

Mazda

626

Workshop Manual

JMZ GF12P2

JMZ GF12F2

JMZ GF12F5

JMZ GF14P2

JMZ GF14P5

JMZ GF14F2

JMZ GF14F5

JMZ GF14S2

JMZ GF14S5

4/97 1577-10-97D

MAZDA

Mazda 626 Workshop Manual

FOREWORD

This manual contains on vehicle service and diagnosis for the Mazda 626.

For proper repair and maintenance, a thorough familiarization with this manual is important, and it should always be kept in a handy place for quick and easy reference.

All the contents of this manual, including drawings and specifications, are the latest available at the time of printing. As modifications affecting repair or maintenance occur, relevant information supplementary to this volume will be made available at Mazda dealers. This manual should be kept up-to-date.

Mazda Motor Corporation reserves the right to alter the specifications and contents of this manual without obligation or advance notice.

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WARRANTY

The manufacturer's warranty on Mazda vehicles and engines can be voided if improper service or repairs are performed by persons other than those at an Authorized Mazda Dealer.

**Mazda Motor Corporation
HIROSHIMA, JAPAN**

APPLICATION:

This manual is applicable to vehicles beginning with the Vehicle Identification Numbers (VIN), and related materials shown on the following page.

CONTENTS

Title	Section
General Information	GI
Engine	B
Lubrication System	D
Cooling System	E
Fuel and Emission Control Systems	F
Engine Electrical System	G
Clutch	H
Manual Transaxle	J
Automatic Transaxle	K
Front and Rear Axles	M
Steering System	N
Braking System	P
Suspension	R
Body	S
Body Electrical System	T
Heater and Air Conditioner Systems	U
Technical Data	TD
Special Tools	ST

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VEHICLE IDENTIFICATION NUMBERS (VIN)

JMZ GF12P20# 100001 —
JMZ GF12F20# 100001 —
JMZ GF12F50# 100001 —
JMZ GF14P20# 100001 —
JMZ GF14P50# 100001 —
JMZ GF14F20# 100001 —
JMZ GF14F50# 100001 —
JMZ GF14S20# 100001 —
JMZ GF14S50# 100001 —

RELATED MATERIALS

626 Training Manual (Europe) 3303-10-97D
Engine Workshop Manual FP FS 1579-10-97D
Manual Transaxle Workshop Manual G25M-R 1441-10-94F
Automatic Transaxle Workshop Manual GF4A-EL . 1393-10-93H
626 Wiring Diagram (Europe (L.H.D.)) 5406-10-97D
626 Wiring Diagram (UK) 5407-10-97D

GENERAL INFORMATION

GI

HOW TO USE THIS MANUAL	GI- 1	HOSE CLAMPS	GI-11
RANGE OF TOPICS	GI- 1	TORQUE FORMULAS	GI-12
SERVICING PROCEDURE	GI- 1	WISE	GI-12
SYMBOLS	GI- 3	DYNAMOMETER	GI-12
ADVISORY MESSAGES	GI- 3	INSTALLATION OF RADIO SYSTEM	GI-12
TROUBLESHOOTING PROCEDURE	GI- 3	ELECTRICAL SYSTEM	GI-13
TEXT SEQUENCE	GI- 6	ELECTRICAL PARTS	GI-13
UNITS	GI- 7	CONNECTORS	GI-13
NEW STANDARDS	GI- 8	ELECTRICAL TROUBLESHOOTING	
FUNDAMENTAL PROCEDURES	GI-10	TOOLS	GI-15
PROTECTION OF THE VEHICLE	GI-10	JACKING POSITIONS	GI-16
PREPARATION OF TOOLS AND		VEHICLE LIFT (2 SUPPORTS) POSITIONS ..	GI-16
MEASURING EQUIPMENT	GI-10	SAFETY STAND POSITIONS	GI-17
SPECIAL TOOLS	GI-10	TOWING	GI-18
DISCONNECTION OF THE NEGATIVE		TOWING HOOK	GI-19
BATTERY CABLE	GI-10	TIEDOWN HOOKS	GI-19
REMOVAL OF PARTS	GI-10	IDENTIFICATION NUMBER LOCATIONS	GI-20
DISASSEMBLY	GI-10	VEHICLE IDENTIFICATION NUMBER	GI-20
INSPECTION DURING REMOVAL,		ENGINE IDENTIFICATION NUMBER	GI-20
DISASSEMBLY	GI-10	ABBREVIATIONS	GI-20
ARRANGEMENT OF PARTS	GI-10	PRE-DELIVERY INSPECTION	GI-21
CLEANING OF PARTS	GI-11	PRE-DELIVERY INSPECTION TABLE	GI-21
REASSEMBLY	GI-11	SCHEDULED MAINTENANCE	GI-22
ADJUSTMENT	GI-11	SCHEDULED MAINTENANCE TABLE	GI-22
RUBBER PARTS AND TUBING	GI-11		

HOW TO USE THIS MANUAL

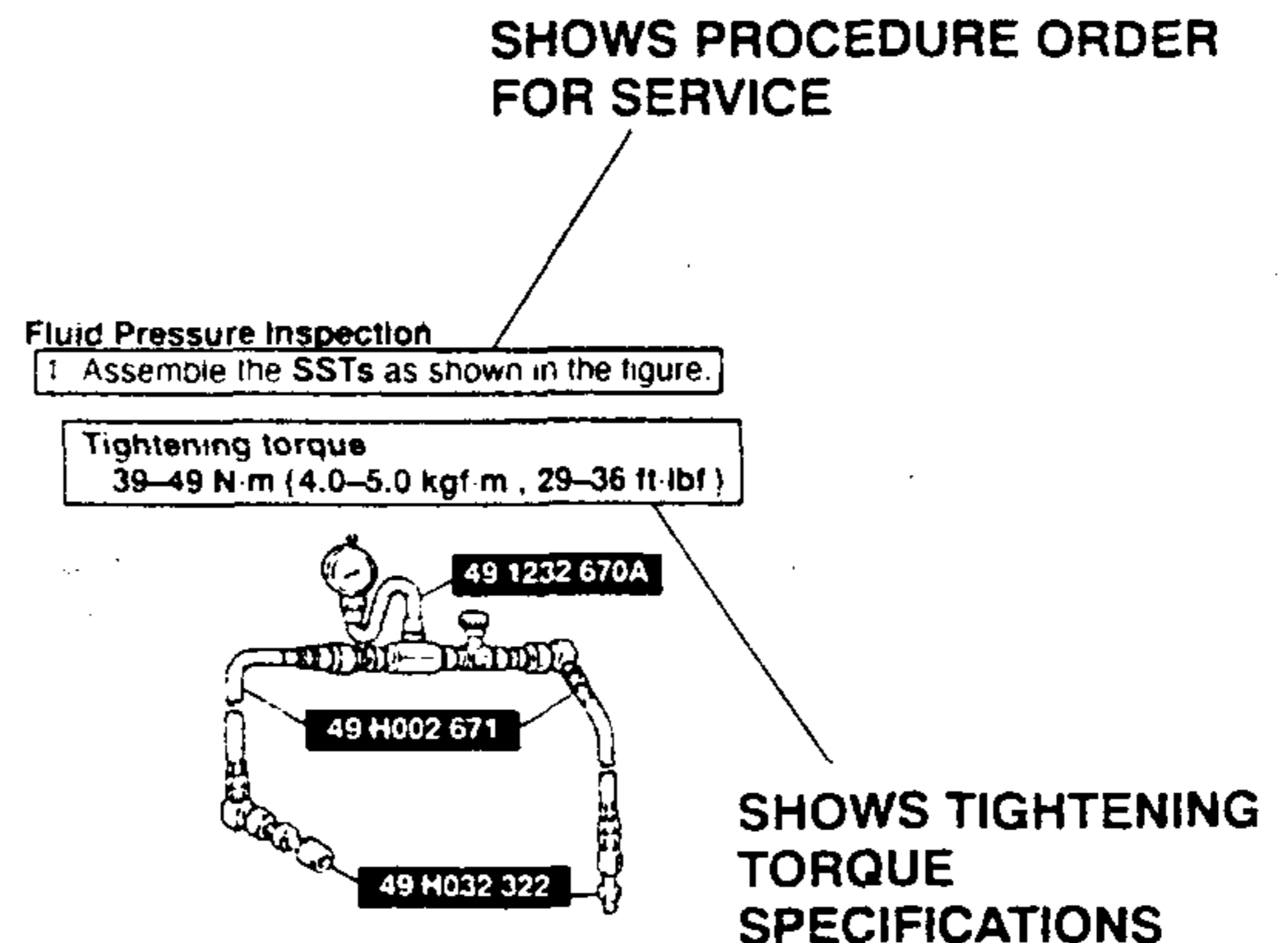
RANGE OF TOPICS

- This manual contains the procedures for performing all of the required service operations. The procedures are divided into the following five basic operations.
 - (1) Removal/Installation
 - (2) Disassembly/Assembly
 - (3) Replacement
 - (4) Inspection
 - (5) Adjustment
- Simple operations which can be performed easily just by looking at the vehicle such as removal/installation of parts, jacking, vehicle lift, cleaning of parts, and visual inspection, have been omitted.

SERVICING PROCEDURE

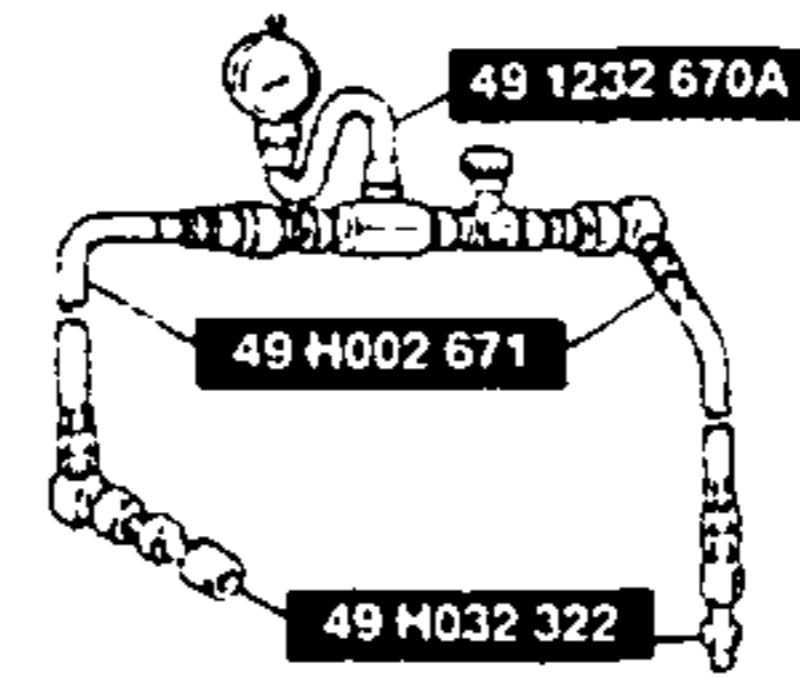
Inspection, Adjustment

- The procedures for inspections and adjustments are divided into steps. Important points in regard to the location and contents of the procedures are explained in detail and are shown in the illustrations.



Fluid Pressure Inspection
 1 Assemble the SSTs as shown in the figure.

Tightening torque
 39-49 N·m (4.0-5.0 kgf·m, 29-36 ft·lbf)



Caution

- Connect the gauge set from under the vehicle to prevent contact with the drive belt and the cooling fan.

HOW TO USE THIS MANUAL

Repair procedure

1. Most repair operations begin with an overview illustration. It identifies the components, shows how the parts fit together, and describes visual part inspection. However, only the removal/ installation procedures which need to be performed methodically have written instructions.
2. Expendable parts, tightening torques, and symbols for oil, grease, and sealant are shown in the overview illustration. In addition, symbols indicating parts which require the use of special service tools for removal/installation are also shown.
3. The procedures are numbered and the part that is the main point of that procedure is shown in the illustration with the corresponding number. Occasionally, there are important points or information concerning a procedure. Refer to this information when servicing the related part.

Procedure

"Removal/Installation" Portion

"Inspection After Installation" Portion

SHOWS SERVICE ITEM (S)

Indicated any relevant references which need to be followed during installation.

SHOWS SPECIAL SERVICE TOOL (SST) FOR SERVICE OPERATION

SHOWS APPLICATION POINTS OF GREASE, ETC.

SHOWS EXPENDABLE PARTS

SHOWS TIGHTENING TORQUE SPECIFICATIONS

SHOWS DETAILS

SHOWS TIGHTENING TORQUE UNITS

SHOWS THERE ARE REFERRAL NOTES FOR SERVICE

SHOWS REFERRAL NOTES FOR SERVICE

SHOWS PROCEDURE ORDER FOR SERVICE

Install the parts by performing steps 1-3 in reverse order

LOWER TRAILING LINK, UPPER TRAILING LINK REMOVAL/INSTALLATION

1. Jack up the rear of the vehicle and support it with safety stands.
2. Remove the undercover. (Refer to UNDERCOVER REMOVAL.) (Refer to UNDERCOVER INSTALLATION.)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.
5. Inspect the rear wheel alignment and adjust it if necessary.

44-80 (4.4-5.2, 32-44)

94-116 (9.5-11.9, 69-86)

43-58 (4.3-5.8, 32-41)

118-156 (12.0-16.0, 87-115)

N-m (kgf-m , ft-lbf)

1	Split pin	8	Nut
2	Nut	9	Upper trailing link ball joint * Removal Note
3	Lower trailing link ball joint * Removal Note	10	Nut
4	Bolt	11	Upper trailing link
5	Lower trailing link	12	Dust boot (upper trailing link) * Removal Note
6	Dust boot (lower trailing link) * Installation Note		
7	Split pin		

Lower Trailing Link Ball Joint, Upper Trailing Link Ball Joint Removal Note

- Remove the ball joint by using the SSTs.

SHOWS SPECIAL SERVICE TOOL (SST) NO.

49 T02B 304 UPPER TRAILING LINK

49 T02B 305 LOWER TRAILING LINK









49 T02B 303

KNUCKLE

HOW TO USE THIS MANUAL

SYMBOLS

- There are eight symbols indicating oil, grease, sealant, and the use of SSTs. These symbols show the points of applying or using such materials during service.

Symbol	Meaning	Kind
	Apply oil	Appropriate new engine oil or gear oil
	Apply brake fluid	Appropriate new brake fluid
	Apply automatic tranaxle/transmission fluid	Appropriate new automatic tranaxle/transmission fluid
	Apply grease	Appropriate grease
	Apply sealant	Appropriate sealant
	Apply petroleum jelly	Appropriate petroleum jelly
	Replace part	O-ring, gasket, etc.
	Use SST	Appropriate SST

ADVISORY MESSAGES

You'll find several **Warnings**, **Cautions**, **Notes**, **Specifications** and **Upper and lower limits** in this manual.

Warning

- A **Warning** indicates a situation in which serious injury or death could result if the warning is ignored.

Caution

- A **Caution** indicates a situation in which damage to the vehicle could result if the caution is ignored.

Note

- A **Note** provides added information that will help you to complete a particular procedure.

Specification

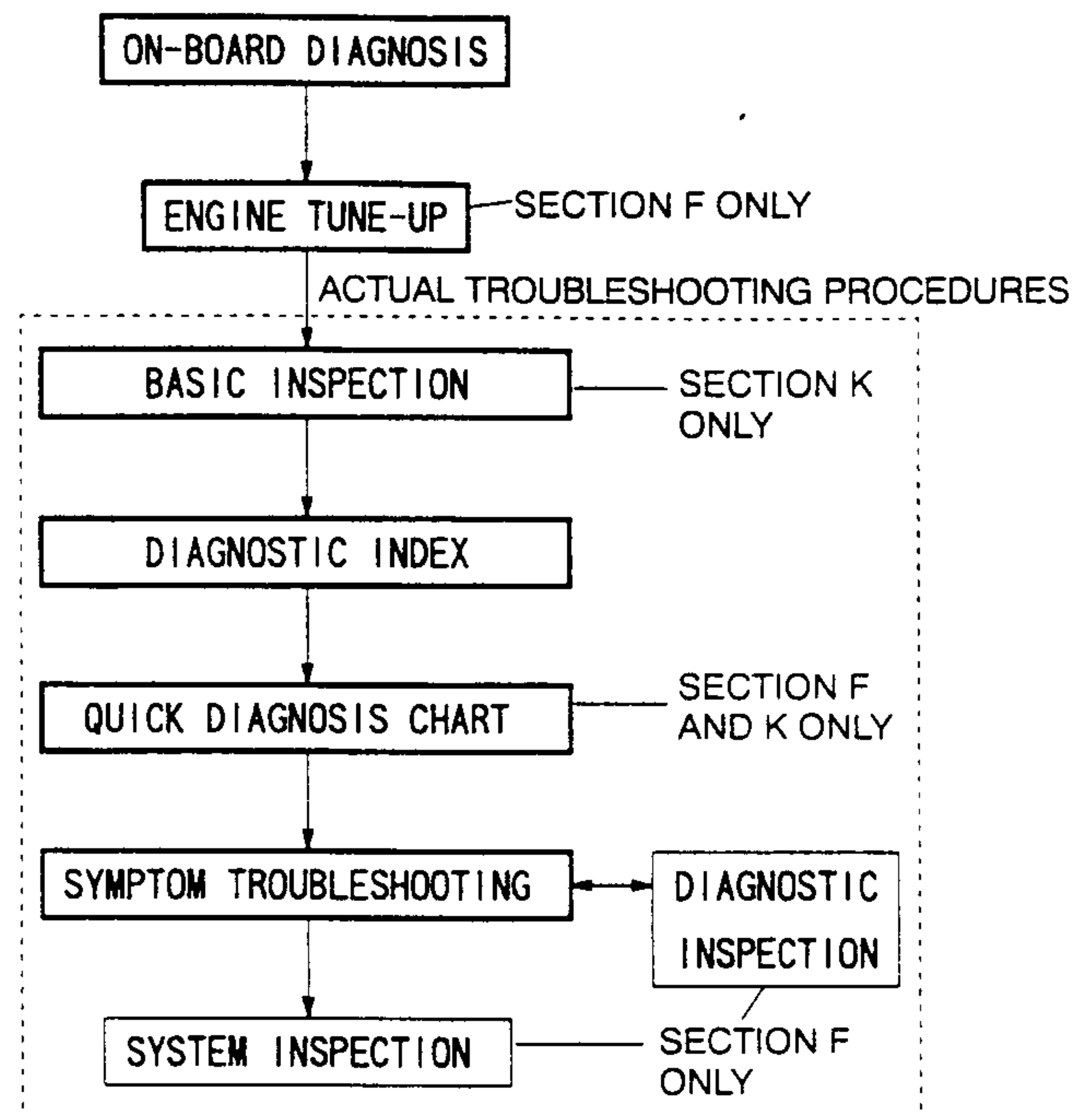
- The values indicates the allowable range when performing inspections or adjustments.

Upper and lower limits

- The values indicate the upper and lower limits that must not be exceeded when performing inspections or adjustments.

TROUBLESHOOTING PROCEDURE

Basic Flow of Troubleshooting



On-board diagnosis

- The service codes are important hints for repairing malfunctions that are difficult to simulate. By following the service code, perform the inspection to quickly and accurately diagnose the malfunction.
- The self-diagnostic function is used during inspection. When a service code is shown, specifying the cause of a malfunction, continue the inspection according to the items indicated by the self-diagnostic function.

Engine tune-up (section F)

- Any necessary adjustments are made after starting the engine.

Basic inspection (section K)

- The basic inspection is performed to quickly narrow down the possible causes after a malfunction occurs regardless of the symptoms. The basic inspection is performed to also locate the region of many malfunction symptoms.

Diagnostic index

- The diagnostic index lists the symptoms of the malfunctions. Select the symptoms pertaining or most closely pertaining to the actual malfunction.

Quick diagnosis chart (section F, K)

- The quick diagnosis chart lists the diagnosis and inspection procedures to be performed specifically relating to the cause of the malfunction.

Symptom troubleshooting

- Symptom troubleshooting quickly determines the location of the malfunction according to the type of symptoms.

HOW TO USE THIS MANUAL

Procedures For Use

Using the basic inspection

- Perform the basic inspection before the symptom troubleshooting.
- Perform each step in the order shown.
- The reference column lists the location of the detailed procedure for each basic inspection.
- Although inspection and adjustment are performed as according to the procedures referred to in the reference column, if the cause of the malfunction is discovered during the basic inspection, continue the procedures as indicated in the remarks column.

STEP	INSPECTION	ACTION	
1	Turn ignition switch to ON Does hold indicator light (illuminate/go out) correspond to hold switch position (ON/OFF)?	Yes	Go to next step
		No	Perform malfunction diagnosis according to No.26 "HOLD INDICATOR LIGHT DOES NOT ILLUMINATE WHEN HOLD SWITCH IS TURNED ON" or No.27 "HOLD INDICATOR LIGHT ILLUMINATES WHEN HOLD SWITCH IS NOT TURNED ON"
2	Check the ATF color and condition Are ATF color and odor normal?	Yes	Go to next step
		No	Repair or replace any defective parts
3	Perform the line pressure test (Refer to MECHANICAL SYSTEM TEST, Line Pressure Test) Is line pressure OK?	Yes	Go to next step
		No	Repair or replace any defective parts
4	Perform the stall test (Refer to MECHANICAL SYSTEM TEST, Stall Test) Is stall speed OK?	Yes	Go to next step
		No	Repair or replace any defective parts
5		Yes	Perform symptom troubleshooting

Using the diagnostic index

- The symptoms of the malfunctions are listed in the diagnostic index for system troubleshooting.
- The exact malfunction symptoms can be selected by using the details.

No.	TROUBLESHOOTING ITEM	DESCRIPTION
1	Discharged battery	—
2	Will not crank or cranks slowly	—
3	No combustion	Engine cranks at normal speed but shows no sign of firing
4	Combustion observed but engine will not start	Engine shows combustion while cranking but will not continue to run when ignition switch is turned from STA to ON
5	Cranks normal but hard to start	Engine cranks at normal speed but requires excessive cranking time before starting Engine runs normally at idle after started
6	Low idle speed/Engine stalls or vibrates	Engine idles at low speed, stalls, or vibrates when engine is cold, hot, or normal temperature
7	High idle speed Idle speed hard to high	Idle speed excessively high and will not go down after warm-up
8	High idle speed Idle speed hard to lower	Idle speed excessively high and requires time to be lowered to normal speed after warm-up
9	Rough idle/Engine stalls when E/L, P/S, or A/C ON	Engine runs normally at idle with no load but stalls or vibrates excessively when load (E/L, P/S, or A/C) is ON
10		Engine runs normally at idle but stalls or vibrates excessively during N-D shift

HOW TO USE THIS MANUAL

Using the quick diagnosis chart

- Symptom troubleshooting shows diagnosis procedure, inspection method, and proper action to take for each trouble symptom.

TROUBLESHOOTING HINTS describes possible point of malfunction.

TROUBLE SYMPTOM

1		Vehicle does not move in D, S, L ranges, or in R position	
TROUBLESHOOTING HINTS If the vehicle does not move in D, S, L ranges or R position, basically, the malfunction is in the automatic transmission. (Vehicle will move even with a malfunction in the PCM.) Since a malfunction in the sensor circuit or output circuit is the cause of the malfunction in the automatic transmission, inspect the sensors, output circuit, and the related harnesses. (1) Clutch slippage, worn (D, S, L ranges - Forward clutch, R position - Reverse clutch, Low and reverse brake) ① Line pressure low			
STEP	INSPECTION	Yes	ACTION
1	With vehicle stopped on a flat, paused road and engine off, does vehicle move when pushed? (in D, S ranges or N, R positions and brake released)	Yes	Go to next step
		No	Check for parking mechanism (Refer to AT workshop manual)
2	Does vehicle move when selector lever is in between N position and D range	Yes	Go to next step
		No	Inspect or adjust the selector lever (Refer to SHIFT MECHANISM, SELECTOR LEVER REMOVAL / INSTALLATION)
3	Check the voltage at the following terminal of the powertrain control module (Refer to section F, CONTROL SYSTEM, POWERTRAIN CONTROL MODULE INSPECTION). • Pressure control solenoid signal is terminal voltage OK?	Yes	Go to next step
		No	Repair or replace any defective parts
4	Check duty of pressure control solenoid (Refer to AUTOMATIC TRANSMISSION, SOLENOID VALVE INSPECTION, Pressure Control Solenoid Output Duty Inspection) Is duty OK?	Yes	Overhaul control valve body and repair or replace any defective parts (Refer to AT workshop manual) If problem remains, overhaul transmission and repair or replace any defective parts (Refer to AT workshop manual)
		No	Check the voltages at the following terminals of the powertrain control module (Refer to section F, CONTROL SYSTEM)

STEP shows the order of troubleshooting.

INSPECTION describes an inspection (method) to quickly determine the failed part.

Reference page(s) for the detailed procedure to perform INSPECTION is shown.

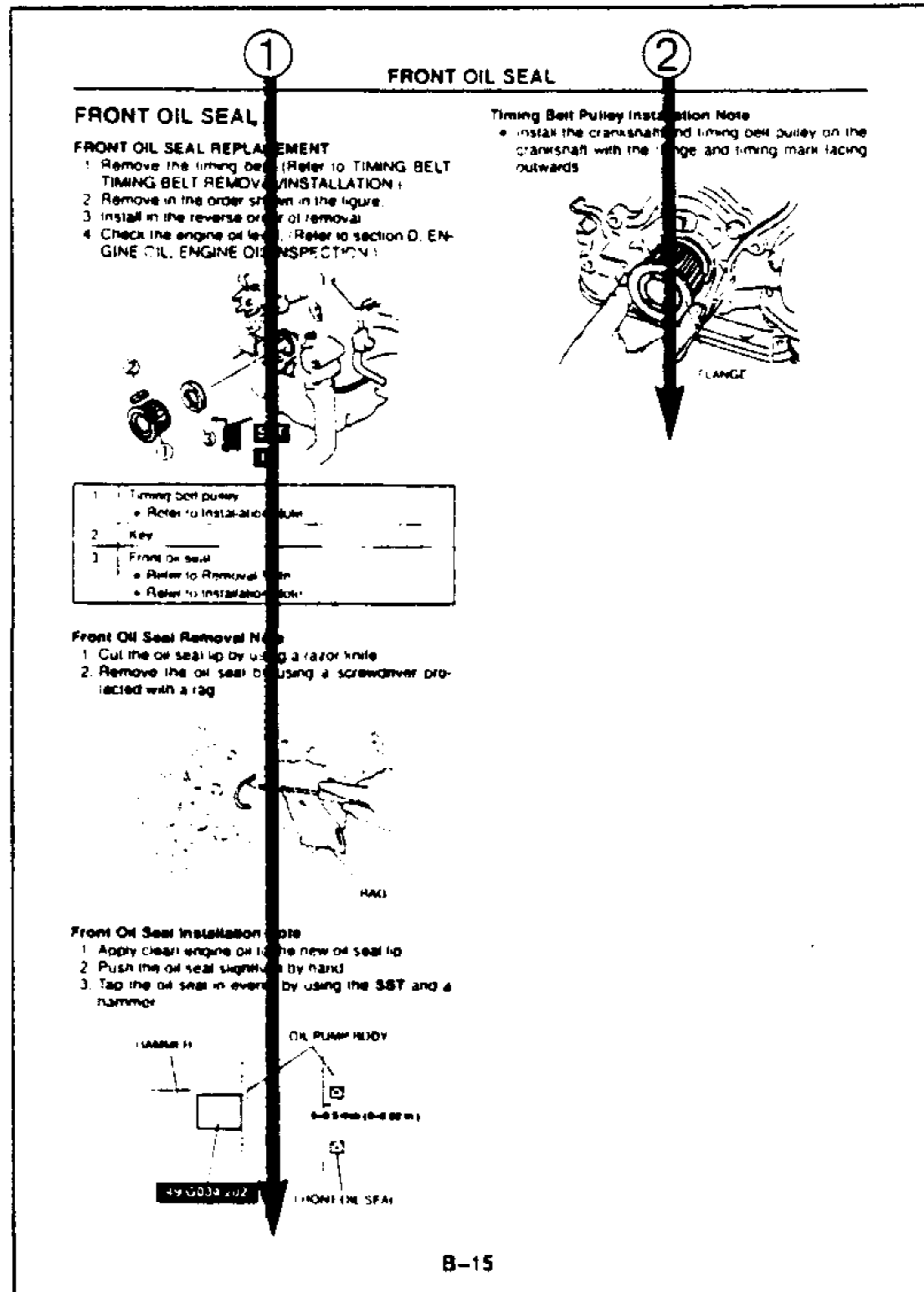
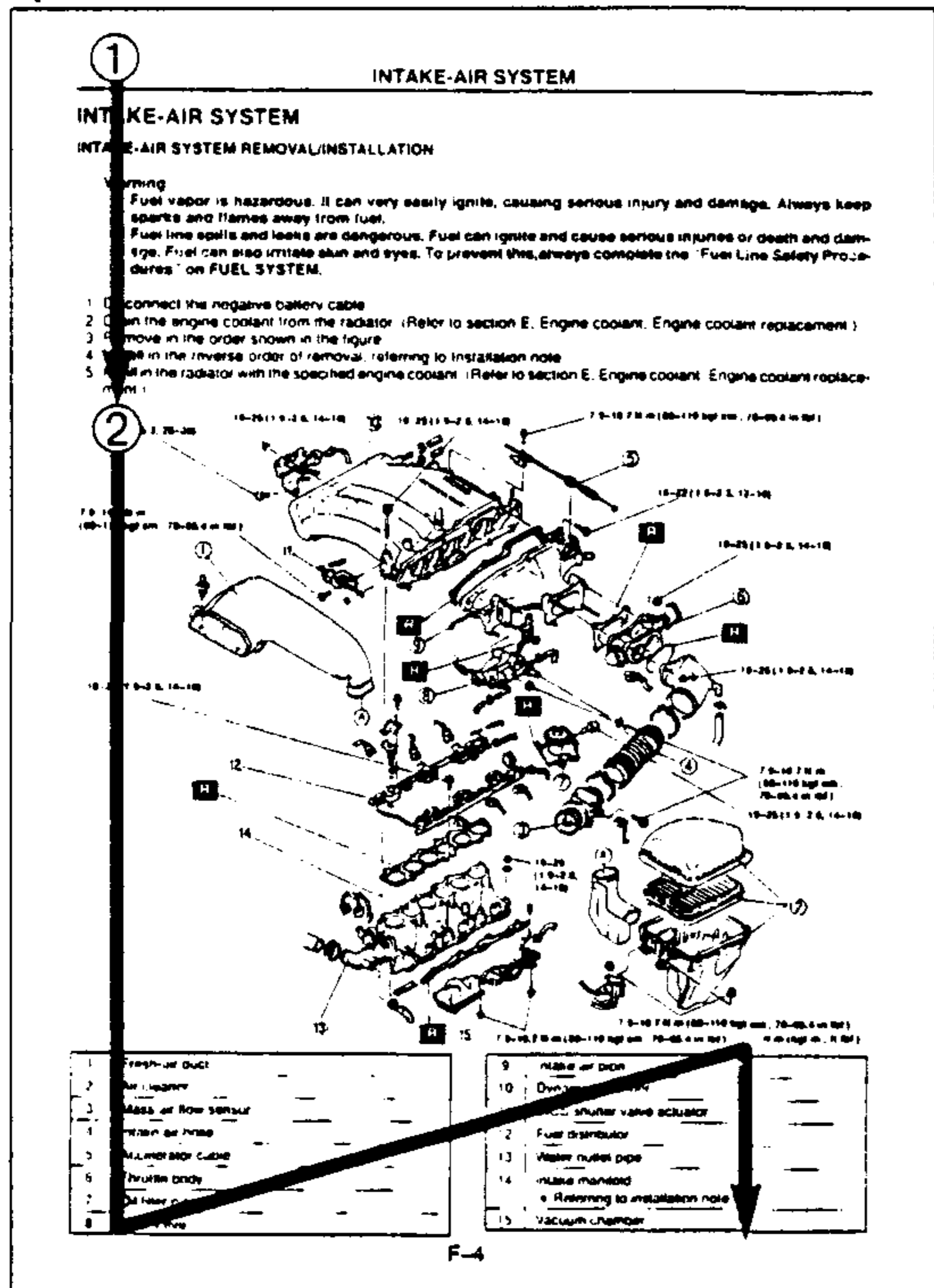
ACTION describes the appropriate action to take as a result (Yes/No) of INSPECTION.

How to perform ACTION is described on the reference page shown.

TEXT SEQUENCE

- The text sequence is as indicated by the arrows shown below.

Example:



UNITS

UNITS

Electrical current	A (ampere)
Electric potential	V (volt)
Electric power	W (watt)
Length	mm (millimeter)
	in (inch)
Negative pressure	kPa (kilo pascal)
	mmHg (millimeters of mercury)
	inHg (inches of mercury)
Positive pressure	kPa (kilo pascal)
	kgf/cm ² (kilogram force per square centimeter)
	psi (pounds per square inch)
Resistance	Ω (ohm)
Speed	rpm (revolution per minute)
Torque	N·m (Newton meter)
	kgf·m (kilogram force per meter)
	kgf·cm (kilogram force per centimeter)
	ft·lbf (foot pound)
	in·lbf (inch pound)
Volume	L (liter)
	US qt (U.S. quart)
	Imp qt (Imperial quart)
	ml (milliliter)
	cc (cubic centimeter)
	cu in (cubic inch)
	fl oz (fluid ounce)
Weight	g (gram)
	oz (ounce)

- The actual converted values for 2.7 kgf/cm² are 264 kPa and 38.4 psi. In the top specification, 2.7 is used as an upper limit, so its converted values are rounded down to 260 and 38. In the bottom specification, 2.7 is used as a lower limit, so its converted values are rounded up to 270 and 39.

Conversion to SI Units (Système International d'Unités)

- All numerical values in this manual are based on SI units. Numbers shown in conventional units are converted from these values.

Rounding off

- Converted values are rounded off to the same number of places as the SI unit value. For example, if the SI unit value is 17.2 and the value after conversion is 37.84, the converted value will be rounded off to 37.8.

Upper and lower limits

- When the data indicates upper and lower limits, the converted values are rounded down if the SI unit value is an upper limit and rounded up if the SI unit value is a lower limit. Therefore, converted values for the same SI unit value may differ after conversion. For example, consider 2.7 kgf/cm² in the following specifications:

210—260 kPa { 2.1—2.7 kgf/cm² , 30—38 psi }
 270—310 kPa { 2.7—3.2 kgf/cm² , 39—45 psi }

NEW STANDARDS

NEW STANDARDS

- Following is a comparison of the previous standard and the new standard.

Previous Standard		New Standard		
Abbreviation	Name	Abbreviation	Name	Remark
—	Accelerator Pedal	AP	Accelerator Pedal	
—	Air Cleaner	ACL	Air Cleaner	
—	Air Conditioning	A/C	Air Conditioning	
—	Airflow Meter	VAF	Volume Air Flow Sensor	
—	Airflow Sensor	MAF	Mass Air Flow Sensor	
—	Alternator	GEN	Generator	
—	ATF Thermosensor	—	Transmission (Transaxle) Fluid Temperature Sensor	
—	Atmospheric Pressure	BARO	Barometric Pressure	
V _B	Battery Voltage	B+	Battery Positive Voltage	
—	Catalytic Converter	OC	Oxidation Catalytic Converter	
		TWC	Three Way Catalytic Converter	
		WU-TWC	Warm Up Three Way Catalytic Converter	#1
—	Circuit Opening Relay	FPR	Fuel Pump Relay	#2
—	Clutch Position	CPP	Clutch Pedal Position	
—	Crank Angle Sensor	CMP	Camshaft Position Sensor	
—	Crank Angle Sensor 2	CKP	Crankshaft Position Sensor	
—	Diagnosis Connector	DLC	Data Link Connector	
—	Diagnosis/Self-Diagnosis	OBD	On-Board Diagnostic	
—	Direct Ignition	DLI	Distributorless Ignition	
—	EC-AT Control Unit	TCM	Transmission (Transaxle) Control Module	
EGI	Electronic Gasoline Injection System	CIS	Continuous Fuel Injection System	
—	Electronic Spark Ignition	EI	Electronic Ignition	#3
ECU	Engine Control Unit	PCM	Powertrain Control Module	#4
		ECM	Engine Control Module	
—	Engine Modification	EM	Engine Modification	
—	Engine RPM Signal	—	Engine Speed Input Signal	
—	Evaporative Emission	EVAP	Evaporative Emission	
—	Exhaust Gas Recirculation	EGR	Exhaust Gas Recirculation	
—	Fan Control	FC	Fan Control	
—	Feedback System	CLS	Closed Loop System	
—	Flexible Fuel	FF	Flexible Fuel	
—	Fuel Pump	FP	Fuel Pump	
—	Fully Closed	CTP	Closed Throttle Position	
—	Fully Open	WOT	Wide Open Throttle	
—	Ground/Earth	GND	Ground	
—	IC Regulator	VR	Voltage Regulator	

#1 : Directly connected to exhaust manifold

#2 : In some models, there is a fuel pump relay that controls pump speed. That relay is now called the fuel pump relay (speed).

#3 : Controlled by the ECM/PCM

#4 : Device that controls engine and powertrain

NEW STANDARDS

Previous Standard		New Standard		
Abbreviation	Name	Abbreviation	Name	Remark
—	Idle Speed Control	IAC	Idle Air Control	
—	Idle Switch	—	Closed Throttle Position Switch	
—	Igniter	ICM	Ignition Control Module	
—	Inhibitor	TR	Transmission (Transaxle) Range	
—	Intake Air Pressure	MAP	Manifold Absolute Pressure	
—	Intake Air Thermo	IAT	Intake Air Temperature	
—	Intercooler	CAC	Charge Air Cooler	
—	Knock Sensor	KS	Knock Sensor	
—	Line Pressure Solenoid Valve	—	Pressure Control Solenoid	
—	Lock-up	TCC	Torque Converter Clutch	
—	Malfunction Indicator Light	MIL	Malfunction Indicator Lamp	
—	Multiport Fuel Injection	MFI	Multiport Fuel Injection	
—	Open Loop	OL	Open Loop	
—	Overdrive	4GR	Fourth Gear	
—	Oxygen Sensor	HO2S	Heated Oxygen Sensor	With heater
		O2S	Oxygen Sensor	
—	Park/Neutral Range	PNP	Park/Neutral Position	
—	Power Steering Pressure	PSP	Power Steering Pressure	
—	Pulse Generator	—	Input/Turbine Speed Sensor	
—	Reed Valve	SAPV	Secondary Air Pulse Valve	
—	Secondary Air Injection System	PAIR	Pulsed Secondary Air Injection	Pulsed injection
		AIR	Secondary Air Injection	Inject with compressor
—	Sequential Fuel Injection	SFI	Sequential Multipoint Fuel Injection	
—	Service Code(s)	DTC	Diagnostic Trouble Code(s)	
—	Spark Ignition	DI	Distributor Ignition	
—	Stoptlight Switch	—	Brake Switch	
—	Test Mode	DTM	Diagnostic Test Mode	#5
—	Throttle Body	TB	Throttle Body	
—	Throttle Sensor	TP	Throttle Position Sensor	
—	Turbocharger	TC	Turbocharger	
—	Vehicle Speed Sensor	VSS	Vehicle Speed Sensor	
—	Vehicle Speed Sensor 1	—	Output Speed Sensor	
—	Water Thermo	ECT	Engine Coolant Temperature	
—	1—2 Shift Solenoid Valve	—	Shift Solenoid A	
	Shift+A Solenoid Valve			
—	2—3 Shift Solenoid Valve	—	Shift Solenoid B	
	Shift+B Solenoid Valve			
—	3—4 Shift Solenoid Valve	—	Shift Solenoid C	
—	3rd Gear	3GR	Third Gear	
—	—	—	Incorrect Gear Ratio	

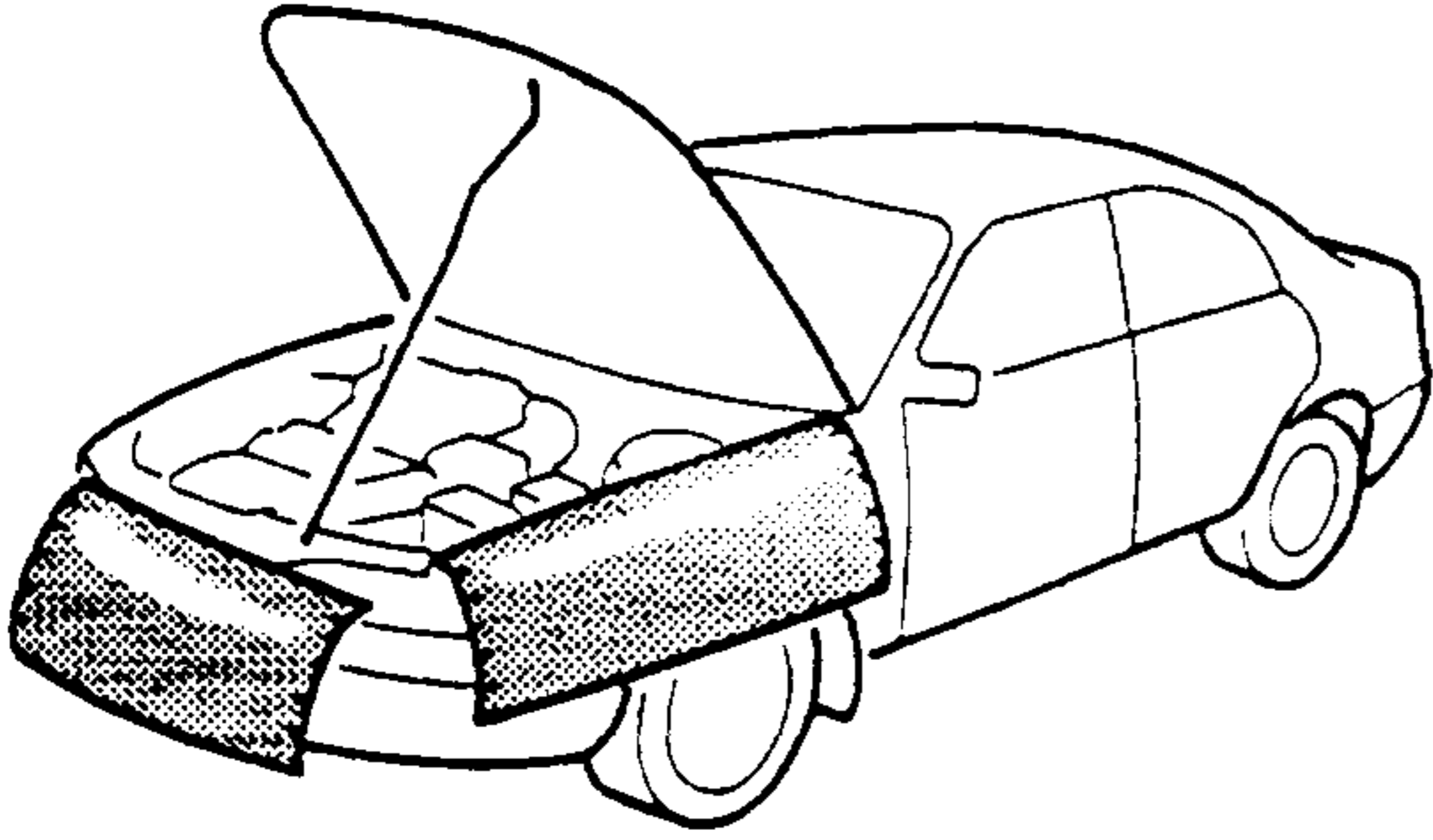
#5 : Diagnostic trouble codes depend on the diagnostic test mode

FUNDAMENTAL PROCEDURES

FUNDAMENTAL PROCEDURES

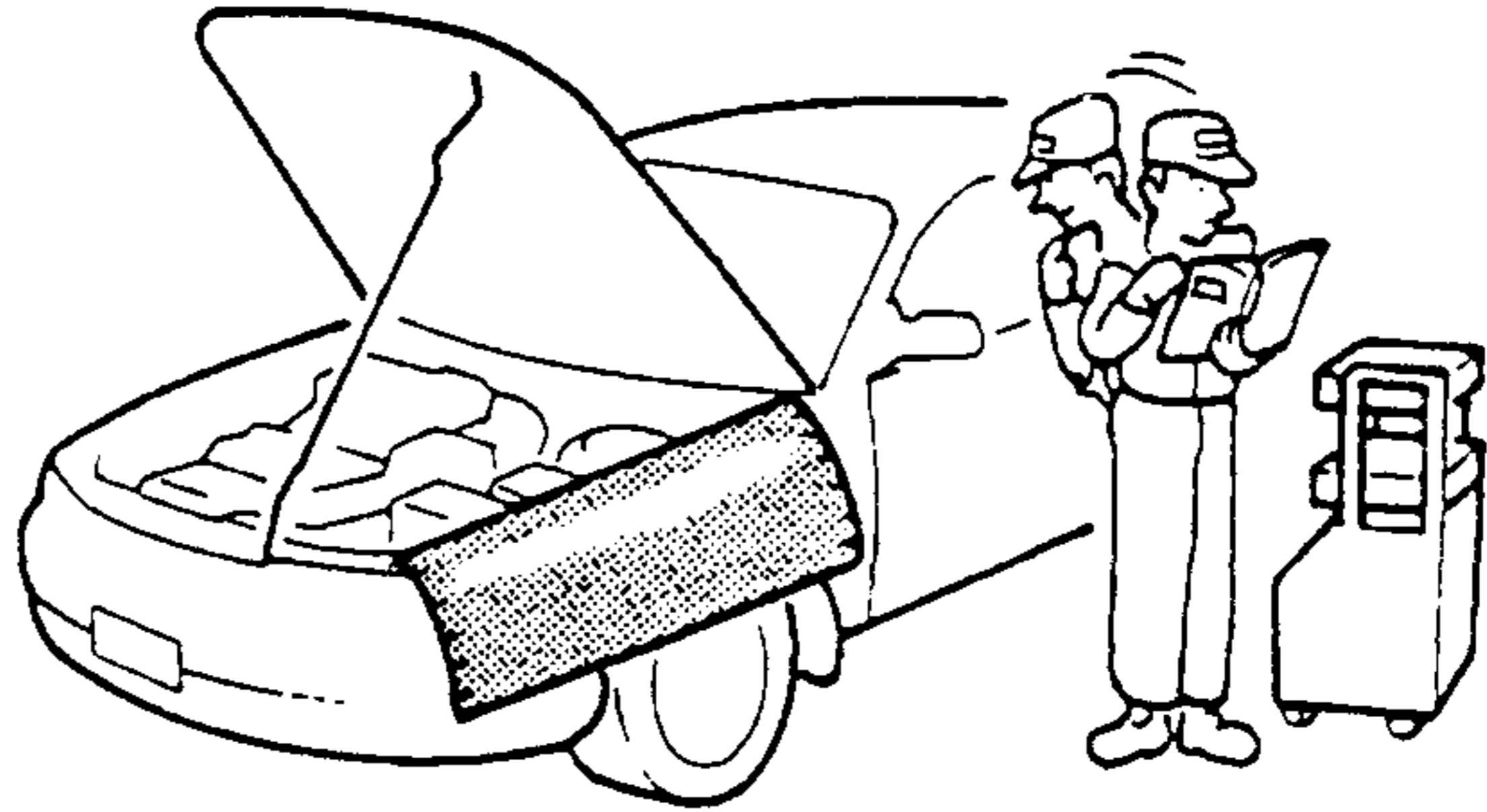
PROTECTION OF THE VEHICLE

- Always be sure to cover fenders, seats, and floor areas before starting work.



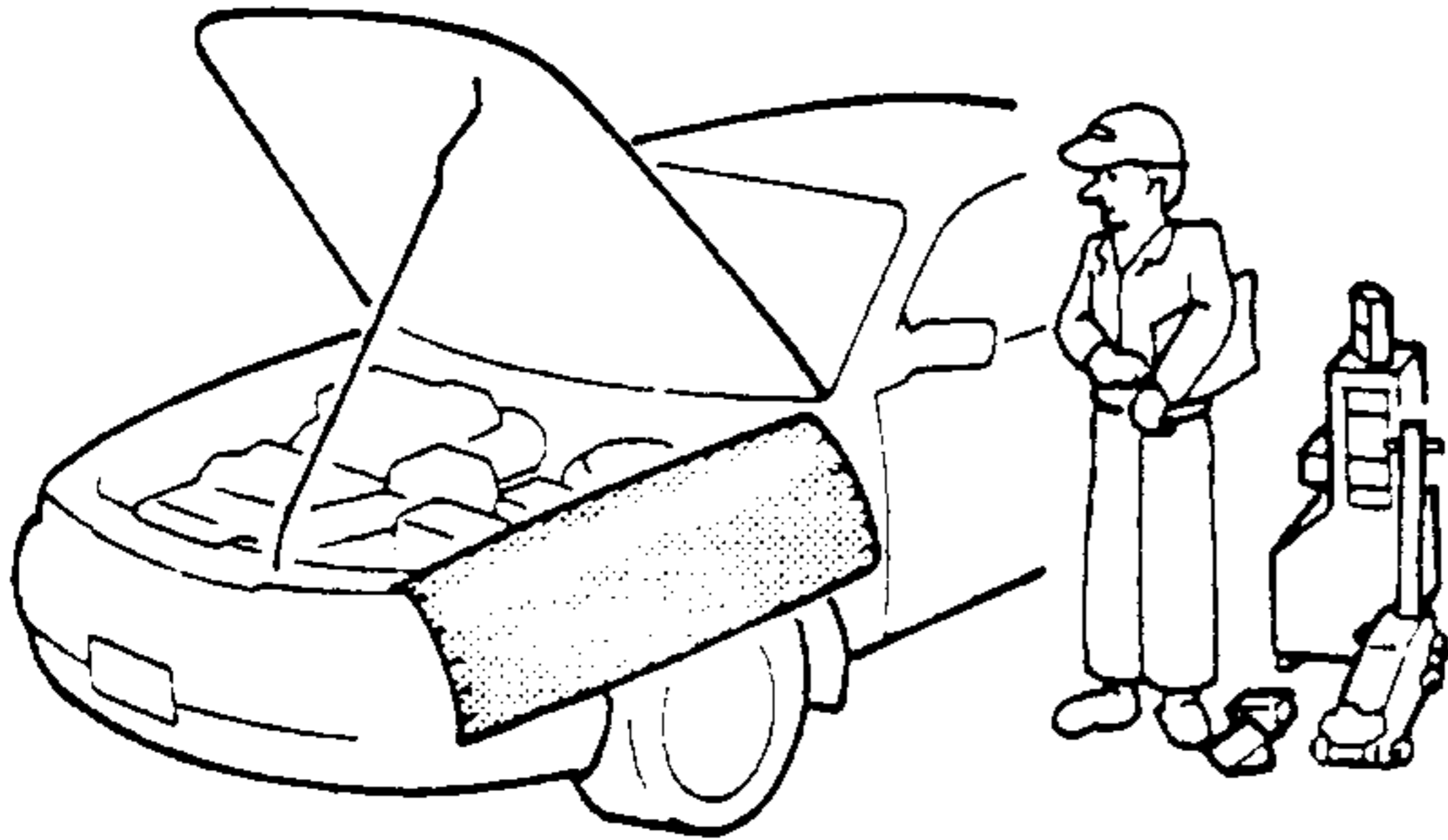
REMOVAL OF PARTS

- While correcting a problem, try also to determine its cause. Begin work only after first learning which parts and subassemblies must be removed and disassembled for replacement or repair. After removing the part, plug all holes and ports to prevent foreign material from entering.



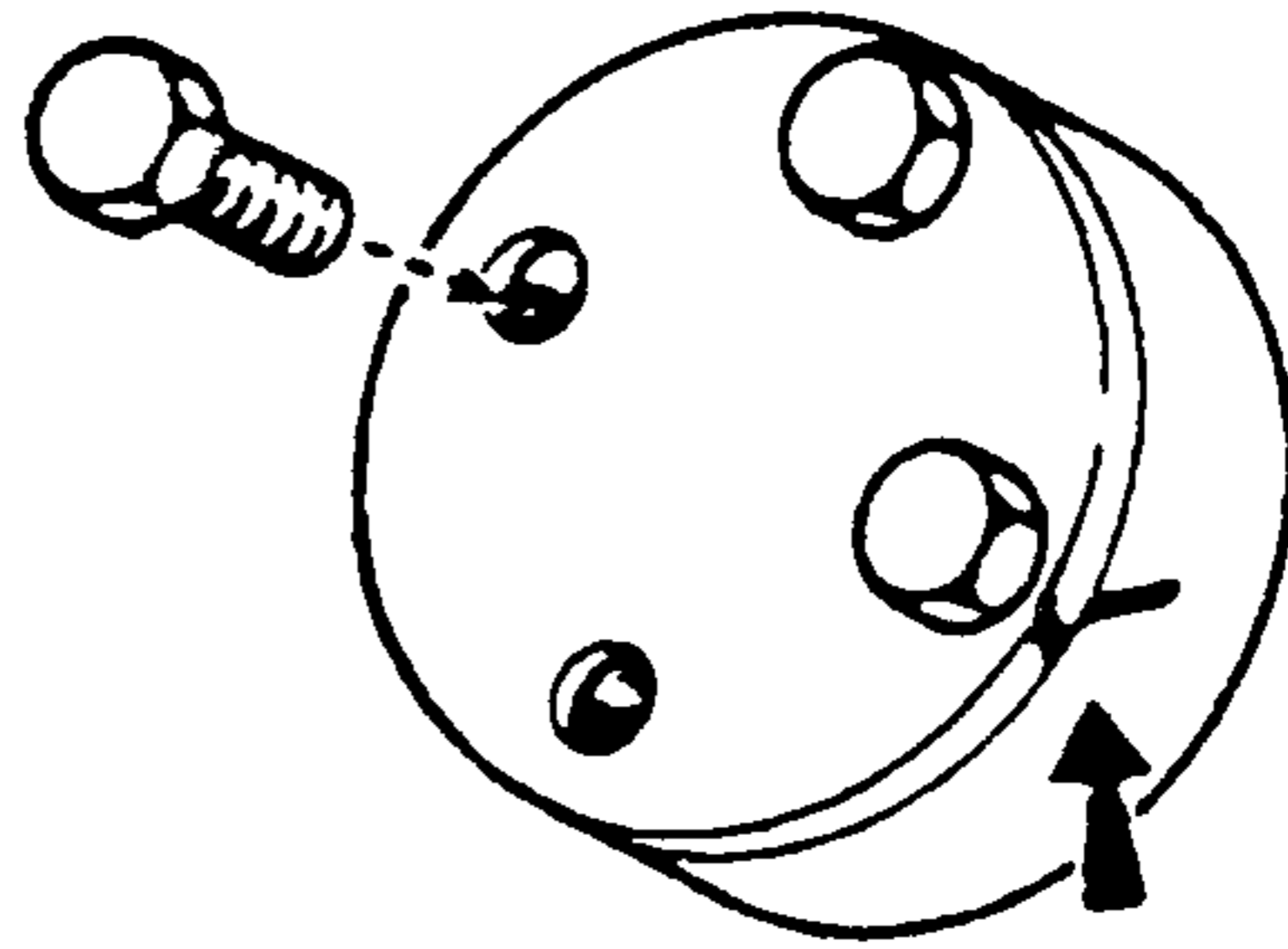
PREPARATION OF TOOLS AND MEASURING EQUIPMENT

- Be sure that all necessary tools and measuring equipment are available before starting any work.



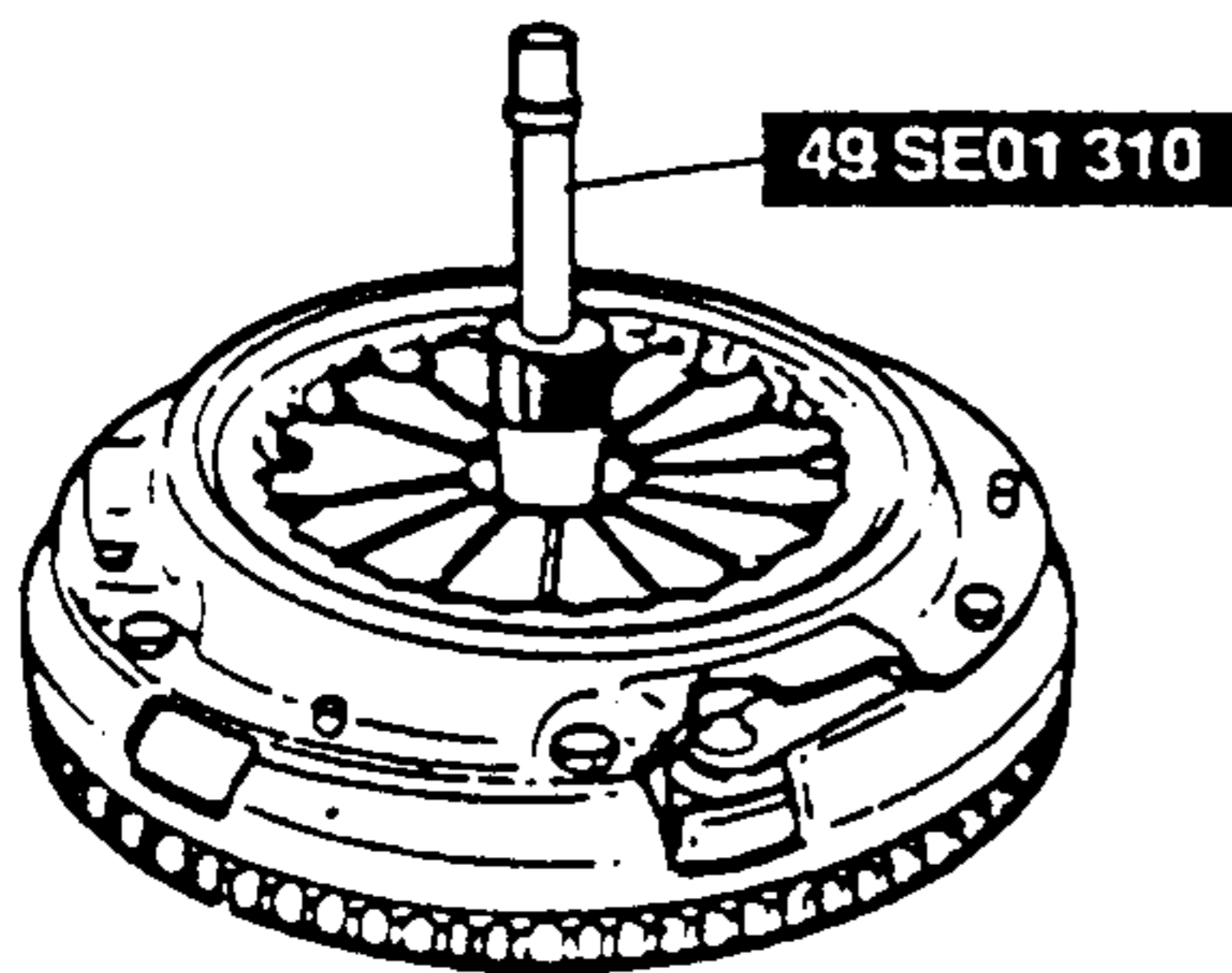
DISASSEMBLY

- If the disassembly procedure is complex, requiring many parts to be disassembled, all parts should be disassembled in a way that will not affect their performance or external appearance and identified so that reassembly can be performed easily and efficiently.



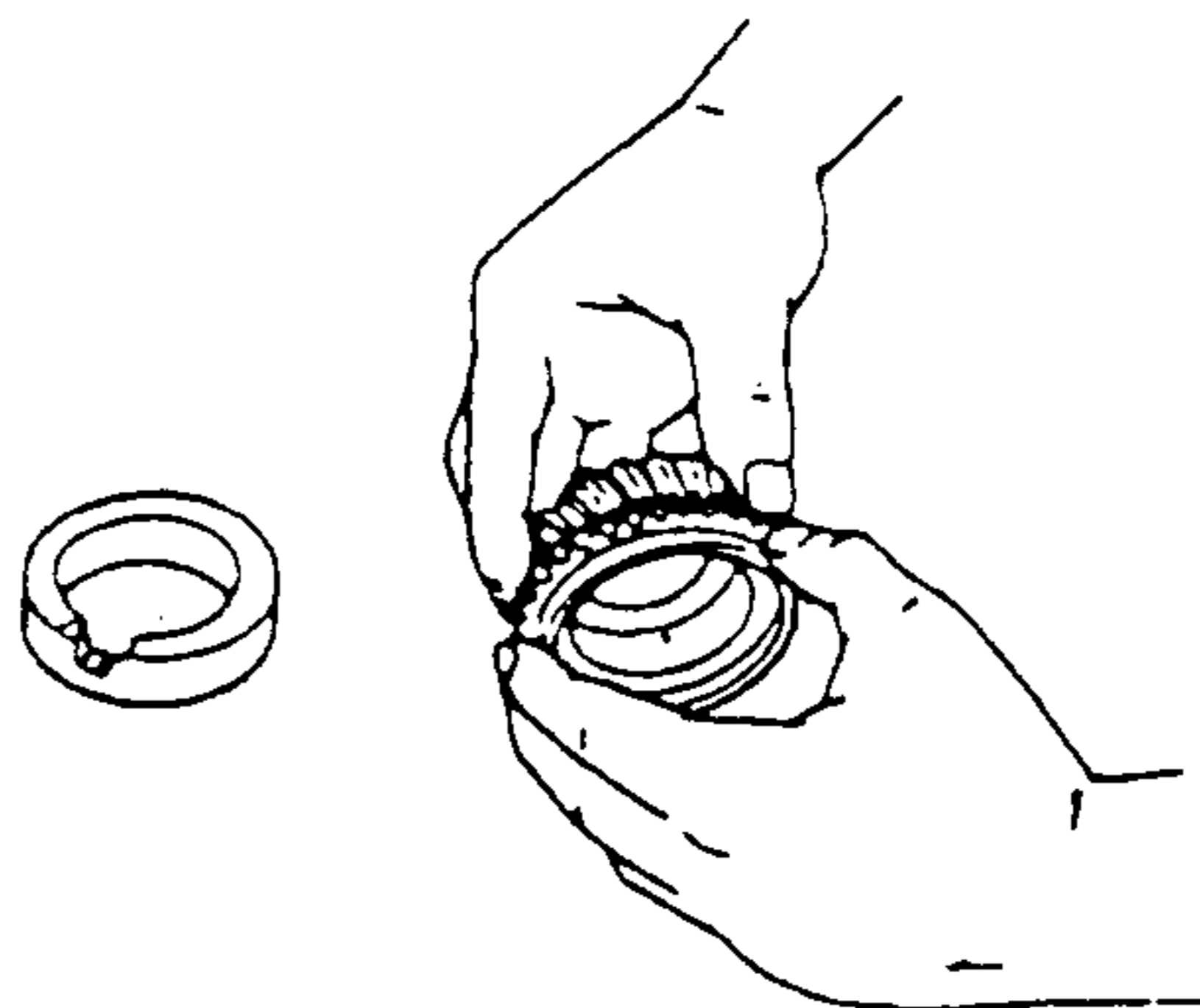
SPECIAL TOOLS

- Use special tools when they are required.



INSPECTION DURING REMOVAL, DISASSEMBLY

- When removed, each part should be carefully inspected for malfunctioning, deformation, damage, and other problems.



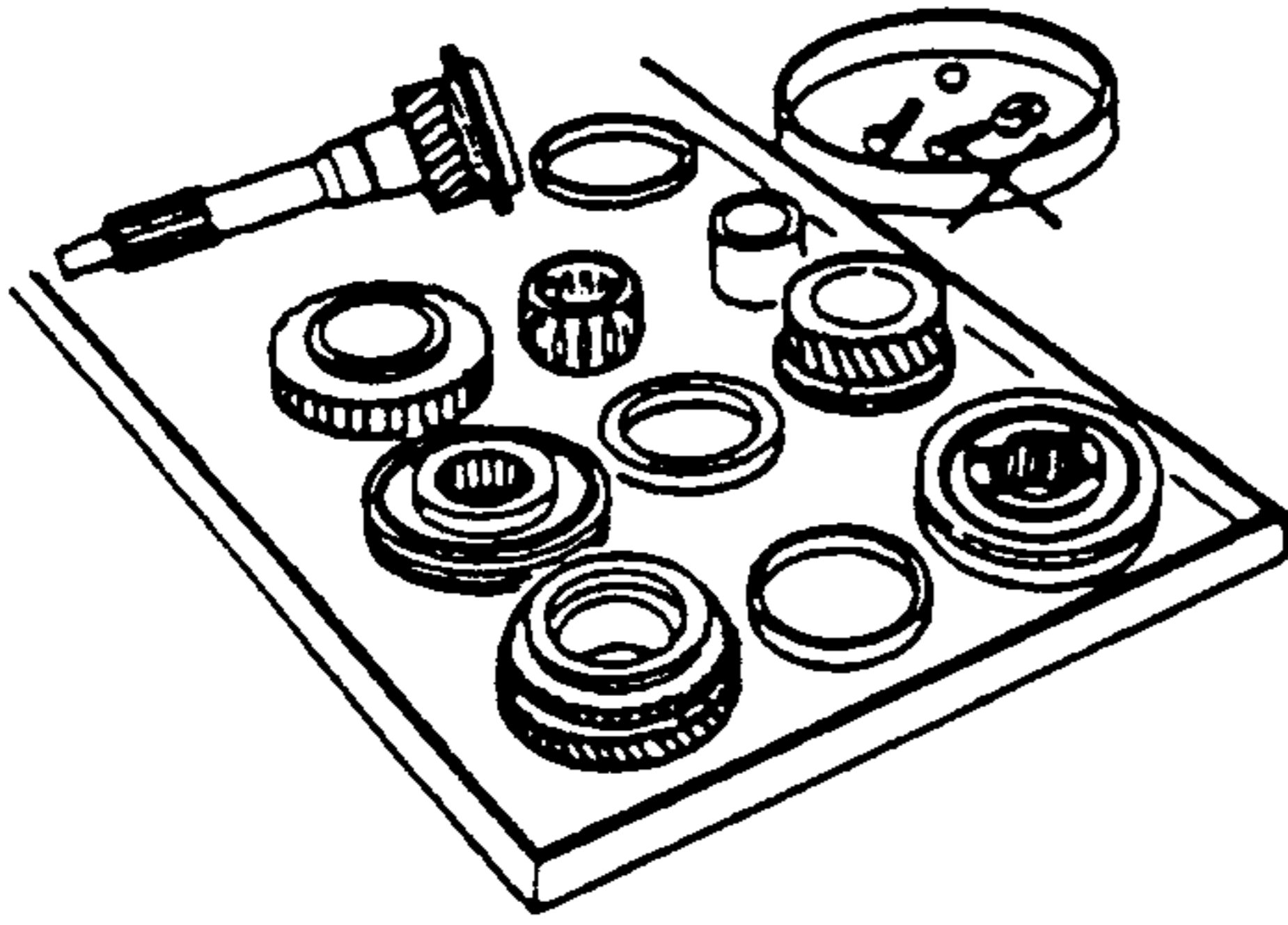
DISCONNECTION OF THE NEGATIVE BATTERY CABLE

- Before beginning any work, turn the ignition switch to LOCK, then disconnect the negative battery cable and wait for more than 1 minute to allow the backup power supply of the SAS unit and side air bag sensors to deplete its stored power.

ARRANGEMENT OF PARTS

- All disassembled parts should be carefully arranged for reassembly.
- Be sure to separate or otherwise identify the parts to be replaced from those that will be reused.

FUNDAMENTAL PROCEDURES

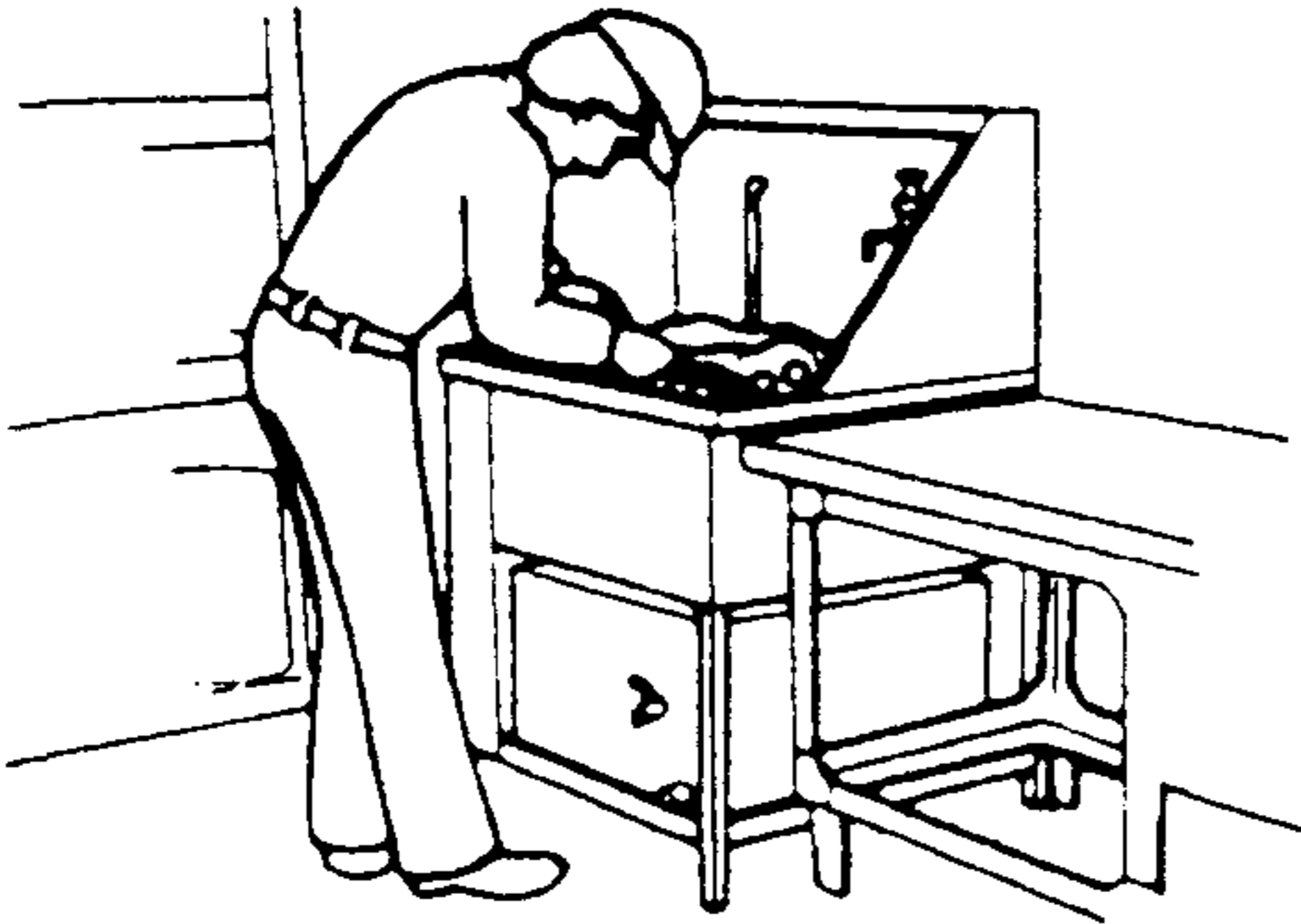


CLEANING OF PARTS

- All parts to be reused should be carefully and thoroughly cleaned in the appropriate method.

Warning

- Using compressed air can cause dirt and other particles to fly out, causing injury to the eyes. Wear protective eye wear whenever using compressed air.

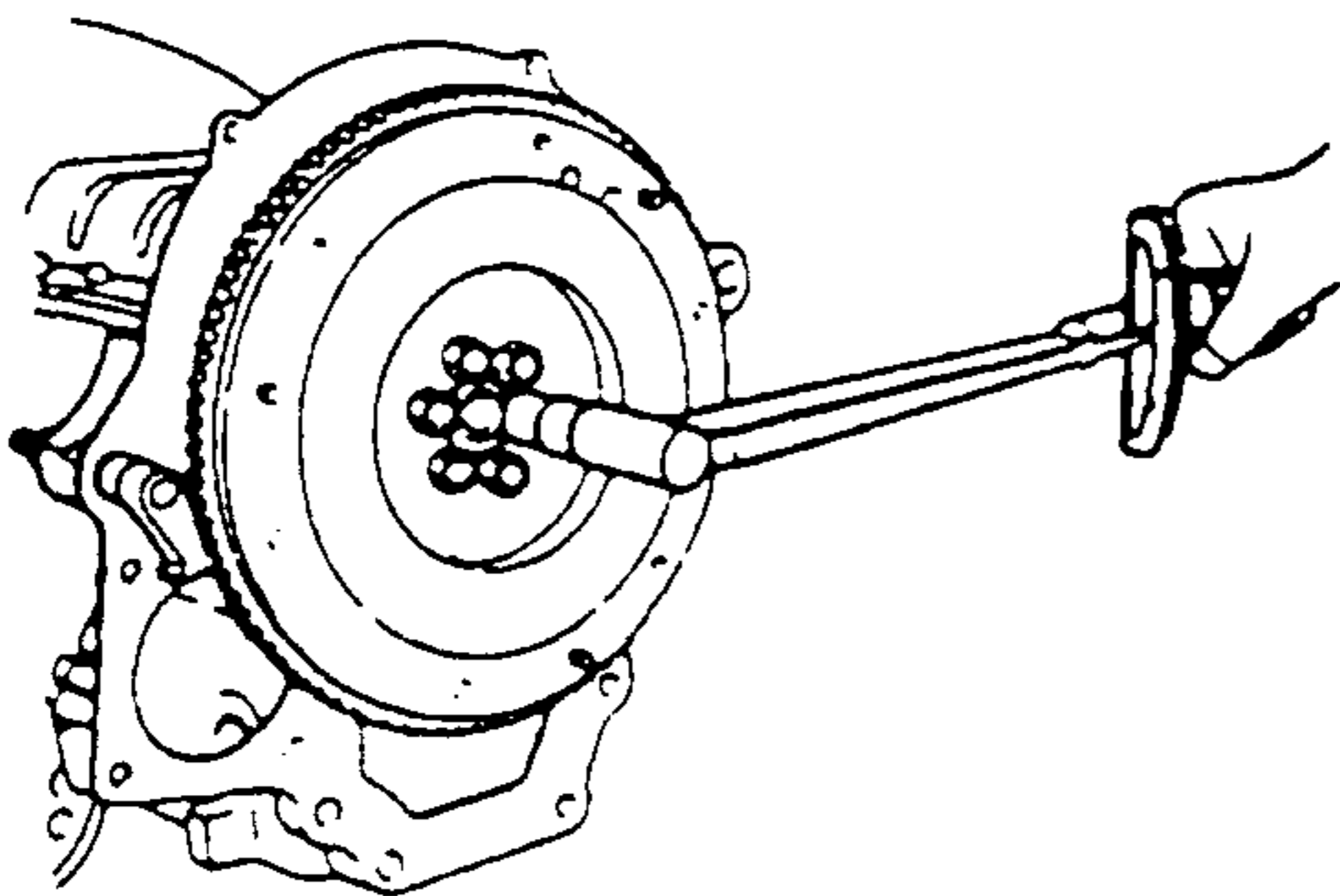


REASSEMBLY

- Standard values, such as torques and certain adjustments, must be strictly observed in the reassembly of all parts.

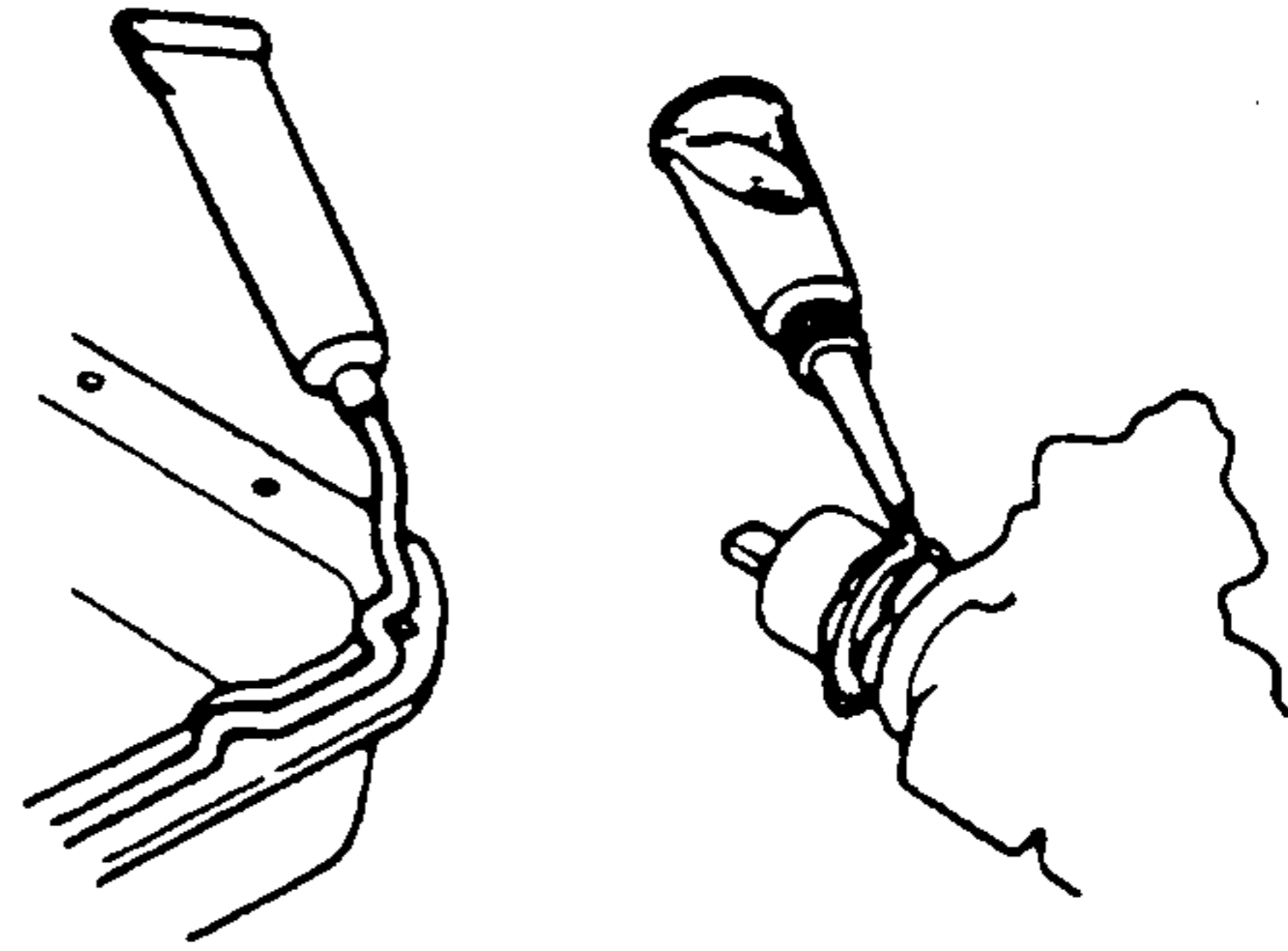
If removed, these parts should be replaced with new ones:

1	Oil seals	2	Gaskets
3	O-rings	4	Lockwashers
5	Cotter pins	6	Nylon nuts



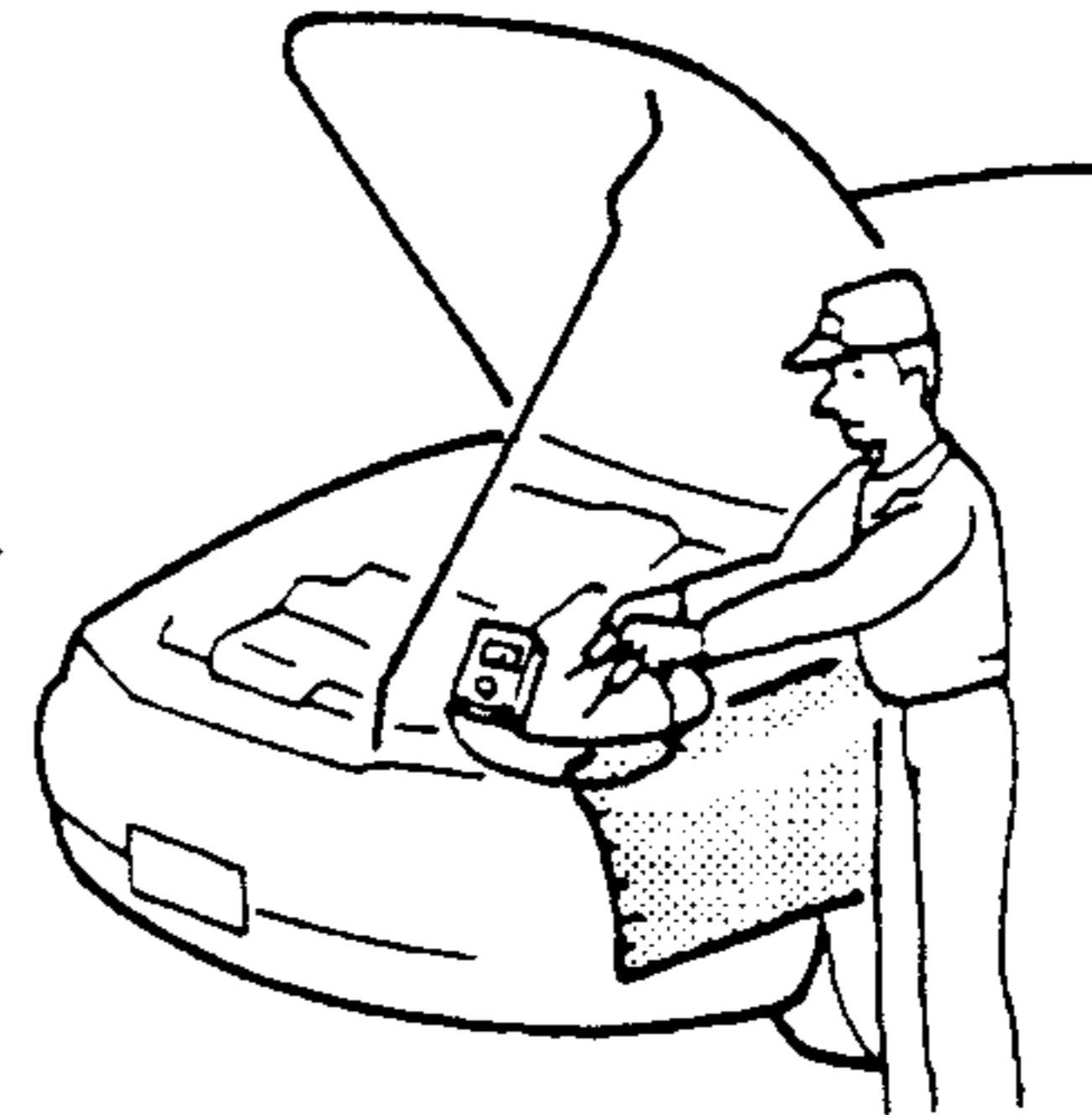
1. Sealant, gasket, or both should be applied to the specified locations. When sealant is applied, parts should be installed before sealant hardens. Hardened sealant causes leaks.

2. Oil should be applied to the moving components of parts.
3. Specified oil or grease should be applied at the prescribed locations (such as oil seals) before reassembly.



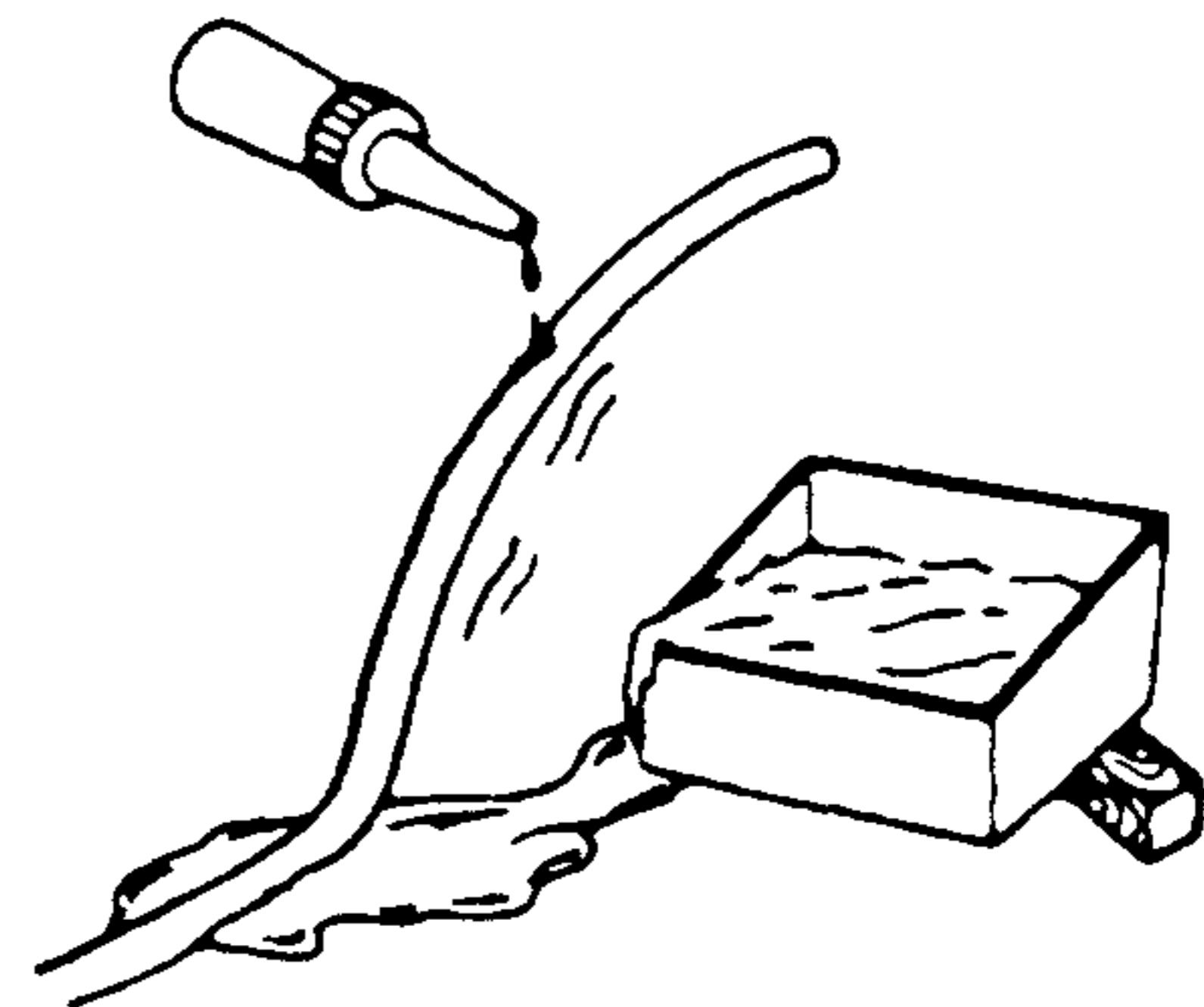
ADJUSTMENT

- Use suitable gauges and testers when making adjustments.



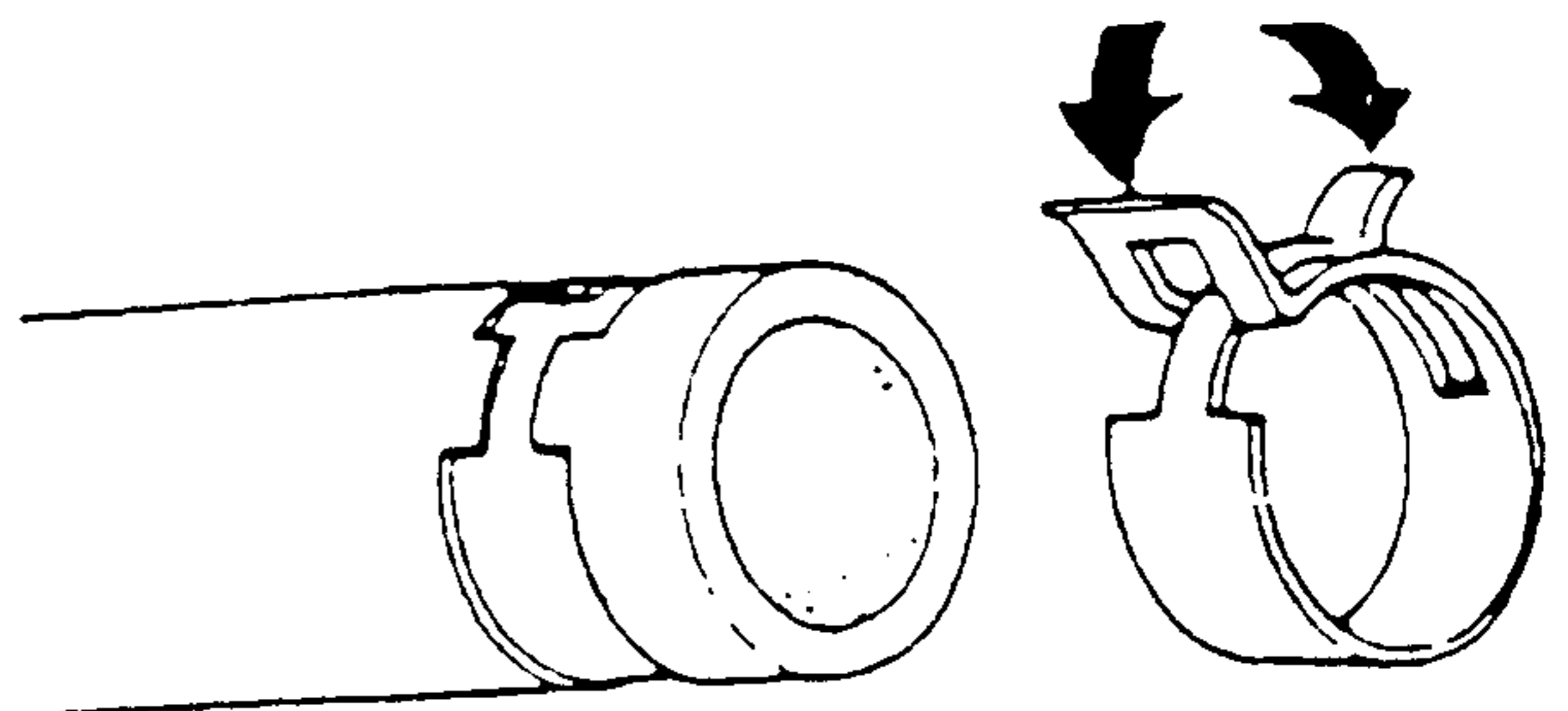
RUBBER PARTS AND TUBING

- Prevent gasoline or oil from getting on rubber parts or tubing.



HOSE CLAMPS

- When reinstalling, position the hose clamp in the original location on the hose, and squeeze the clamp lightly with large pliers to ensure a good fit.



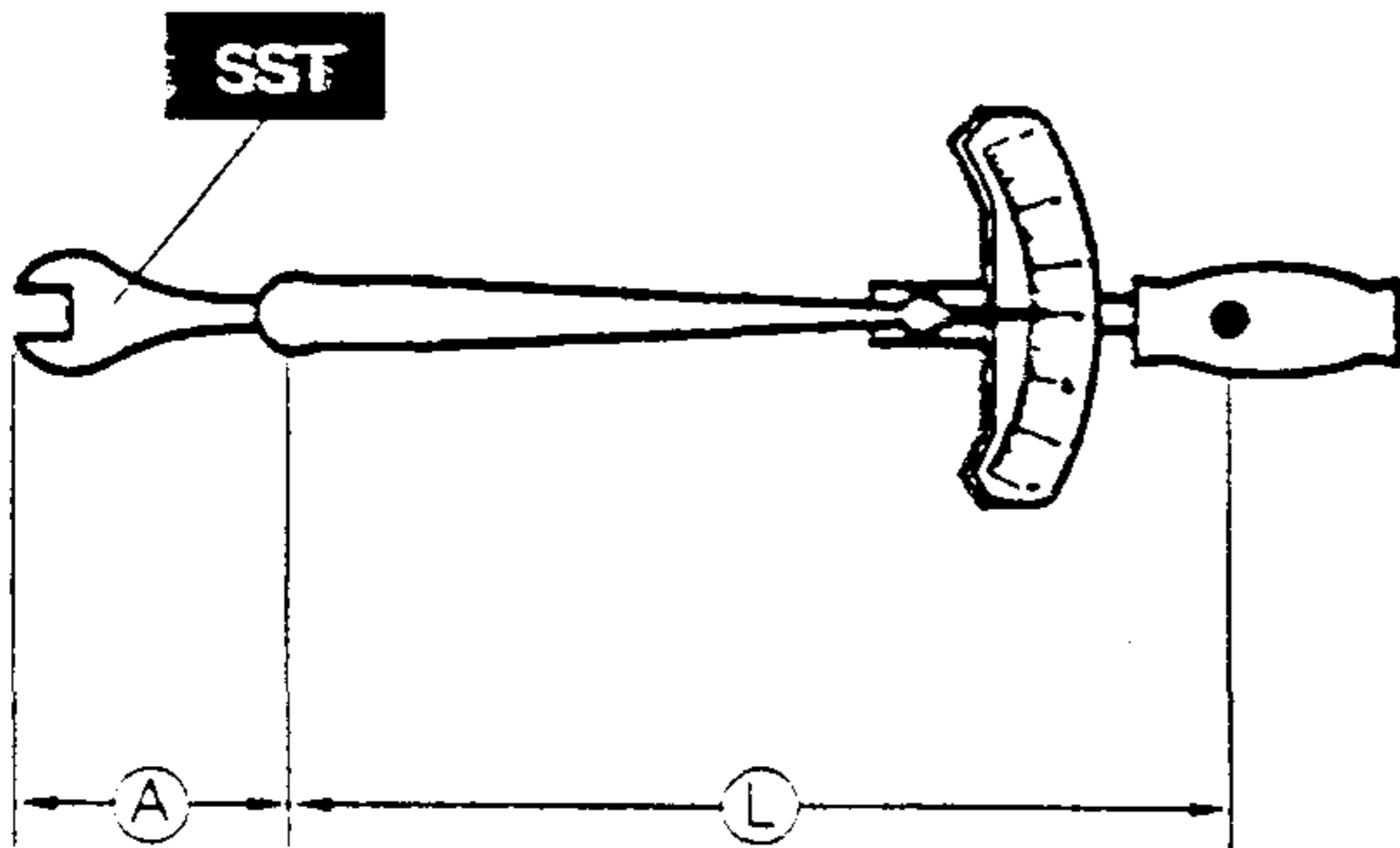
FUNDAMENTAL PROCEDURES, INSTALLATION OF RADIO SYSTEM

TORQUE FORMULAS

- When using a torque wrench-SST combination, the written torque must be recalculated due to the extra length that the SST adds to the torque wrench. Recalculate the torque by using the following formulas. Choose the formula that applies to you.

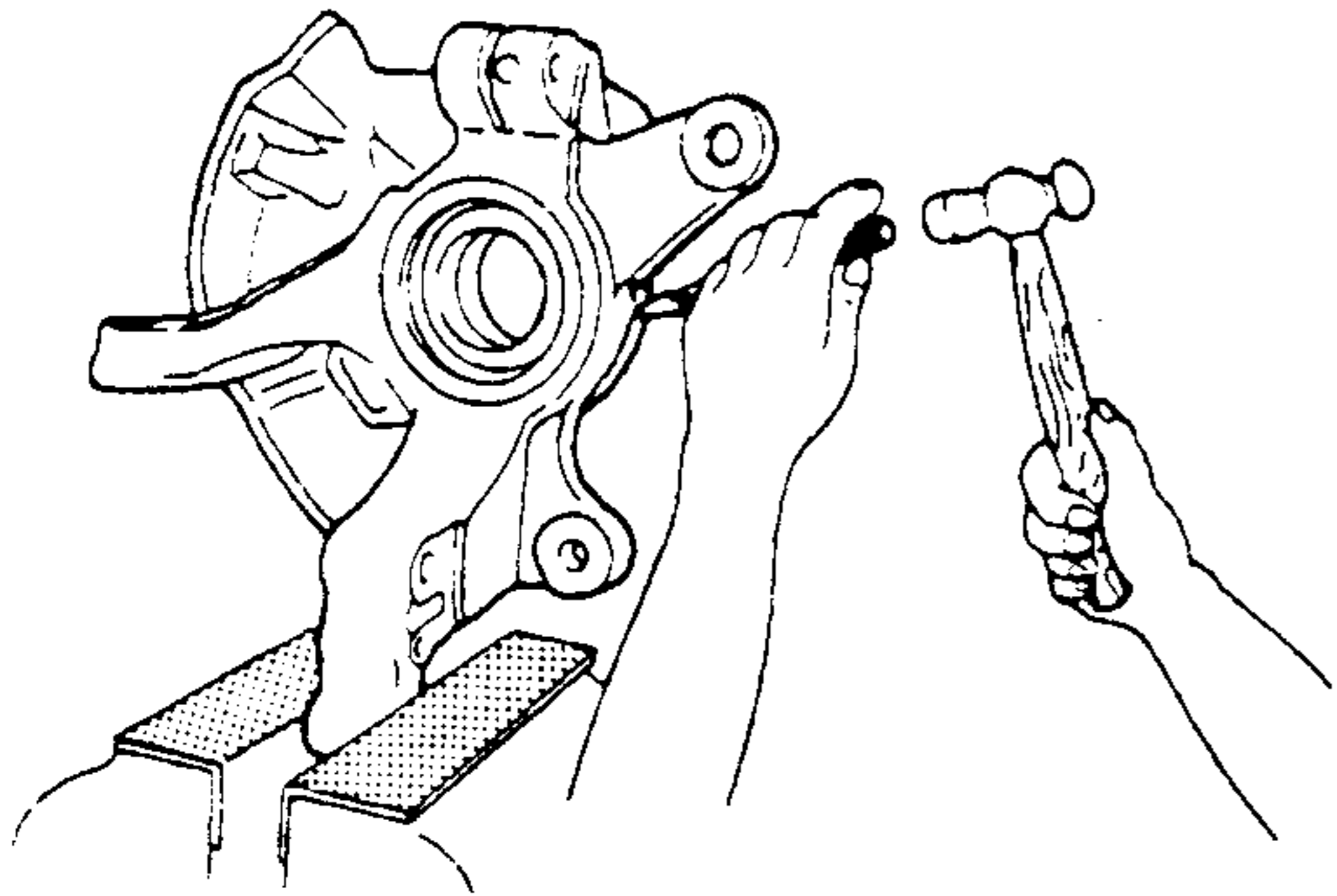
Torque Unit	Formula
kgf·m	$\text{kgf}\cdot\text{m} \times [L/(L+A)]$
kgf·cm	$\text{kgf}\cdot\text{cm} \times [L/(L+A)]$
ft·lbf	$\text{ft}\cdot\text{lbf} \times [L/(L+A)]$
in·lbf	$\text{in}\cdot\text{lbf} \times [L/(L+A)]$

A: The length of the SST past the torque wrench drive.
L: The length of the torque wrench.



WISE

- When using a vise, put protective plates in the jaws of the vise to prevent damage to parts.



DYNAMOMETER

When test-running a vehicle on dynamometer

- Place a fan, preferably a vehicle-speed proportional type, in front of the vehicle.
- Connect an exhaust gas ventilation unit.
- Cool the exhaust pipes with a fan.
- Keep the area around the vehicle uncluttered.
- Watch the water temperature gauge.

Note

- ABS warning light illuminates when the vehicle is on a chassis roller and rotate only front wheel for more than **20 seconds** (60 seconds for ABS/TCS model). Turn ignition switch OFF and ON again, then drive the vehicle faster than **20 km/h {12.4 mph}**. Verify that ABS warning light goes out. DTC does not memorized.

INSTALLATION OF RADIO SYSTEM

If a radio system is installed improperly or if a high-powered type is used, the CIS and other systems may be affected.

When the vehicle is to be equipped with a radio, observe the following precautions.

- Install the antenna at the farthest point from control modules.
- Install the antenna feeder as far as possible from the control modules harness, and perpendicular to wiring harnesses.
- Do not install a high-powered radio system.
- After installing the radio system, start and idle the engine, then confirm that the engine is not influenced by output waves from the system.

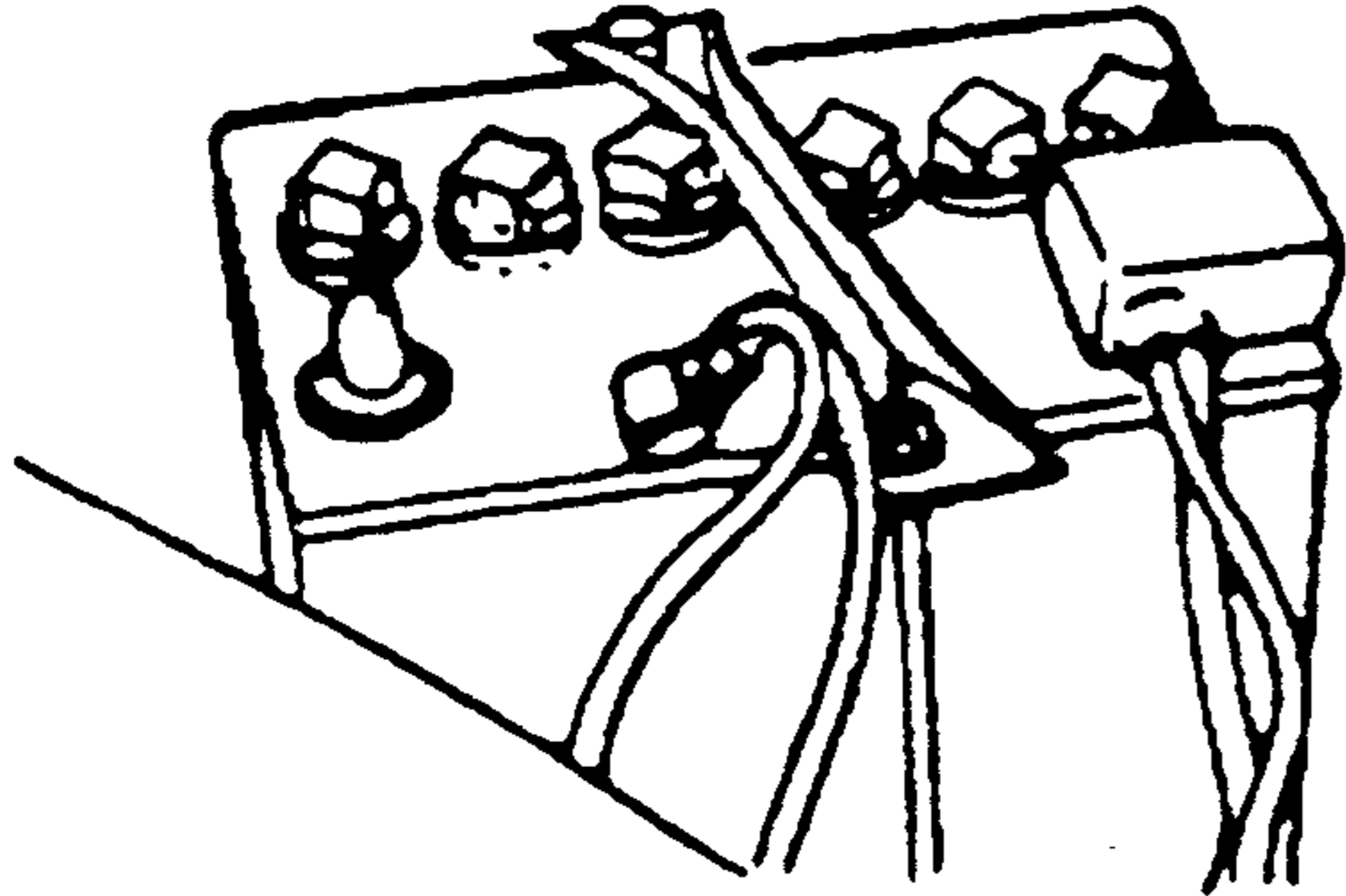
ELECTRICAL SYSTEM

ELECTRICAL SYSTEM

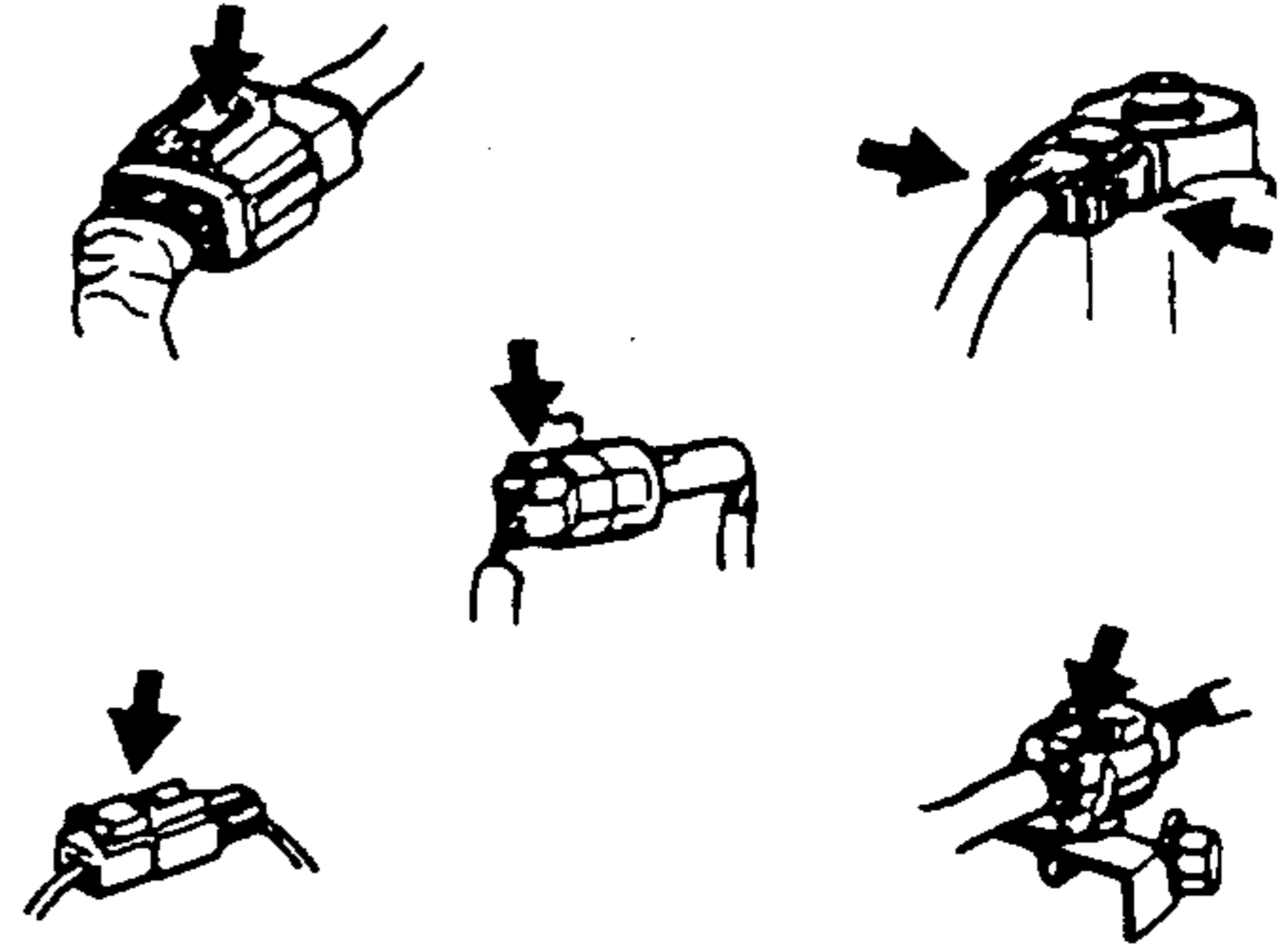
ELECTRICAL PARTS

Battery Cable

- Before disconnecting connectors or removing electrical parts, disconnect the negative battery cable.

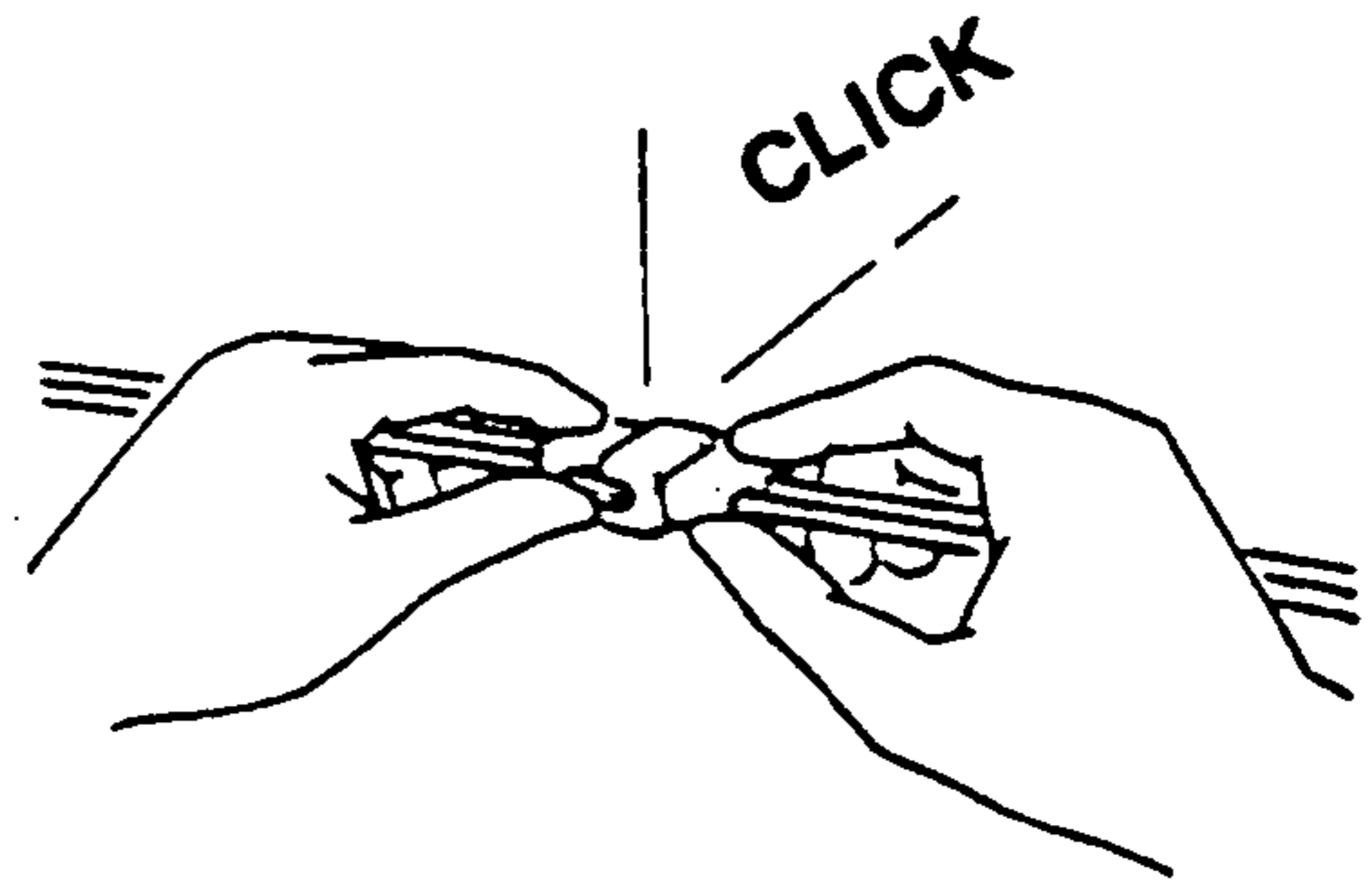


- Connectors can be disconnected by pressing or pulling the lock lever as shown.



Locking Connector

- When locking connectors, listen for a click that will indicate they are securely locked.



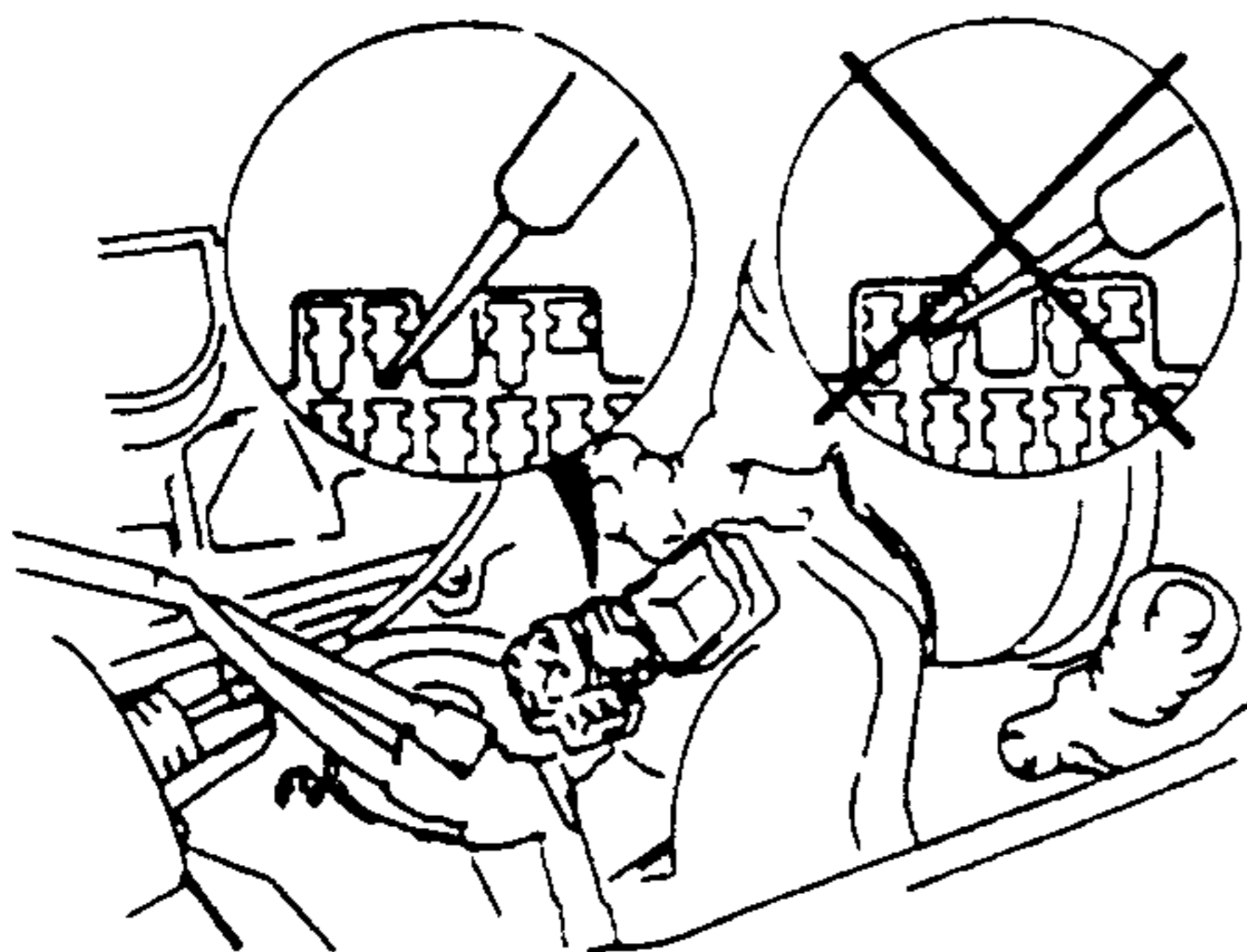
CONNECTORS

Data Link Connector

- Insert the probe into the service hole when connecting a jumper wire to the data link connector.

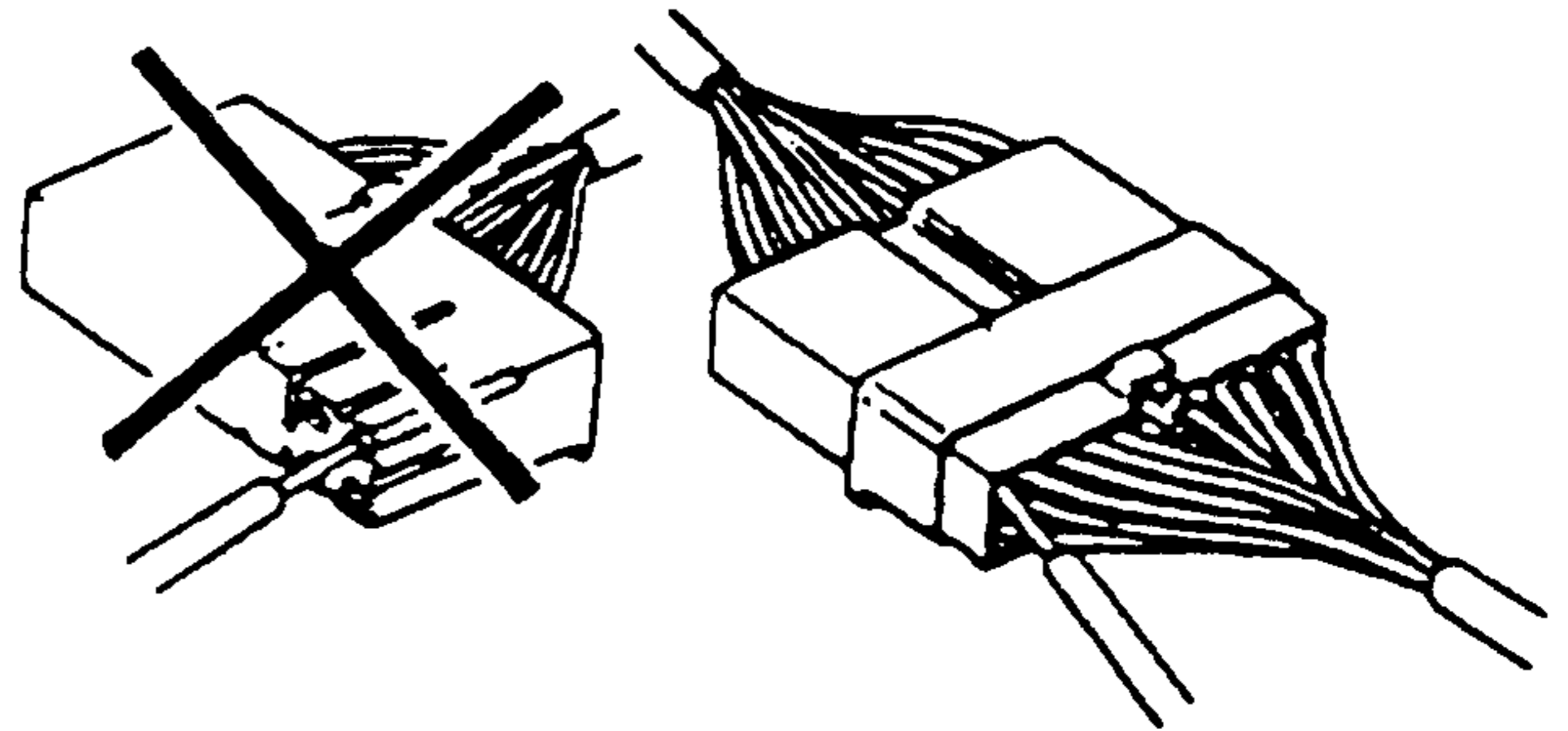
Caution

- Inserting a jumper wire probe into the data link connector terminal may damage the terminal.



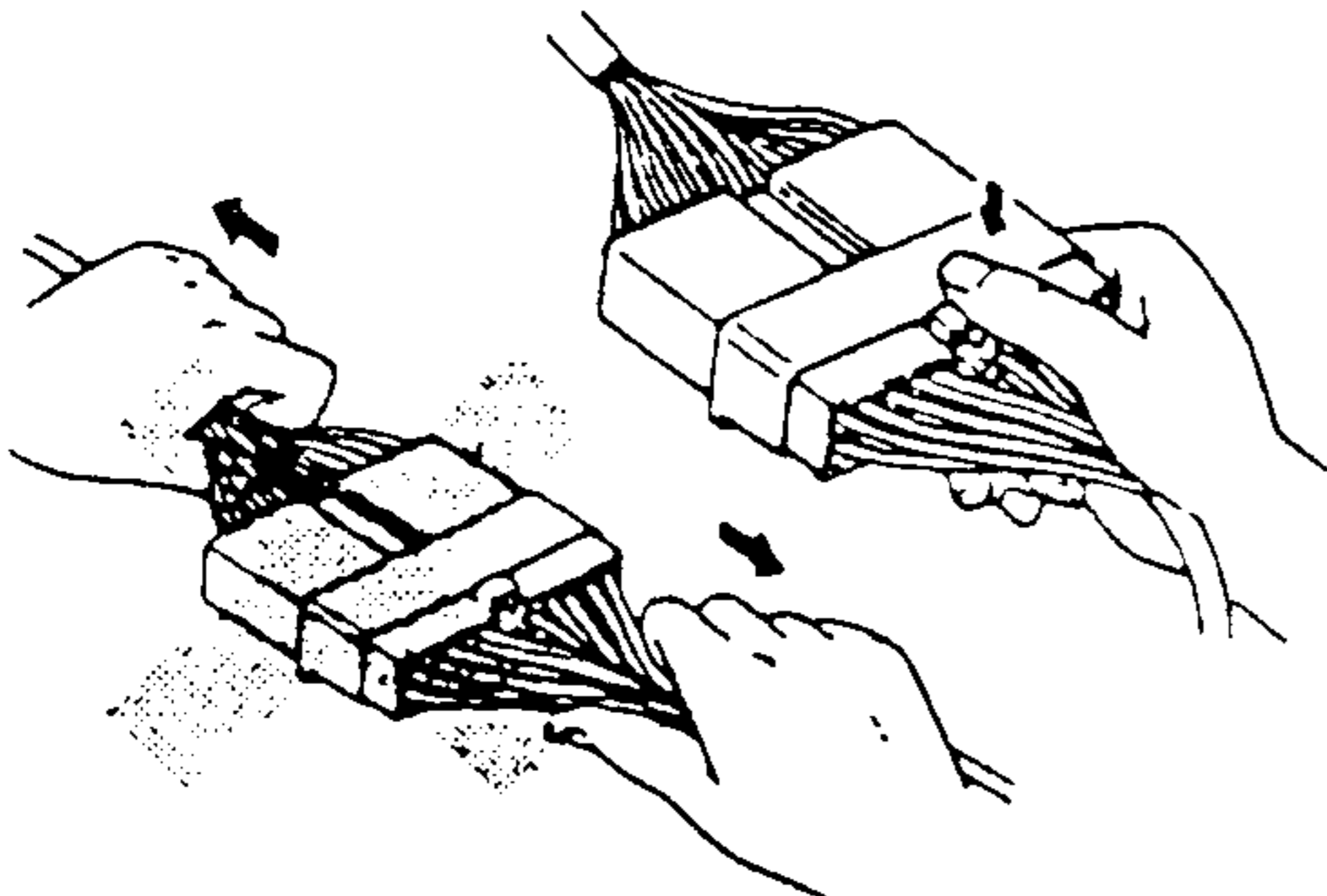
Inspection

1. When a tester is used to check for continuity or to measure voltage, insert the tester probe from the wiring harness side.



Disconnecting Connectors

- When disconnecting two connectors, grasp the connectors, not the wires.

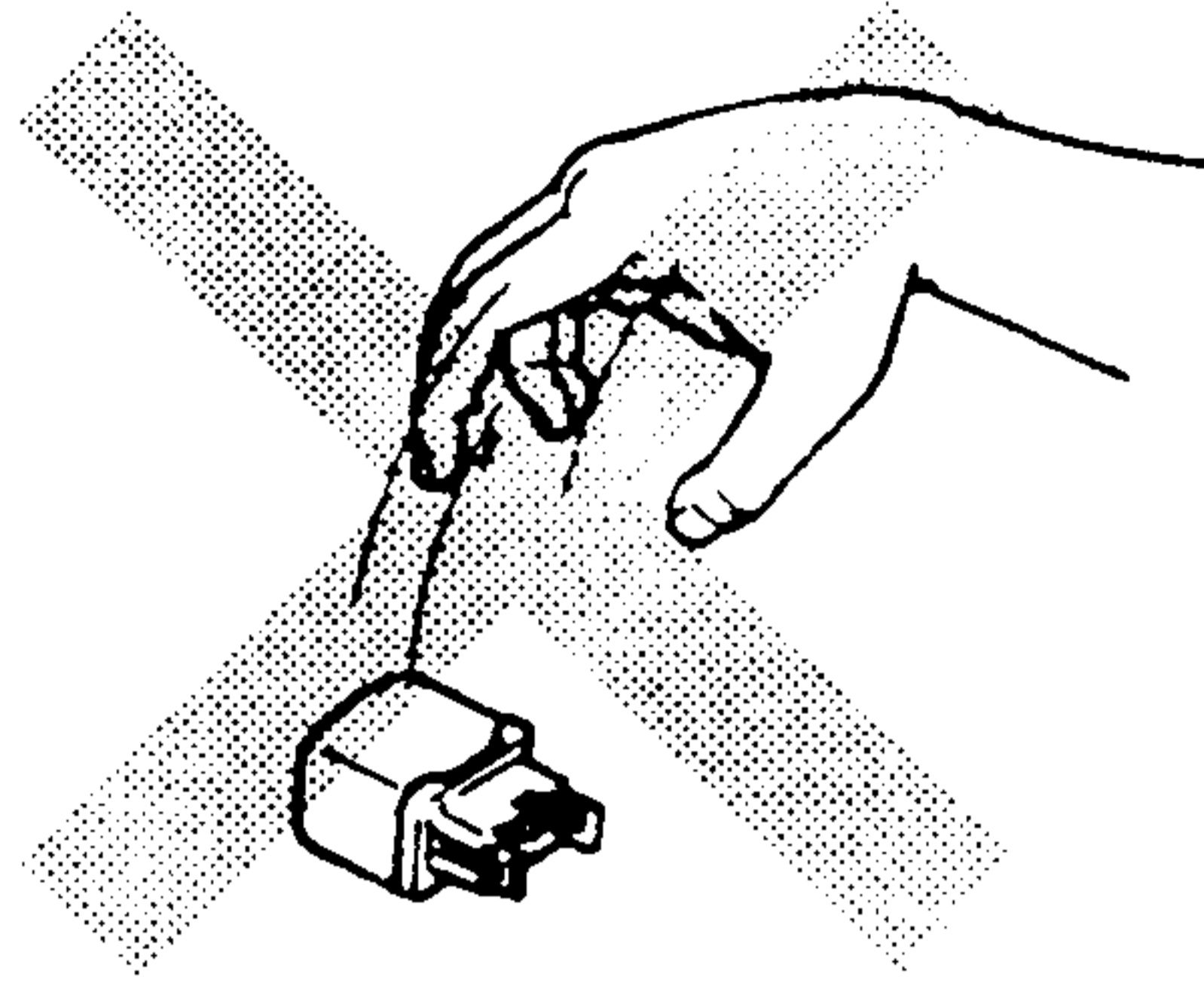
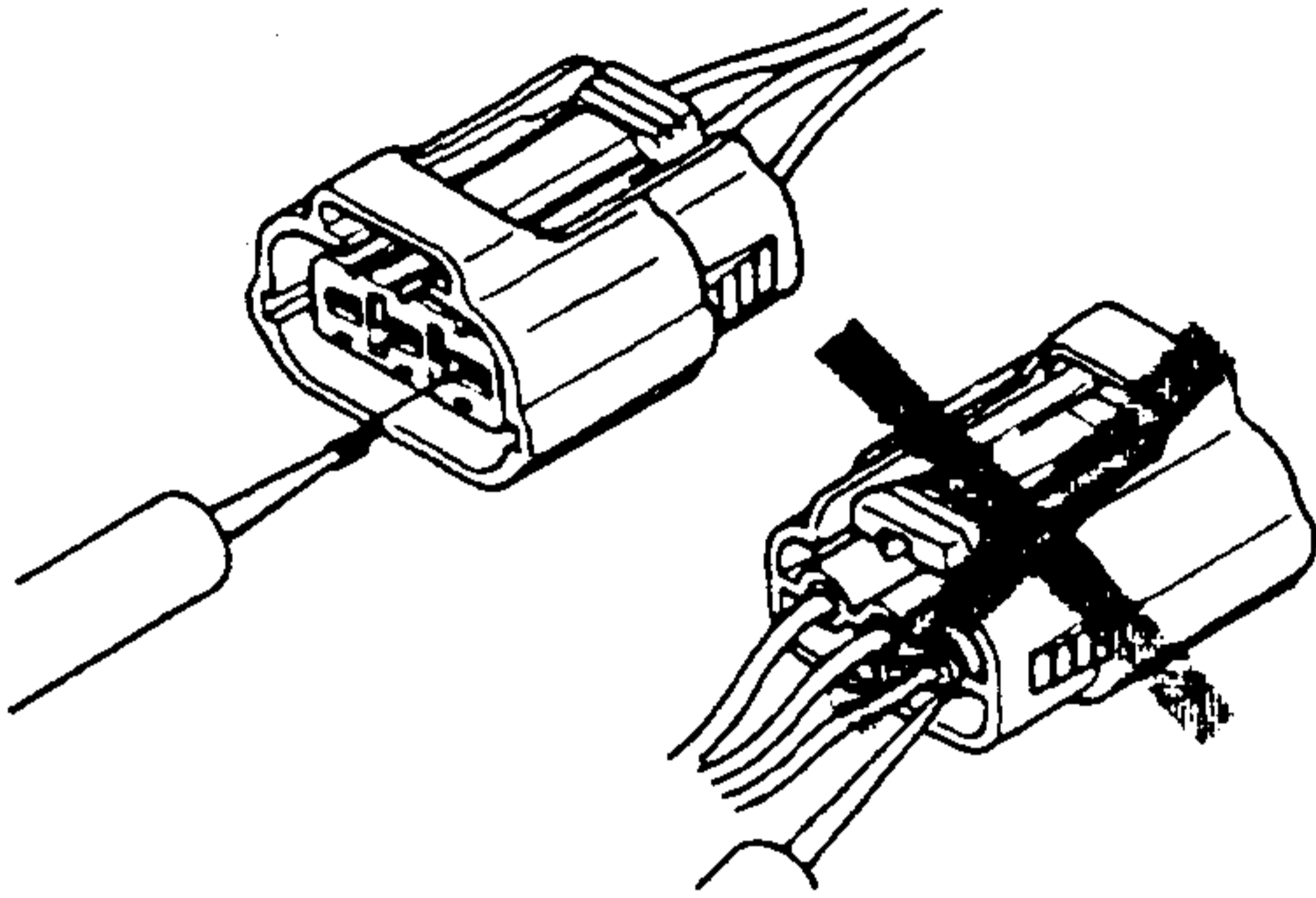


2. Check the terminals of waterproof connectors from the connector side, as they cannot be accessed from the wiring harness side.

ELECTRICAL SYSTEM

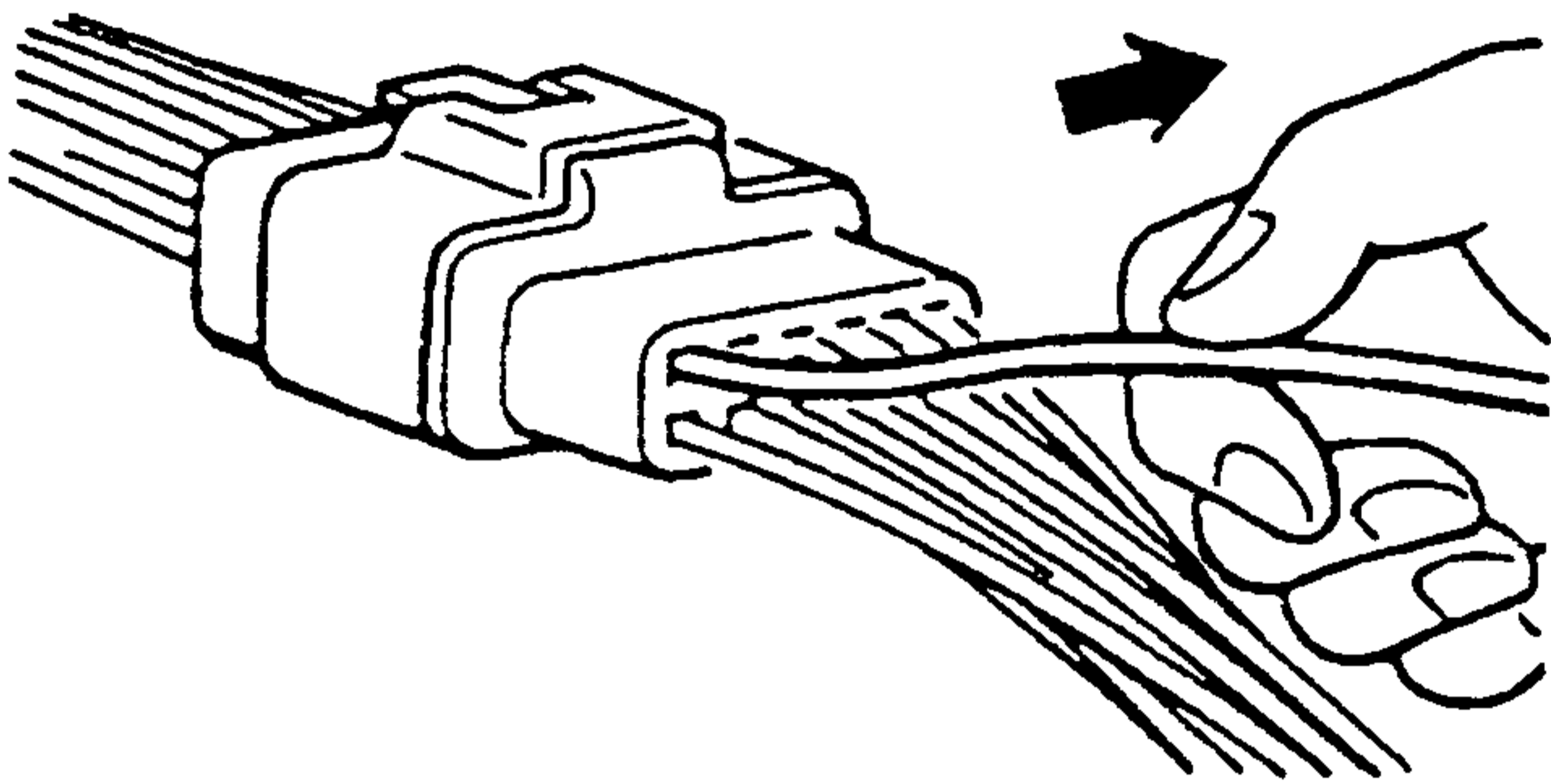
Caution

- To prevent damage to the terminal, wrap a thin wire around the lead before inserting it into the terminal.



Terminals Inspection

- Pull lightly on individual wires to check that they are secured in the terminal.

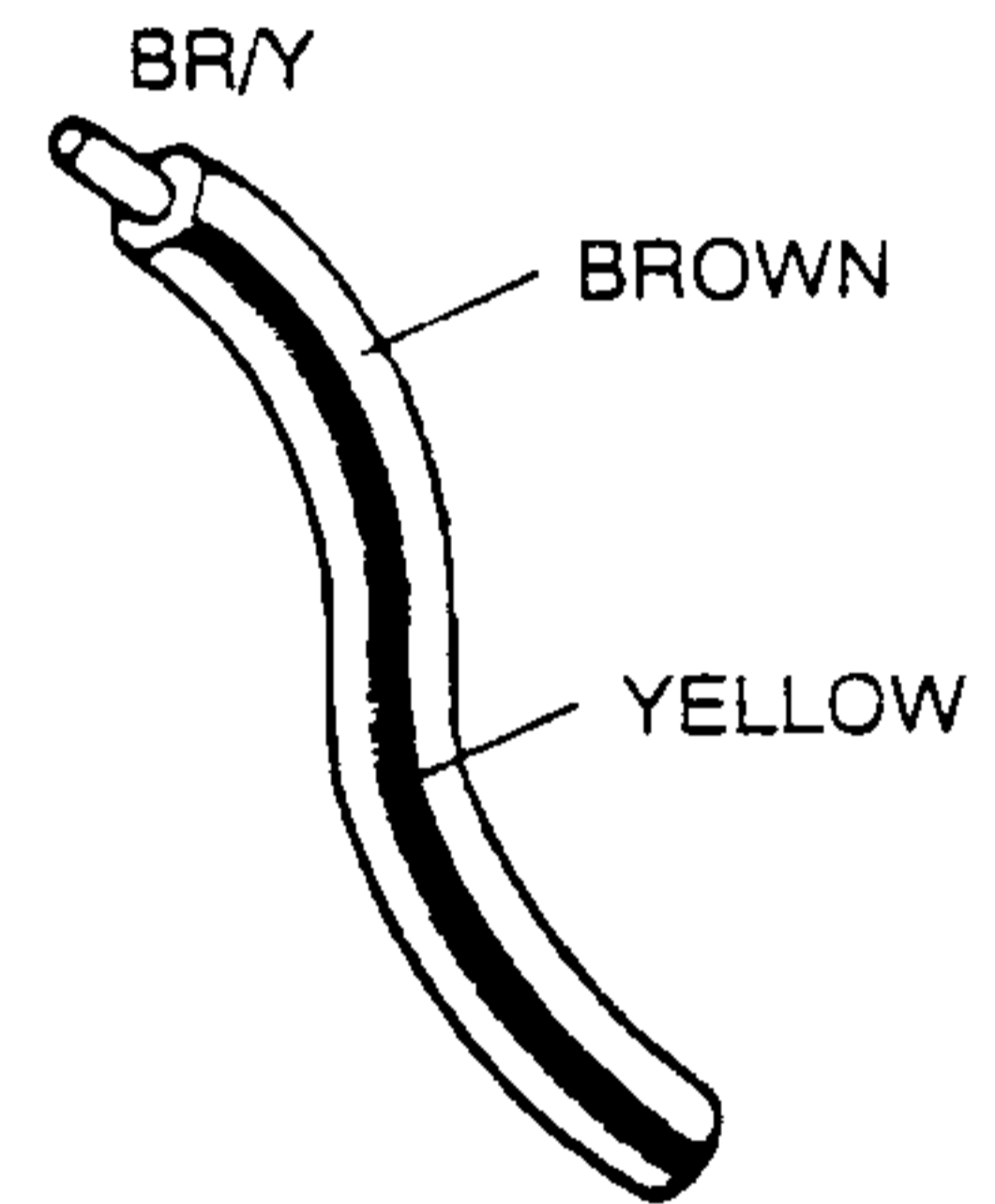
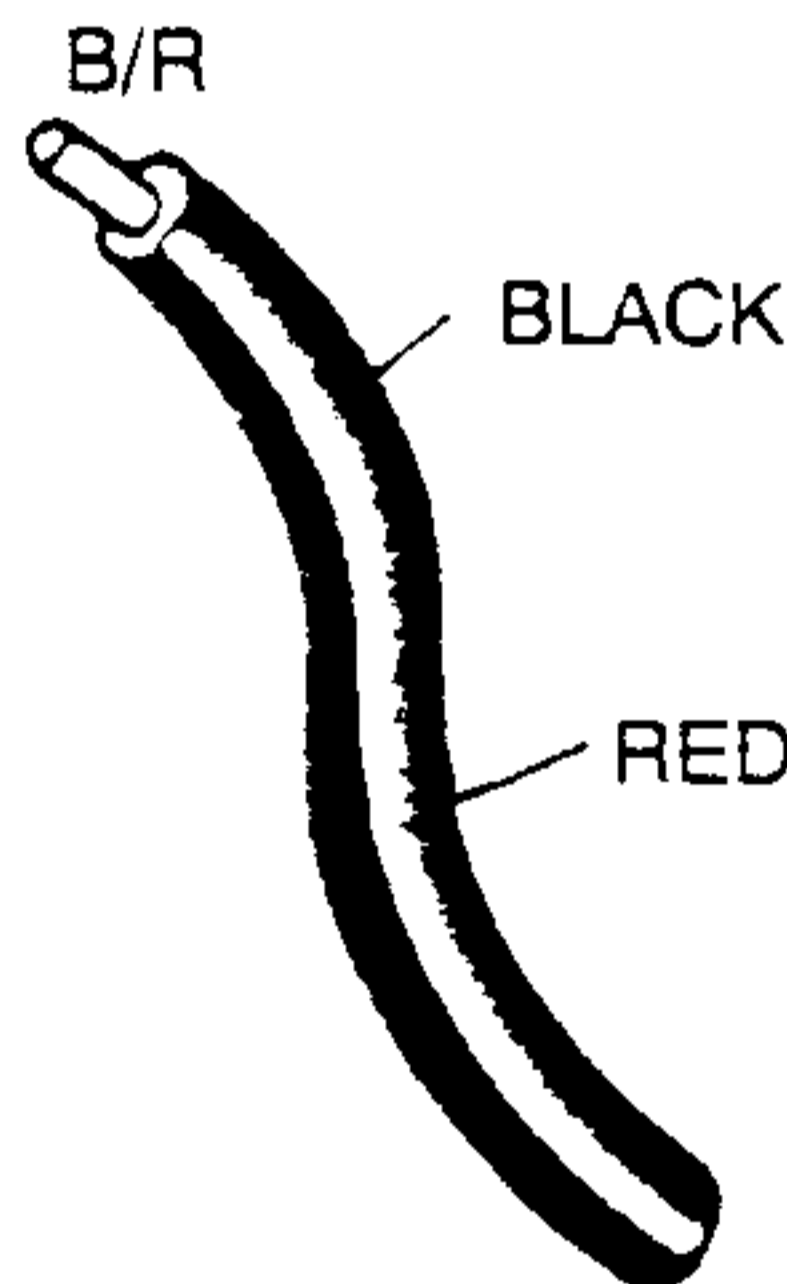


Wiring Harness

Wiring color codes

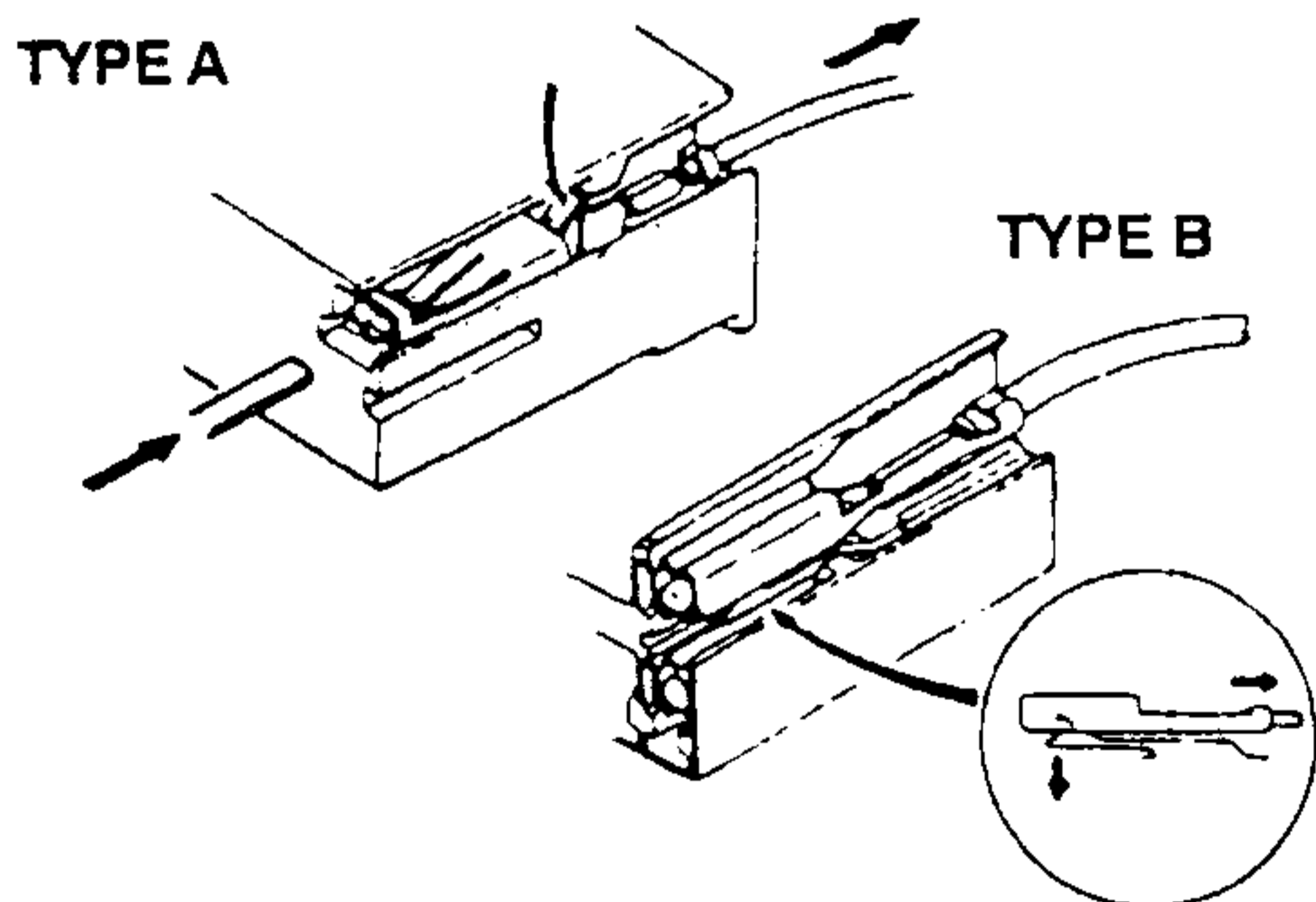
- Two-color wires are indicated by a two-color code symbol.
- The first letter indicates the base color of the wire and the second the color of the stripe.

CODE	COLOR	CODE	COLOR
B	Black	O	Orange
BR	Brown	P	Pink
G	Green	R	Red
GY	Gray	V	Violet
L	Blue	W	White
LB	Light Blue	Y	Yellow
LG	Light Green		



Replacement

- Use the appropriate tools to remove a terminal as shown. When installing a terminal, be sure to insert it until it locks securely.
- Insert a thin piece of metal from the terminal side of the connector, and then, with the terminal locking tab pressed down, pull the terminal out from the connector.



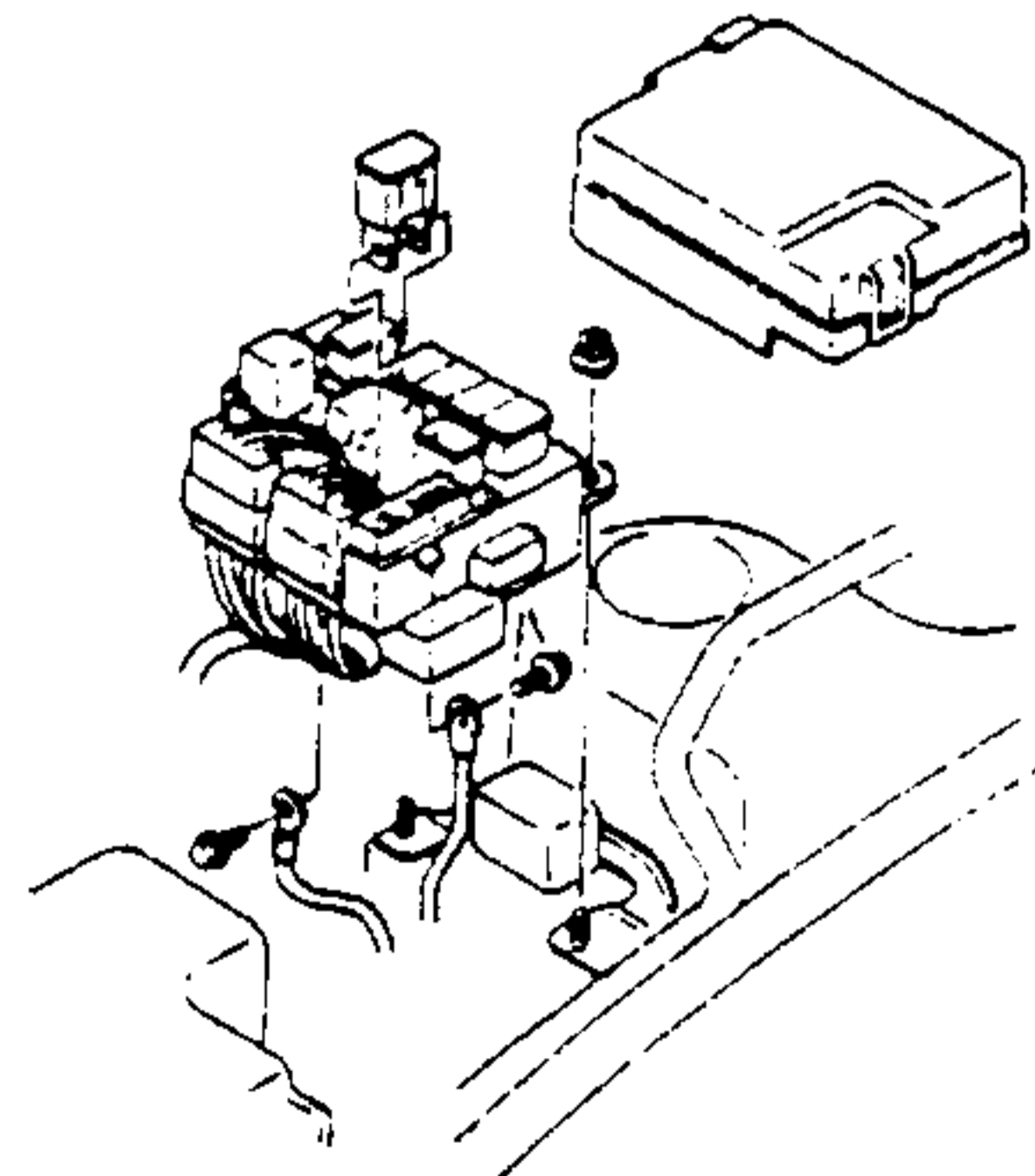
Fuse

Replacement

1. When replacing a fuse, be sure to replace it with one of the specified capacity. If a fuse again fails after it has been replaced, the circuit probably has a short and the wiring should be checked.
2. Be sure the negative battery terminal is disconnected before replacing a main fuse.

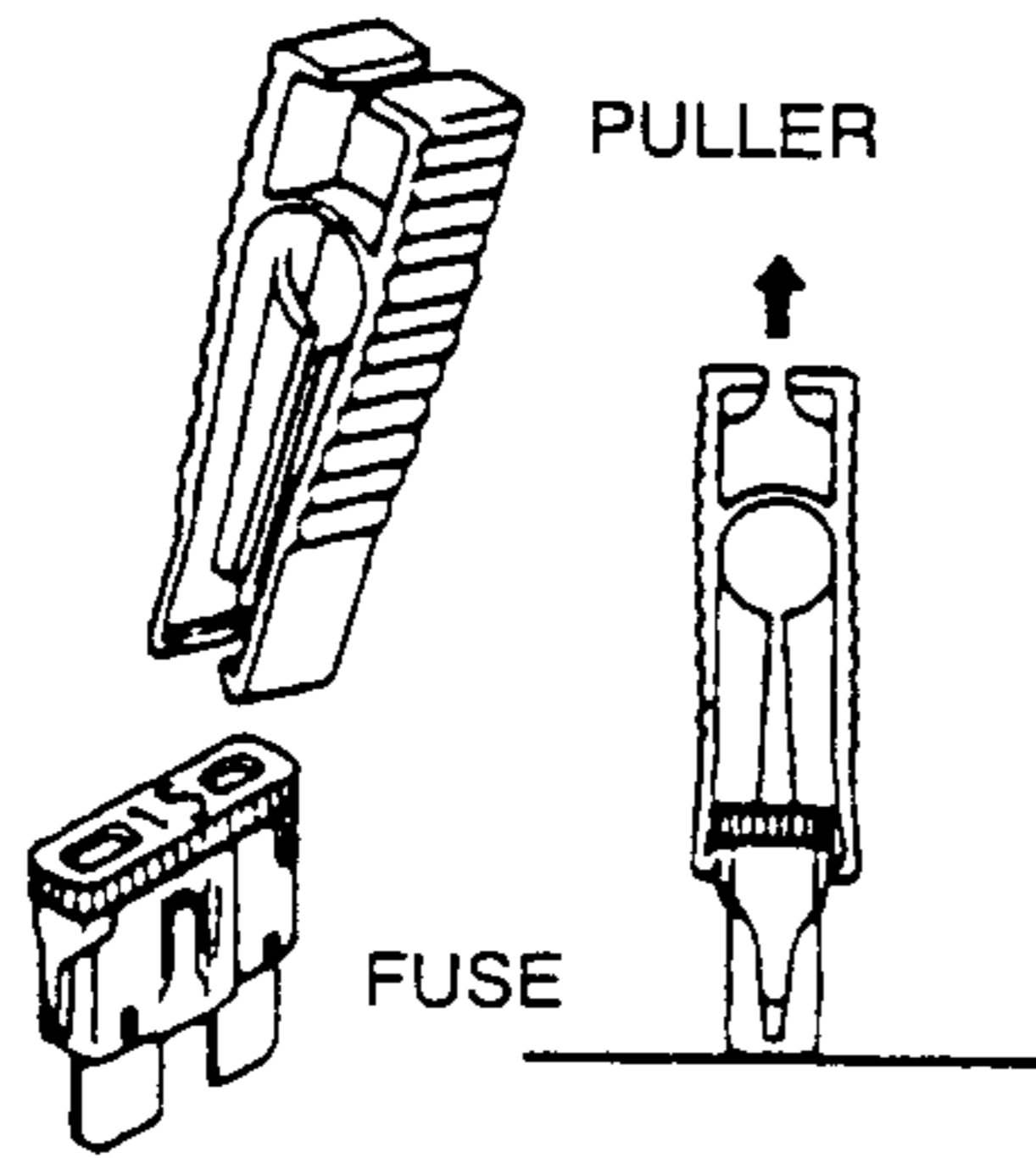
Sensors, Switches, and Relays

- Handle sensors, switches, and relays carefully. Do not drop them or strike them against other objects.



ELECTRICAL SYSTEM

3. When replacing a pullout fuse, use the fuse puller.



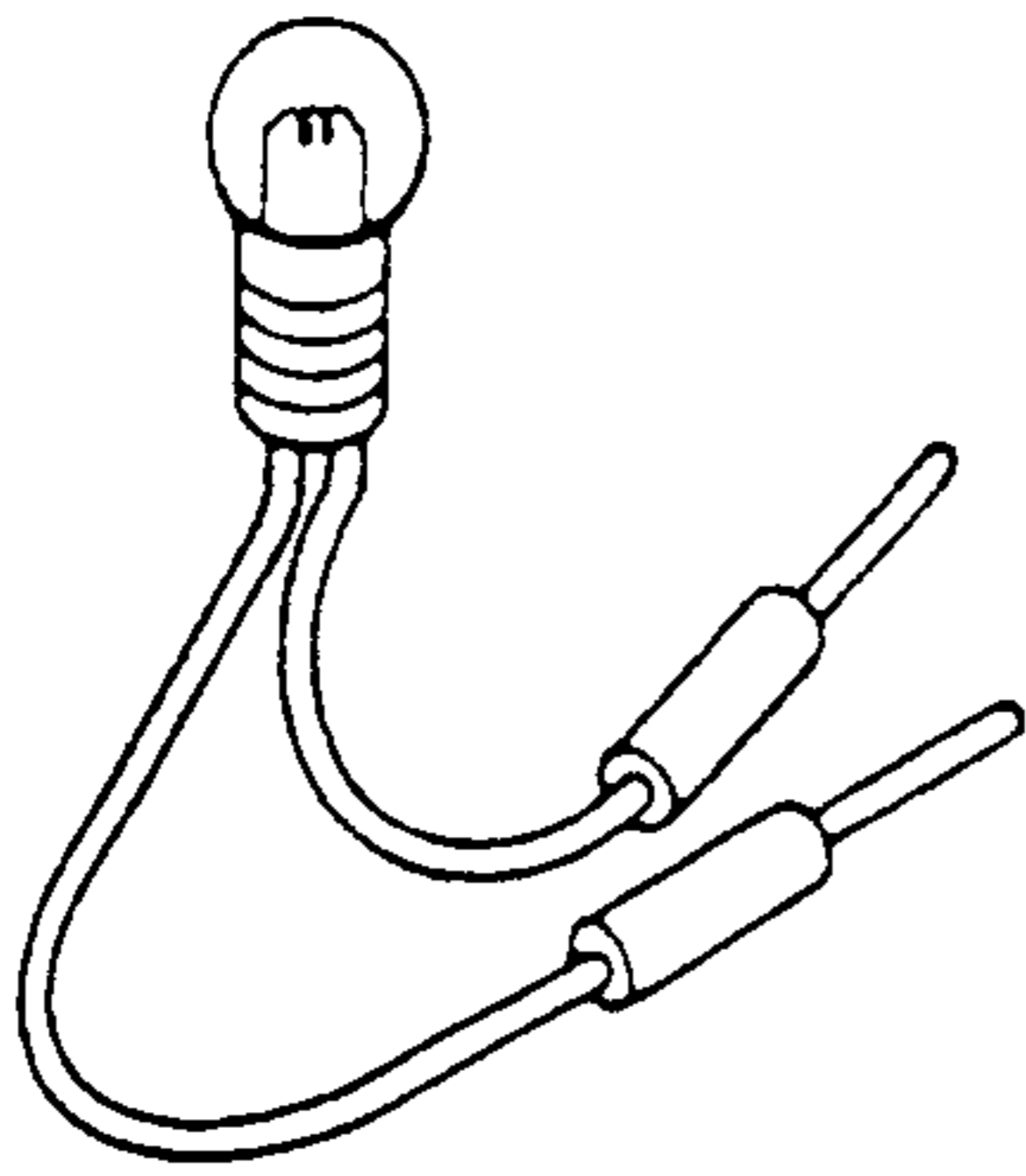
ELECTRICAL TROUBLESHOOTING TOOLS

Test Light

- The test light, as shown in the figure, uses a 12 V bulb. The two lead wires should be connected to probes. The test light is used for simple voltage checks and for checking for short circuits.

Caution

- Using a bulb over 3.4 W when checking the control unit may damage the control unit.

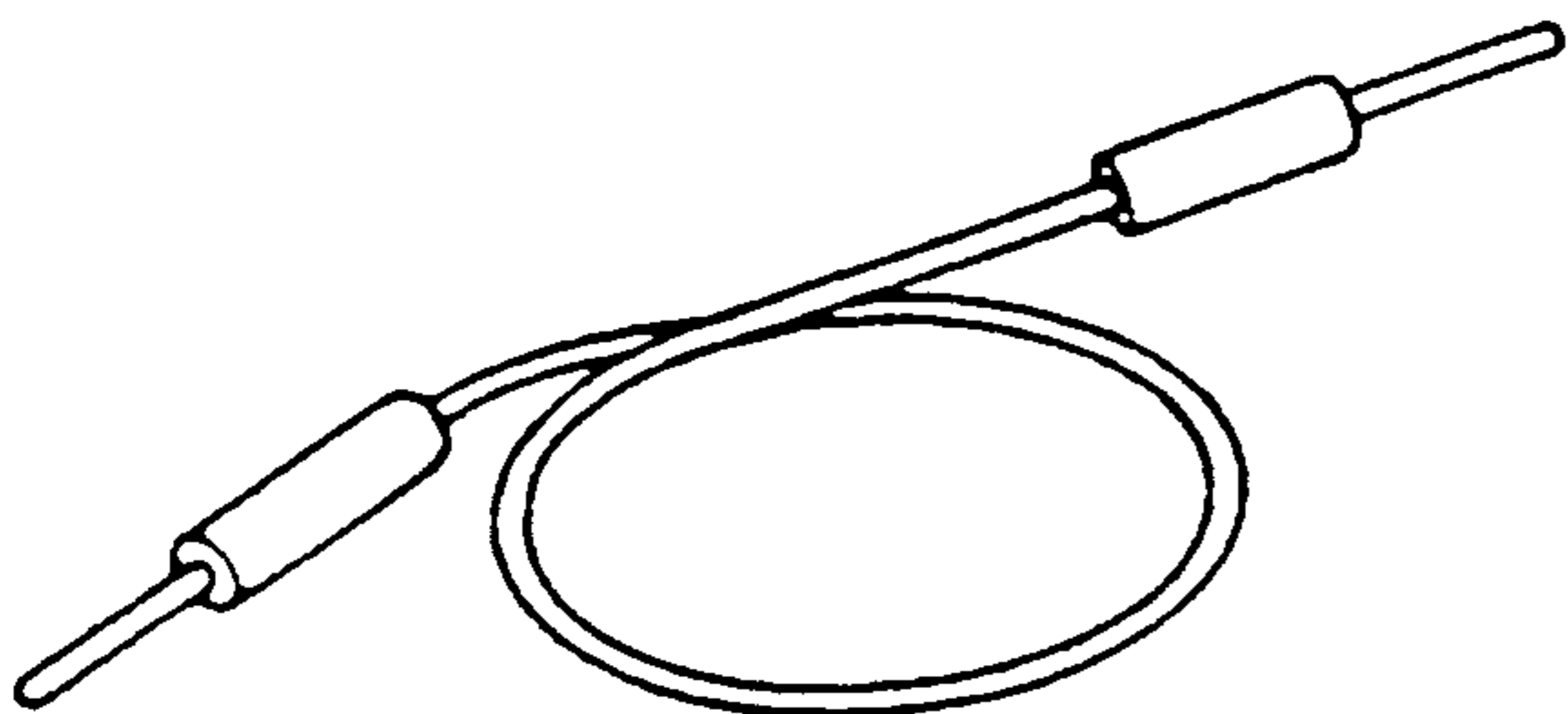


Jumper Wire

- A jumper wire is used to create a temporary circuit. Connect the jumper wire between the terminals of a circuit to bypass a switch.

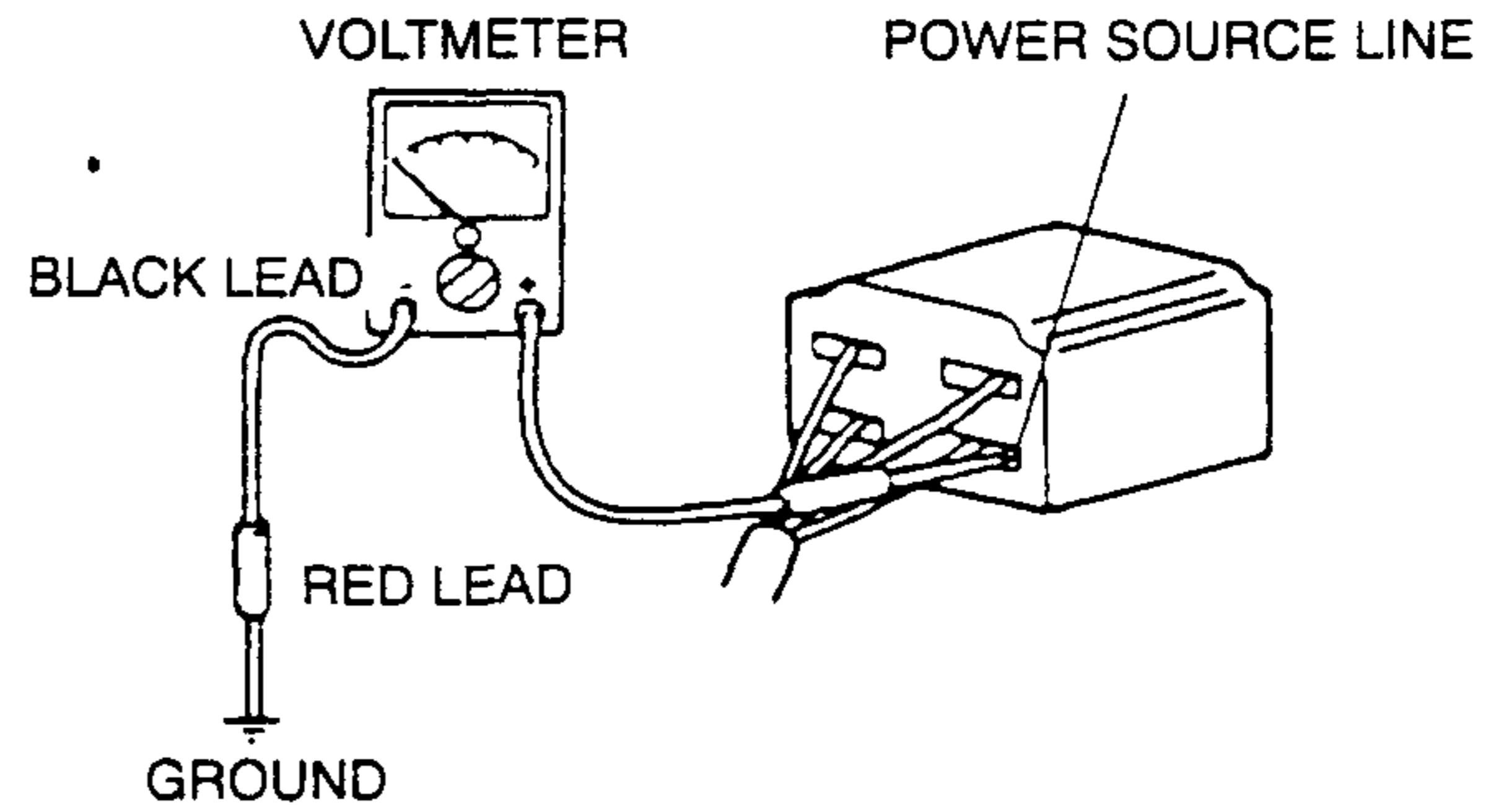
Caution

- Do not connect a jumper wire from the power source line to a body ground; this may cause burning or other damage to wiring harnesses or electronic components.



Voltmeter

- The DC voltmeter is used to measure circuit voltage. A voltmeter with a range of 15 V or more is used by connecting the positive (+) probe (red lead wire) to the point where voltage is to be measured and the negative (-) probe (black lead wire) to a body ground.

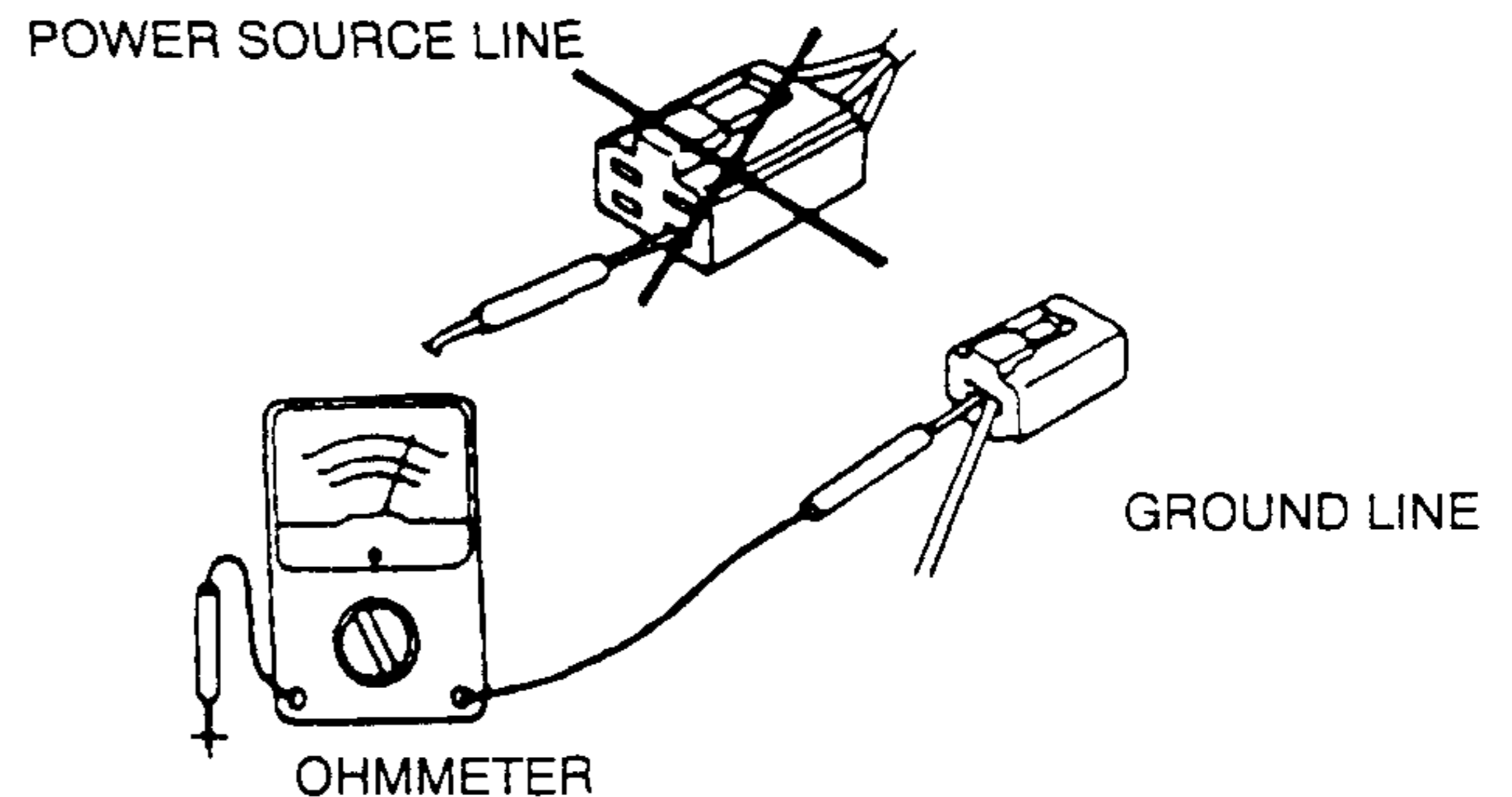


Ohmmeter

- The ohmmeter is used to measure the resistance between two points in a circuit, and to check for continuity and short circuits.

Caution

- Do not connect the ohmmeter to any circuit to which voltage is applied. This will damage the ohmmeter.



JACKING POSITIONS, VEHICLE LIFT (2 SUPPORTS) POSITIONS

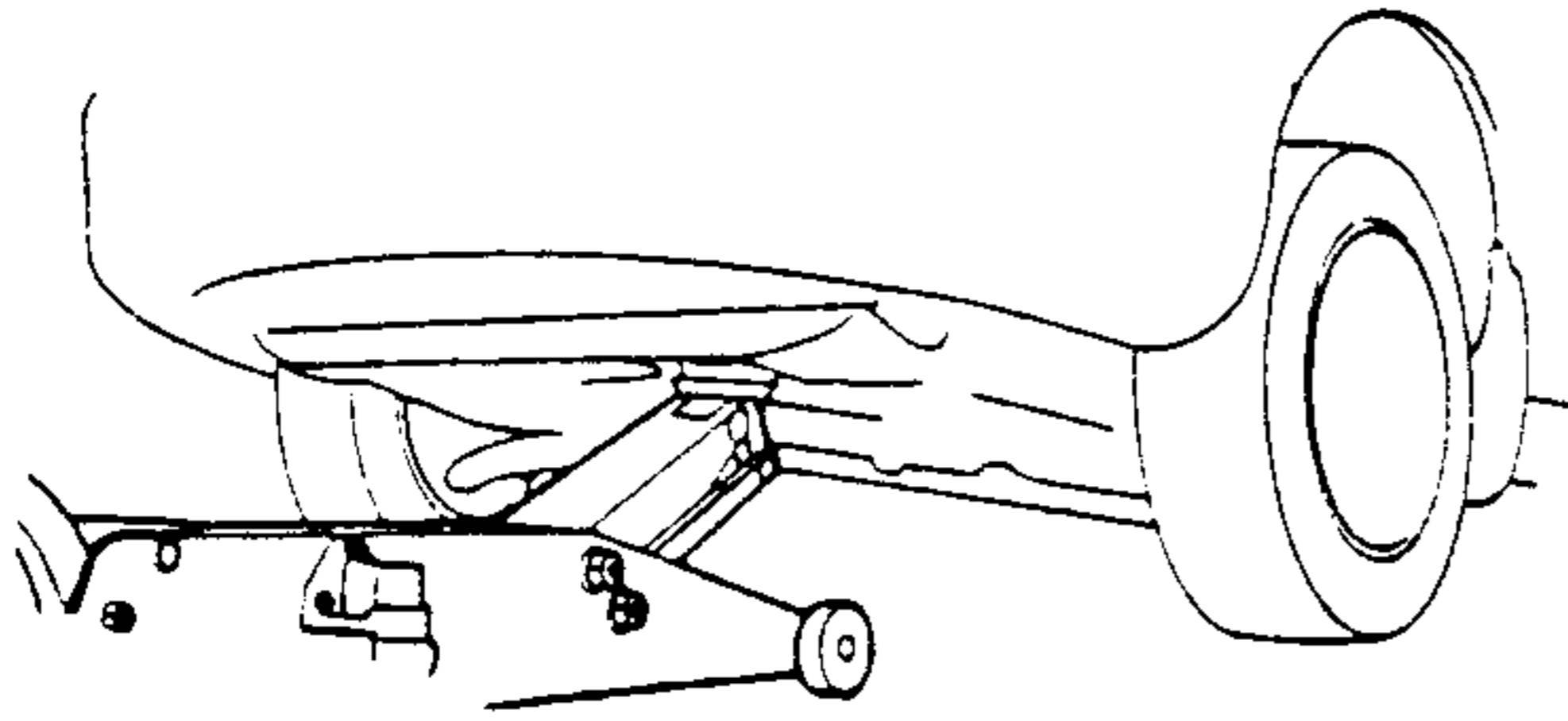
JACKING POSITIONS

Warning

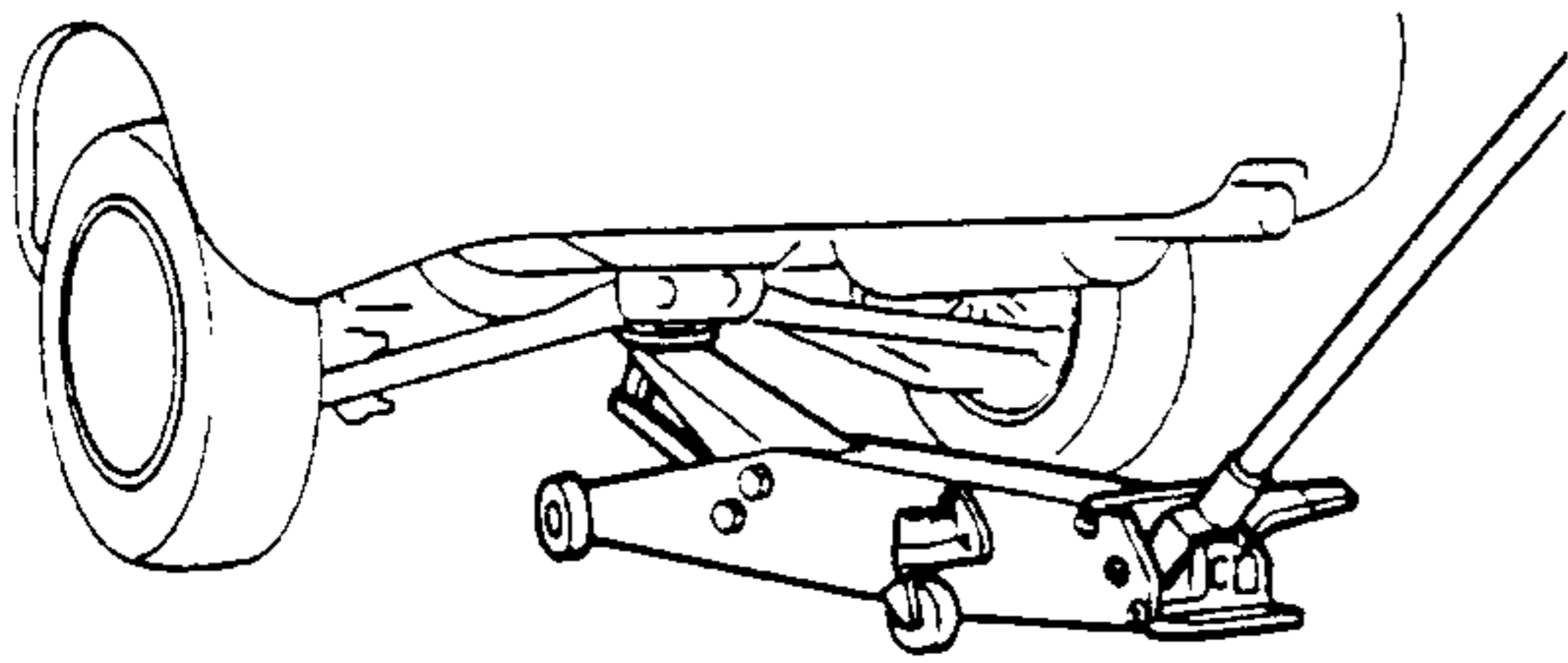
- Improperly jacking a vehicle is dangerous. The vehicle can slip off the jack and cause serious injury. Use only the correct front and rear jacking positions and block the wheels.

Use safety stands to support the vehicle after it has been lifted.

FRONT

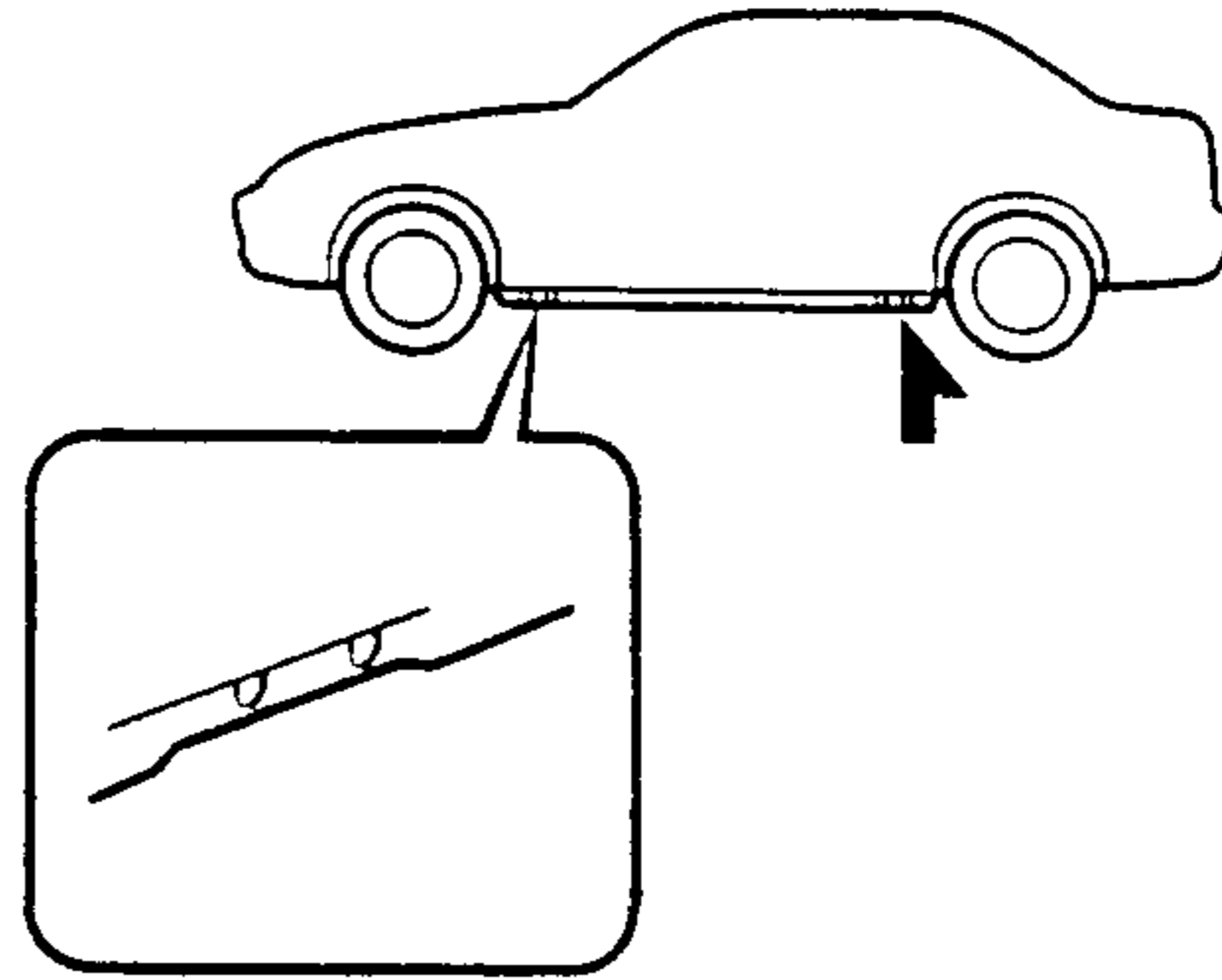


REAR



VEHICLE LIFT (2 SUPPORTS) POSITIONS

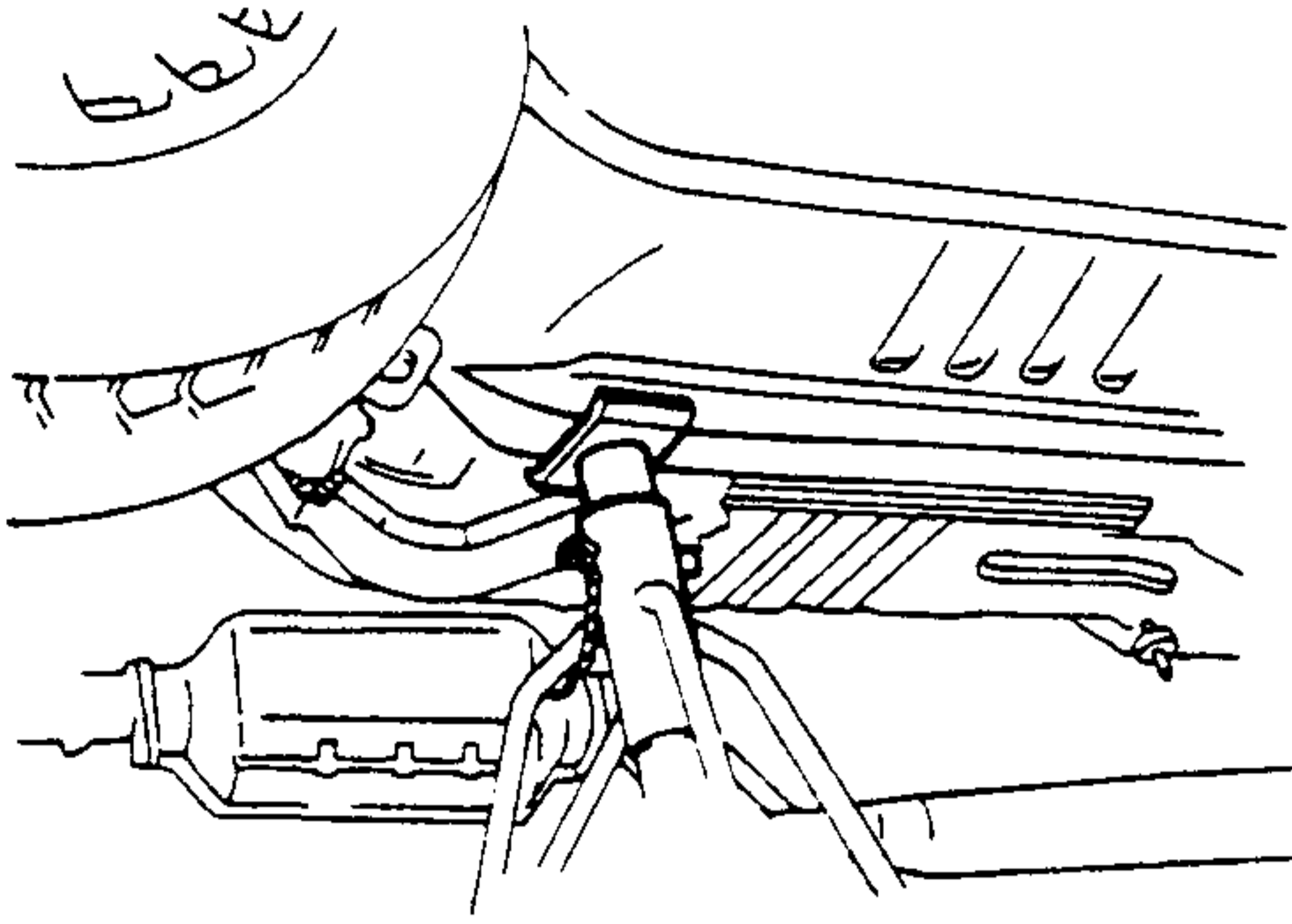
FRONT AND REAR



SAFETY STAND POSITIONS

SAFETY STAND POSITIONS

FRONT



REAR

