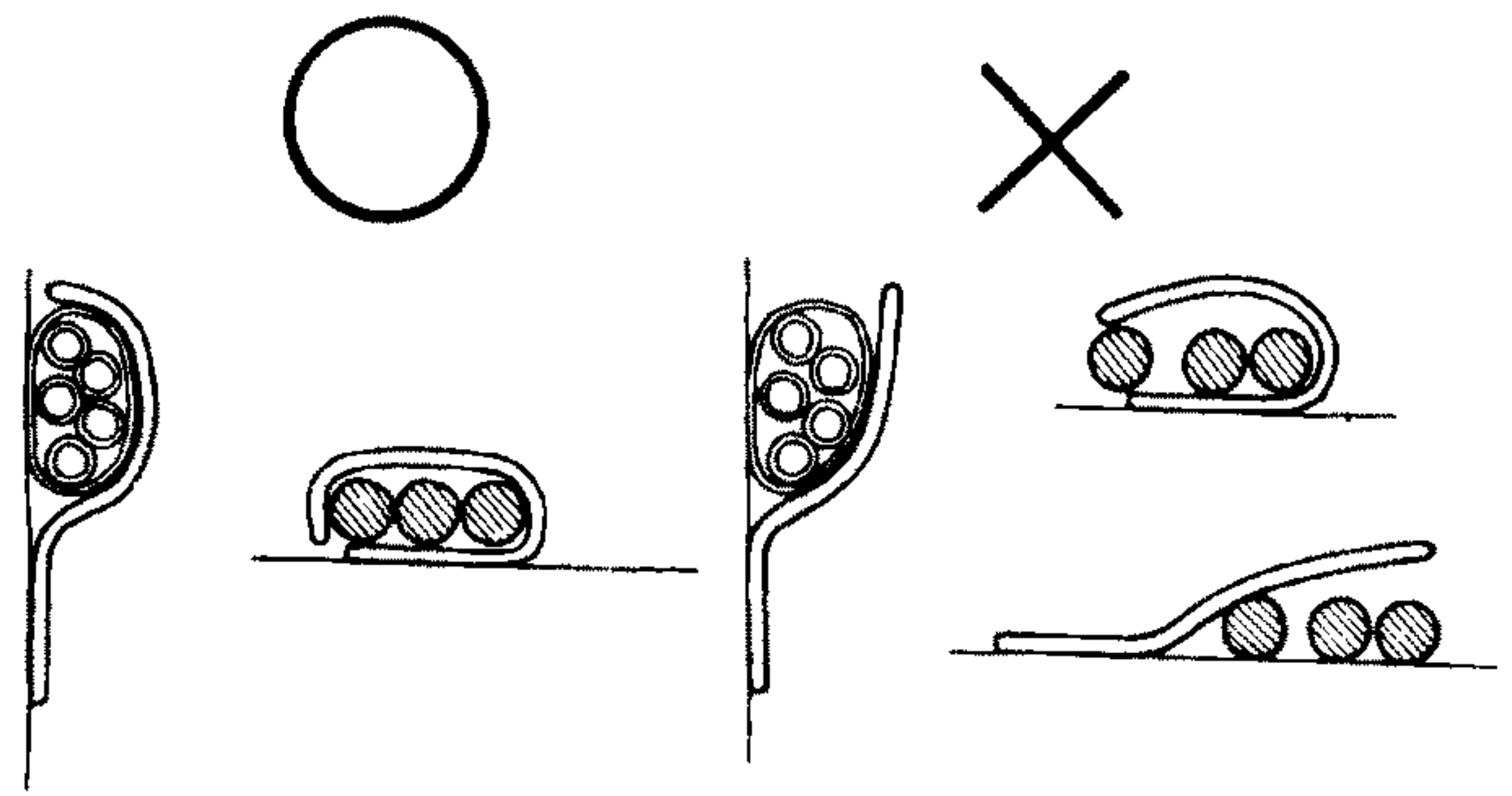
- Firmly secure the connectors.
- Covers should wrap whole terminals.
- Open end of the covers should not face upwards.



- Fix wire steps to designated position on the frame.
- Clamp wire harnesses at the coated area when aluminium straps are used.



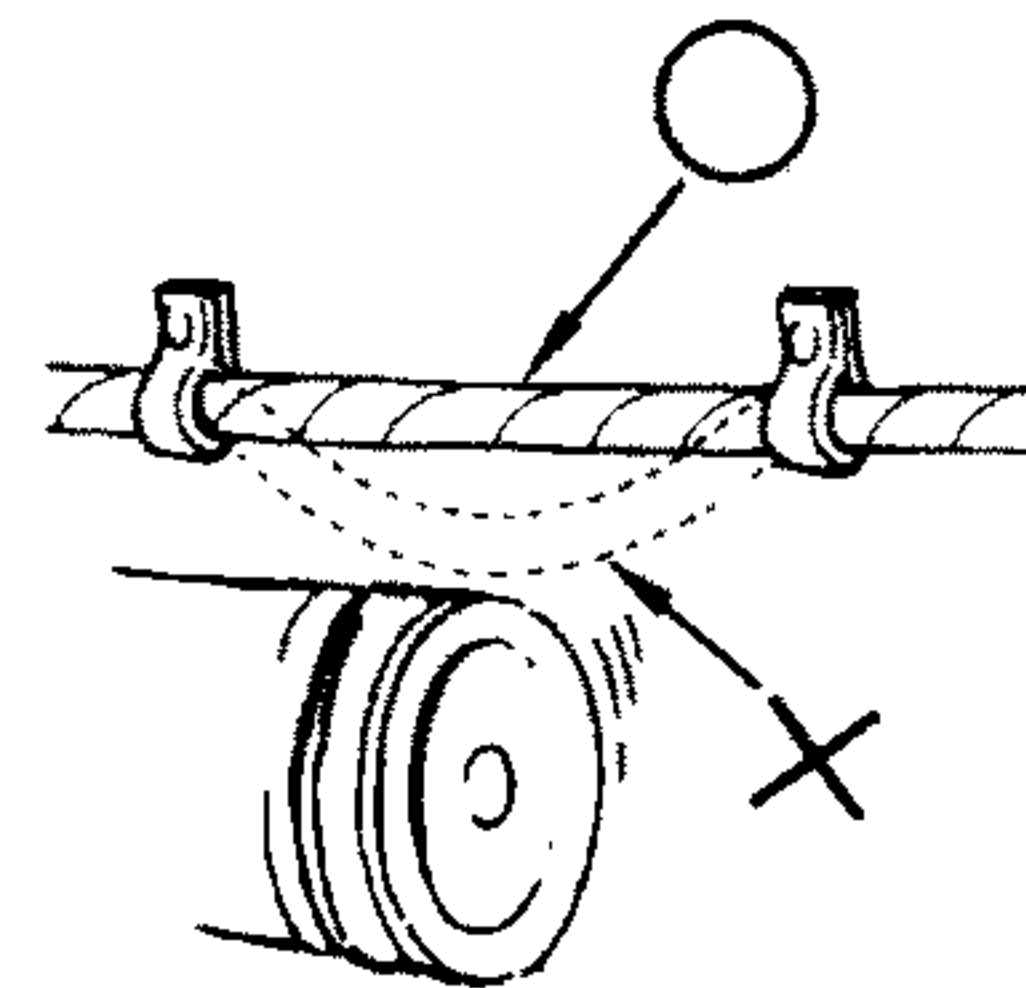
- Make sure wire harnesses are properly clamped.



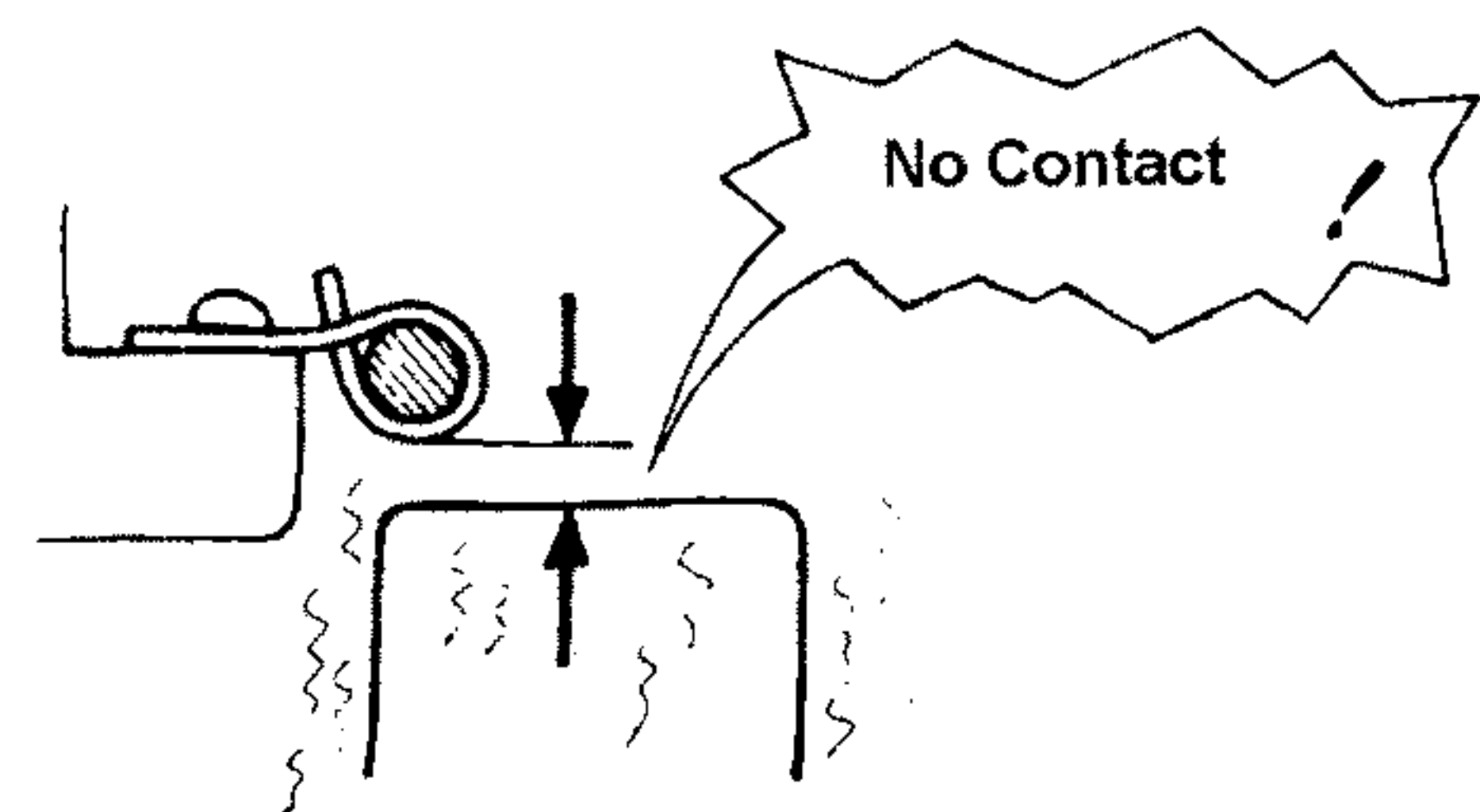
- Do not clamp to the welded side when weld-clamping.



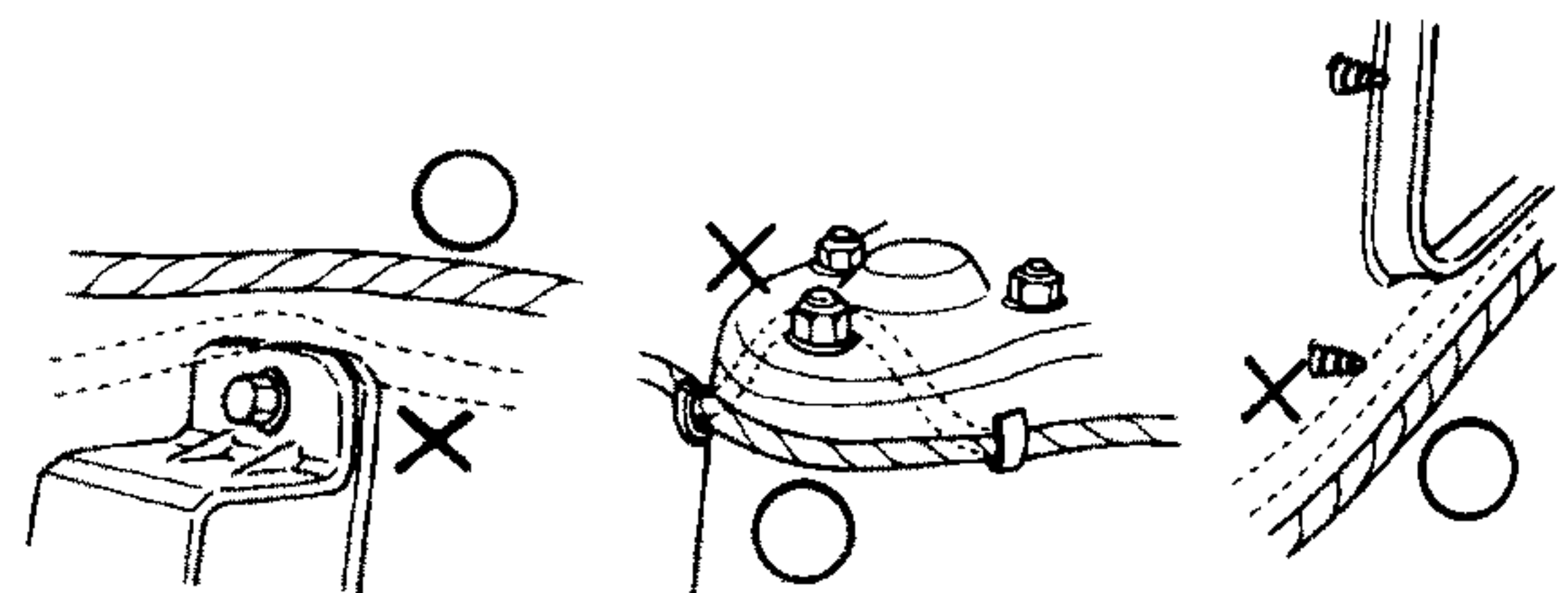
- Clamp wire harnesses so as to keep them away from moving parts.



- Clamp wire harnesses so as to keep them away from heated parts.

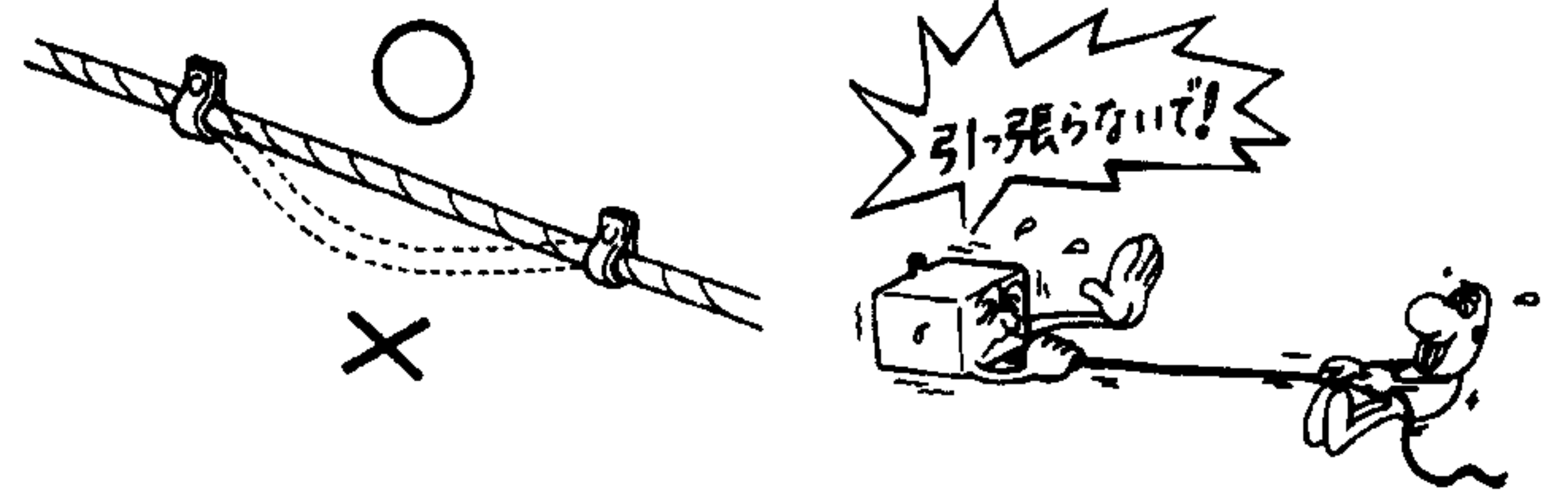


- Wire harnesses are to be routed to avoid body edges or sharp edges.

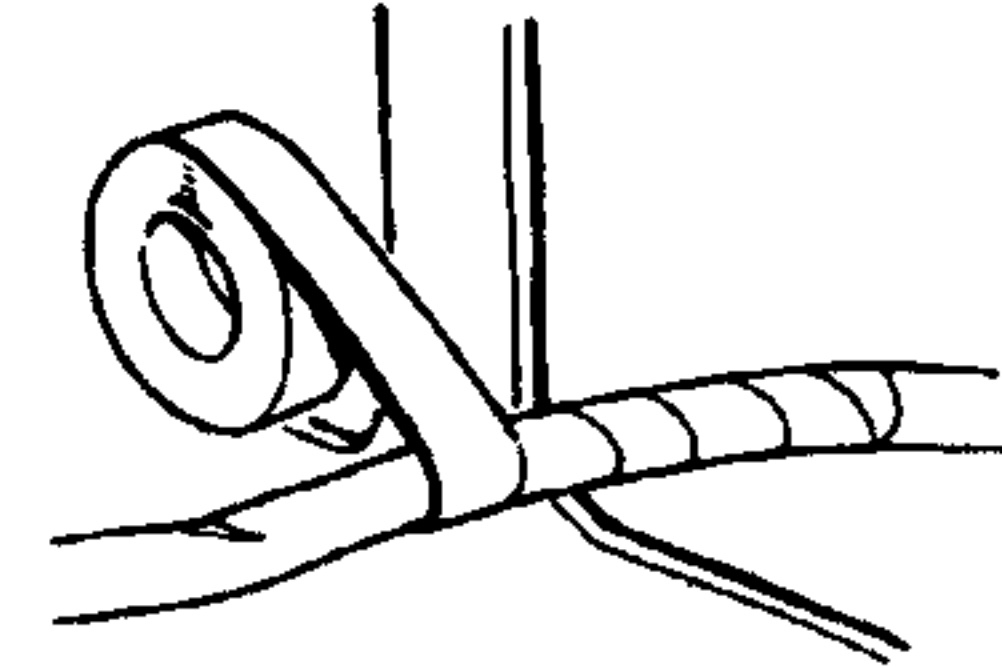


- Do not let wire harnesses touch bolt/screw heads and their ends.

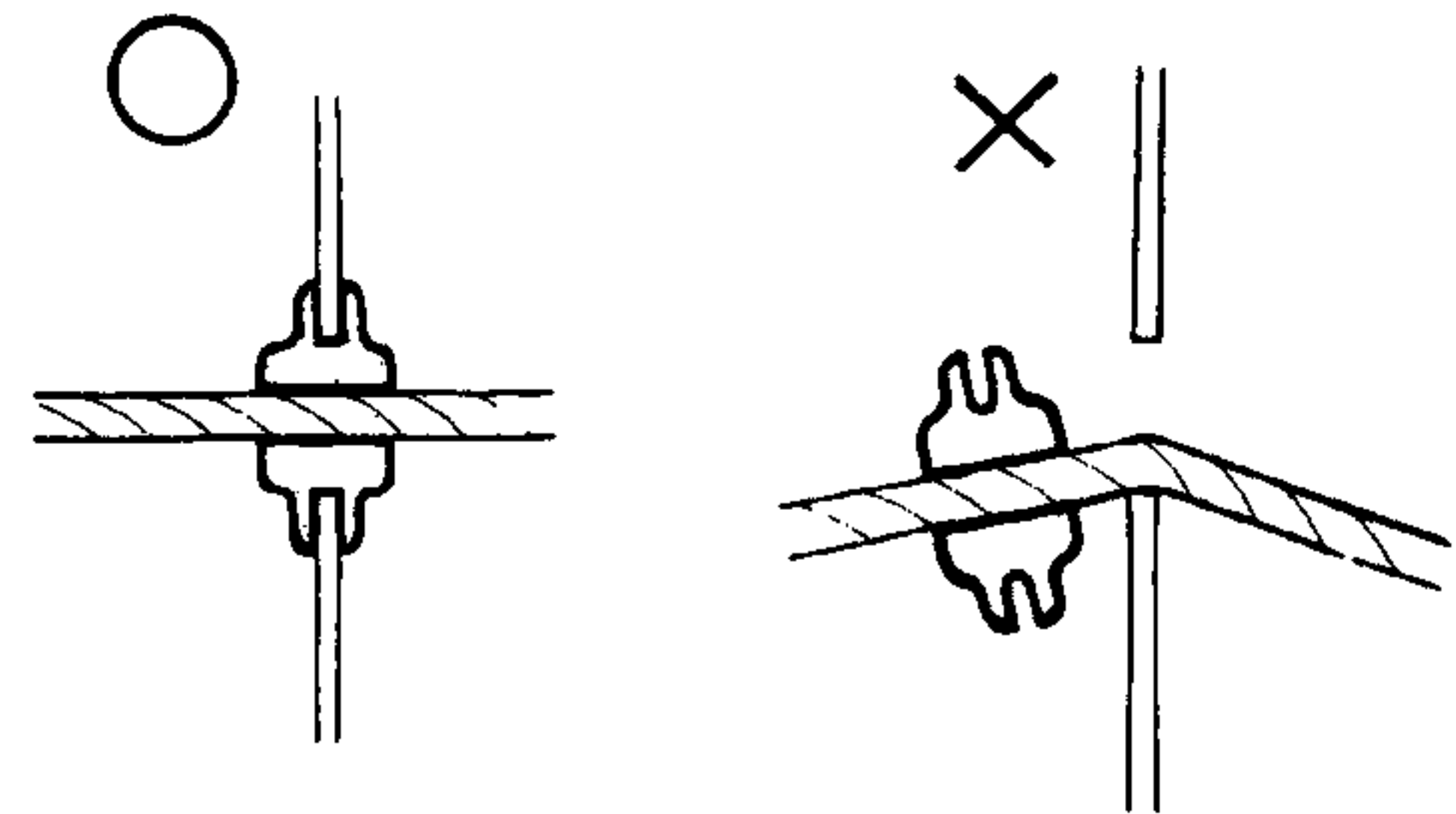
- Do not apply excessive tension / slack to the wire harnesses.



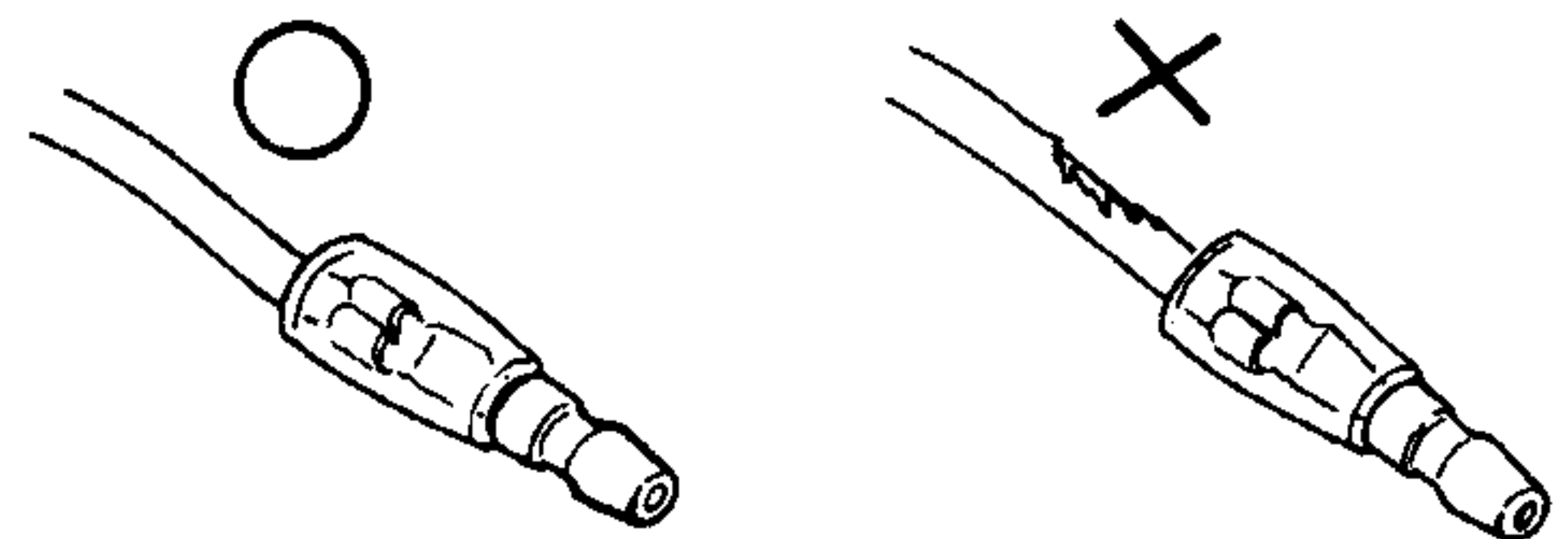
- If there is no other alternatives but to route wire harnesses through sharp edges, protect the part with tubes or tape.



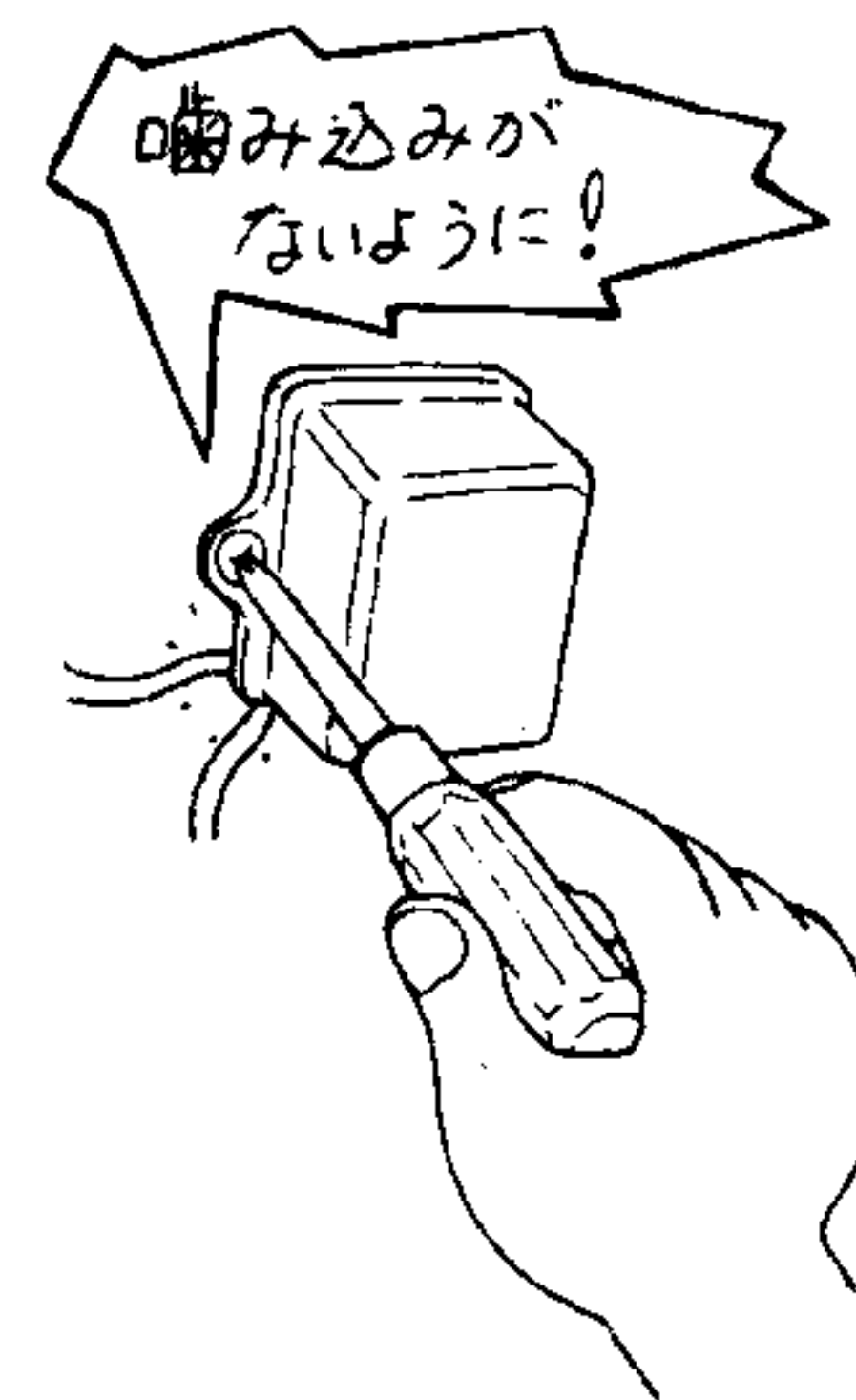
- Firmly set grommets if available.



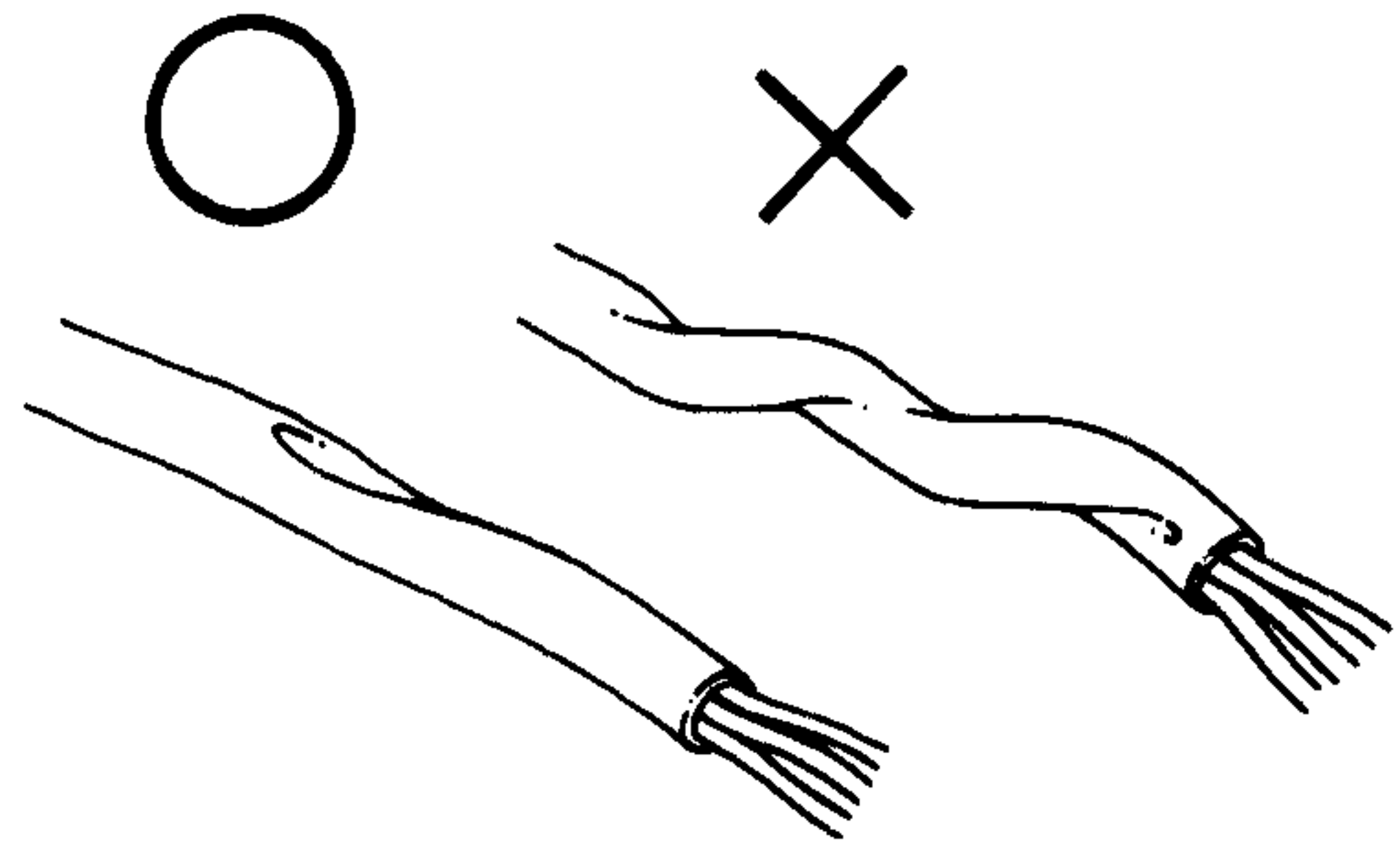
- Do not unwrap wire harnesses.
- Wrap the wire harness with adhesive vinyl tape if it is unwrapped.



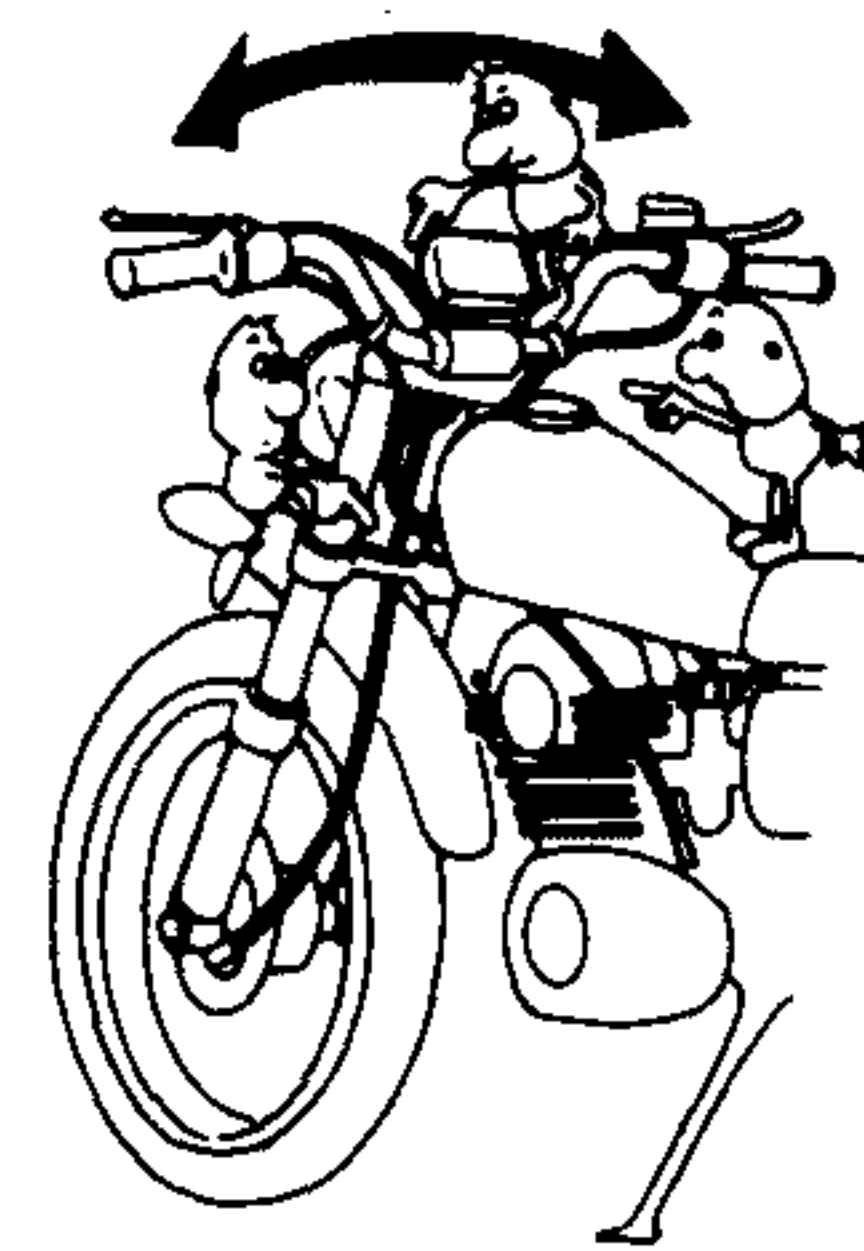
- Do not catch wire harnesses when installing parts.



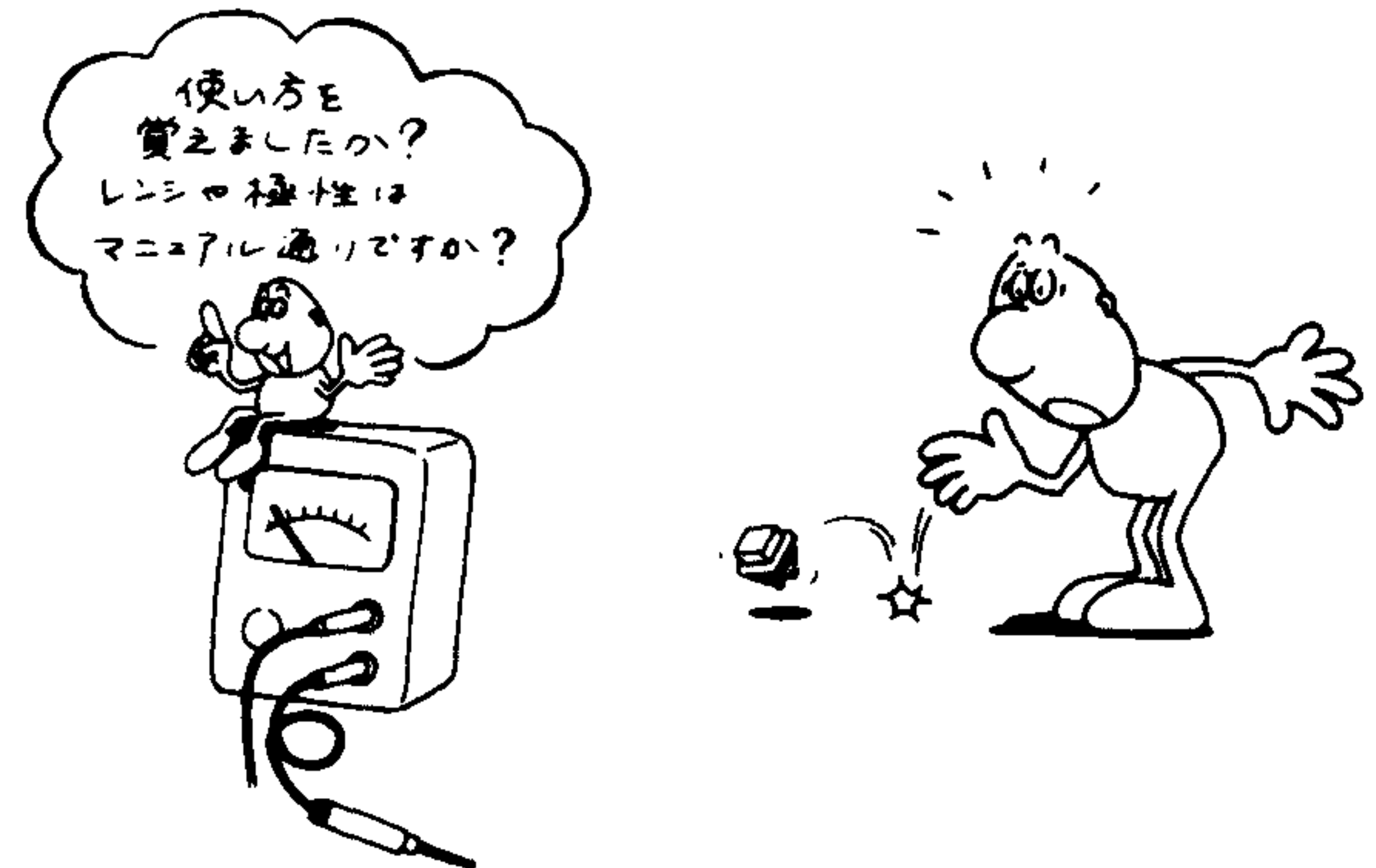
- Do not twist wire harnesses.



- Make sure wire harnesses are not over-tensioned or over-slack when the handlebar is fully turned to either side. Also, they should not have any sharp bending, catching or contact with sharp edges.



- Read instructions when using a multi meter, and follow the instruction on the service manual.

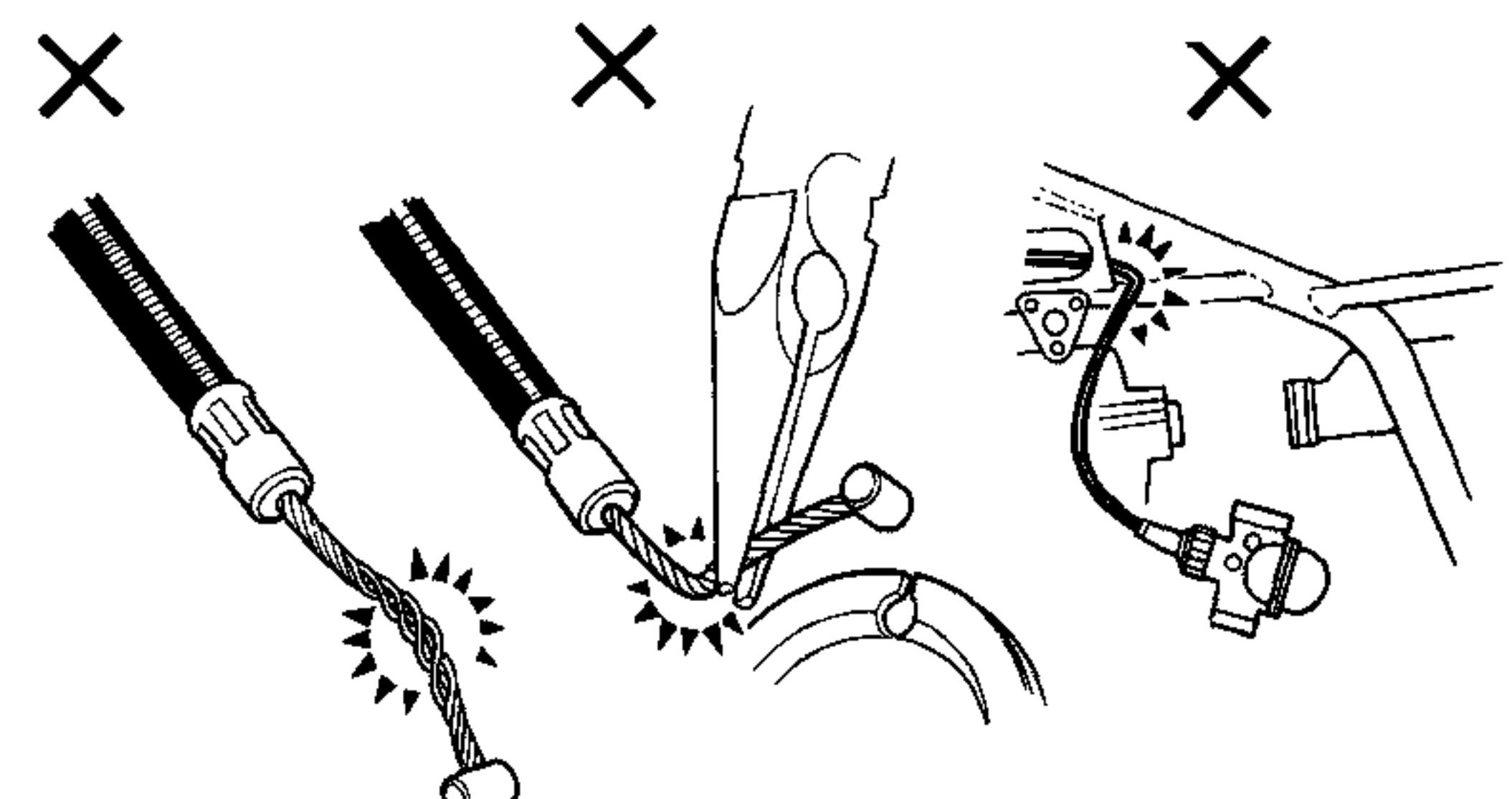





- Do not drop or throw parts.












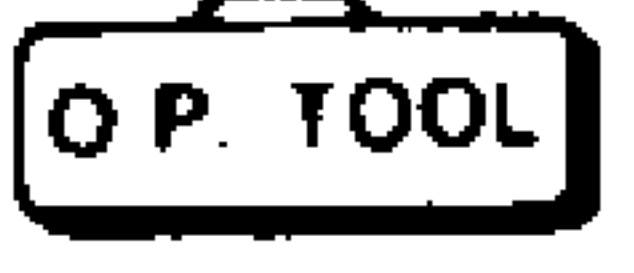

- If rust is forming on the terminal, remove with sandpaper before re-connecting.



- Do not twist or sharply bend cables. Such deformations or damages may cause failure.



Symbol	Meaning	Symbol	Meaning
	<p>Danger:</p> <p>Its neglect may lead to serious injuries.</p>		<p>Important:</p> <p>Its neglect may lead to minor injury or damaging the parts.</p>
			<p>General caution:</p> <p>Tips of the work</p>

Symbol	Meaning	Symbol	Meaning
	<p>Apply oil:</p> <p>Unless specified, use designated or recommended oil.</p>		Apply sealant
	<p>Apply Molybdenum solution:</p> <p>The solution is a mixture of engine oil and Molybdenum grease at</p>		Replace with new parts whenever disassembled.
	<p>Apply multi-purpose grease. (Lithium soap based NLG #2 equivalent).</p> <p>Example: SHELL Albania EP-2</p>		Apply brake fluid. Use recommended grade (DOT4)
	<p>Apply Molybdenum grease (3% or more Molybdenum, NLGI#2 equivalent)</p> <p>Mitsubishi multi purpose M2 Dow Corning Molycoat BR – 2 PLUS</p>		Apply recommended cushion oil.
	<p>Apply Molybdenum paste. (40% or more Disulphide Molybdenum. NLGI#2 equivalent).</p> <p>Local paste Molycote G-n Paste (Dow Corning)</p>		Use exclusive tools
	<p>Apply silicone grease Silicone grease G40M (ShinEtsu)</p>		O.P. (Option) tool. Refer to parts list as these tools are considered to be parts.
	<p>Apply screw locker.</p> <p>Use medium class unless specified.</p>	-> 3-1	Reference pages.

Tightening Torque

• Engine

Part Name	Qty	Screw Dia	Tightening Torque kg-m	Notes
Cylinder head cover (special bolt)	6	6	0.8 - 1.2	
Cam shaft holder (flange bolt)	16	6	1.2 - 1.6	
Cylinder head (flange bolt)	12	7	1.7 - 2.1	Apply oil
Spark Plug	4	10	1.0 - 1.2	
Con rod (con rod bolt/nut)	8	-	1.5 - 1.9	Apply oil
Gear train holder nut	2	8	1.8 - 2.2	
AC generator fly wheel	1	10	8.0 - 9.0	UBS
Starter Clutch	1	10	7.0 - 8.0	UBS
Clutch Centre	1	20	6.0 - 7.0	
Oil pump driven sprocket (flange bolt)	1	6	1.3 - 1.7	Apply screw lock
Oil Pressure Switch	1	-	1.0 - 1.4	Apply screw lock
Neutral Switch	1	10	1.0 - 1.4	
Oil filter centre bolt	1	20	1.5 - 2.0	
Drain plug bolt	1	14	3.5 - 4.0	
Crankcase attachment bolt (6mm)	16	6	1.0 - 1.4	Apply oil
(8mm)	11	8	2.1 - 2.5	Apply oil
Cover attachment bolt (6mm)	25	6	0.8 - 1.2	
Shift drum center (Shifter pin)	1	-	2.1 - 2.5	Apply screw lock

• Frame

Part Name	Qty	Screw Dia	Tightening Torque kg-m	Notes
Handle attachment Bolt	2	8	2.5 - 3.0	
Brake Disc Bolt	12	8	3.7 - 4.3	
Front accelerator nut	1	14	5.5 - 6.5	
Front accelerator holder nut	4	8	1.8 - 2.5	U-Nut
Caliper bracket bolt	4	8	2.4 - 3.0	
Master cylinder holder nut	2	6	1.0 - 1.4	
Front folk socket bolt	2	8	1.5 - 2.0	
Bottom bridge bolt	2	10	3.0 - 4.0	
Top bridge bolt	2	7	0.9 - 1.3	
Front Folk bolt	2	31	1.5 - 3.0	
Steering adjusting bolt	1	26	2.0 - 2.4	
Steering stem bolt	1	24	9.0 - 12.0	
Driven sprocket nut	6	8	2.8 - 3.4	
Rear accelerator bolt	1	16	8.0 - 10.0	U-Nut
Rear cushion lower joint locking nut	1	12	3.8 - 6.0	Apply screw locker
Rear cushion upper bolt	1	10	5.0 - 6.0	U-Nut
Rear cushion lower bolt	1	10	5.0 - 6.0	U-Nut
5.0 - 6.0	1	10	5.0 - 6.0	U-Nut
Con rod bolt (Custom arm side)	1	10	5.0 - 6.0	U-Nut
(Frame side)	1	10	5.0 - 6.0	U-Nut
Rear folk pivot adjusting bolt	1	26	1.0 - 2.0	
Rear folk pivot locking nut	1	26	6.0 - 7.0	
Rear folk pivot nut	1	14	6.0 - 7.0	U-Nut

Part Name	Qty	Screw Dia.	Tightening Torque kg-m	Notes
Hanger pin	4	10	1.5 - 2.0	
Hanger pin plug	4	10	0.1 - 0.2	
Brake hose attachment bolt	4	10	2.5 - 3.5	
Brake hose tightening bolt	1	10	3.0 - 4.0	Right side under a bottom bridge
Exhaust pipe joint nut	8	6	0.8 - 1.2	
Muffler attachment bolt	1	8	2.4 - 3.0	
Change pedal	1	6	1.0 - 1.4	
Engine mount bolt	8	10	4.5 - 5.5	
Engine hanger bracket	4	10	3.5 - 4.5	
Sub frame	4	10	4.5 - 5.5	
Side stand bracket	2	8	2.5 - 3.0	
Step holder	4	8	2.5 - 3.0	
Tandem step holder	4	8	2.5 - 3.0	
Ignition switch	2	8	2.5 - 3.0	
Thermostat case	2	6	1.0 - 1.4	
Radiator upper stay	2	6	1.0 - 1.4	
Radiator grill	2	6	0.8 - 1.2	
Fuel cock	1	22	2.0 - 2.5	
Fuel tank attachment nut	1	6	0.8 - 1.2	
Fuel tank attachment bolt	1	8	1.8 - 2.5	
Air cleaner case (step bolt)	6	5	0.6 - 1.0	
Air cleaner duct	1	6	0.5 - 0.8	
Sub air cleaner	1	6	0.5 - 0.8	
Fairing	6	6	0.7 - 1.1	
Fairing inside cover	4	6	0.6 - 1.0	
Head light	4	6	0.3 - 0.5	
Fairing stay	2	10	3.0 - 4.0	
Meter	2	6	0.8 - 1.2	
Cooling fan switch	1	16	2.4 - 3.2	Apply sealer
Front fender (6mm bolt)	4	6	0.8 - 1.2	
(6mm bis)	2	6	0.7 - 1.1	
Rear fender A	4	6	0.7 - 1.1	
Rear fender B	5	6	0.8 - 1.2	
Tail light	2	6	0.8 - 1.2	
Starter motor terminal cable	1	6	0.8 - 1.2	
Front direction indicator	2	5	0.35 - 0.50	
Horn stay	1	6	0.8 - 1.2	

- For the parts not specified in the above tables, use the following standards.

- **Standard Tightening Torque** SH (Small Head) Bolt: 8mm flange head 6mm bolt

Type of bolt/nut	Torque kg-m	Type of bolt/screw/nut	Torque kg-m
5mm bolt/nut	0.45 - 0.6	5mm screw	0.35 - 0.5
6mm bolt/nut	0.8 - 1.2	6mm screw, 6mm flange bolt	0.7 - 1.1
8mm bolt/nut	1.8 - 2.5	6mm flange bolt/nut	1.0 - 1.4
10mm bolt/nut	3.0 - 4.0	8mm flange bolt/nut	2.4 - 3.0
12mm bolt/nut	5.0 - 6.0	10mm flange bolt/nut	3.5 - 4.5

- **Exclusive / Common Tools**

CBR250R,RR

1. Maintenance Information

• New Exclusive tools

Name of the tool	Tool Number	Application	Section in the Manual
Compression gauge attachment	07GMJ-KT70100	Cylinder compression meas.	2
Clutch center holder	07GMB-KT70100	Clutch assembly/disassembly	10
Valve spring compressor attachment	07GME-KT70200	Valve assembly/disassembly	7
Tappet hole protector	07GME-KT70200	Valve assembly/disassembly	7
Valve guide remover (4mm)	07GMD-KT70100	Valve guide assembly/disassembly	7
Socket wrench (Dodecagon)	07GMA-KT70100	Cylinder head 7mm bold (dodecagon) attach/detachment	7
Needle bearing remover	07GMA-KT70200	Rear fork L-bearing detachment	14
Lock nut wrench	07GMA-KT70200	Rear fork attach/detachment	14

• Existing exclusive tools

Name of the tool	Tool number	Application	Section in the manual
Oil pressure gauge attachment	07510-4220100	Oil pressure measurement	3
Steering stem attachment	07916-3710100	Adjust nut attach/detachment	13
Bearing remover	07936-3710300	Detachment of needle bearings of rear fork and suspension linkage, main shaft L-bearing	14
- Remover handle	07936-3710100		8
- remover sliding weight	07741-00110201		
Driver attachment (28X30mm)	07946-1870100	Attachment of rear fork L-bearing	14
Steering stem driver	07946-MB00000	Inner race attachment	13
Driver shaft	07946-MJ00100	Rear fork bearing detachment	14
Fork seal driver attachment	07947-KA20200	Front fork assembly	13
Ball race remover set	07946-KM90000	Ball race attach/detachment	13
- driver shaft assy(incl. nut)	07946-KM90300		
- assembly base			
- driver attachment A	07946-KM90600		
- driver attachment B	07946-KM90100		
- bearing remover A	07946-KM90200		
- bearing remover B	07946-KM90400 07946-KM90500		
Rear cushion compressor attachment	07959-MB10000	Rear cushion Assembly/disassembly	14
Valve guide reamer	07964-8840000	Valve guide clean/finish	7
Snap ring pliers	07914-3230001	Snap ring attach/detachment	15
Piston ring compressor	07955-ZG00000	Piston assembly	9