YAMAHA

XVZ12TDK

TDK

Supplementary Service Manual

16-03-36

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and new data for the XVZ12TDK.
For complete information on service procedures, it is necessary to use this Supplementary Service Manual together with the following manual.

XVZ12TK Service Manual (LIT-11616-03-35)

OVERSEAS SERVICE
OVERSEAS OPERATIONS
YAMAHA MOTOR CO., LTD.

NOTICE

This manual was written by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to put an entire mechanic's education into one manual, so it is assumed that persons using this book to perform maintenance and repairs on Yamaha machines have a basic understanding of the mechanical concepts and procedures inherent to machine repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit for use and/or unsafe.

This model has been designed and manufactured to perform within certain specifications in regard to performance and emissions. Proper service with the correct tools is necessary to ensure that the machine will operate as designed. If there is any question about a service procedure, it is imperative that you contact a Yamaha dealer for any service information changes that apply to this model. This policy is intended to provide the customer with the most satisfaction from his machine and to conform with federal environmental quality objectives.

Yamaha Motor Company, Ltd. is continually striving to improve all models manufactured by Yamaha. Modifications and significant changes in specifications or procedures will be forwarded to all Authorized Yamaha dealers and will, where applicable, appear in future editions of this manual.
Particularly important information is distinguished in this manual by the following notations:

NOTE: A NOTE provides key information to make procedures easier or clearer.

CAUTION: A CAUTION indicates special procedure that must be followed to avoid damage to the machine.

WARNING: A WARNING indicates special procedure that must be followed to avoid injury to a machine operator or person inspecting or repairing the machine.

Starting Serial Number

XVZ12TDK 31M-000101



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PERIODIC INSPECTION AND ADJUSTMENT

INTRODUCTION

This chapter includes all information necessary to perform recommended inspections and adjustments. These preventive maintenance procedures, if followed, will ensure more reliable vehicle operation and a longer service life. The need for costly overhaul work will be greatly reduced. This information applies to vehicles already in service and to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

MAINTENANCE INTERVALS CHARTS

Proper periodic maintenance is important. Especially important are the maintenance services related to emissions control. These controls not only function to ensure cleaner air but are also vital to proper engine operation and maximum performance. In the following maintenance tables, the services related to emissions control are grouped separately.

PERIODIC MAINTENANCE EMISSION CONTROL SYSTEM

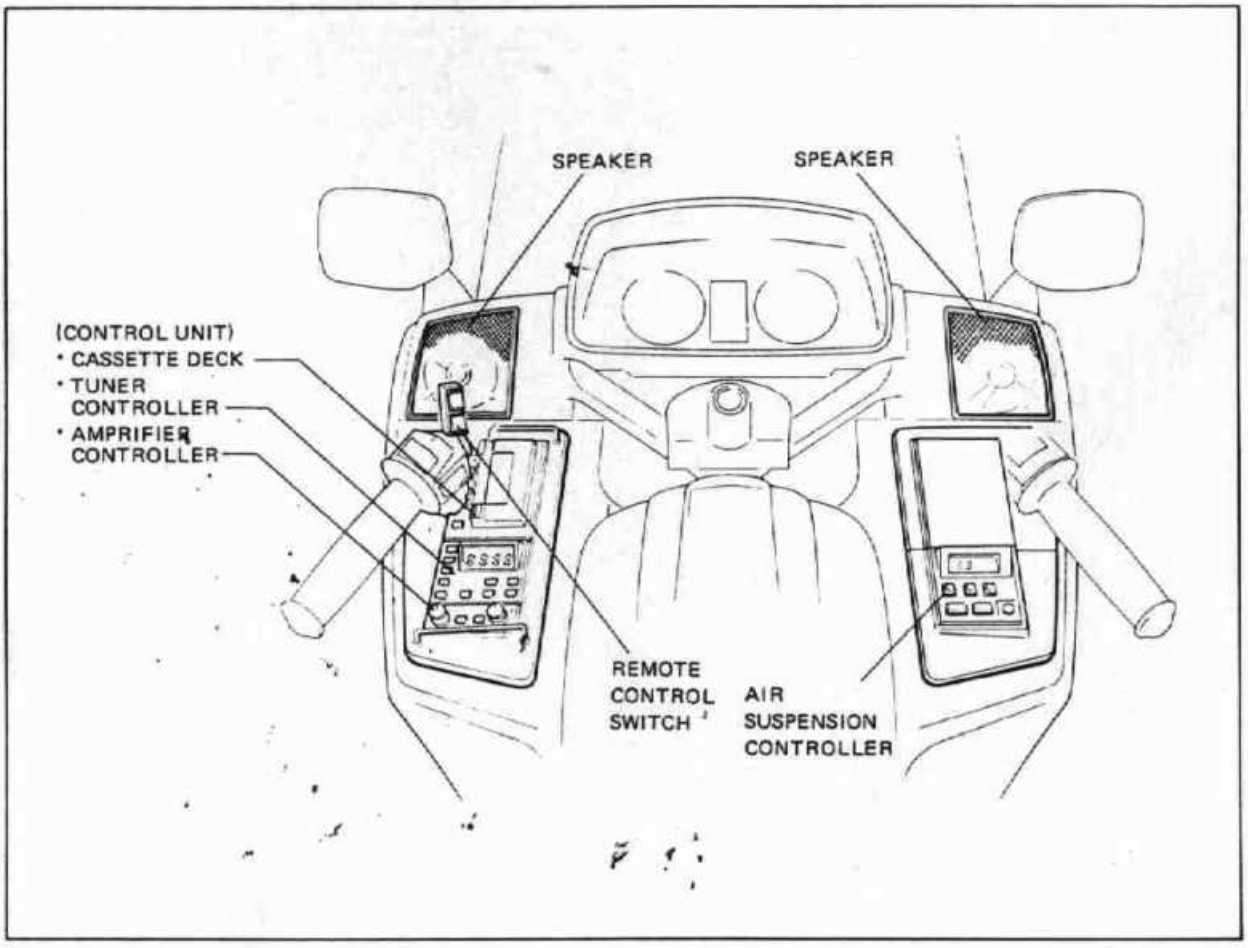
No.	Item	Remarks	Initial break-in		Thereafter every	
			1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months
1	Valve clearance	Check and adjust valve clearance when engine is cold. Adjust after initial 13,000 km (8,000 mi) or 18 months and thereafter every 12,000 km (7,500 mi) or 18 months.	○			Adjust every 12,000 km (7,500 mi) or 18 months
2	Spark plugs	Check condition. Adjust gap/Clean. Replace after initial 13,000 km (8,000 mi) or 18 months and thereafter every 12,000 km (7,500 mi) or 18 months.		○	○	Repalce every 12,000 km (7,500 mi) or 18 months
3	Crankcase ventilation system	Check ventilation hose for cracks or damage. Replace if necessary.		○		○
4	Fuel line	Check fuel hose for cracks or damage. Replace if necessary.		○		○
5	Fuel filter	Replace initial 33,000 km (20,500 mi) and thereafter every 32,000 km (20,000 mi).				Replace every 32,000 km (20,000 mi)
6	Exhaust system	Check for leakage. Retighten if necessary. Replace gasket(s) if necessary.		○	○	
7	Carburetor synchronization	Adjust synchronization of carburetors.		○	○	
8	Idle speed	Check and adjust engine idle speed. Adjust cable free play.		○	○	

GENERAL MAINTENANCE/LUBRICATION

No.	Item	Remarks	Type	Initial break-in		Thereafter every		
				1,000 km (600 mi) or 1 month	5,000 km (3,000 mi) or 7 months	4,000 km (2,500 mi) or 6 months	8,000 km (5,000 mi) or 12 months	16,000 km (10,000 mi) or 24 months
1	Engine oil	Warm up engine before draining.	Refer to page 53	○			Replace every 12,000 km (7,500 mi) or 18 months	
2	Oil filter	Replace	–	○				
3	Air filter	Clean with compressed air. Replace if necessary	–		○		○	
4	Cooling system	Check hoses for cracks or damage, replace if necessary.	–			○	○	
		Replace coolant 24 months.	Ethylene glycol anti-freeze coolant.					Every 24 months
5	Brake system	Adjust free play. Replace pads if necessary.	–	○	○	○		
6	Final gear oil	Replace	SAE 80 API GL-4 Hypoid gear oil	○				○
7	Control and meter cable	Apply chain lube thoroughly.	Yamaha chain and cable lube or SAE 10W30 motor oil	○	○	○		
8	Shift pedal and brake pedal shaft pivot.	Apply chain lube lightly.	Yamaha chain and cable lube or SAE 10W30 motor oil.		○	○		
9	Center and sidestand pivots	Apply chain lube lightly.	Yamaha chain and cable lube or SAE 10W30 motor oil		○	○		
10	Steering bearing and reces.	Check bearing assemblies for looseness. Moderately repack every 16,000 km (10,000 mi)	Medium weight wheel bearing grease		○	○		Repack
11	Front fork oil	Drain completely. Refill to specification.	Yamaha fork oil 10wt or equivalent					○
12	Wheel bearings	Check bearings for smooth rotation. Replace if necessary.	–		○	○		
13	Battery	Check specific gravity. Check breather pipe for proper operation.	–		○	○		
14	Brake lever and clutch lever pivot shaft	Apply chain lube lightly.	Yamaha chain and cable lube or SAE 10W30 motor oil		○	○		
15	Rear arm pivot bearing	Check bearing assembly for looseness. Moderately repack every 16,000 km	Medium weight wheel bearing grease		○	○		Repack
	r suspen- n link ots	Apply chain lube	Lithium soap base grease					○
	drier	Replace desiccant every 24 months	–					every 24 months
	tion er	Clean filter every 12 months	–				every 12 months	
16	Re sio piv							
17	Air							
18	Suc filt							

MAJOR FEATURES

AUDIO SYSTEM



YAMAHA AUDIO SYSTEM is equipped with a 12-watt amplifier, amplifier controller, tuner controller, cassette tape deck, left & right speakers, and remote control switch.

The tuner controller provides both auto-tuning and auto-dimmer LED display. The radio can be preselected for five FM stations and five AM stations.

The cassette tape deck has both auto-reverse and metal tape capabilities.

Weatherproof speakers are located at both sides of the fairing.

The remote control switch can control both the tuner and the cassette deck for auto-tuning, muting, or tape reverse operation.

Volume adjusts automatically to compensate for ambient noise levels.

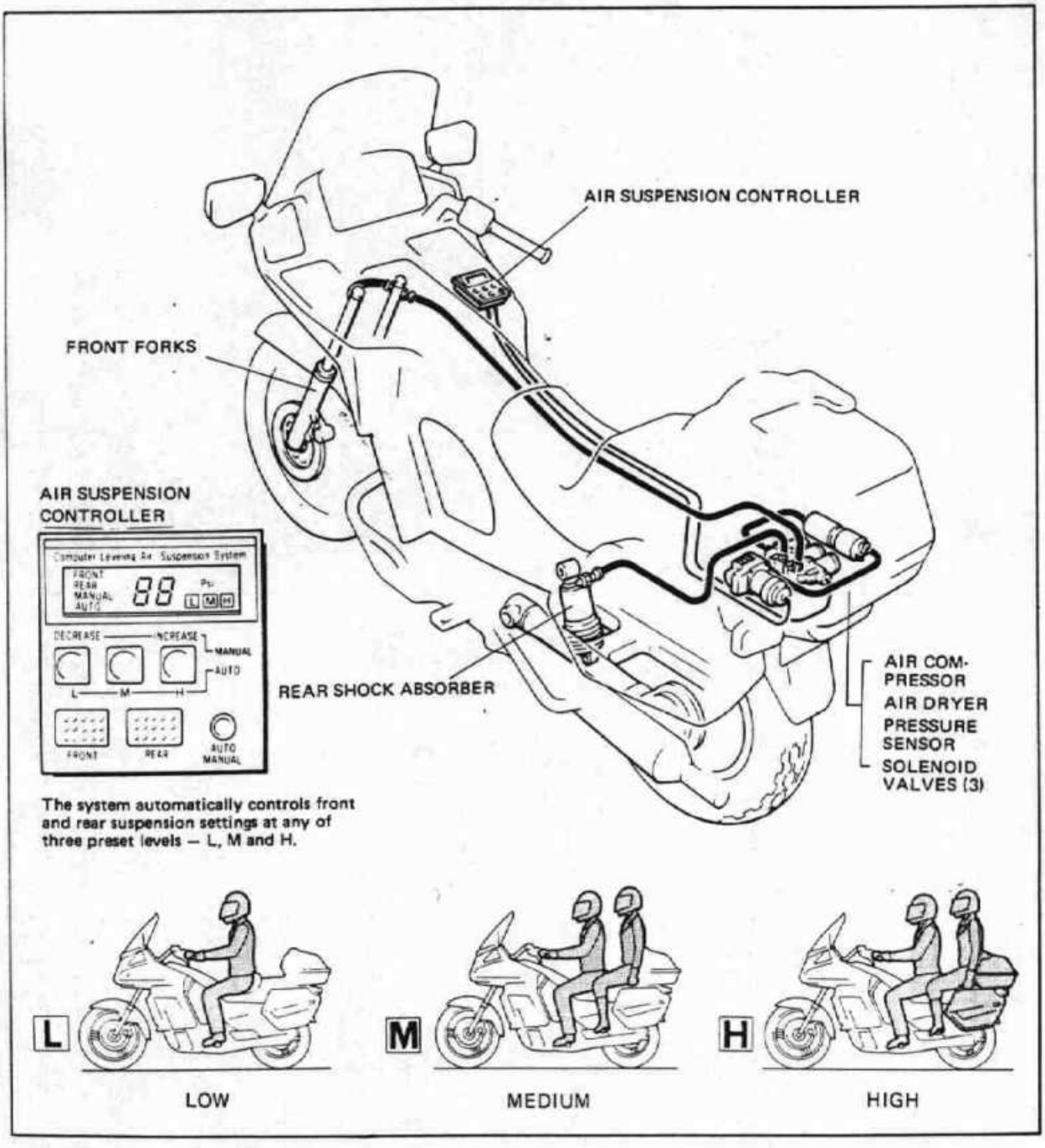
The controller units are detachable for security and the connectors are gold-plated for corrosion resistance.

CLASS (Computer Leveling Air Suspension System)

CLASS is the world's first suspension control system by which the front and rear suspension air pressures can be controlled at a touch.

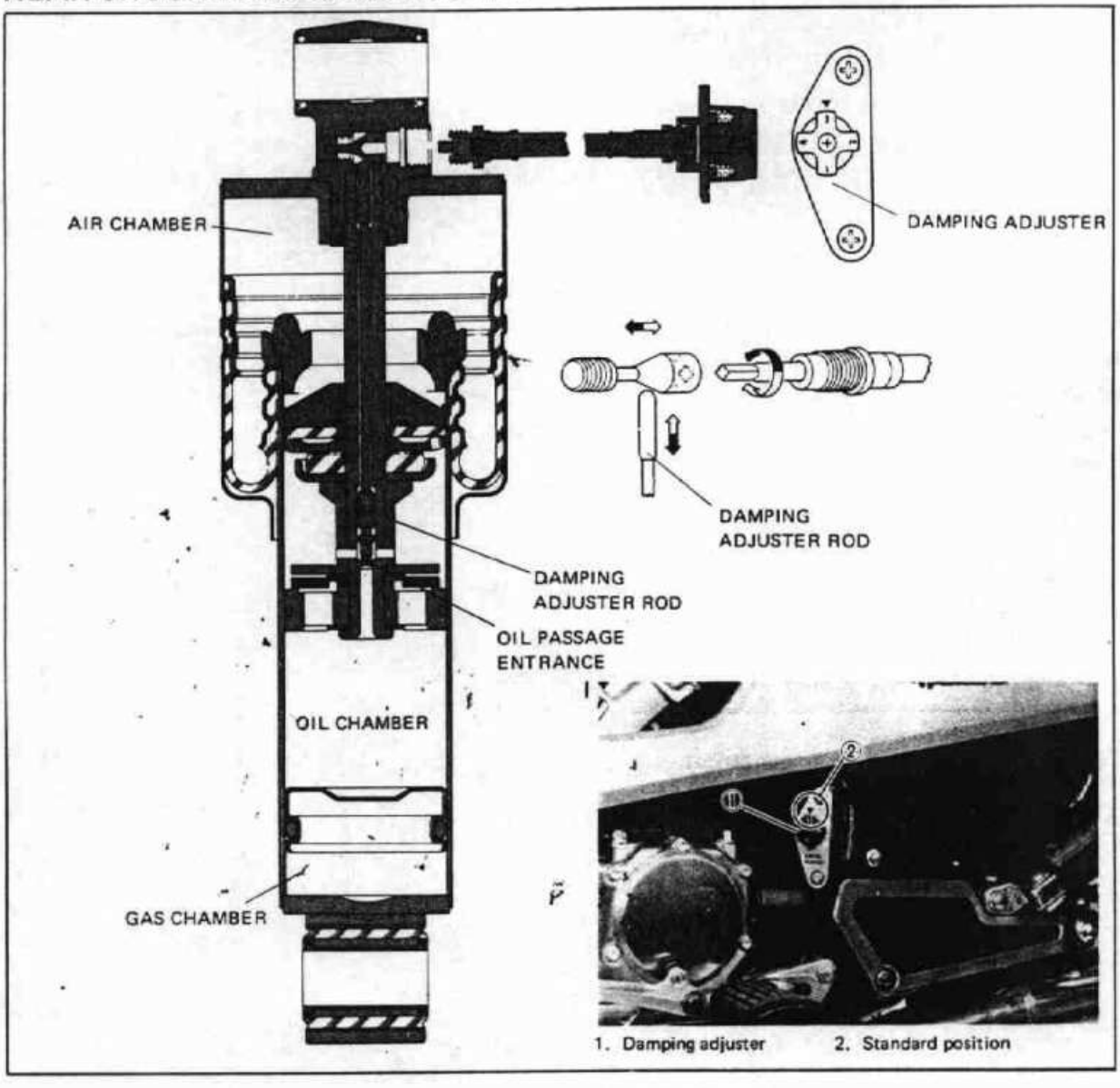
The operation of buttons on the control panel's (air suspension controller) enables the semiconductor pressure sensor and microcomputer to measure both front and rear suspension air pressures and automatically adjust the pressures in three stages. On the MANUAL mode, it is possible to set the pressures at any desired level.

The air suspension controller, equipped with a built in microcomputer controls the solenoid valves and air compressor motor, the controller simultaneously provide a reach out of the constantly changing air pressure on the liquid crystal display (LCD) during pressure adjustment. In case of trouble, the self-diagnosis function indicates an "error" sign (E1 to E6) on the display to help in troubleshooting.



The system automatically controls front and rear suspension settings at any of three preset levels — L, M and H.

REAR SHOCK DAMPING ADJUSTER



1. Damping adjuster 2. Standard position

Damping

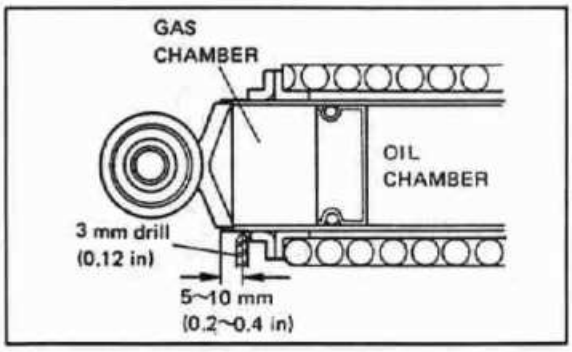
Turn the damping adjuster to increase or decrease the damping.

If the damping adjuster is turned toward the 4, the damping becomes harder; if the adjuster is turned toward the 1, damping becomes softer.

Standard position – No. 1 No. 1 – Minimum damping No. 4 – Maximum damping

WARNING:

1. **This unit contains high pressure nitrogen gas.**
2. **Incineration or disassembly may cause explosion.**
3. **Drill as shown with eye protection.**

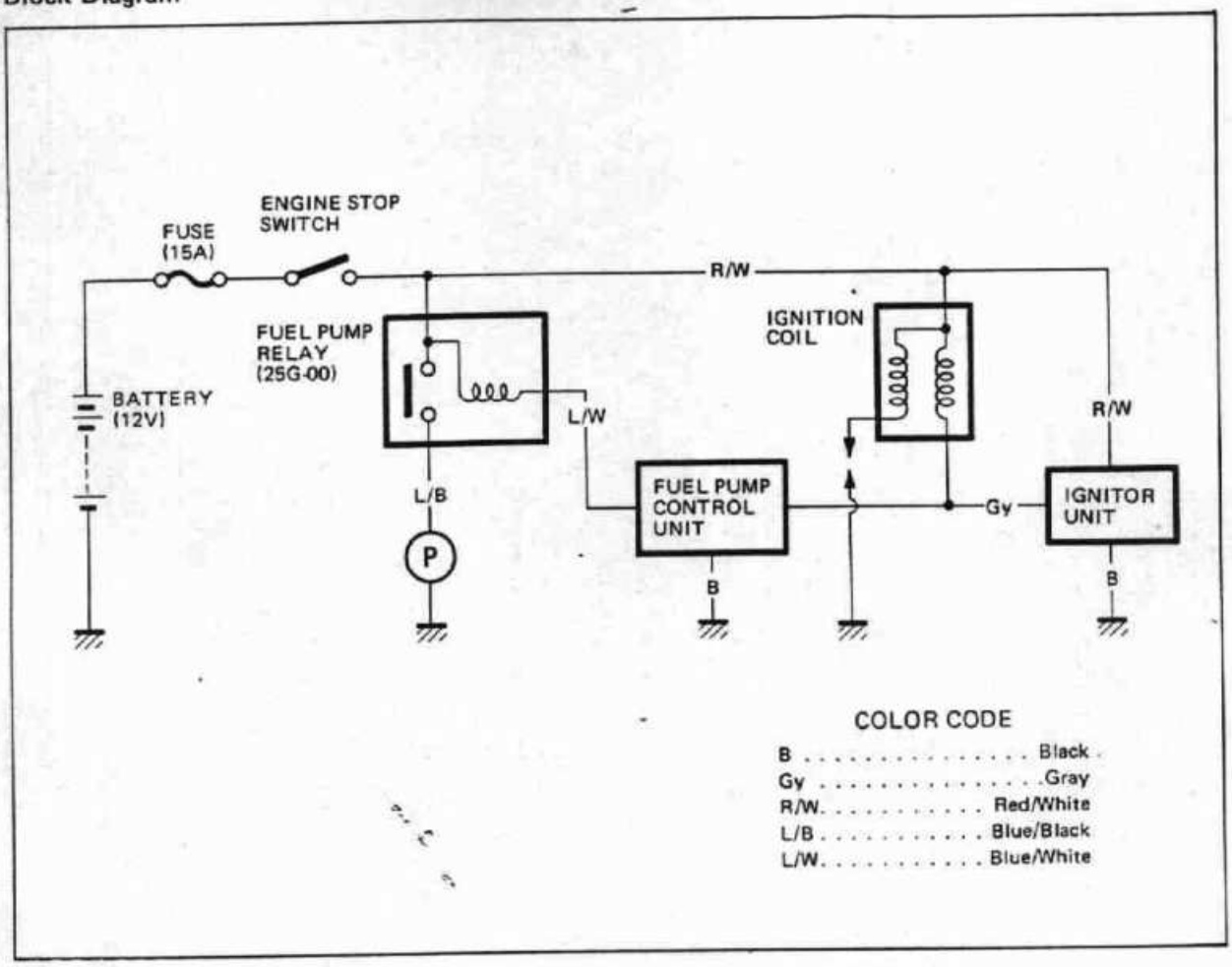


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NEW SERVICE

FUEL SYSTEM

Block Diagram



Functions

This system makes it possible for the fuel pump to move only when the ignition sparks occur.

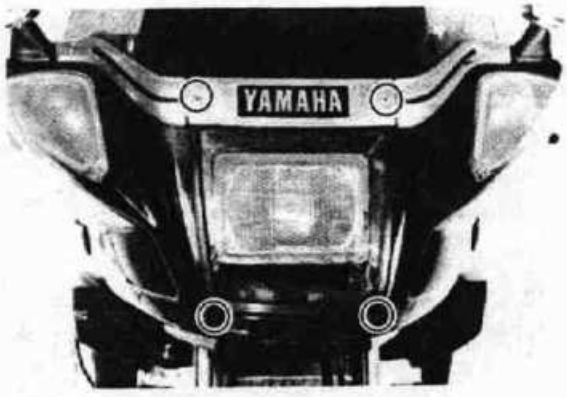
1. When the main switch is turned to ON, the fuel pump relay is turned on for 0.3 seconds and then the fuel pump moves.
2. When the starter switch is pushed, the starter motor runs and ignition pulses occur.
   The ignition pulses cause the relay to turn on and the fuel pump moves.
3. When carburetors have no more fuel, the engine stops running and also ignition pulses stop.
   As the relay is turned off without ignition pulses, the fuel pump stops moving.

Fuel pump control unit
Fuel pump relay

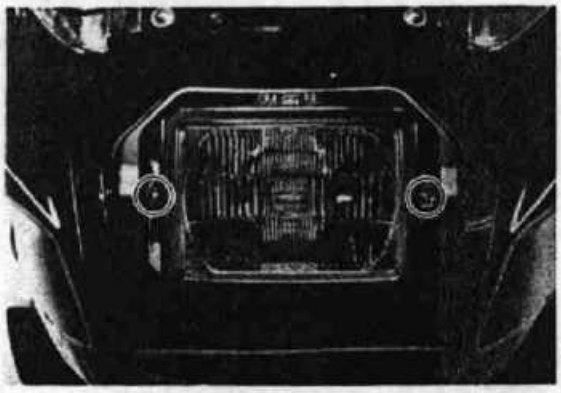
The fuel pump control unit and the relay are mounted behind the headlight.

Removal

1. Remove the four screws.



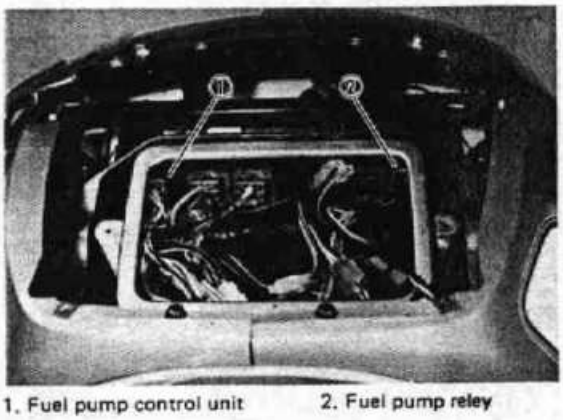
2. Remove the headlight holding screws (2).



3. Disconnect the lead wires and remove the light unit assembly.



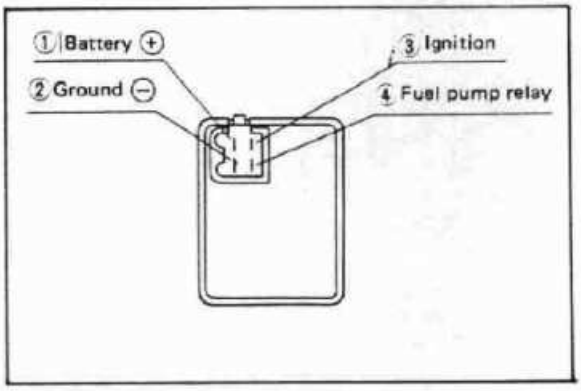
4. Pull out the fuel pump control unit and the relay from the rubber mountings, and disconnect the connectors.



1. Fuel pump control unit 2. Fuel pump reley

Fuel pump control unit inspection

Check the resistance using a pocket tester.



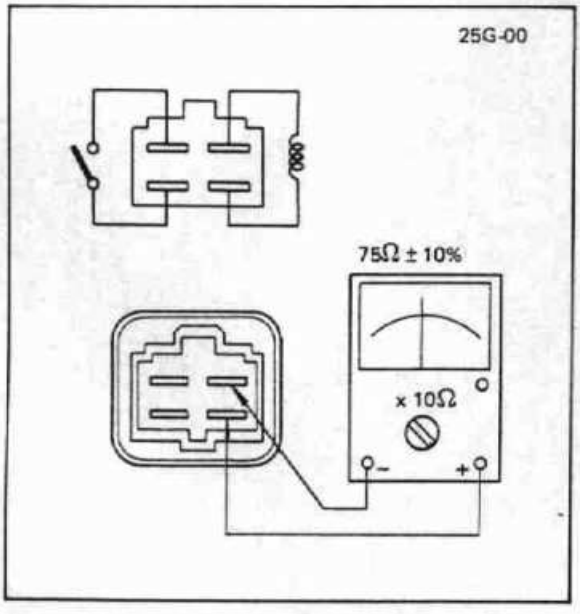
(kΩ range)

Tester ⊖ lead \ Tester ⊕ lead	①	②	③	④
①		∞	∞	∞
②	1 ~ 30		∞	1 ~ 15
③	∞			∞
④	1 ~ 15	∞	∞	

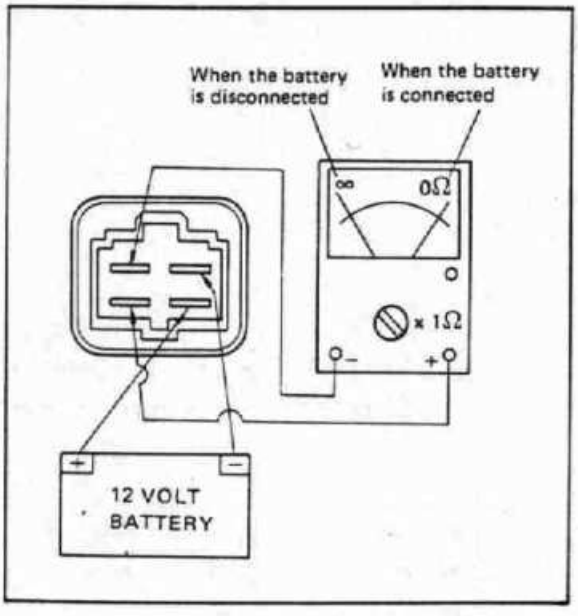
If the resistance is not within specification, replace the control unit.

Fuel pump relay inspection

1. Check the resistance of the relay coil windings with the pocket tester. If the resistance is not within specification, replace the relay.

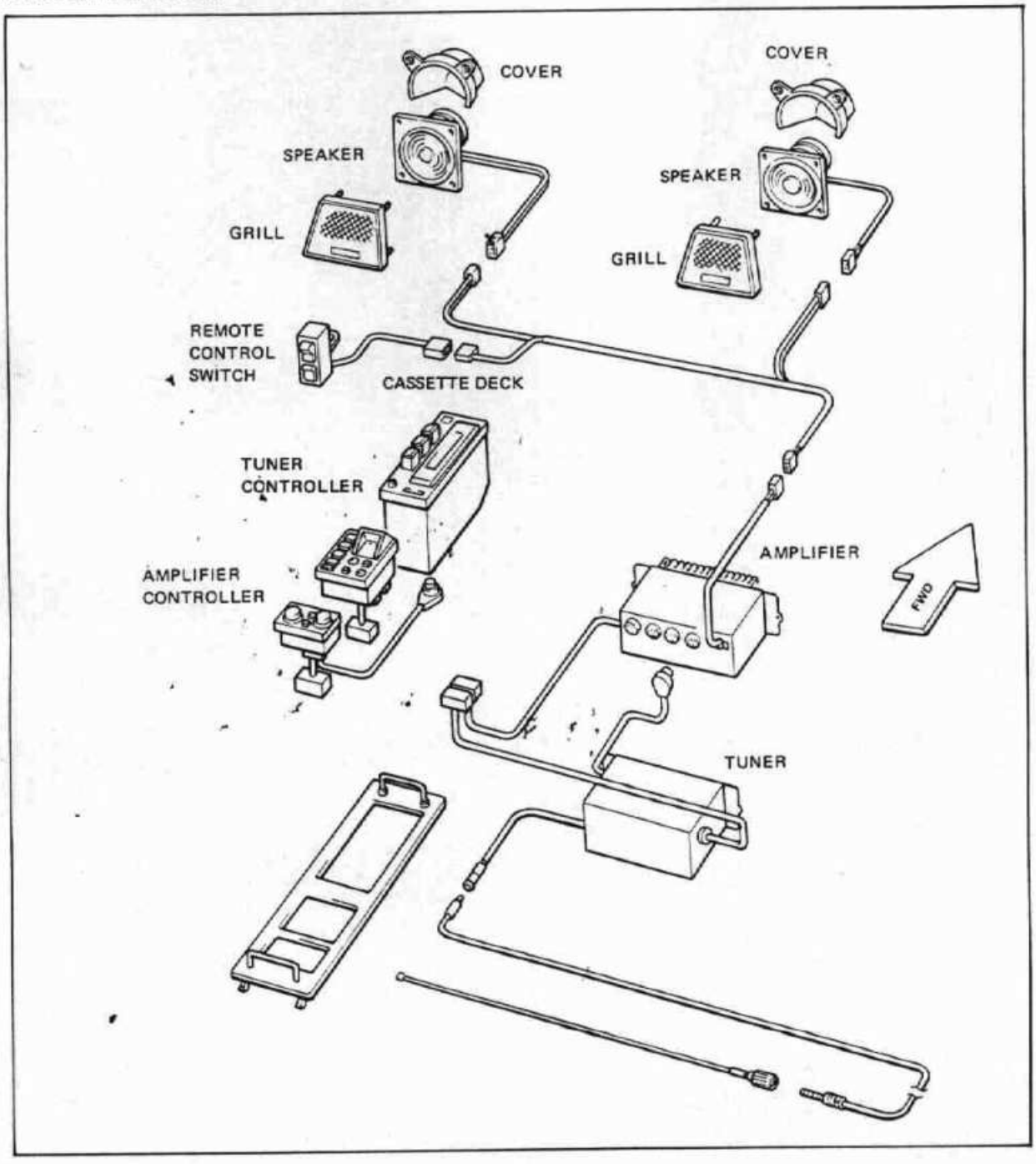


2. Check the relay function with a 12 volt battery and the pocket tester. Connect the leads as shown in the illustration. If the resistance readings do not equal those shown in the illustration, replace the relay.



AUDIO SYSTEM

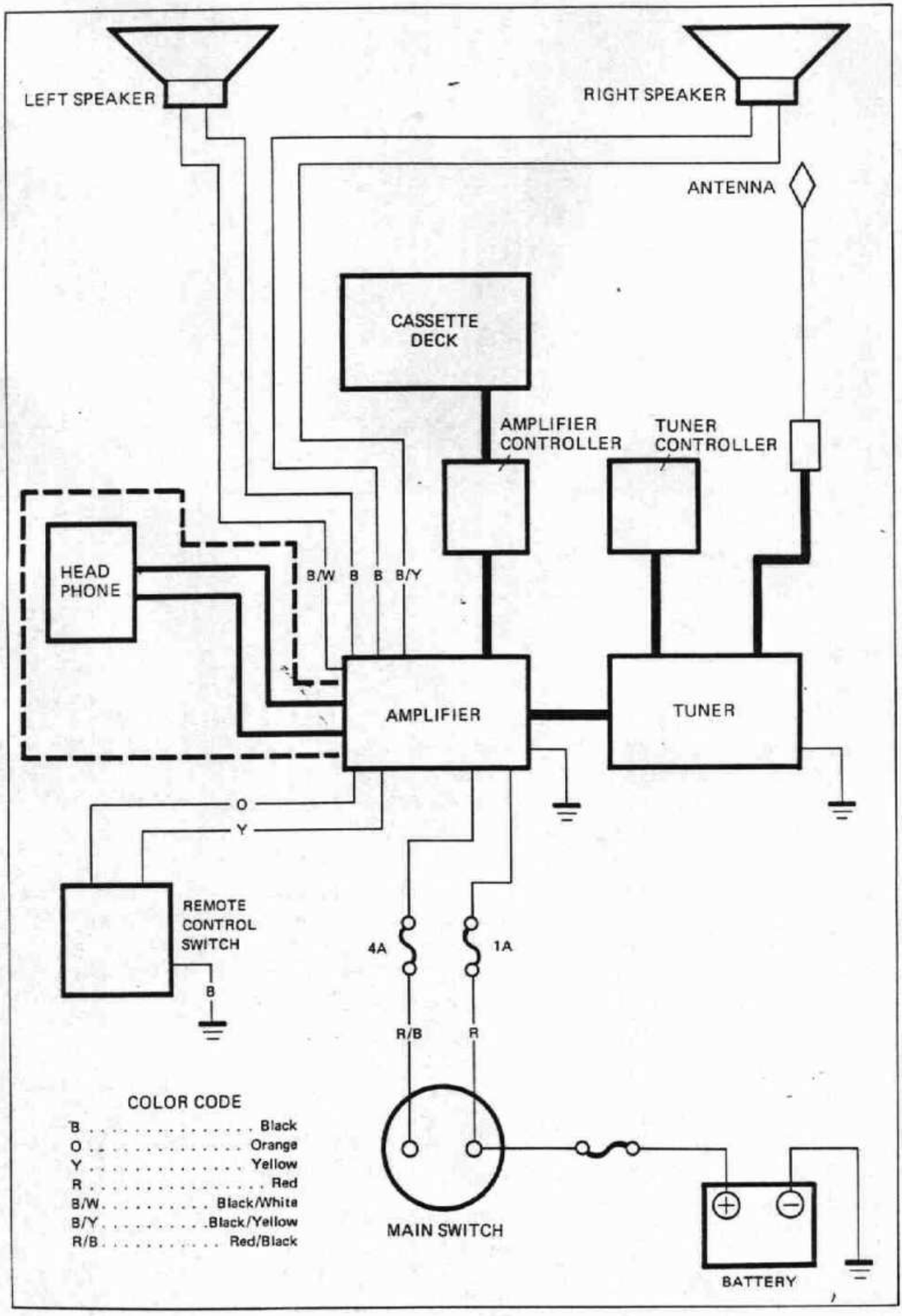
SYSTEM DIAGRAM



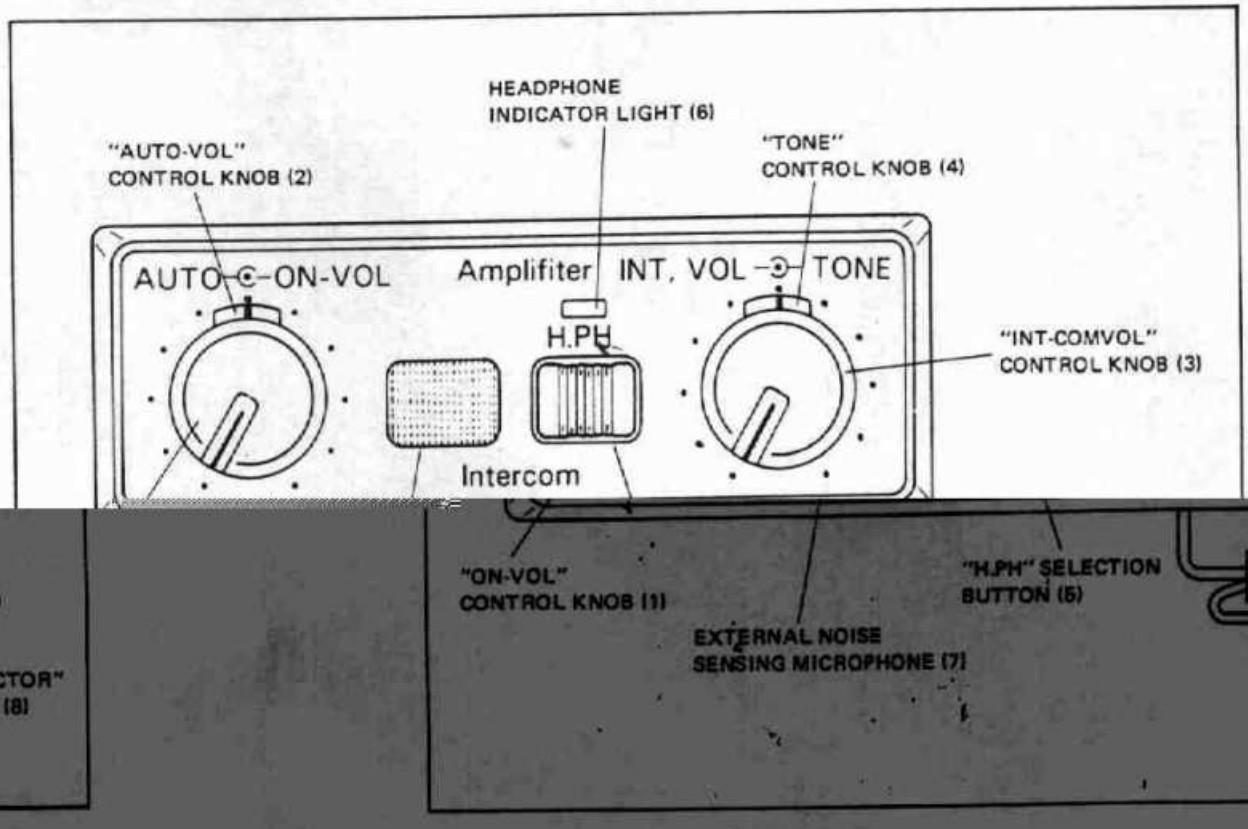
CAUTION:

- Although the cassette deck, tuner controller, and amplifier controller are of waterproof design, never hose or splash them with water or clean them with a wet scrub brush. For their own protection, be sure to remove these units before washing your motorcycle.
- When removing these units, never splash the connectors with water, allow dirt to come in contact with the connectors, or bend the connector pins.
- When removing the units, be sure to turn off their main switches and power sources (ON-VOL/INT-VOL).

WIRING DIAGRAM



AMPLIFIER CONTROLLER



Operation

(1) "ON-VOL" control knob
- This controls the power source and sound volume for the tuner and
. Turning this knob counterclockwise full cuts off the power source, whi
clockwise increases the volume.
- Insertion or ejection of a cassette tape into and out of the deck makes a
from tuner to deck or deck to tuner operation.

(2) "AUTO-VOL" control knob
- During riding there is a lot of ambient noise which tends to absorb the s
tuner, and deck. Turning this automatic volume control knob cloc
relative volume. When this knob is turned fully to the left, it cancels the
- Proper positioning of both POWER-VOL and AUTO-VOL can provide
same level of hearing whether the motorcycle is parked, idling in traffic,

(3) "INT-COMVOL" control knob
- This is a power source as well as volume control switch for the inter-con
ing it counterclockwise turns off the power source and turning it clo
inter-com sound volume.
- The INT-COM VOL has no bearing with the POWER-VOL in operatio
the whole system, turn off the power source switches (1) and (3).

the cassette deck.
e turning the bend-

n automatic change

ound volume of the
kwise increases the
feature.
approximately the
or in motion.

n component. Turn-
ckwise increases the

n. Thus, to turn off

(4) "TONE" control knob
- This is for the tone adjustment with the tuner and deck. Turning it counterclockwise emphasizes the bass tones, whereas a clockwise rotation brings out the treble tones.

(5) Switch-over from HEADPHONE to SPEAKER and vice versa
- Pushing this switch alternately turns on the headphone and speaker. When the headphone is turns on, the indicator glows.

(6) Headphone indicator light
- When the above switch-over knob is turned for HEADPHONE, this indicator comes on.

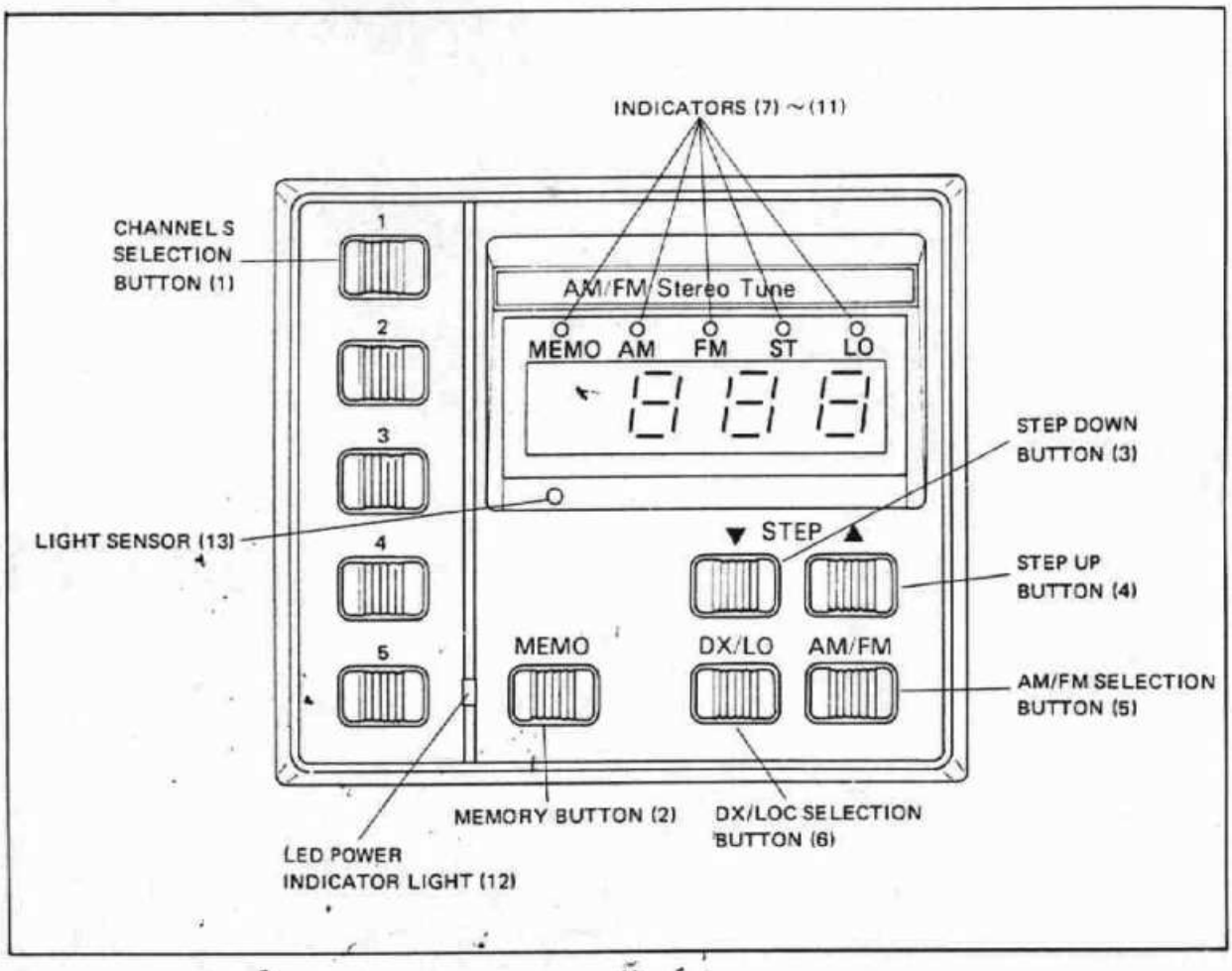
(7) External noise sensing microphone
- This is a noise sensing microphone for automatic sound volume control. It is covered with a waterproof cloth which lets sounds through.
- Be careful not to clog this mesh cloth with dust or foreign material and avoid tearing it.

(8) DIN-CONNECTOR short plug
- When the cassette deck is not connected, short the DIN-CONNECTOR using this plug. If this plug is not inserted, the amplifier will not work.

NOTE:
- Pull out the short plug from the DIN connector only when it is connected with the deck.
- Adjust the auto-volume so that it reaches a comfortable hearing level whether the motorcycle is parked or in motion. As the sensor microphone for the auto-volume adjustment is covered with a special waterproof cloth, do not it too hard.
- The power source switch and intercom switch are independent of each other. Turn them on or off as required.
- The change-over switch from headphone to speaker/speaker to headphone is effective only for sound from the radio or tape. Sound through the intercom (microphone) comes only through the headphone. Please note that if the HP-SP switch is at the HP position, no sound will come out of the speaker. Do not mistake it for component failure.
- Clean the panel surface with a soft cloth moistened with a neutral detergent. Never use thinner, benzene, or gasoline.

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TUNER CONTROLLER



Operation

(1) CHANNEL selection button
- Pre-selected AM or FM stations can be recalled at a touch by pressing of the five channel selected buttons.
- These five station selection buttons enable you to select either five AM or five FM stations.

(2) Memory button
- Push this memory button; LED (7) glows for minutes.
- If any of the channel selection buttons is touched while LED (7) is glowing, the selected frequency will by instantly fed into the tuner controller's memory bank for later recall.

(3) STEP DOWN button
- Each touch on this button selects the station in descending order. If this button is held the quick selection of stations will accur in a descending order of frequency, i.e., towards the slower end of the waveband.

(4) STEP UP button
- This is the reverse of the above operation.

(5) AM/FM selection button
- Each touch on this button changes tuning from AM to FM or from FM to AM.
- When AM reception is selected, indicator (8) glows; while during FM reception indicator (9) is displayed.

(6) DX/LOC selection button

- Each touch on this button replaces DX for LOC and vice versa. The indicator (11) comes on for LOC.
- With DX, a relatively weak frequency can be received.
- With LOC, only strong frequencies can be caught.
- Push on the handlebar remote control tune switch and the tuner controller will scan the waveband for an available stations.

(7) to (11) Indicators

- Red LED is used for the indicators.
- With the indicaotor ST (10), it comes on only for FM stereo broadcasting.

(12) LED power indicator light

- This lights when the main switch is turned to "ACC."

(13) Light sensor

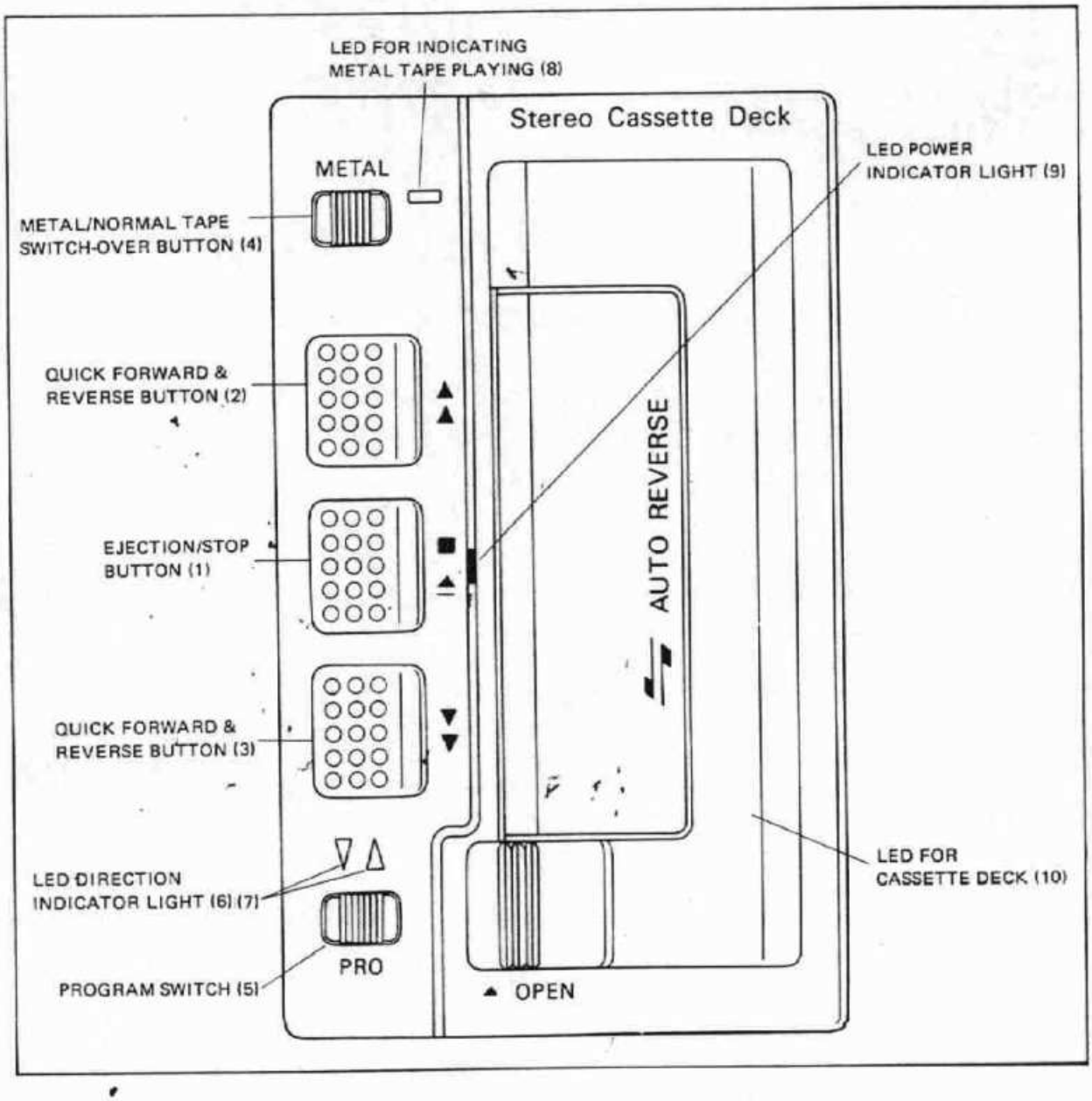
- This senses surrounding brightness for control of the LED lights. According to the ambient brightness, LED either increases or decreases its brightness automatically for better visibility.

NOTE:

- The audio system is subjected to noises on a motorcycle, such as sounds induced by improper spark plugs. Thsu, resistor plugs are employed. Always replace with the specified type.
- Unclear radio reception such as static or station "crossover" may occur on some frequencies due to weak redio transmitting waves. Try another station.
- Do not use the battery for a long time without recharging it.
- Clean the Tuner Controller panel surface with a soft cloth moistened with a neutral detergent. Never use thinner, benzene, or gasoline.
- Do not allow clutch oil or brake oil to drop or touch on the controller panel. If this happens, immediately wipe off the oil thoroughly.

CASSETTE DECK

Appearance and Description



Operation

(1) Ejection/stop button

- Press this button firmly, then remove the tape.
- Press this button lightly to release the fast forward or fast reverse operation; the tape will then revert to the play mode.

(2) & (3) Quick forward/reverse buttons

- Press button (2) for fast forward or fast reverse depending on what program direction the tape is running.
- Press button (3) for fast forwardor fast revers, depending on what progsam direction the tape is running.

(4) Metal/Normal tape switch-over button
- Each push on this button replaces metal to normal, or normal to metal tape playing.
- LED (8) lights to show metal tape playing.

(5) Program switch
- Each push on this button changes the program direction.
- Tape playing deraction is indicated by LED (6) and (7).

(6) & (7) LED direction indicator light
- Tape direction is indicated by LED (6) and (7).

(8) LED for indicating metal tape playing.

(9) LED power indicator light
- When the power source is turned on for tuner operation, the power indicator light is displayed.

(10) Lid for cassette deck
- The cassette deck lid is of waterproof design. Be sure that the cassette deck lid is closed when not in use.
- This lid can remain closed after depressing button(1) to stop the tape.button.(1).....

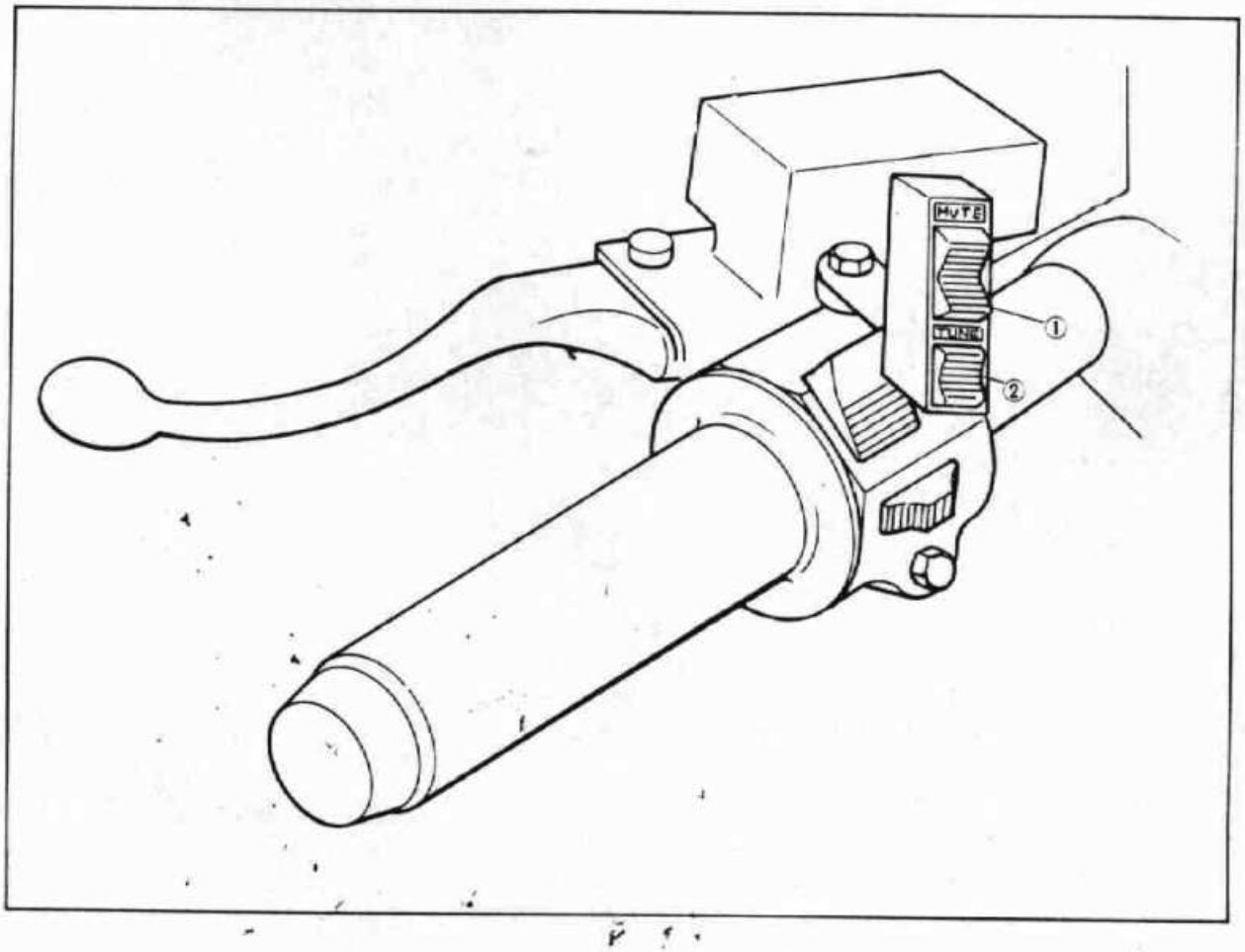
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cover over the cassette deck in wet weather.
insertion lid closed whice the tape is being played. Also keep it closed when the

tapes in a case to protect the tape from dirt, scratches, or unraveling.
he tape tight before playing it, as it may get entangled in the deck.
e tapes in the sun for a long time.
k gets water in it, dry it in the shade with the cassette insertion lid open.
ic head using an alcohol moistened cotton-tipped srick.
e dack pancl surface with a soft cloth moistened with a neutral detergent. Never
ene, or gasoline.
ttery for a long tume without recharging it.
tch oil or brake oil to drop or touch on the controller panel. If this happens,
off the oil thotoughly.

NOTE:
- Use a waterproof
- Keep the cassette deck is not in use
- Store the cassette
- Be sure to make t
- Do not expose th
- If the cassette dec
- Clean the magneti
- Clean the cassette use thinner, benze
- Do not use the ba
- Do not allow clu immediately wipe

REMOTE CONTROL SWITCH

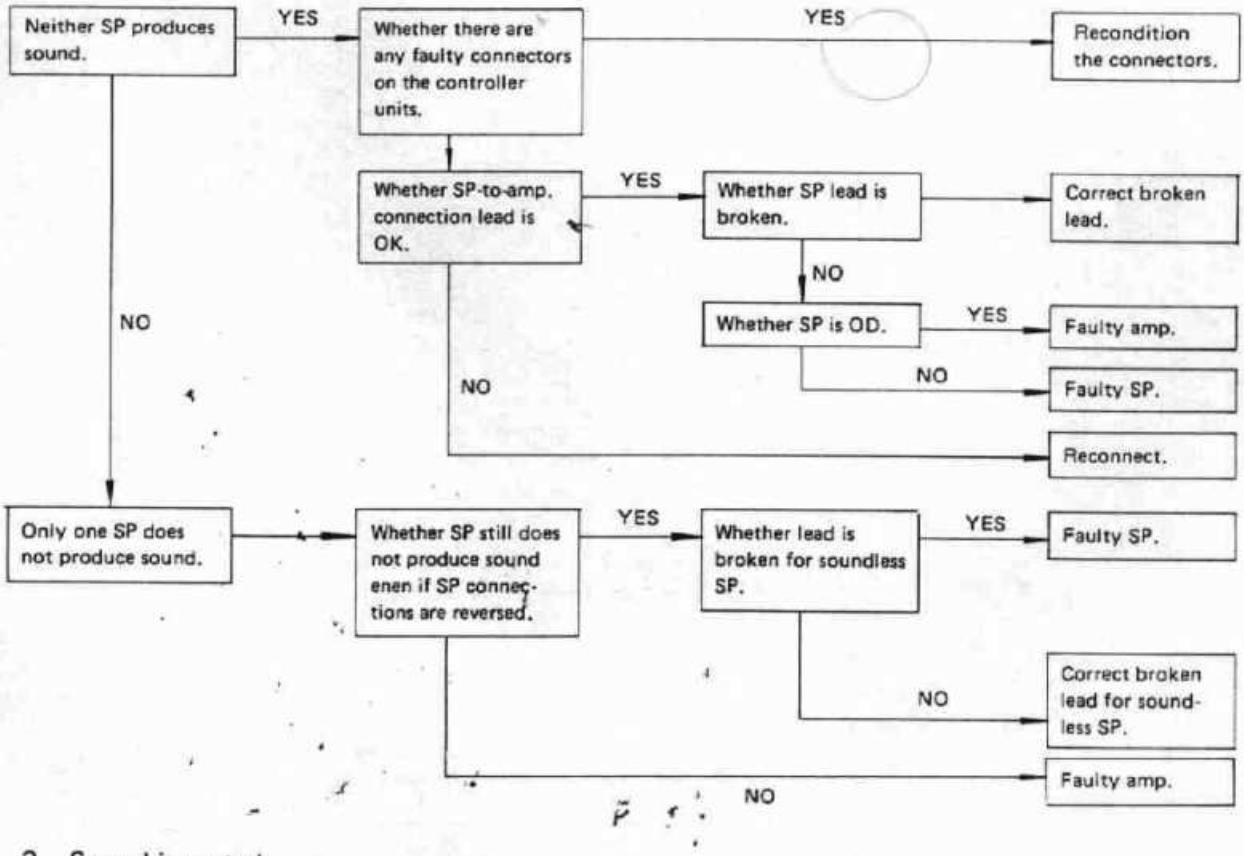


(1) MUTE switch
Push this switch at the upper portion, and the volume decreases automatically by 20 dB.

(2) TUNE siwtch
Push this switch one, and auto-tuning (auto-seeking) starts to seek whatever station can be received.

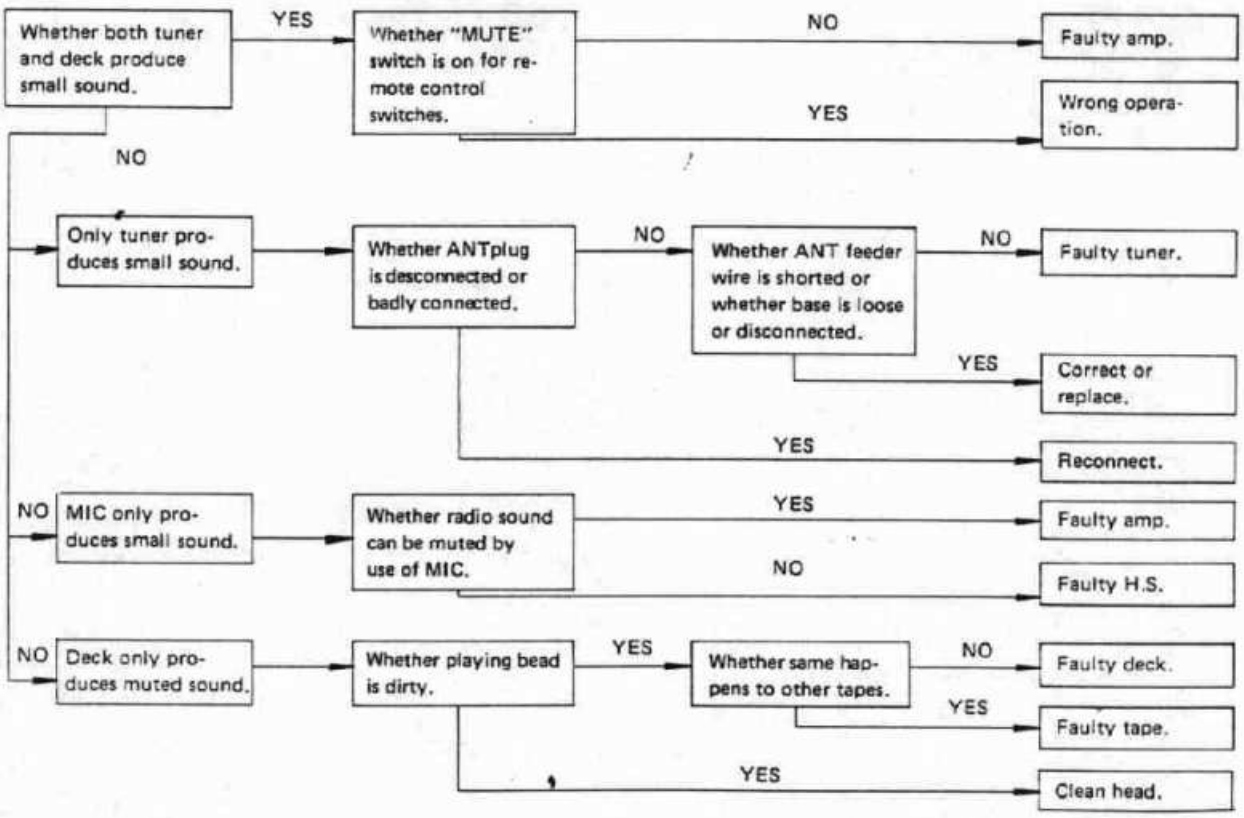
2. No sound from speaker only.
   Before checking the following chart:
   - Be sure that HEADPHONE switch on the amplifier controller is turned to OFF.

Check:



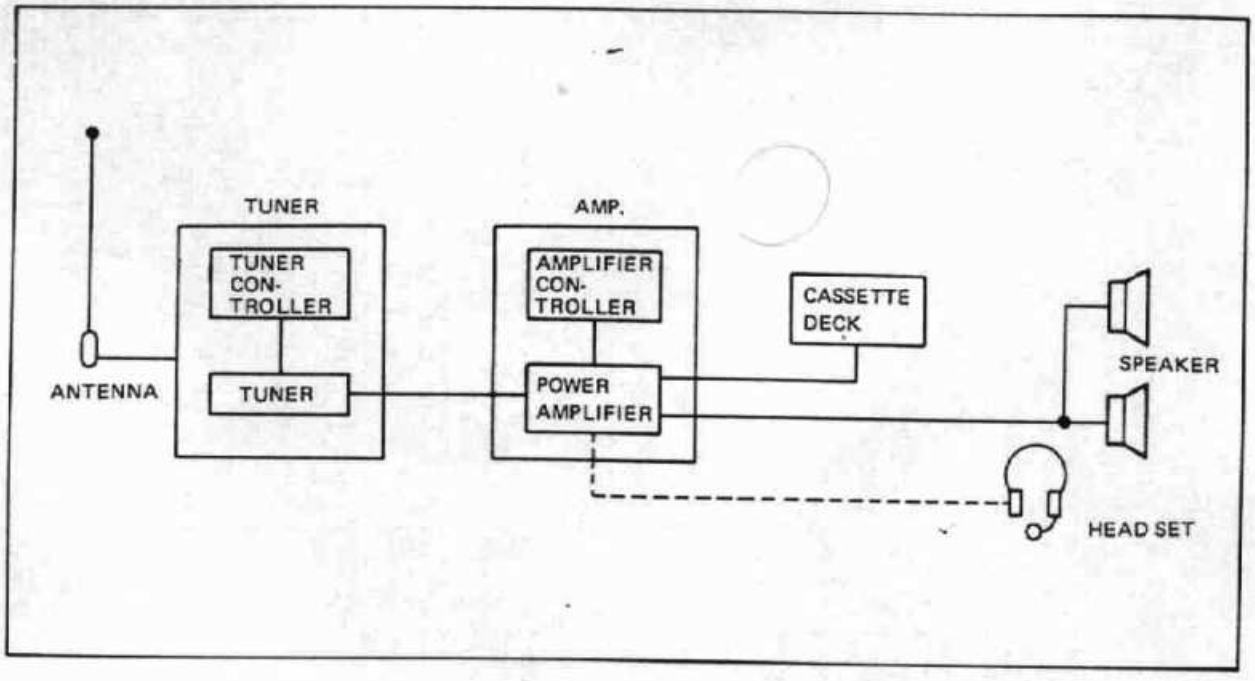
3. Sound is muted.

Check:



TROUBLESHOOTING

Check the following chart for component problems:



1. No power from the battery.

Check:

Whether LED power → YES → Whether LED power → YES → Whether tape playing → YES → Faulty amp.

t glows
n amp.
urned

Indicator light is displayed on the deck when a tape cassette is inserted. → NO → Faulty deck.

e are
nnec-
a amp. → NO

→ YES → Reconnect.

ope-
N-VOL
nd off
L off. → NO → Faulty tuner.

→ YES → Faulty amp.

YES → Replace burned fuses or reconnect.

when main switch is turned to "ACC".

NO

Whether there are any burned fuses or faulty connectors on the controller units. → NO → Whether relay

on deck whe
ON-VOL is t
on.

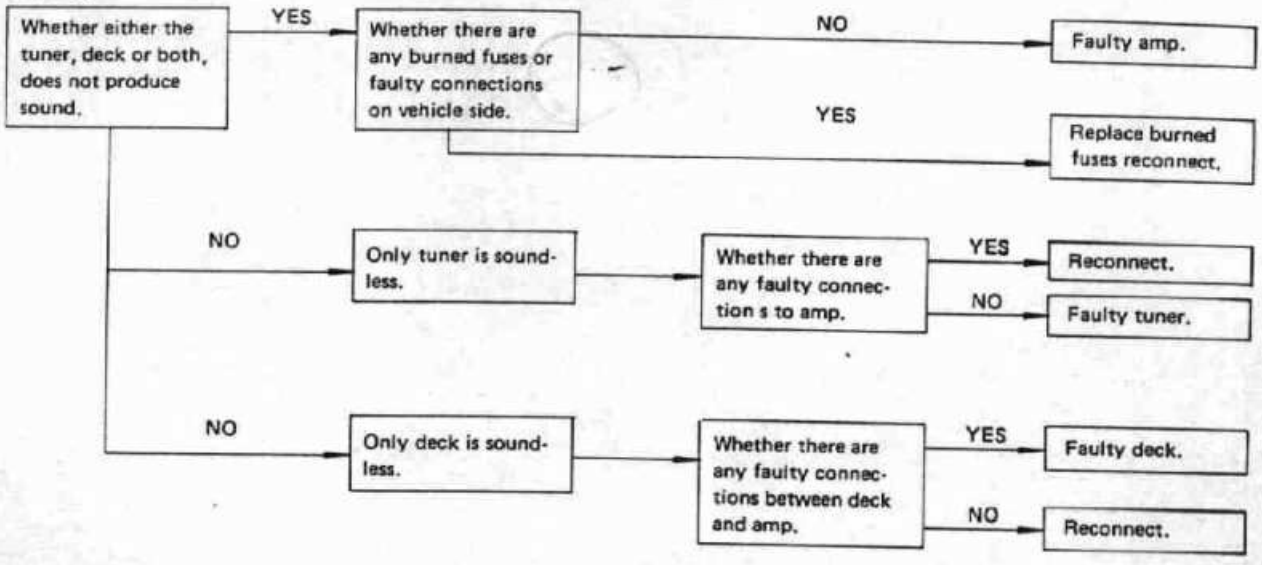
NO

Whether ther
any faulty co
tions betwee
and deck.

rates when O
is turned on
with INT-VO

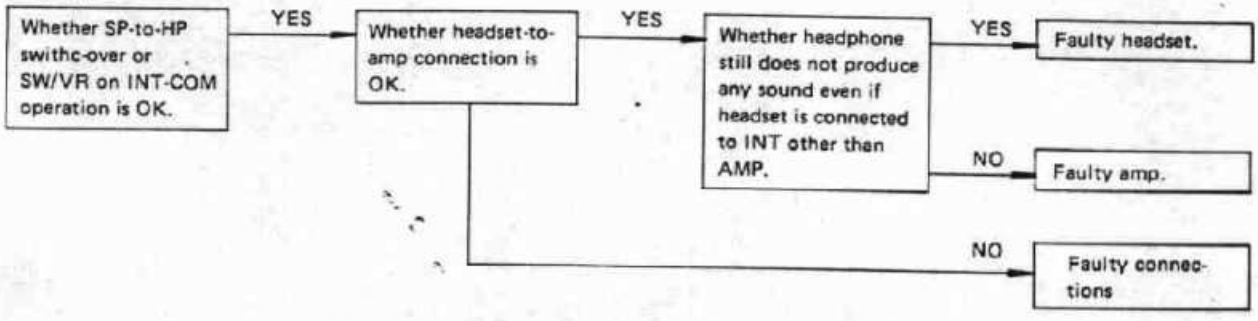
4. No sound from the speaker headphone.

Check:



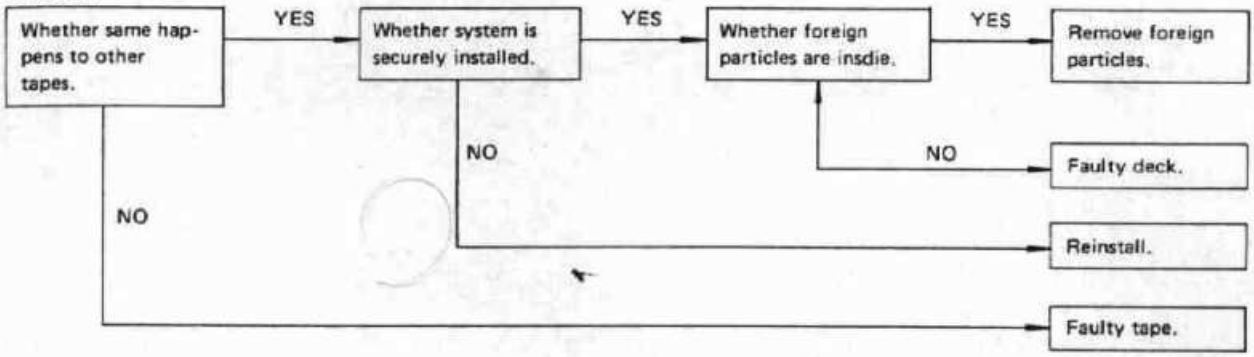
5. No sound from the headphone only.

Check:



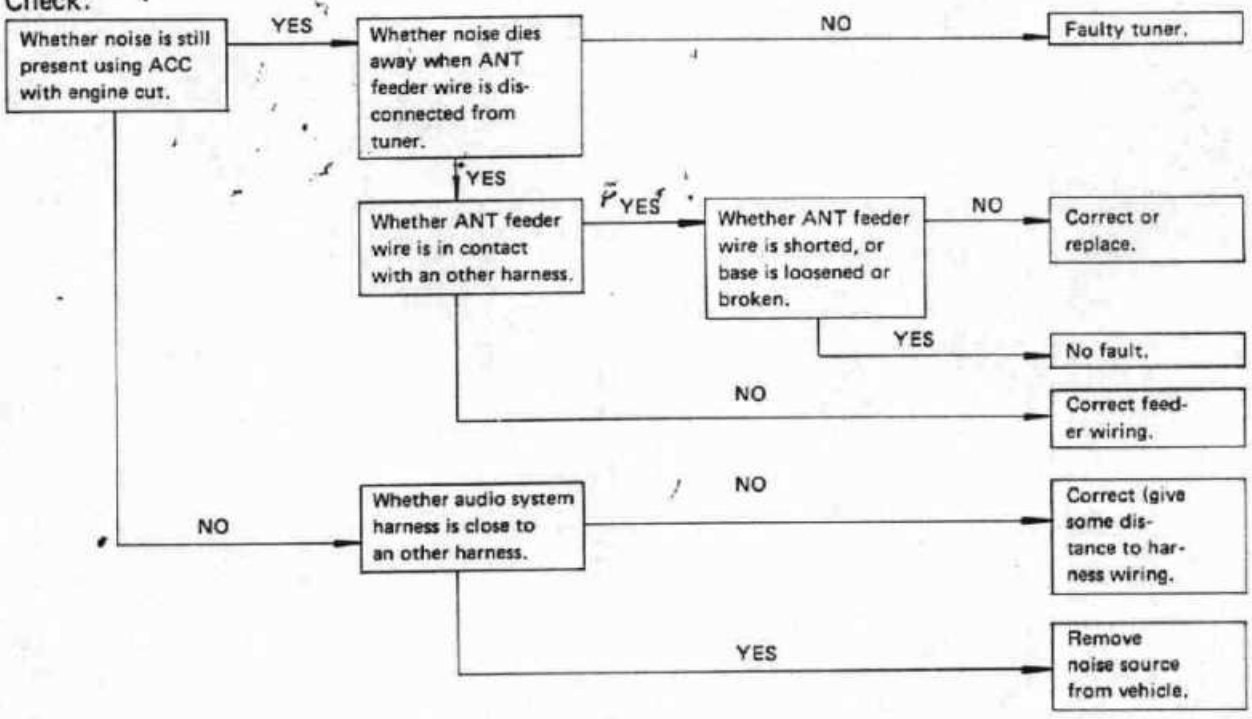
6. System is subjected to wowing and fluttering.

Check:



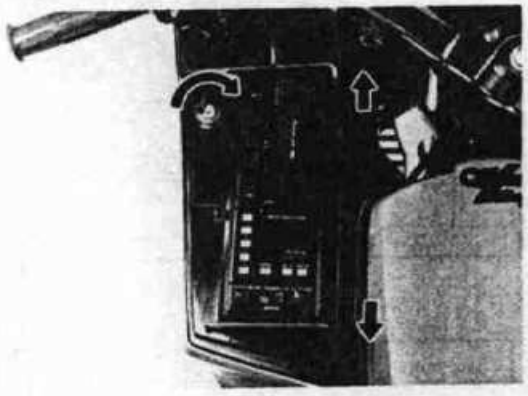
7. There are many noises.
   Before checking the following chart:
   - Check the high tension code for binding and connection from igniton coils to spark plug caps.
   - Check the ground lead from the amplifier and tuner to chassis. (Inside of the left fairing panel)

Check:



AUDIO SYSTEM REMOVAL

1. Insert the key in the lock and turn it clockwise.
2. Push each lever as shown.



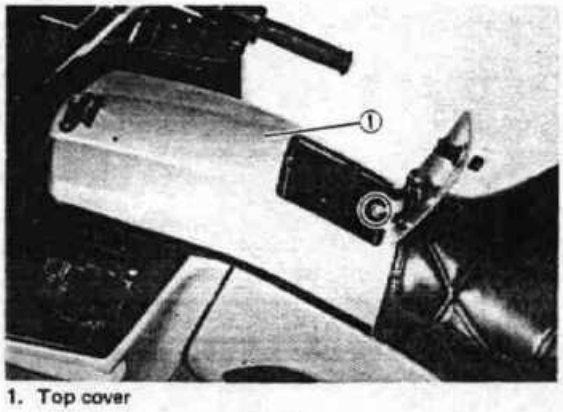
3. Pull the audio controller out from the fairing.

CAUTION:

Before removing the control unit, turn off the main switch and "ON-VOL"/"INT.VOL" control knobs.
When removing the control unit, protect it, as well as the conectors from water and mud. Do not bend or strain the connector terminals.

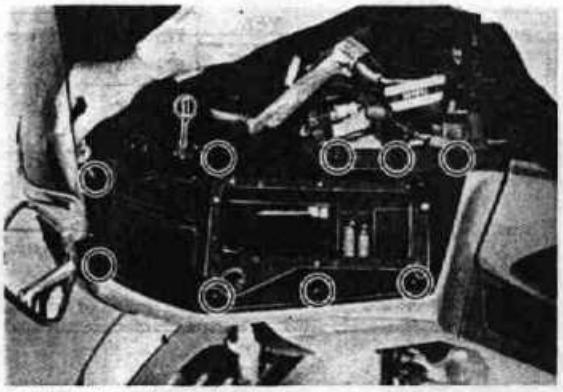


4. Remove the top cover.



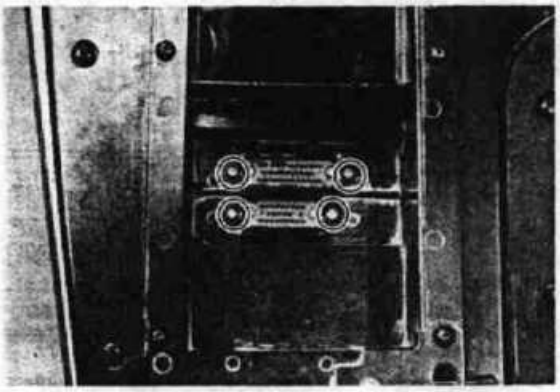
1. Top cover

5. Pull out the headlight adjusting knob and remove the screws (9) securing the console box panel.



1. Headlight adjusting knob

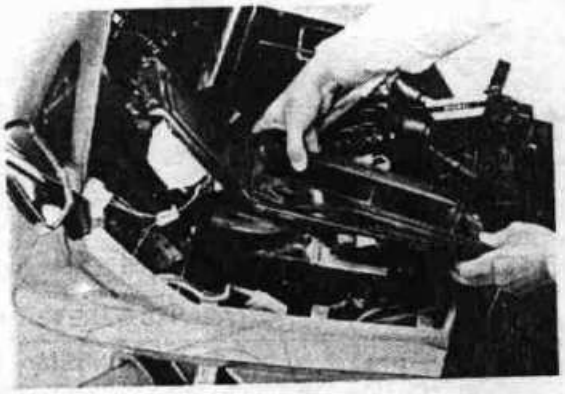
6. Remove the screws (4) securing the connectors from amp. and tuner.



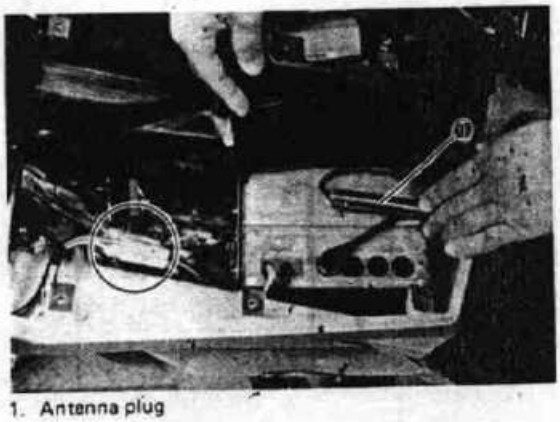
7. Disconnect the speaker lead connector.



8. Remove the console box panel (left) with loud speaker attached.

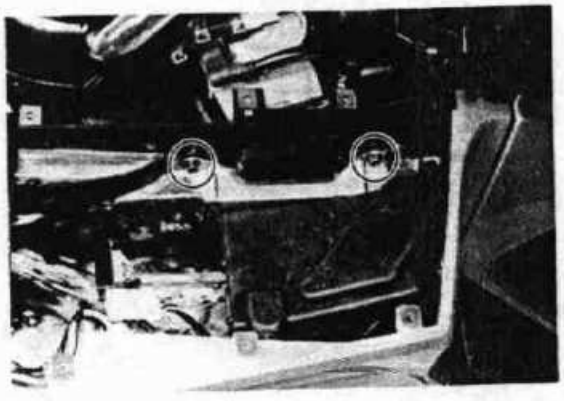


9. Disconnect the connector from the power amplifier and antenna plug.

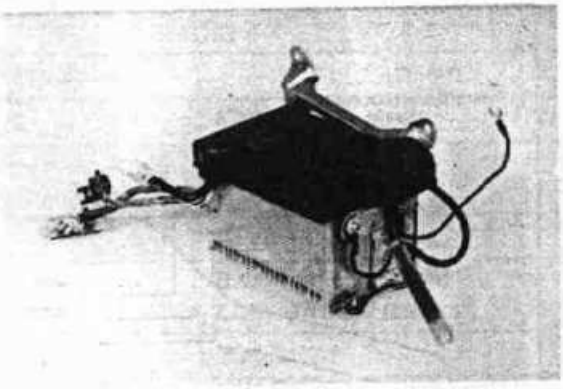


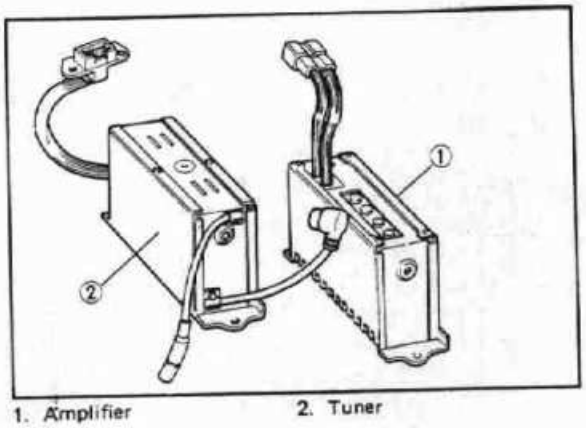
1. Antenna plug

10. Remove the two bolts (2) securing the amplifier and tuner bracket.



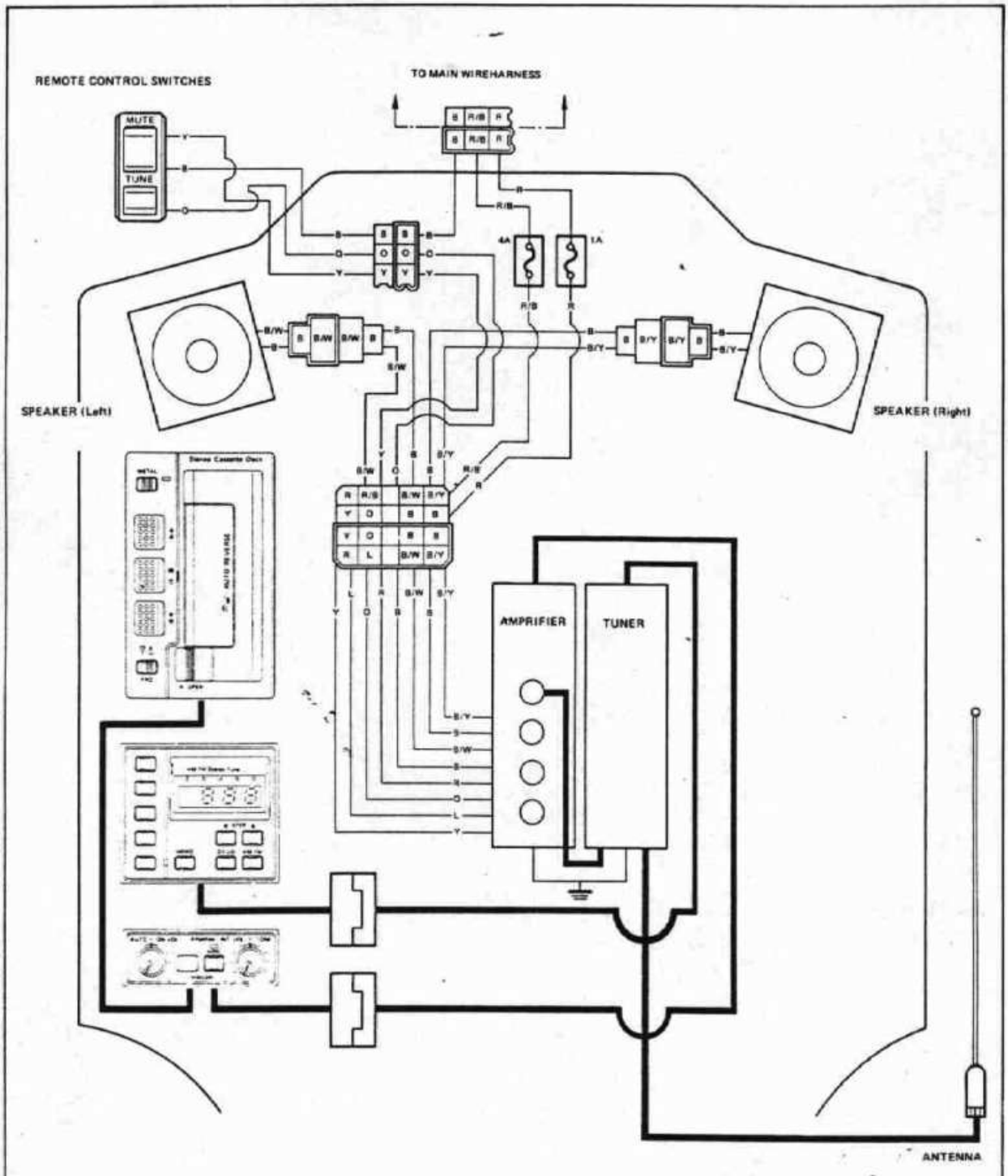
11. Remove the amplifier and tuner.





1. Amplifier 2. Tuner

AUDIO CONNECTING DIAGRAM



COLOR CODE

B	Bleak	R/B	Red/Black
R	Red	O	Orange
Y	Yellow	B/Y	Black/Yellow
L	Blue	B/W	Black/White

AUDIO SPECIFICATIONS

ITEM	RADIO	
	AM SECTION	FM SECTION
TUNINGN RANGE	530 ~ 1,620 KHZ	87.9 ~ 107.9 MHZ
INTERMEDIATE FREQUENCY	450 KHZ	10.7 MHZ
USABLE SENSITIVITY	38 dB V(Max)	18 dB V(Max)
STOP SENCITIVITY	DX: 30 dB V (Norm) LOC: 55 dB V (Norm)	DX: 15 dB V (Norm) LOC: 45 dB V (Norm)

	Width	Height	Depth
	93	82	30
	160	50	99
	100 mA(Max)		
	1 mA(Max)		

SIZE(Unit: mm)	
	RADIO PANEL
	RADIO BLACK BOX
CURRENT CONSUMPTION	Switch ON
	Switch OFF

	DECK
	–
	–
	–
	4-track, 2-channel Stereo for reproduction
	4.76 cm/sec.
	Normal and Metal

	Width	Height	Depth
	87	142	162
	ACC: 1A(Max)		
0mA	MAIN: 5mA(Max)		

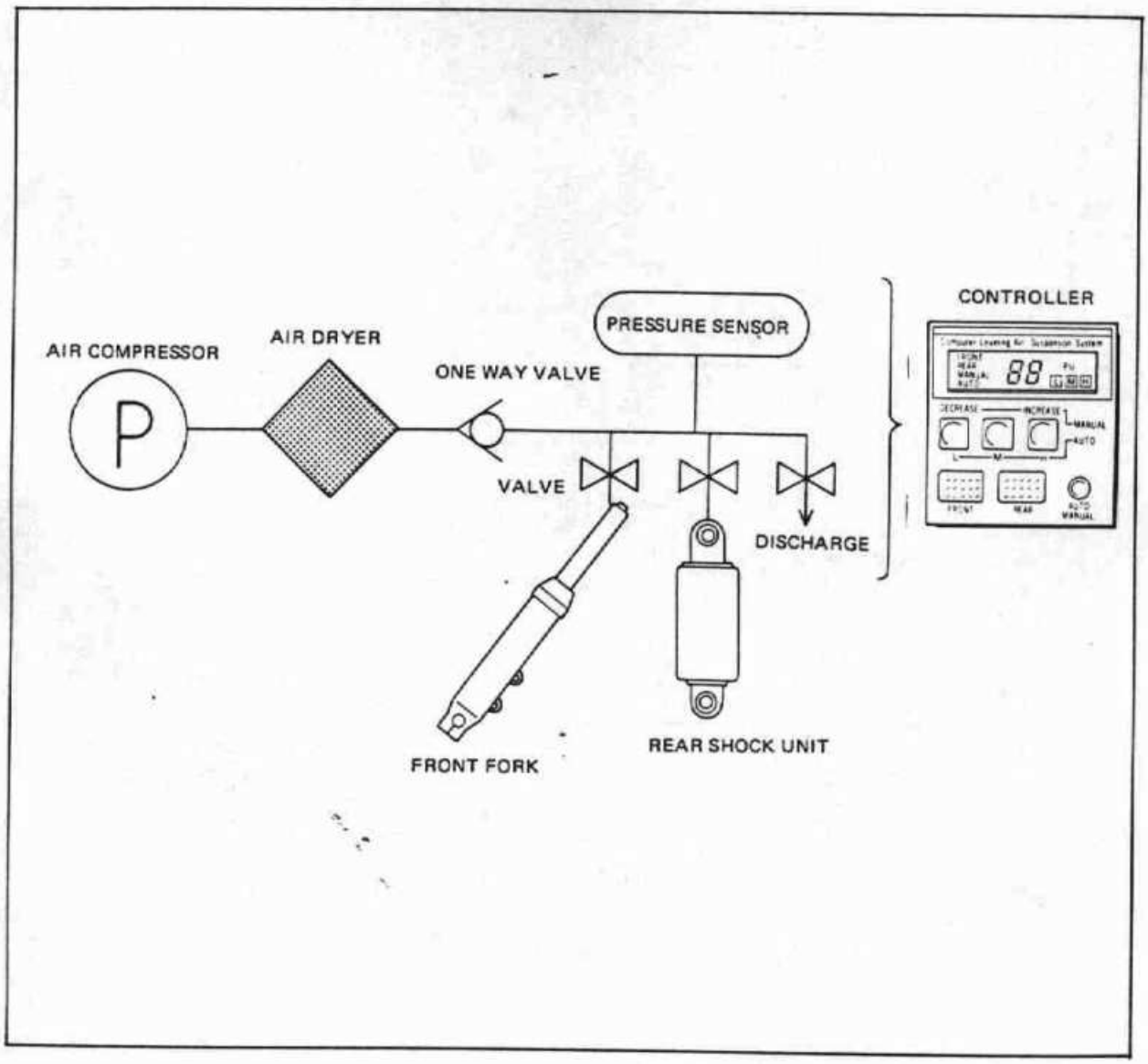
ITEM	AMPLIFIER
OUTPUT POWER	12W
AUTO–VOL. RANGE	20 dB
OUTPUT IMPEDENCE	SPEAKER: 4Ω HEADPHONE: 8Ω
CIRCUIT SYSTEM	–
TAPE SPEED	–
TAPE	–

SIZE(unit: mm)		Width	Height	Dep
	PANNEL	93	32	4
	BLACK BOX	160	50	9

CURRENT CONSUMPTION		
	Switch ON	ACC: 5.5A
		MAIN: 10
	Switch OFF	1mA(Max)

CLASS (Computer Leveling Air Suspension System)

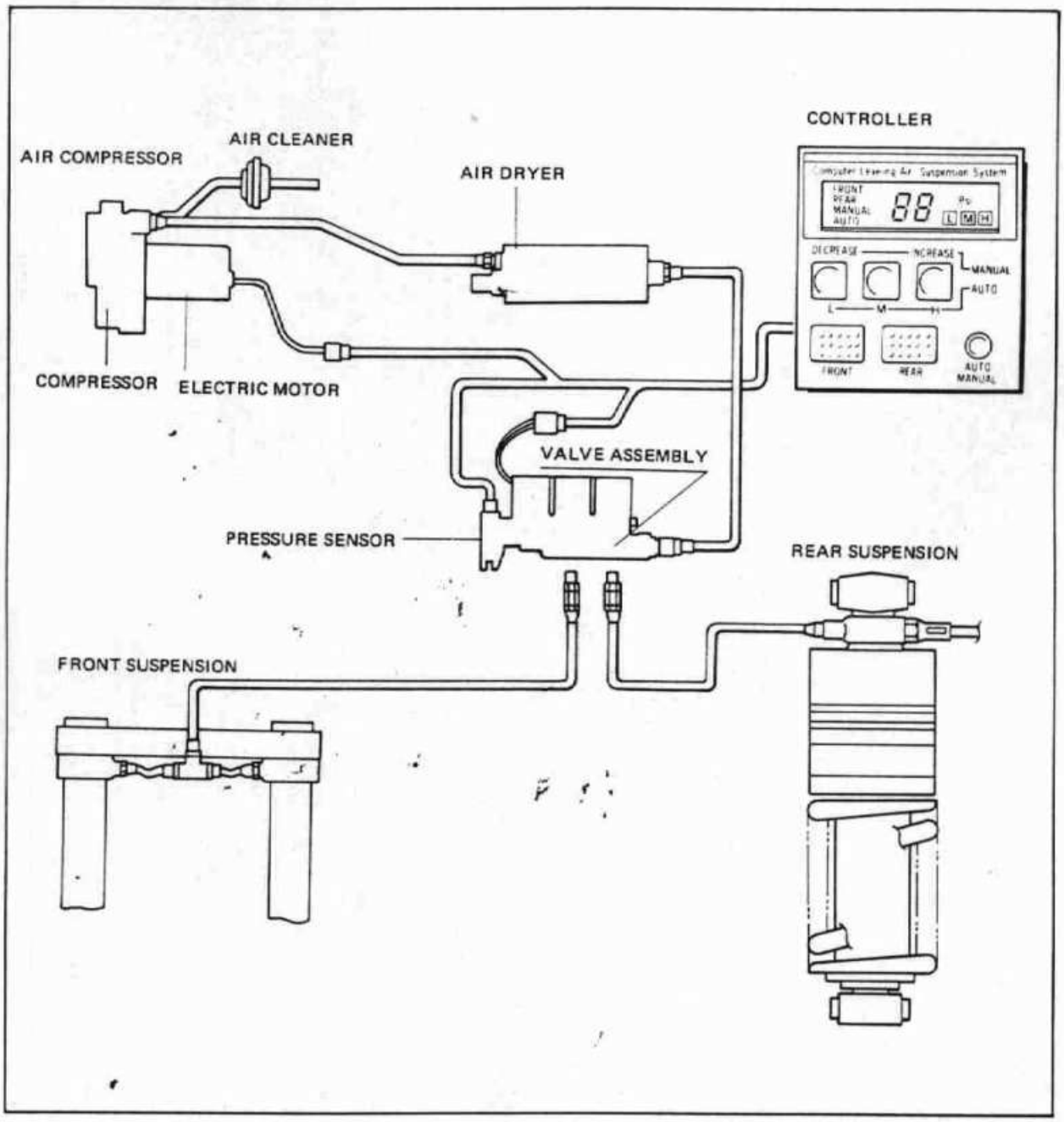
DESCRIPTION OF THE SYSTEM



The operation of buttons on the controller enbles the semiconductor pressure sensor and microcomputer to measure both front and rear suspension air pressures and automatically adjust the pressures in three stages. On the MANUAL mode, it is possible to set the pressures at any desired level.

The controller has a biult-in microcomputer that controls the solenoid valves and air compressor motor. Simultaneously the controller also indicuted the constantly banging air pressure on the liquid crystal display (LCD) during pressure adjustment. In case of trouble, the self-diaguosis fuuction indicotes an "error" sign (E1 to E6) on the display to aid in troubleshooting.

CLASS COMPONENT PARTS



The air suspension controller controls the air compressor and three solenoid valves. It also feeds air to and draws air from the front and rear suspension systems. The semiconductor pressure sensor constantly measures the air pressure during pressure adjustment and transmits it to the controller.

By operating the switch, the front and rear suspension air chambers and the pressure sensor chamber can be connected, and the compressor operates when air is required. If air has to be drawn out, the discharge valve openes. In this way, the suspension air pressures are controlled.

Functions

1. Air pressure measurement of the front and rear suspensions.
2. Air pressure adjustment of the fromt and rear suspensions.

a) Automatic adjustment
Both front and rear suspension air pressures can be set in three stages.

MODE		KPa	kg/cm²	psi
L	FRONT	78.4	0.8	11
	REAR	98.1	1.0	14
M	FRONT	98.1	1.0	14
	REAR	294	3.0	42
H	FRONT	118	1.2	17
	REAR	490	5.0	71

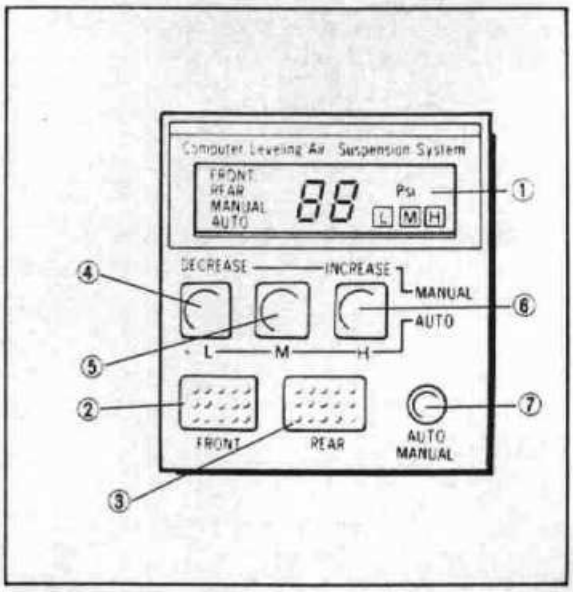
b) Manual adjustment
Both front and rear suspension air pressures can be set at any desired level within adjustable range.

	Unit	Lower limit	Upper limit
FRONT	kPa	49.0	147
	kg/cm²	0.5	1.5
	psi	7	21
REAR	kPa	49.0	588
	kg/cm²	0.5	6.0
	psi	7	85

3. LCD (Liquid crystal display) of air pressure and mode
LCD indicates the selection of the front or rear suspension, the present suspension air pressure, the adjusted air pressure, AUTO/MANUAL mode, and error sign.
4. Error diagnosis
LCD shows six different error signs depending on trouble diagnosis. Refer to "Troubleshooting".

OPERATION

Control Panel



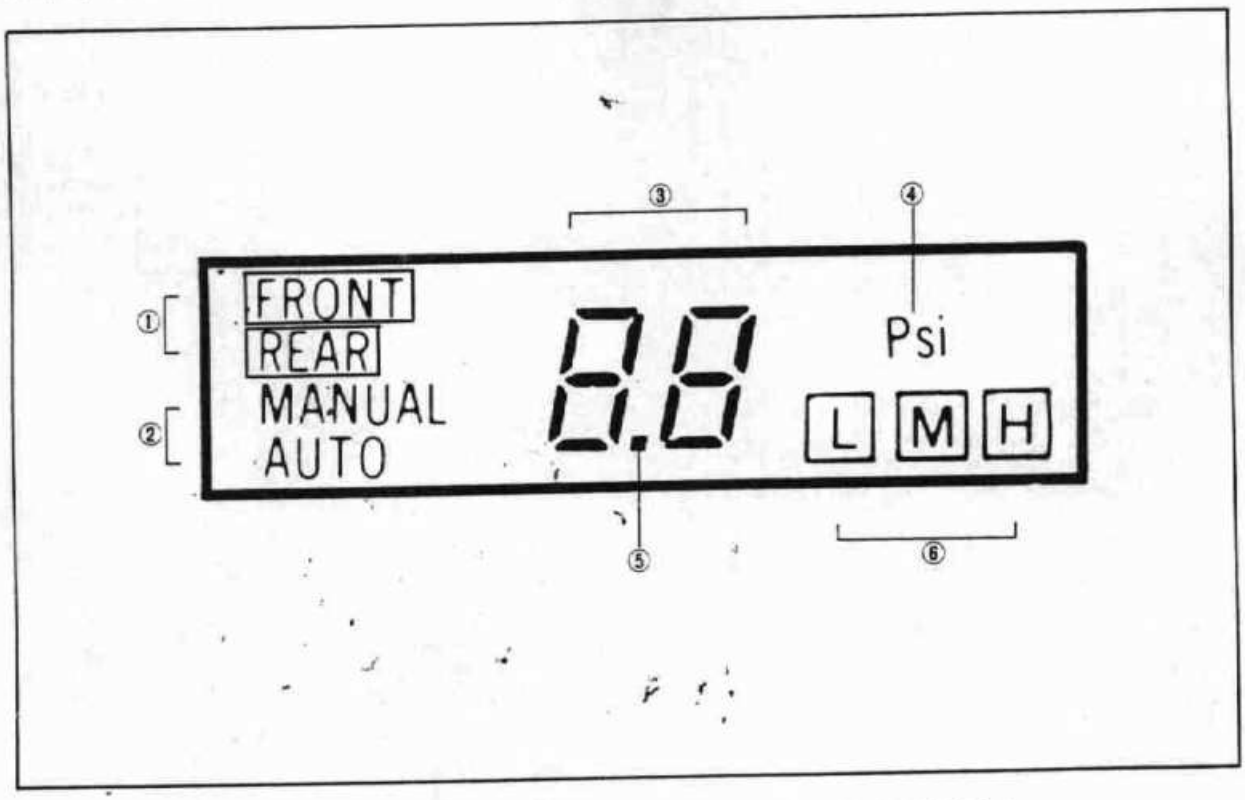
1. Display panel
2. "FRONT" switch
3. "REAR" switch
4. "LOW" switch
5. "MEDIUM" switch
6. "HIGH" switch
7. "AUTO/MANUAL" switch

1. Diaplay panel
The display panel shows the front and rear suspension air pressures (kg/cm² and psi), FRONT or REAR, AUTO or MANUAL mode, and the present air pressure. It also gives an error message. (Refer to page xx.)
2. "FRONT" switch
This switch is used to measure and adjust the front suspension air pressure.
3. "REAR" switch
This switch is used to measure and adjust the rear suspension air pressure.
4. "LOW" switch (DECREASE switch)
In the AUTO mode, this switch serves as the the LOW level (solo rider) preset switch, and in the MANUAL mode, it plays the role of a suspension air pressure DECREASE switch.
5. "MEDIUM" switch
In the AUTO mode, this switch is used as the MEDIUM level (with a passenger) preset switch, and in the MANUAL mode, it serves no purpose.

6. "HIGH" switch (INCREASE switch)
   In the AUTO mode, this switch serves as the HIGH level (with a passenger and extra load) preset switch, and in the MANUAL mode, it changes into the air pressure INCREASE switch.

7. "AUTO/MANUAL" switch
   This switch selects the AUTO or MANUAL mode.

Display Panel Detail



1. Shows that pressure measurement or adjustment is being made of front or rear suspension.
2. Shows that the system is either in AUTO or in MANUAL mode.
   When the switch is turned on, the system is always set in the AUTO mode.
3. Air pressure is shown in two digits, and for example, an error sign such as E2 appears.
4. Psi: For 31M (U.S.A.)
   kg/cm^2 : For 31N (CAN.)
5. This dot will not be shown when psi is used as a measuring unit.
6. L-M-H
   In measurement mode: Indicates that the present air pressure is at L, M, or H.
   In AUTO mode: Indicates the pressure level to which air pressure should be adjusted.
   In MANUAL mode: Indicates that the present air pressure is at L, M, or H.

low to Operate

IOTE:
/hen operating CLASS, be sure to erect the ıainstand.

1. Set the main switch at ACC.

IOTE:
:LASS can operate only when the main ıvitch is set to ACC.

2. For 3.0 seconds after the main switch is turned on, all letters and numbers are shown on the display panel for a segment check; simultaniously CLASS also measures atmospheric pressure.
   Up to this moment, all switches are unacceptable.
3. Push the switch, FRONT or REAR, whichever you desire to set.

IOTE:
he pressure adjustment switch, L, M, or H, is nacceptable.

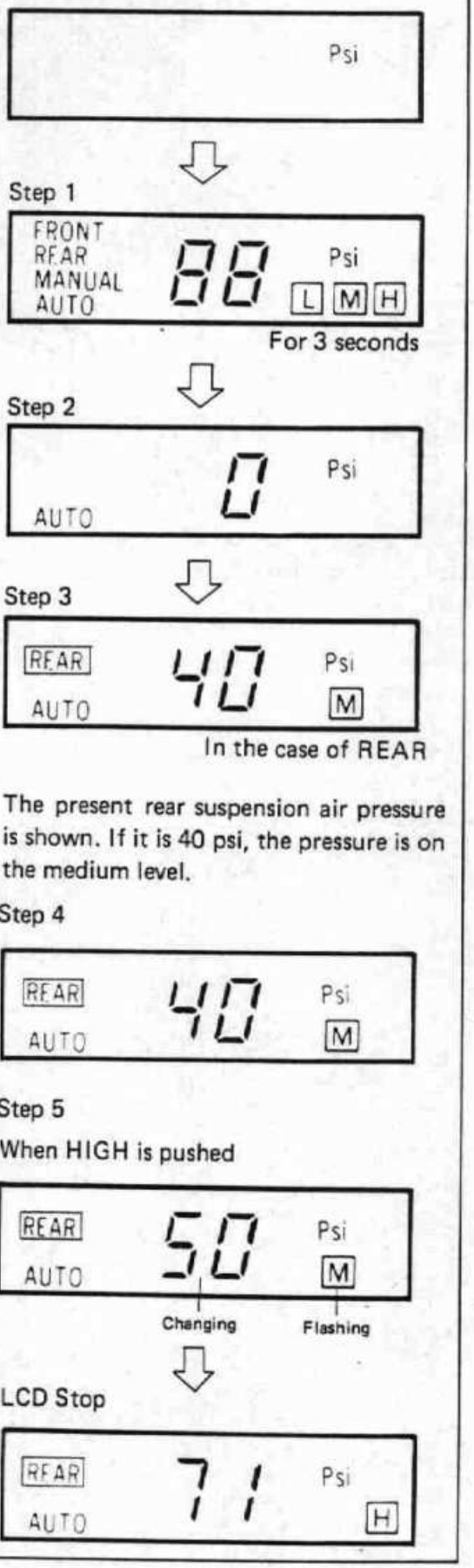
If an error sign is shown, refer to "Troubleshooting."

a. Auto adjustment: Start with step 4.
b. Manual adjustment: Start with step 6.
c. Measurement of suspension air pressure: Repeat steps, starting with step 4.
d. Switch of suspension from one to another: Repeat steps, starting with 3.

4. Automatic adjustment
   When MANUAL is shown, push the AUTO/MANUAL switch so that the mode reverts to AUTO.
5. Push the switch, L, M, or H, whichever you desire.
   When the display stops flashing, the pressure adjustment is complete.

Switch	FRONT		REAR	
	kg/cm²	psi	kg/cm²	psi
LOW	0.8	11	1.0	14
MEDIUM	1.0	14	3.0	42
HIGH	1.2	17	5.0	71

Example of display



6. Manual adjustment
   Push the AUTO/MANUAL switch so that the mode reverts to MANUAL.
7. Push the INCREASE switch to set the pressure slightly higher than the preset level.
   Push the DECREASE switch to set the pressure slightly lower. While observing the display, set the pressure to your desired level.

	Adjustable range	
FRONT	kg/cm^2	0.5 ~ 1.5
	psi	7 ~ 21
REAR	kg/cm^2	0.5 ~ 6.0
	psi	7 ~ 85

If the pressure goes out of the above range, the compressor motor and all valves stop automatically.

NOTE:

- Switch of suspension from one to another: Start with step 3.
- Measurement of suspension air pressure: Start with step 3.
- Automatic adjustment: Start with step 4.
- Manual adjustment: Start with step 6.

Example of display

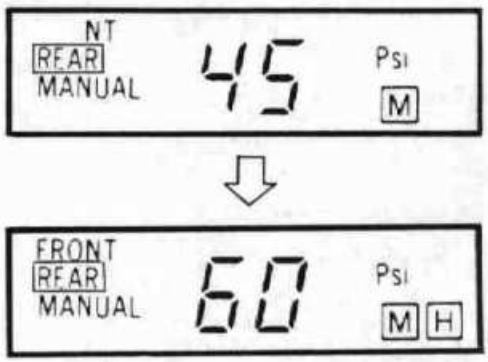
Step 6



MANUAL is shown.

Step 7

INCREASE switch is pushed



L, M, or H is shown indicating the pressure level.

Operation Notes

1. Pressure adjustment should be made with the mainstand erected. The pressure levels for automatic adjustment are preset with the main stand erected.
2. Avoid pushing two switches at close intervals, or they will not work. Push one by one at full intervals.
   (For instance, to measure the suspension air pressure, you must wait until the pressure has stabilized. Otherwise, the adjustment switch cannot be operated.)
3. When two switches are pushed at a time, the one pushed first has preference.
4. If three switches are pushed at one time, CLASS may stop functioning.
5. Switches may sometimes not work during operation; this does not necessarily mean trouble. Refer to the switch acceptance chart below;
6. In the MANUAL mode, the front suspension air pressure should be first adjusted. If the order is reversed, the residual high pressure air in the circuit will flow into the front suspension. (In this case, use the DECREASE switch for pressure adjustment.)
7. Avoid operating citizens band radio while operating CLASS.
8. Air will be discharged, though in a small amount, each time the air pressure is measured. So when air pressure measurement is repeated, the air pressure will show a decrease.
9. Automatic adjustment is possible with an accuracy of ± 0.1 kg/cm² (± 1.4 psi). Any slight difference may be shown when the air pressure is checked after automatic adjustment is made, but it does not necessarily represent air leakage.
10. Do not operate this system while running.

Switch Acceptance Chart

No.	Condition	Front, Rear Switch	LMH, INC, DEC Switch	AUTO/MANUAL Switch
1	All characters on LCD are shown.	No	No	No
2	Atmospheric pressure is being read.	No	No	No
3	Suspension air pressure is being measured.	No	No	Yes
4	After suspension air pressure is measured.	Yes	Yes	Yes
5	During automatic adjustment.	No	Yes	No
6	After automatic adjustment.	Yes	Yes	Yes
7	During manual adjustment.	No	No	No
8	After manual adjustment.	Yes	Yes	Yes
9	Error sign is on.	No	No	No

When an "Error" Sign Appears

To show troubles by self-check functions, the following six signs are used:

E1 to E6

E1: Shows a trouble of the system. (If detected by self-check when power is turned on.

E2: Air pressure does not rise when the air compressor is operated.

E3: The air compressor has been operated continuously for about one minute.

E4: The pressure sensor has no output voltage.

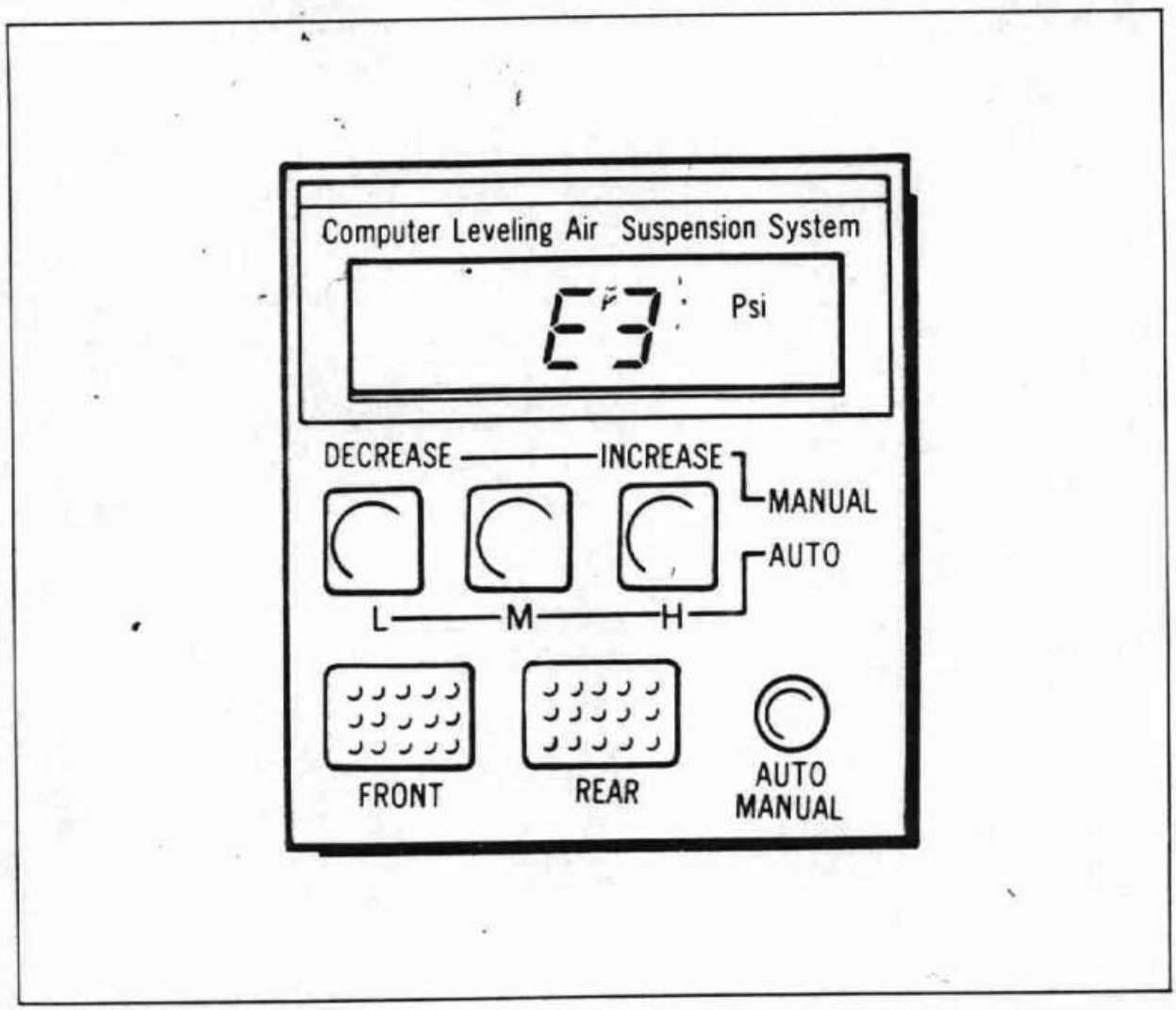
E5: Control unit has trouble.

E6: Air pressure does not drop with the discharge valve opened.

Troubles are shown in the above six categories, but if more than one trouble is combined, the error sign cannot be identical with the troubles. In this case, refer to "How to locate the cause of trouble." (For example, if a connector has a poor contact, one of the six errors which is incorrect may appear at random.)

NOTE:

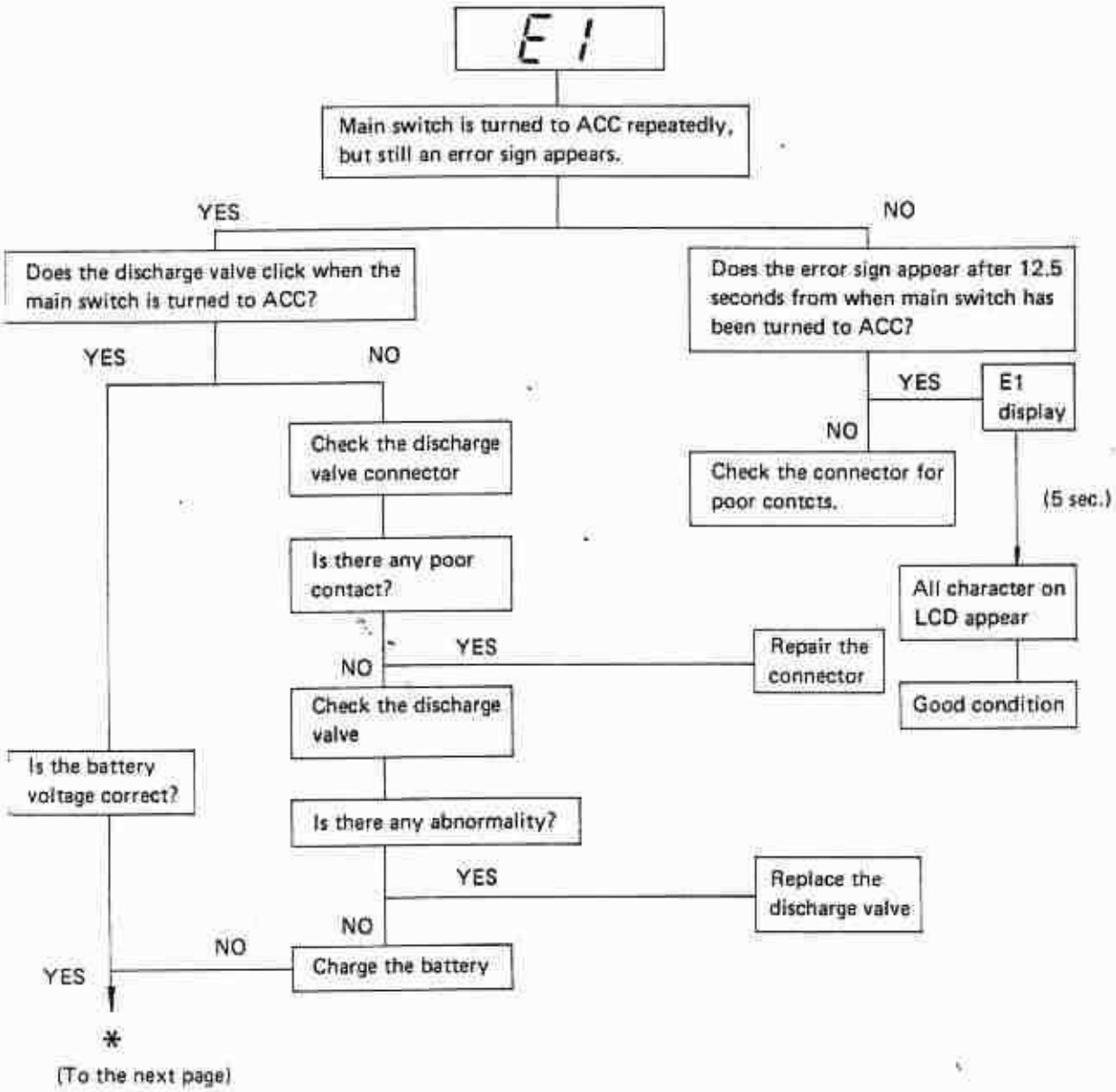
Should any error sign appear, the system will be reset after 5 seconds.



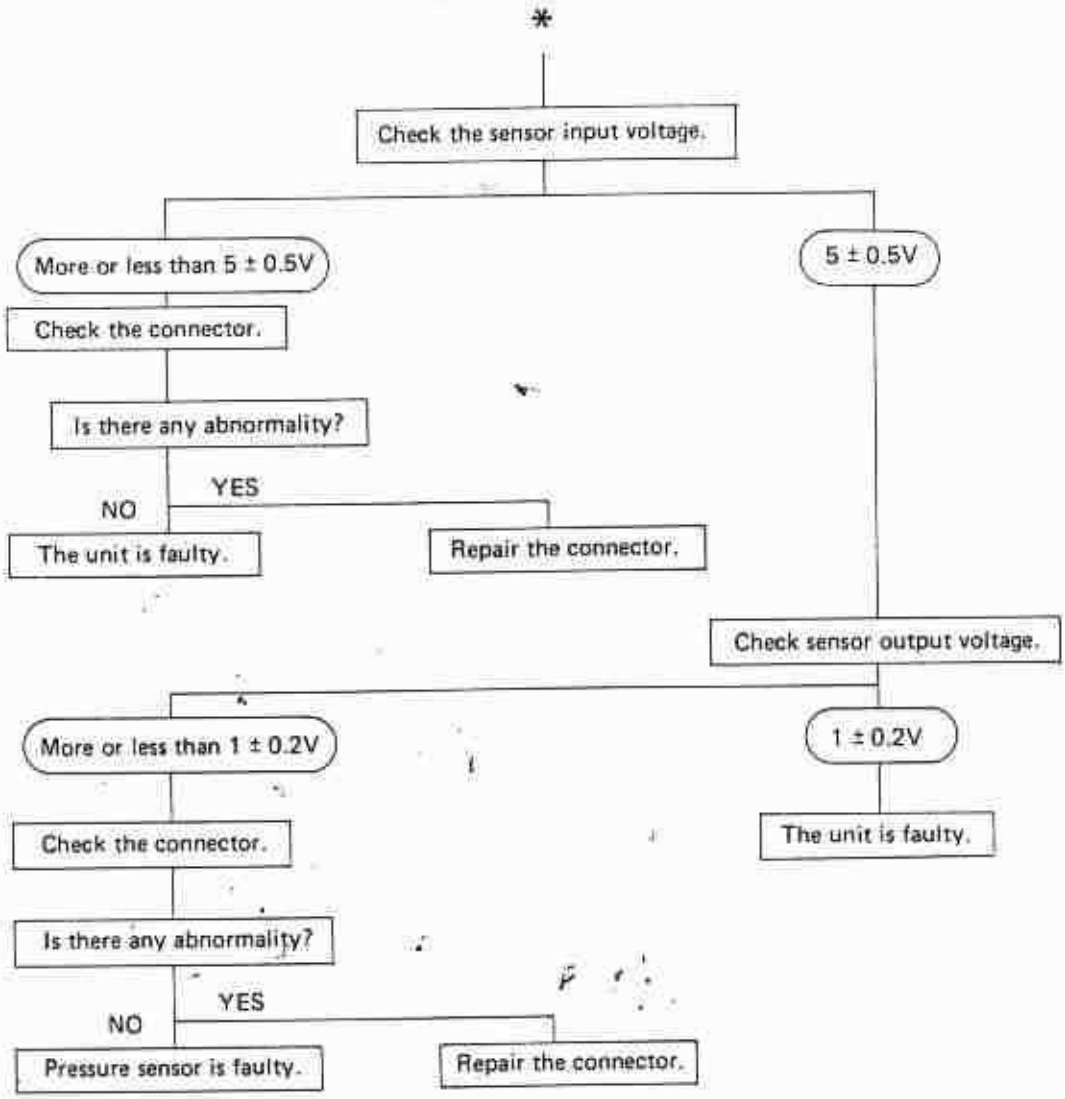
How to Locate the Cause of Trouble

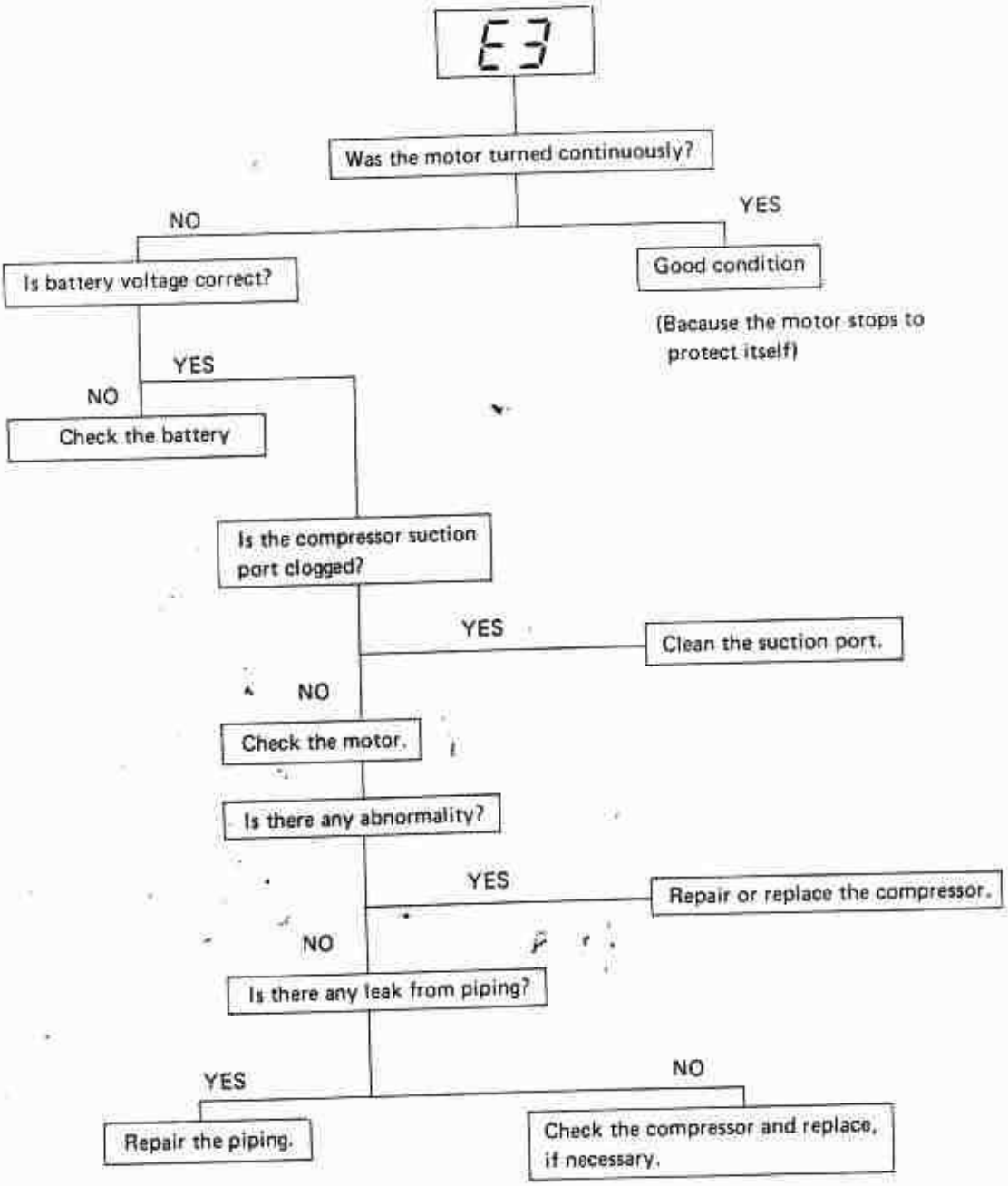
The causes of the possible troubles are classified by an error sign as shown in the following troubleshooting flow chart to assist you in trouble diagnosis.

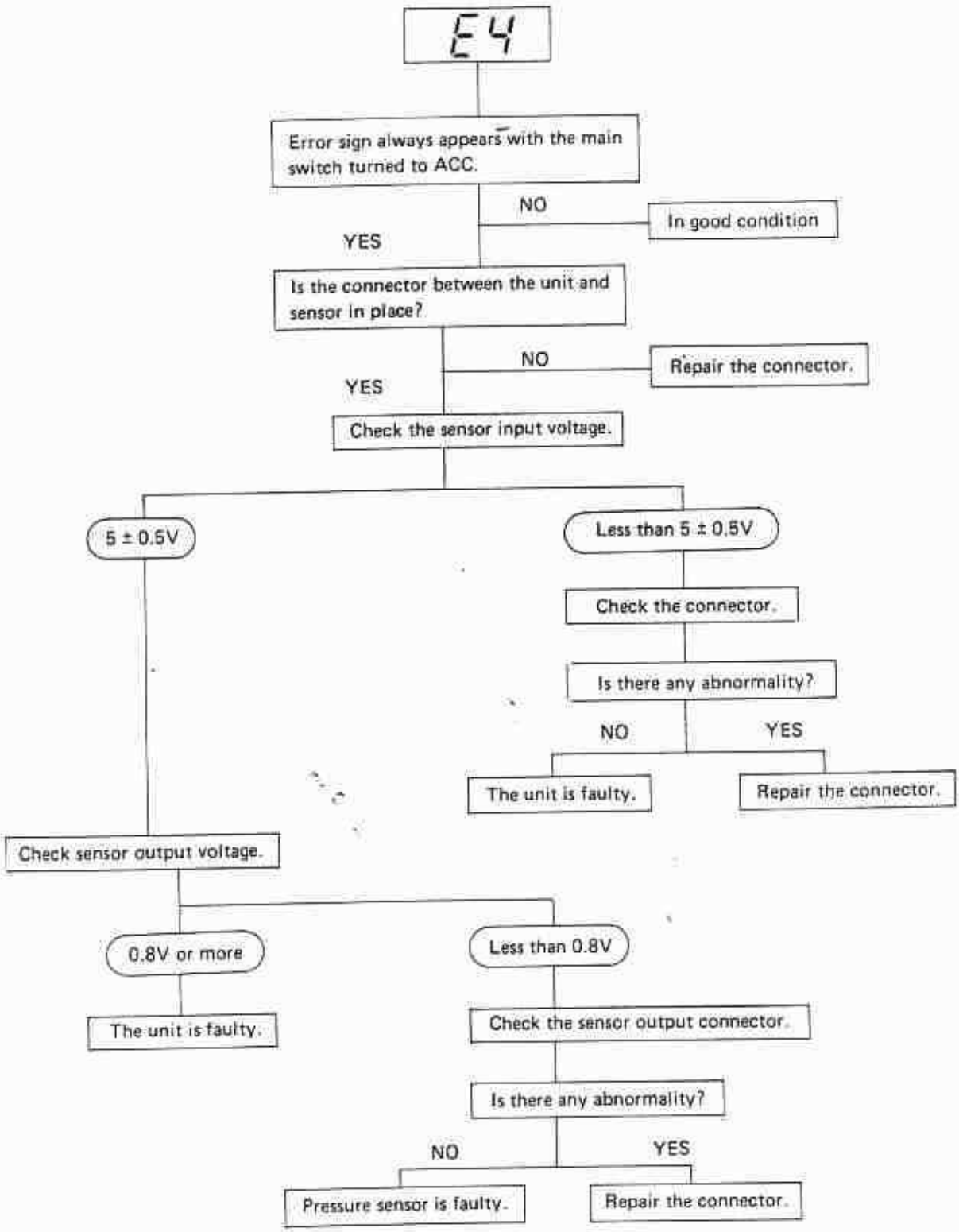
If the unit is found faulty, check for the cause of trouble by referring to the Unit Check Flow Chart.

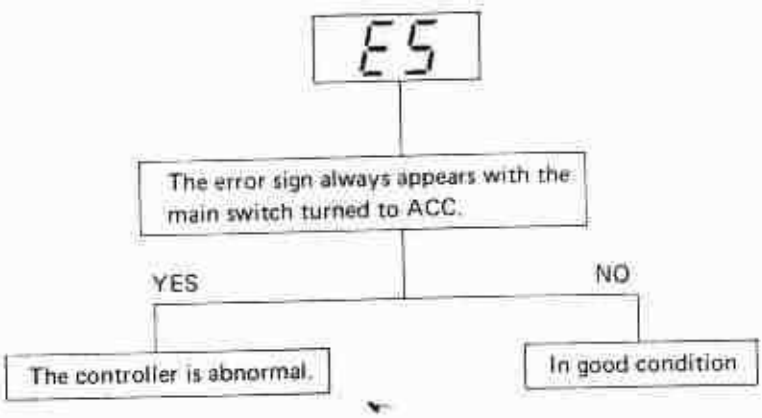


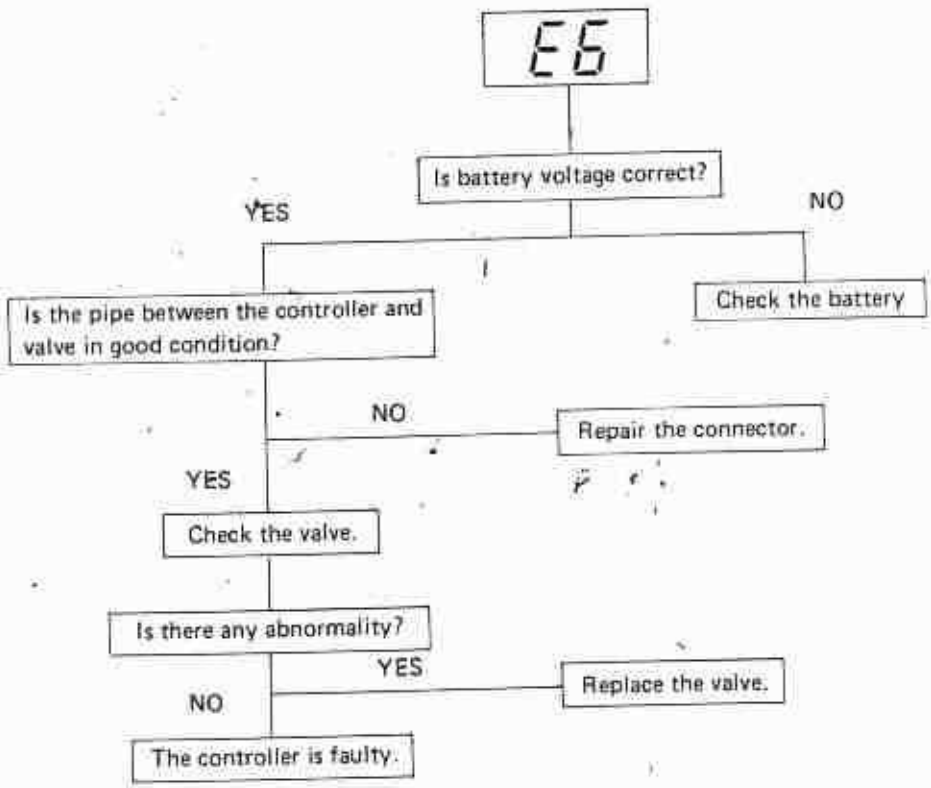
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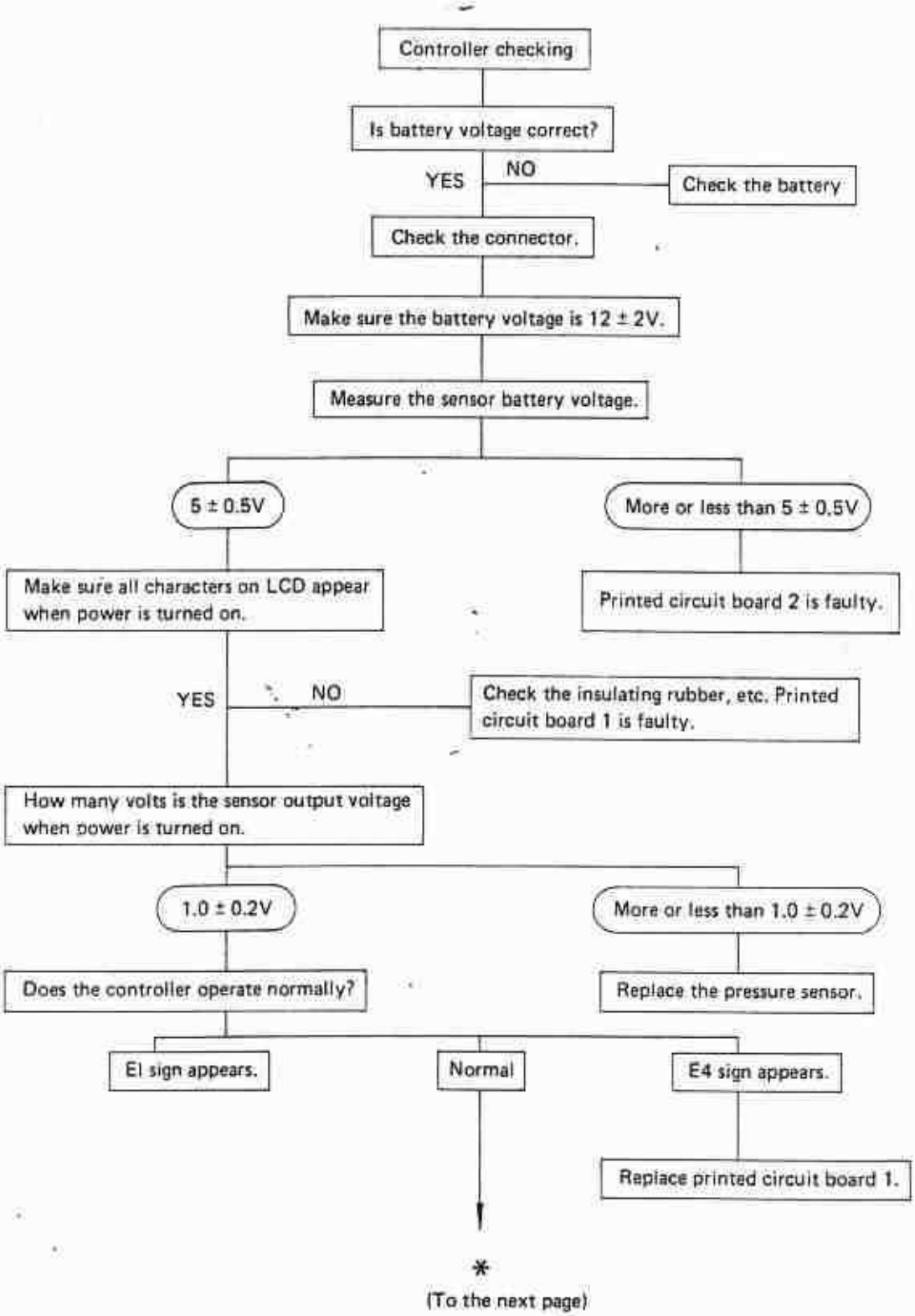

E3
Was the motor turned continuously?
NO
YES
Is battery voltage correct?
Good condition
(Bacause the motor stops to protect itself)
YES
NO
Check the battery
Is the compressor suction port clogged?
YES
Clean the suction port.
NO
Check the motor.
Is there any abnormality?
YES
Repair or replace the compressor.
NO
Is there any leak from piping?
YES
NO
Repair the piping.
Check the compressor and replace, if necessary.


E4
Error sign always appears with the main switch turned to ACC.
NO
In good condition
YES
Is the connector between the unit and sensor in place?
NO
Repair the connector.
YES
Check the sensor input voltage.
5 ± 0.5V
Less than 5 ± 0.5V
Check the connector.
Is there any abnormality?
NO
YES
The unit is faulty.
Repair the connector.
Check sensor output voltage.
0.8V or more
Less than 0.8V
The unit is faulty.
Check the sensor output connector.
Is there any abnormality?
NO
YES
Pressure sensor is faulty.
Repair the connector.

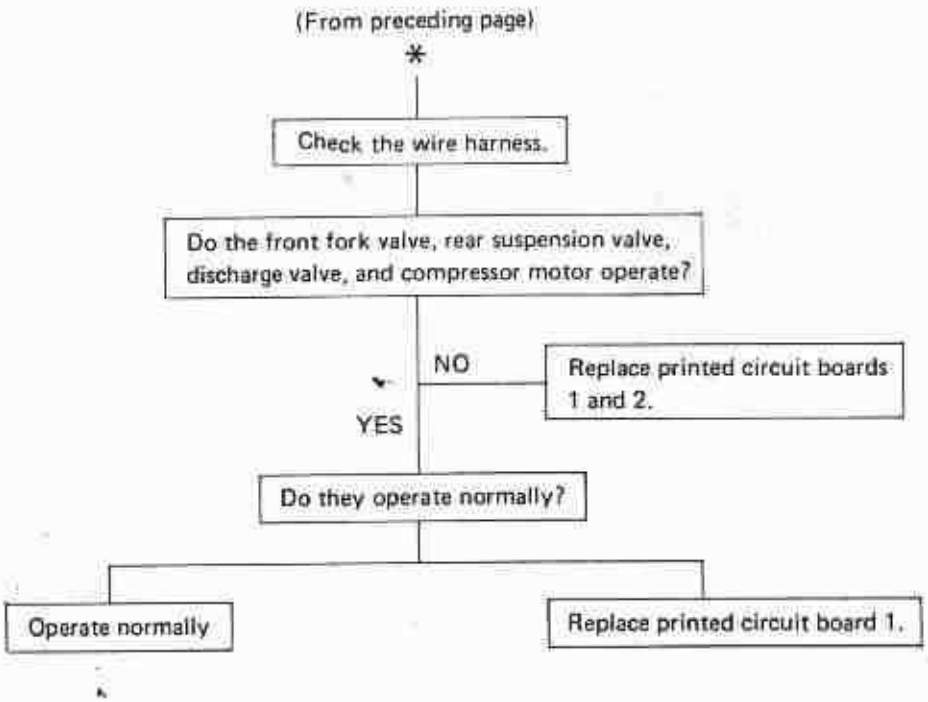

E5
The error sign always appears with the main switch turned to ACC.
YES
NO
The controller is abnormal.
In good condition


E6
Is battery voltage correct?
YES
NO
Is the pipe between the controller and valve in good condition?
Check the battery
NO
Repair the connector.
YES
Check the valve.
Is there any abnormality?
YES
NO
Replace the valve.
The controller is faulty.

Controller check flow chart



(To the next page)



Other Irrgularities

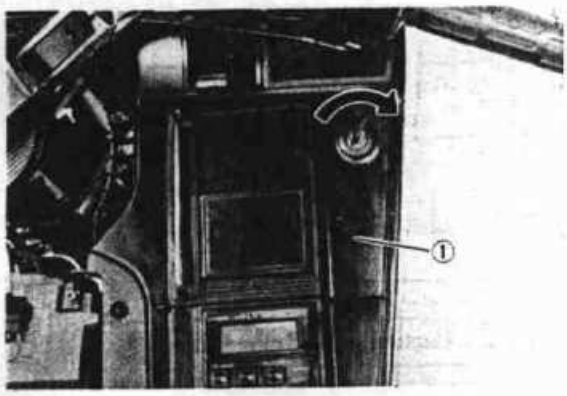
	Trouble	Possible cause
1	Unit does not operate at all. (No light comes on.)	Fuse broken
2	All characters on LCD is kept turned on.	Control unit is faulty. (Mainly printed circuit board 2)
3*	Pressure adjustment can be complete unusually quickly, but measurement shows different values each time it is rechecked.	• Fork oil may clog the air hose. (Return the oil into the front fork.) • Valve is fauty. (It does not operate.)

* See page 51 for more detail.

CLASS REMOVAL

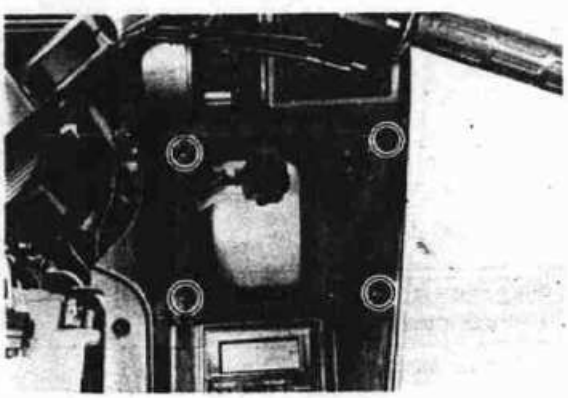
Air Suspension Controller Removal

1. Insert the key in the lock and turn it clockwise.
2. Pull the lever as shown and remove the cover.

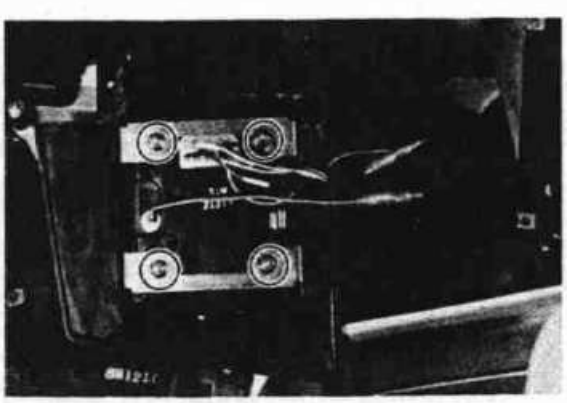


1. Cover

3. Loosen and remove the screws (4).

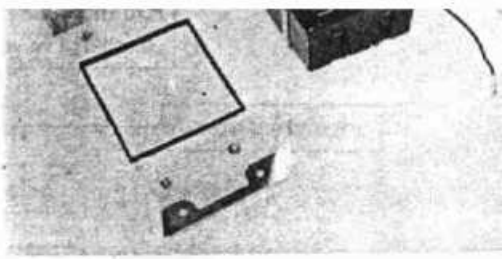


4. Pull out the base panel with the air suspension controller.
5. Disconnect the connectors and remove the securing nuts (4).



6. Remove the air suspension controller from the base panel.

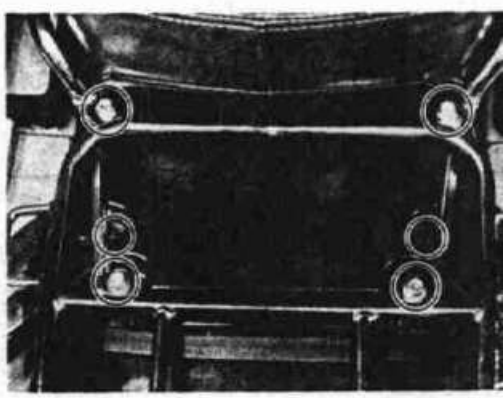




To install the air suspension contr
reverse the removal procedure.

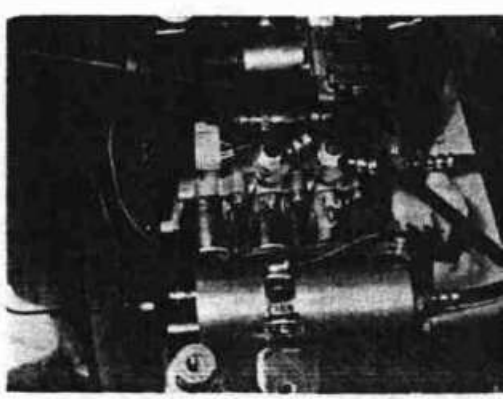
Component Parts Removal

1. Remove the travel trunk, ant
carrier, and cover.



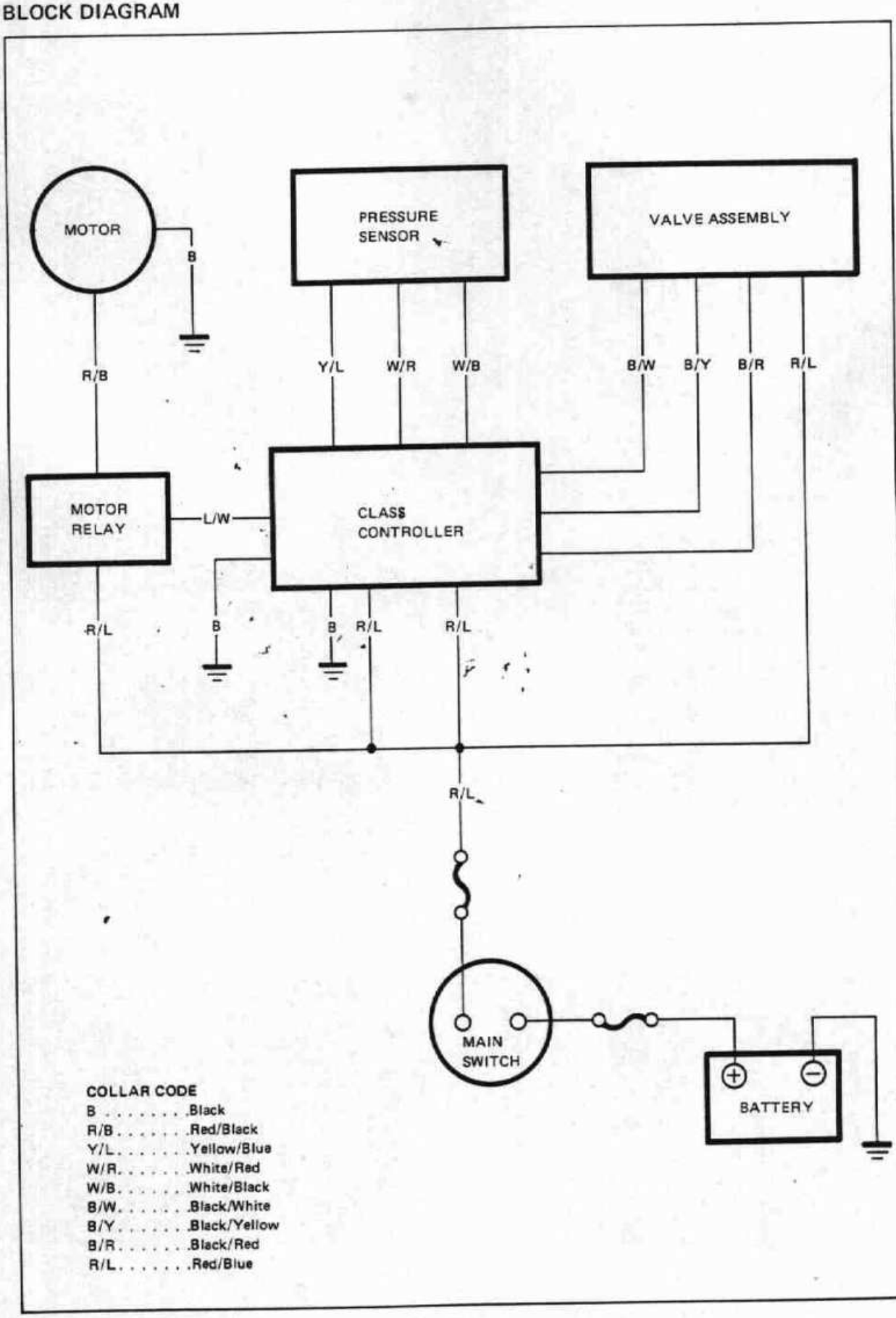
NOTE:
Refer to owner's manual to remove the
trunk.

2. Remove the required component



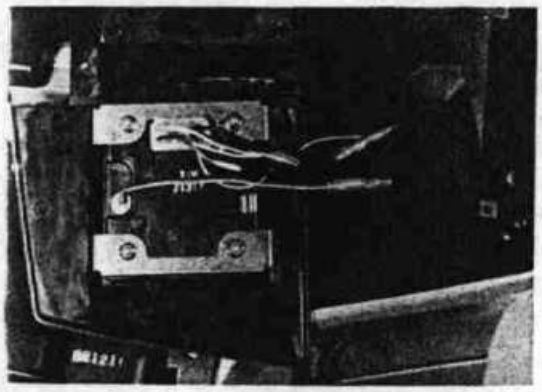
CLASS INSPECTION

BLOCK DIAGRAM



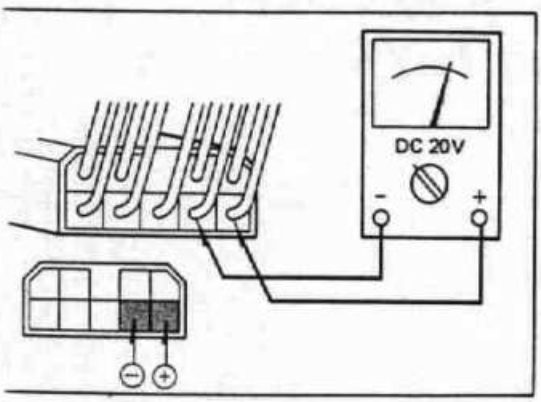
ıecking Battery Voltage

. Remove the control unit together with the mounting panel with all leads still connected.
(See "Air Suspension Controller Removal")



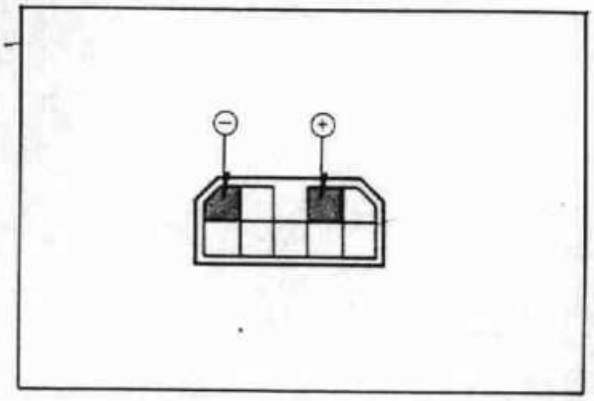
2. Turn the main switch to ACC, and hook a tester up to the coupler on the rear of the control unit.
Black-Red/Blue: 12 ± 2V





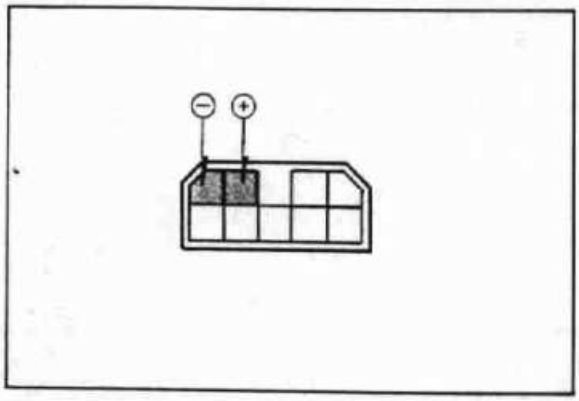
Checking the Sensor Power Voltage

The check should be made with the main switch set to ACC, White/Black-Yellow/Blue: 5 ± 0.5V.



Checking the Sensor Output Voltage

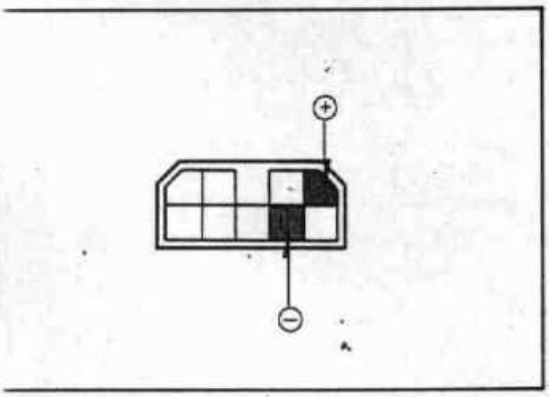
Measure the voltage about 10 seconds after the main switch is turned on.
White/Black-White/Red: 1.0 ± 0.2V



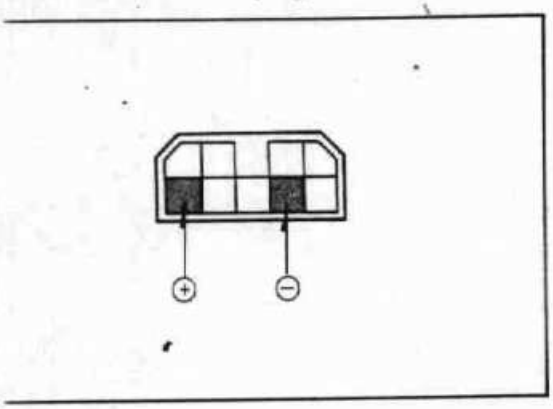
ıecking the Valve by Operating the Cont-ller

ıe check should be made with the main ⁄itch set to ACC and with each control ⁄itch being pushed.

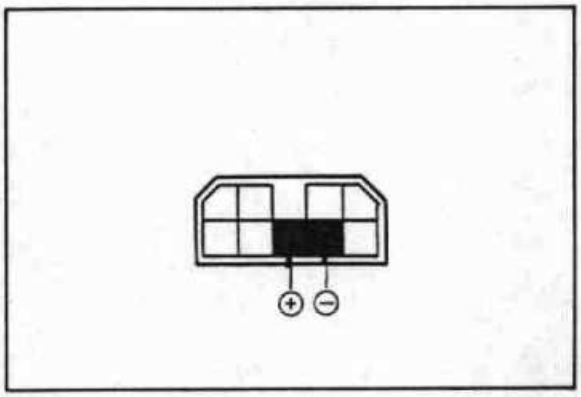
1. Connect the tester + lead to Black/Red and — lead to Black. Push the "FRONT" switch. When tester readings change from 12V to 0V, the front valve circuit is in good condition.



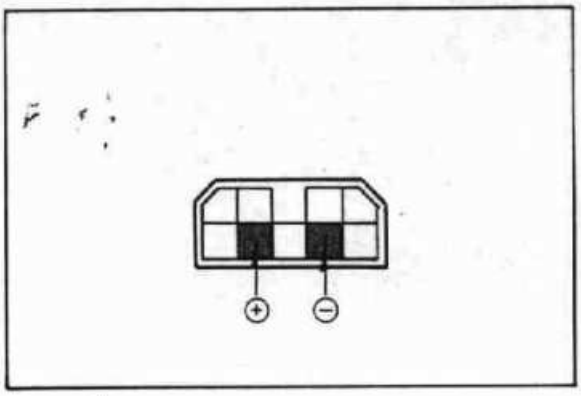
2. Connect the tester + lead to Black/Yellow and — lead to Black. Push the "REAR" switch. When tester readings change from 12V, to 0V; the rear valve circuit is in good condition.



3. Connect the tester + lead to Blue/White and — lead to Black. Push the required controller switch(es) to operate the motor relay. When tester readings change from 12V to 0V, the motor relay circuit is in good condition.

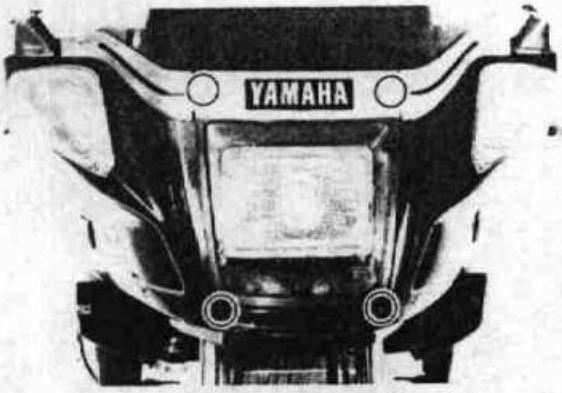


4. Connect the tester + lead to Black/White and — lead to Black. Push the required controller switch to operate the discharge valve. When tester readings change from 12V to 0V, the discharge valve circuit is in good condition.

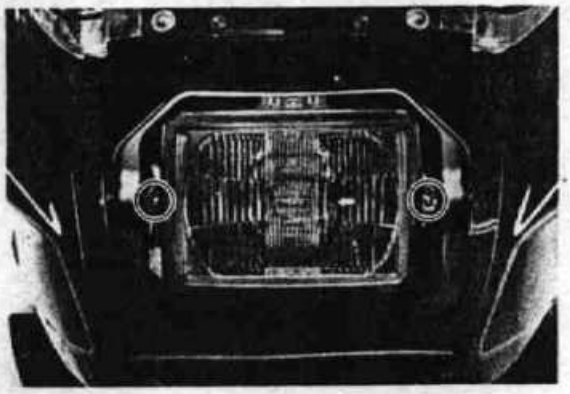


Checking the Compressor Motor Relay

1. Remove the four screws.



2. Remove the headlight holding screws (2).



3. Disconnect the lead wires and remove the light unit assembly.



4. Remove the compressor motor relay.



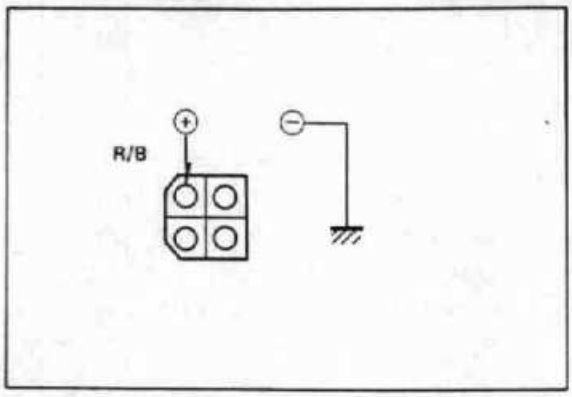
1. Compressor motor relay (5A8-00)

On-frame Checking

NOTE:
Main switch is set to ACC.

1. Connect the tester + lead to Red/Black and – lead to Ground.

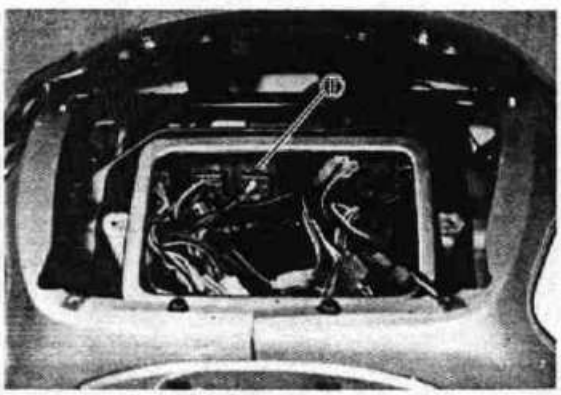




2. Push the INCREASE switch to operate the motor relay.
3. When tester readings change from 0V to 12V, the motor relay is in good condition.

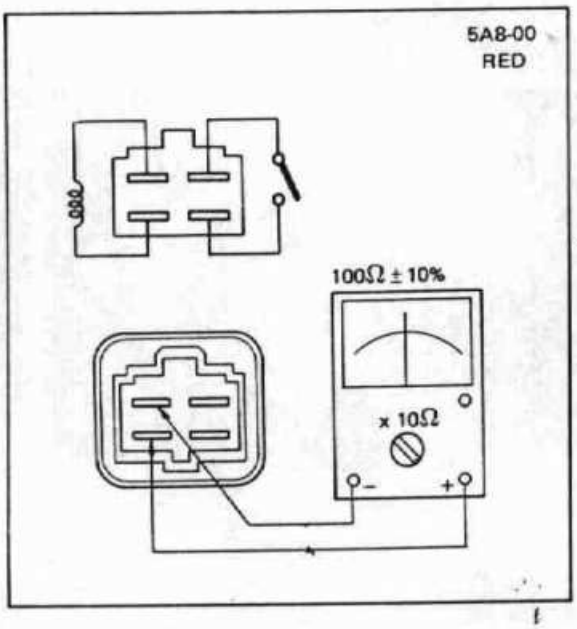
Off-frame Checking

1. Disconnect and remove the compressor motor relay.

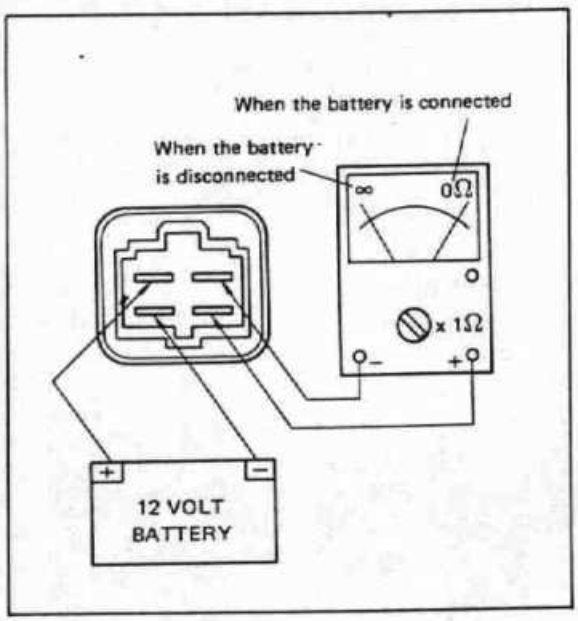


1. Compressor motor relay

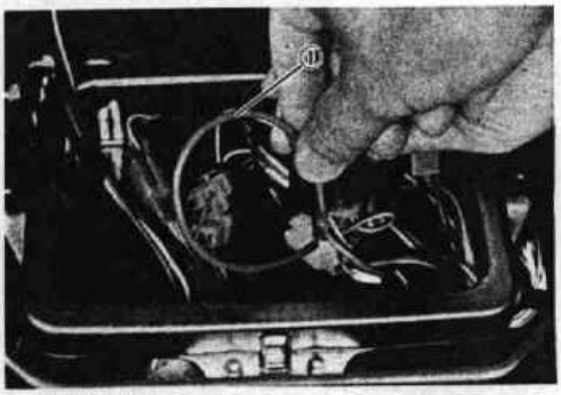
2. Check the resistance of the relay coil windings with the pocket tester. If the resistance is not within specification, replace the relay.



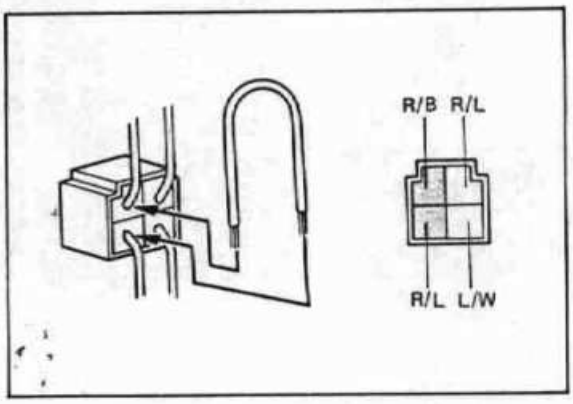
3. Check the relay function with a 12 volt battery and the pocket tester. Connect the leads as shown in the illustration. If the resistance readings do not equal those shown in the illustration, replace the relay.



Checking the Operation of the Compressor
(With the main switch set to ACC)
Short the Red/Black and Red/Blue connector with a jumper cable. If the compressor runs, it is in good condition.



1. Jumper cable



CAUTION:

Bad connection of a jumper wire may cause damage to the controller's micro-computer.

Checking the Valves
(With the main switch set to ACC)

1. Remove the seat and locate the (13 pin) connector.

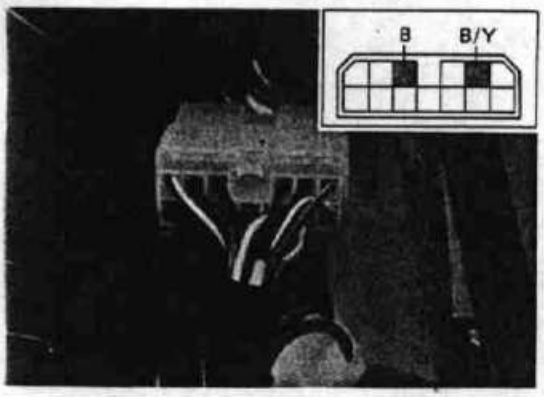


. Check the operation of the valve using a jumper cable.

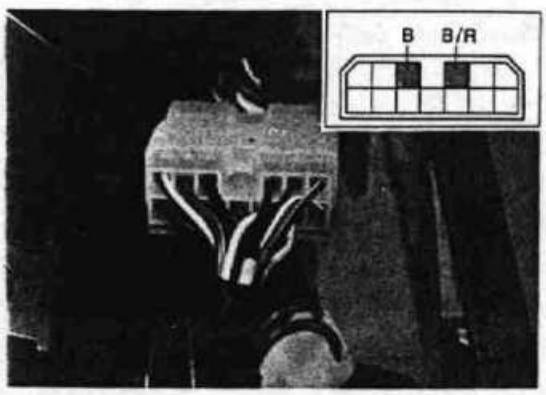


Jumpen cable

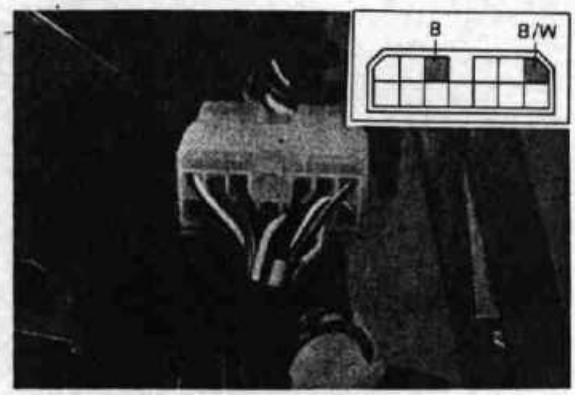
ear valve
ack-Black/Yellow: Short the leads, and if e front valve clicks, it is in good condition.



ont valve
ack-Black/Red: Short the leads, and if the ır valve clicks, it is in good condition.

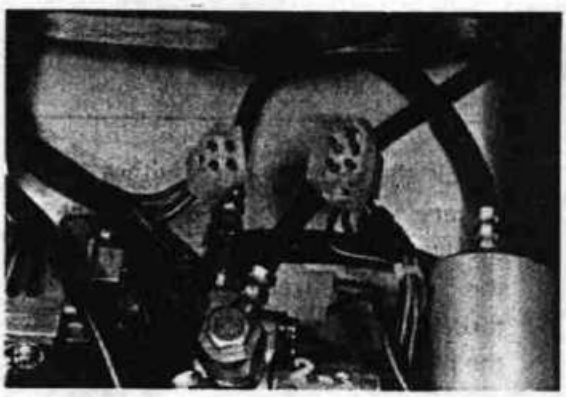


Discharge valve
Black-Black/White: Short the leads, and if the discharge valve clicks, it is in good condition.

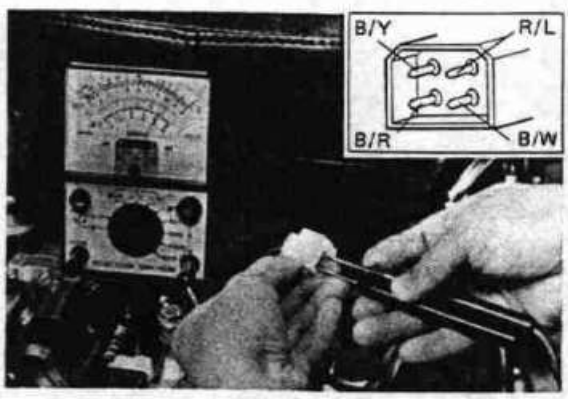


Checking the Solenoid Valve Resistance

1. Disconnect the connector.



2. Using a tester, check the resistance of the circuit.



Front solenoid	R/L – B/R
Rear solenoid	R/L – B/Y
Discharge solenoid	R/L – B/W

Standard resistance Approx. 30Ω

MAINTENANCE

Replacing the Desiccant in the Air Dryer

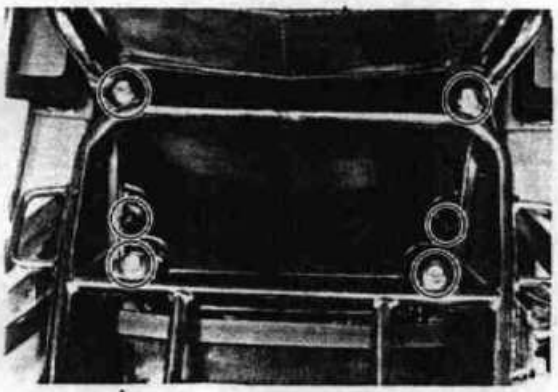
The air dryer contains 60 grams of silica gel as an absorbant. The absorbing power of the desiccant decreases as it absorbs moisture so it must be replaced periodically. The desiccant is colorless when it is new but turns to pink after absorbing moisture.

Replacement interval: 2 years

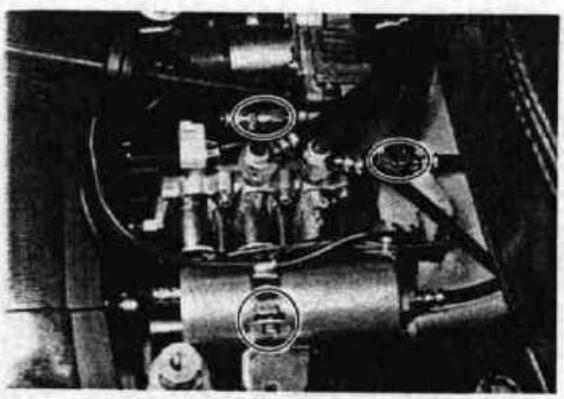
NOTE:

When used frequently or in humid areas, replacement intervals should be shortened.

1. Remove the travel trunk, antenna, carrier, and cover.



2. Loosen the union nuts and disconnect the hoses. Remove the dryer.



3. Release the compressed air in the dryer by pushing the DECREASE (MANUAL) switch on the controller.



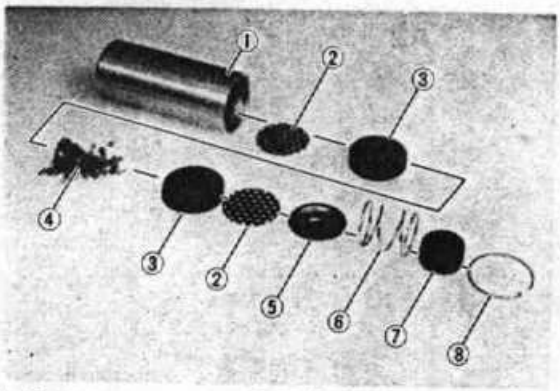
4. By pushing the cap, remove the circlip, and pull out the cap.

CAUTION:

Avoid pulling the hose. Keep the opening of the chamber upright so that inner parts do not fall off.



5. Remove the spring, filter 2, baffle plate, filter plate, filter 1, desiccant, filter 1 and filter plate.



1. Dryer case
2. Filter plate
3. Filter 1
4. Disiccant
5. Baffle plate
6. Spring
7. Filter 2
8. Circlip

6. Thoroughly blow the particles out of the case and hose by compressed air.



CAUTION:

Wear an eye protector to protect your eyes from injury.

7. Wash the filter in water and dry it off.
8. Install the filter plate and filter on the bottom of the dryer.

NOTE:

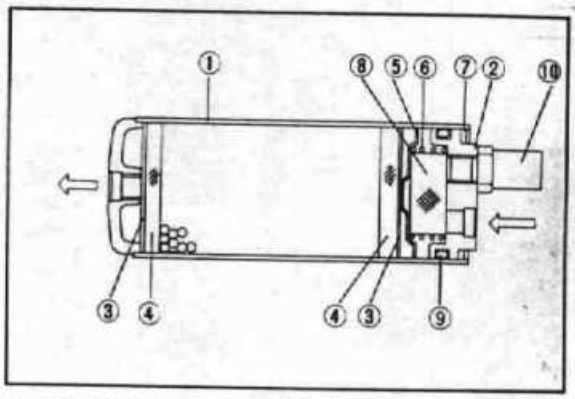
There must be no particles beyond the filter. These may cause damage or air leaks to the valve.

9. Put 60 grams of the specified desiccant (SILICA GEL) into the dryer case, and install the filter 1, filter plate, baffle plate, spring, and filter 2 in that order.

CAUTION:

- **Use this desiccant as soon as the bag is opened.**
- **Do not press or crush this desiccant in any way.**
- **Any pulverized desiccant should be excluded.**
- **Keep out of reach of children.**
- **This desiccant cannot be eaten. Should you swallow any, see a doctor immediately.**

10. Install the cap and the circlip in its place, and pull the cap.



1. Dryer case
2. Cap
3. Filter plate
4. Filter 1
5. Baffle plate
6. Spring
7. Circlip
8. Filter 2
9. O-ring
10. Relief valve

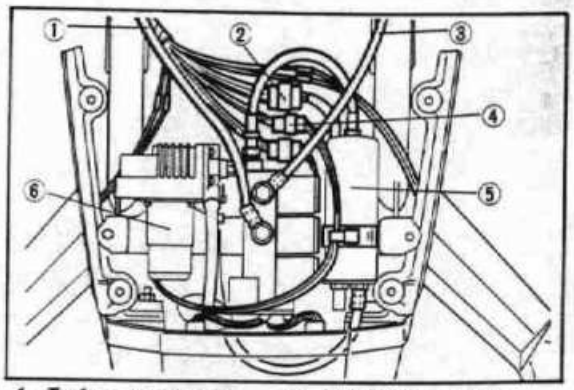
11. Install the dryer on the bracket.

CAUTION:

When installing the dryer, be sure you do not pinch pipes and wires.

NOTE:

Make sure that pipes and wires are routed properly.



1. To front suspension
2. Taillight connector
3. To rear suspension
4. Air compressor lead wire connector
5. Air dryer
6. Air compressor

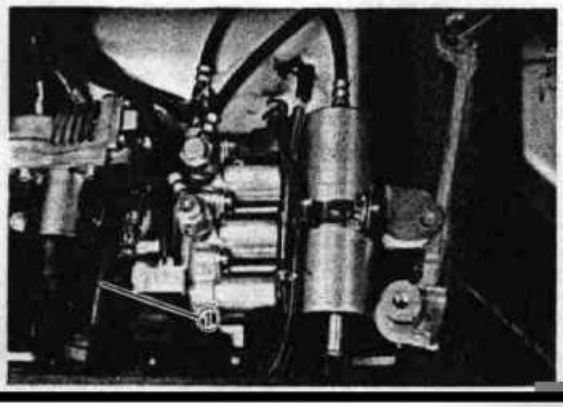
12. Install the cover, carrier antenna, and travel trunk.

Cleaning the Suction Filter

The air compressor suction port is fitted with a filter which must be cleaned periodically.

Cleaning interval: One year

1. Remove the travel trunk antenna, carrier, and cover.
2. Remove the suction pipe.



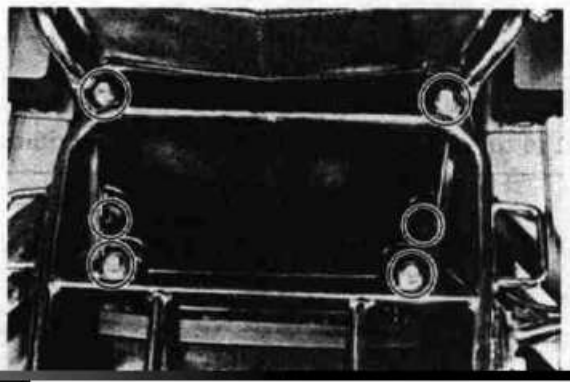
Removing the Oil in the Air Hose

If the motorcycle falls down, the front fork oil may flow into the air hose.

If air pressuer reading goes further down than 3 psi (0.21 kg/cm²) in 2 ~ 3 seconds after setting the fork air pressure and if the air is not leaking, the fork oil is suspected to be in the air hose.

Remove the oil in the air hose as follows.

1. Loosen and remove the left fork cap bolt.
2. Remove the travel trunk, antenna, carrier and cover.

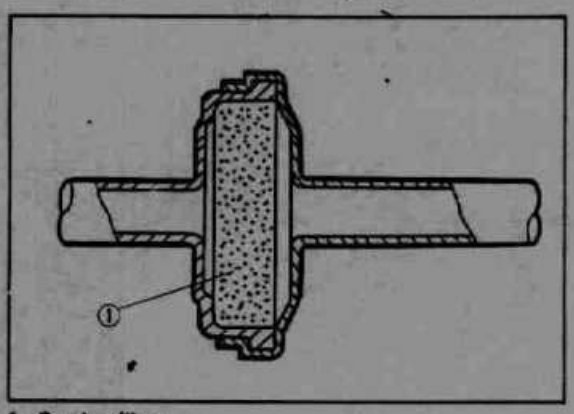


t and disconnect
t fork.



1. Suction pipe

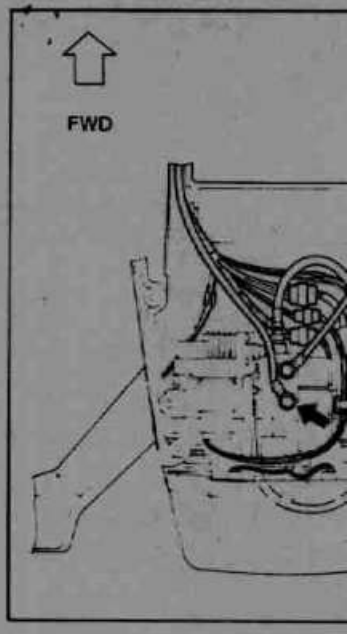
3. Remove the suction filter in the suction pipe.



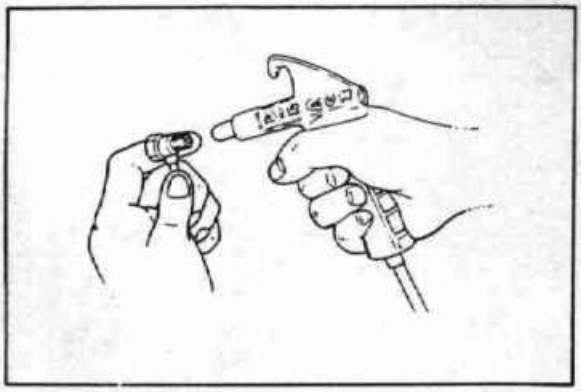
1. Suction filter

4. After cleaned in a cleaning solvent, the filter should be dried up. After installing the filter, connect the hose to the filter housing while taking care not to ben it. The open end of the hose should face downward, and the filter housing halves should be put together so that no water enters through the mating surfaces.
5. Install the cover, carrier antenna, and travel trunk.

3. Loosen the union bo
the air hose for the fro



4. Blow the air hose using compressed air to return the fork oil completely into the front fork.



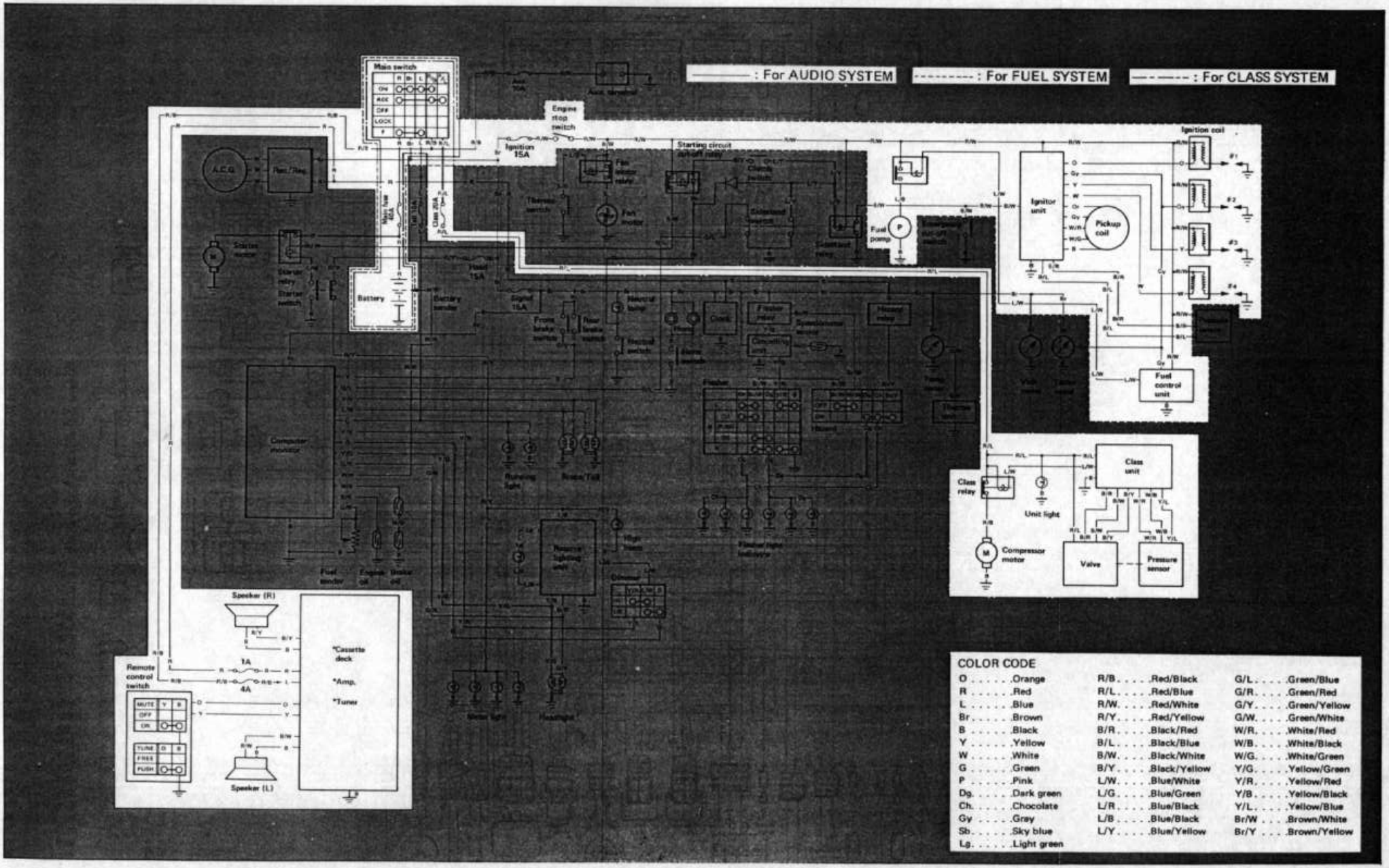
5. Reverse the removal procedure for reassembly.

Tightening torgue:
Union bolt
10 Nm (1.0 m·kg, 7.2 ft·lb)
Fork cap bolt
25 Nm (2.5 m·kg, 18 ft·lb)

Recommended combinations of the front fork and the rear shock absorber.
Use this table as a guide to meet specific riding conditions and motorcycle load.

		L		M		H	
Loading condition		Solor rider		With passenger or accessory equipment		With accessory equipement and passenger	
							
Air Pressure		kg/cm²	pai	kg/cm²	pai	kg/cm²	psi
	Front	0.8	11	1.0	14	1.2	17
	Rear	1.0	14	3.0	42	5.0	71
Damping adjuster		1 or 2		2 or 3		3 or 4	

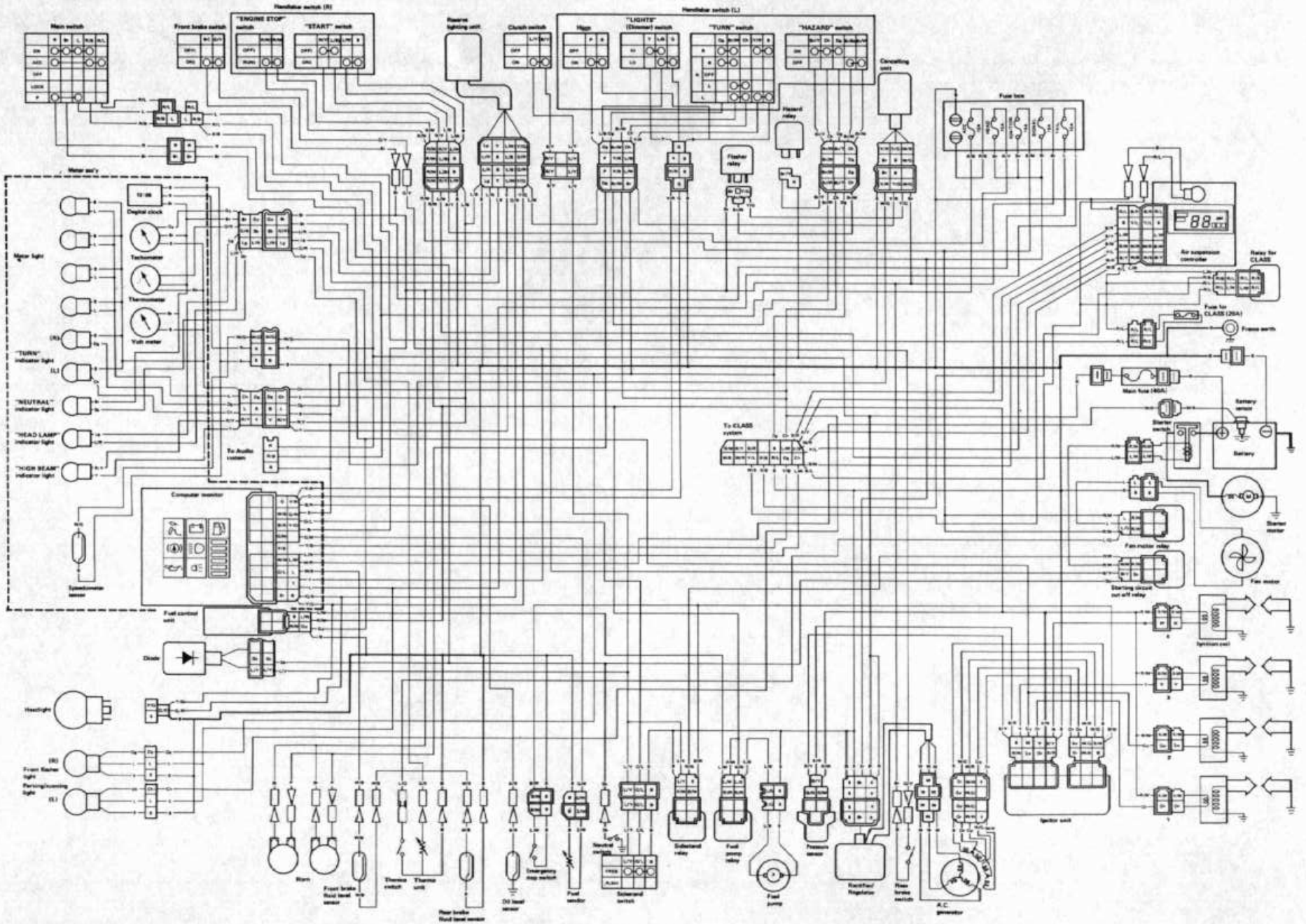
— MEMO —



COLOR CODE

O . . . . . Orange	R/B . . . . Red/Black	G/L . . . . Green/Blue
R . . . . . Red	R/L . . . . Red/Blue	G/R . . . . Green/Red
L . . . . . Blue	R/W . . . . Red/White	G/Y . . . . Green/Yellow
Br . . . . . Brown	R/Y . . . . Red/Yellow	G/W . . . . Green/White
B . . . . . Black	B/R . . . . Black/Red	W/R . . . . White/Red
Y . . . . . Yellow	B/L . . . . Black/Blue	W/B . . . . White/Black
W . . . . . White	B/W . . . . Black/White	W/G . . . . White/Green
G . . . . . Green	B/Y . . . . Black/Yellow	Y/G . . . . Yellow/Green
P . . . . . Pink	L/W . . . . Blue/White	Y/R . . . . Yellow/Red
Dg . . . . . Dark green	L/G . . . . Blue/Green	Y/B . . . . Yellow/Black
Ch . . . . . Chocolate	L/R . . . . Blue/Black	Y/L . . . . Yellow/Blue
Gy . . . . . Gray	L/B . . . . Blue/Black	Br/W . . . Brown/White
Sb . . . . . Sky blue	L/Y . . . . Blue/Yellow	Br/Y . . . Brown/Yellow
Lg . . . . . Light green		

XVZ12TDK WIRING DIAGRAM



COLOR CODI

B	Bk
L	Bl
Dg	De
Ch	Ch
Lg	Lg
Br	Br
Sb	Sk
Y	Ye
R	Re
Gy	Gr
G	Gr
P	Pir
W	Wh
O	Or
B/Y	Bl
B/R	Bl
B/W	Bl
L/B	Bl
L/W	Bl
L/R	Bl
L/G	Bl
L/Y	Bl
Y/R	Ye
Y/G	Ye
Y/L	Ye
Y/B	Ye
R/B	Re
R/L	Re
R/W	Re
R/Y	Re
G/Y	Gr
G/R	Gr
G/L	Gr
G/W	Gr
W/G	Wl
W/R	Wl
W/B	Wl
Br/W	Br
Br/Y	Br

SPECIFICATIONS

GENERAL SPECIFICATIONS

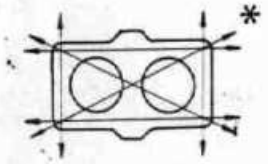
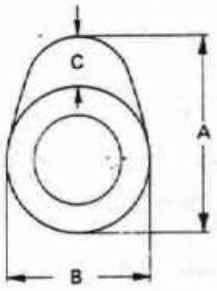
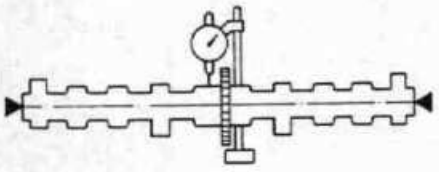
Model	XVZ12TDK
Model Code Number: Engine Starting Number Vehicle I.d Number	31M 31M-000101 JYA31M00•DA000101
Dimensions: Overall Length Overall Width Overall Height Seat Height Wheelbase Minimum Ground Clearance	 2,470 mm (97.2 in) 940 mm (37.0 in) 1,490 mm (58.7 in) 785 mm (30.9 in) 1,610 mm (63.4 in) 145 mm (5.7 in)
Basic Weight: Wight Oil and Full Fuel Tank	 341 kg (752 lb)
Minimum Turning Radius:	2,900 mm (114 in)
Engine: Engine Type Cylinder Arrangement Displacement Bore x Stroke Compression Ratio Compression Pressure Starting System	 Liquid cooled 4-stroke gasolin, DOHC V-4 cylinder 1,198 cm^3 76.0 x 66.0 mm (2.99 x 2.60 in) 10.5 : 1 1,176.8 kPa (12.0 kg/cm^2, 171 psi) Electric starter
Lubrication System:	Wep sump
Oil Type or Grade: Engine oil  Final Gear Oil	 Yamalube 4-cycle oil or SAE 20W40 type SE motor oil (If temperature does not go below 5°C (40°F)) SAE 10W30 type SE motor oil (If temperature does not go above 15°C (60°F)) SAE 80 API "GL-4" Hypoid gear oil
Oil Capacity: Engine Oil: Periodic Oil Change With Oil Filter Replacement Total Amount Final Gear Case Oil Amount	 3.2 L (2.8 Imp qt, 3.4 US qt) 3.5 L (3.1 Imp qt, 3.7 US qt) 4.5 L (3.9 Imp qt, 4.8 US qt) 0.3 L (0.26 Imp qt, 0.32 US qt)
Radiator Capacity: (Including All routes)	 2.7 L (2.4 Imp qt, 2.8 US qt)
Air Filter:	Dry type element
Fuel: Type Tank Capacity	 Regular gasoline 20 L (4.4 Imp qt, 5.3 US gal)
Carburetor: Type/Manufacturer	 BDS 34 x 4 / MIKUNI
Spark Plug: Type/Manufacturer Gap	 DPR8EA-9/NGK, X24EPR-U9/NIPPONDENSO 0.8 ~ 0.9 mm (0.031 ~ 0.035 in)

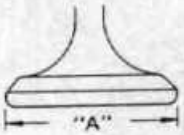
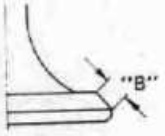
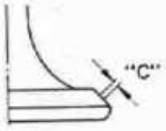
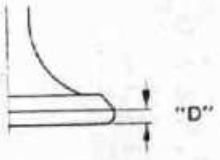
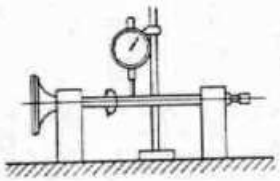
Model	XVZ12TDK	
Clutch Type:	Wet, multiple-disc	
Transmission:		
Primary Reduction System	Spar gear	
Primary Reduction Ratio	87/49 (1.775)	
Secondary Reduction System	Shaft drive	
Secondary Reduction Ratio	21/27 x 33/10 (2.567)	
Transmission Type	Constant mesh, 5-speed	
Operation	Left foot operation	
Gear Ratio 1st	39/15 (2.600)	
2nd	39/22 (1.772)	
3rd	31/23 (1.347)	
4th	31/29 (1.068)	
5th	29/32 (0.906)	
Chassis:		
Frame Type	Tublar steel, Double cradle	
Caster Angle	28° 30'	
Trail	125 mm (4.9 in)	
Tire:		
Type	Tubeless	
Size (F)	120/90-18-65H	
Size (R)	140/90-16-71H	
Tire Pressure (Cold tire):		
Basic weight:		
With oil and full fuel tank	341 kg (752 lb)	
Maximum load*	189 kg (417 lb)	
Cold tire pressure	FRONT	REAR
Up to 90 kg (198 lb) load*	221 kPa (2.3 kg/cm², 32 psi)	221 kPa (2.3 kg/cm², 32 psi)
90 kg (198 lb) ~ 189 kg (417 lb) load*	221 kPa (2.3 kg/cm², 32 psi)	275 kPa (2.8 kg/cm², 40 psi)
High speed riding	221 kPa (2.3 kg/cm², 32 psi)	221 kPa (2.3 kg/cm², 32 psi)
	* Load is the total weight of acrgo, rider, passenger, and accessories.	
Brake:		
Front Right-side	Disc brake	
Operation	Right hand operation	
Front Left-side and Rear	Disc brake	
Operation	Right foot operation	
Suspension:		
Front Suspension	Telescopic fork	
Rear Suspension	Swingarm (New monocross suspension)	
Shock Absorber:		
Front Shock Absorber	Air, Coil spring, Oil damper	
Rear Shock Absorber	Air, Coil spring, Oil damper	
Wheel Travel:		
Front Wheel Travel	140 mm (5.5 in)	
Rear Wheel TRavel	105 mm (4.1 in)	
Electrical:		
Ignition System	T.C.I.	
Generator System	A.C. generator	
Battery Type or Model	GM18Z-3A	
Battery Capacity	12V 20AH	
Headlight Type:	Bulb type (Quartz bulb)	

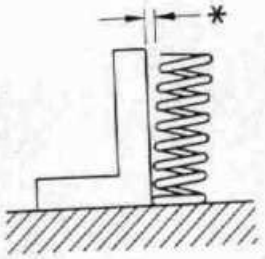
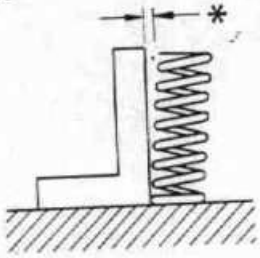
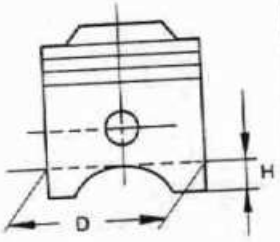
Model	XVZ12TDK
Bulb Wattage/Quantity:	
Headlight	12V, 60W/55W x 1
Tail/Brake Light	12V, 8W/27W x 2
Flasher Light	12V, 27W x 4
Parking/Running Light	12V, 8W x 2
Meter Light	12V, 3.4W x 4
Indicator Light Wattage/Quantity:	
"HEAD LAMP"	12V, 3.4W x 1
"NEUTRAL"	12V, 3.4W x 1
"HIGH BEAM"	12V, 3.4W x 1
"TURN"	12V, 3.4W x 2

MAINTENANCE SPECIFICATIONS

ENGINE

Model	XVZ12TDK
Cylinder Head:	
Warp Limit* 	0.03 mm (0.0012 in)
Cylinder:	
Bore Size	75.07 ~ 76.2 mm (2.96 ~ 2.99 in)
Taper Limit	0.05 mm (0.002 in)
Out of Round Limit	0.05 mm (0.002 in)
Cam shaft:	
Drive Method	Chain drive (Center)
Cam Cap Inside Dia.	25.000 ~ 25.021 mm (0.984 ~ 0.985 in)
Camshaft Outside Dia.	24.967 ~ 24.980 mm (0.983 ~ 0.983 in)
Shaft-to-Cap Clearance	0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
Cam Dimensions	
Intake "A"	36.25 ~ 36.35 mm (1.427 ~ 1.431 in)
< Limit > 	36.15 mm (1.42 in)
Intake "B"	28.18 ~ 28.28 mm (1.109 ~ 1.113 in)
< Limit >	28.08 mm (1.11 in)
Exhaust "A"	36.25 ~ 36.35 mm (1.427 ~ 1.431 in)
< Limit >	36.15 mm (1.42 in)
Exhaust "B"	28.18 ~ 28.28 mm (1.109 ~ 1.113 in)
< Limit >	28.08 mm (1.11 in)
Camshaft Runout Limit 	0.03 mm (0.0012 in)
Cam Chain:	
Cam Chain Type/No. of Links	BF05M/118
Cam Chain Adjustment Method	Automatic

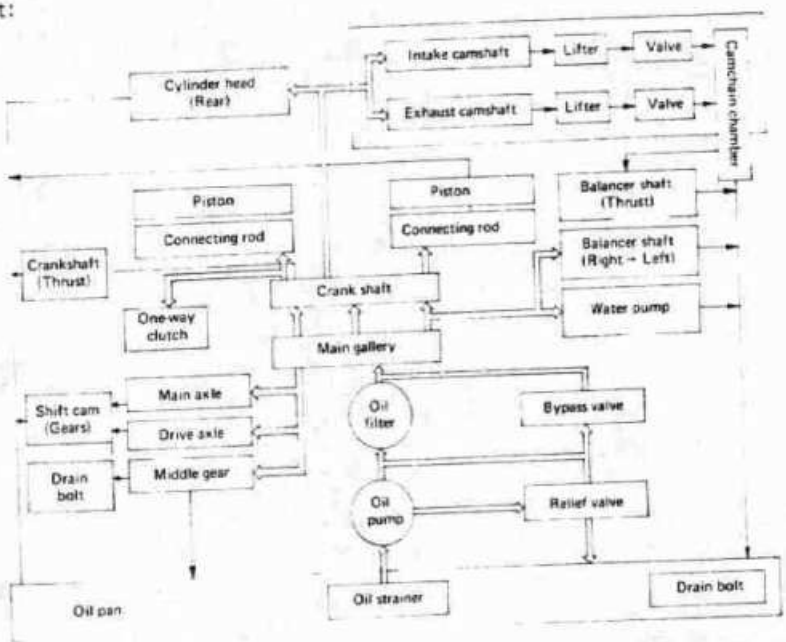
Model		XVZ12TDK
Valve, Valve Seat, Valve Guide:		
Valve Clearance (Cold):	IN.	0.11 ~ 0.15 mm (0.0043 ~ 0.0059 in)
	EX.	0.16 ~ 0.20 mm (0.0063 ~ 0.0079 in)
Valve Dimensions		
 Head Dia.		
 Face Width		
 Seat Width		
 Margin Thickness		
"A" Head Dia.	IN.	28.9 ~ 29.1 mm (1.138 ~ 1.146 in)
	EX.	23.9 ~ 24.1 mm (0.941 ~ 0.949 in)
"B" Face Width	IN.	1.6 ~ 3.1 mm (0.063 ~ 0.122 in)
	EX.	1.3 ~ 2.4 mm (0.051 ~ 0.095 in)
"C" Seat Width	IN.	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
	EX.	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
< Limit >	IN.	1.4 mm (0.055 in)
	EX.	1.4 mm (0.055 in)
"D" Margin Thickness	IN.	1.1 ~ 1.5 mm (0.043 ~ 0.059 in)
	EX.	1.1 ~ 1.5 mm (0.043 ~ 0.059 in)
< Limit >	IN.	0.7 mm (0.028 in)
	EX.	0.7 mm (0.028 in)
Stem Outside Dia.	IN.	5.975 ~ 5.990 mm (0.235 ~ 0.236 in)
	EX.	5.960 ~ 5.975 mm (0.235 ~ 0.235 in)
< Limit >	IN.	5.945 mm (0.234 in)
	EX.	5.92 mm (0.233 in)
Guide Inside Dia.	IN.	6.000 ~ 6.012 mm (0.236 ~ 0.237 in)
	EX.	6.000 ~ 6.012 mm (0.236 ~ 0.237 in)
< Limit >	IN.	6.05 mm (0.238 in)
	EX.	6.05 mm (0.238 in)
Stem-to-Guide Clearance	IN.	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
	EX.	0.025 mm (0.001 in)
< Limit >	IN.	0.08 mm (0.0031 in)
	EX.	0.1 mm (0.0039 in)
Stem Runout Limit		0.01 mm (0.0004 in)
		
Valve Spring:		
Inner Spring:		
Free Length	IN.	37.3 mm (1.47 in)
	EX.	37.3 mm (1.47 in)
< Limit >	IN.	35.3 mm (1.39 in)
	EX.	35.3 mm (1.39 in)
Set Length (Valve Closed)	IN.	31.8 mm (1.25 in)
	EX.	31.8 mm (1.25 in)
Compressed Pressure (Installed)	IN.	4.57 ~ 5.37 kg (10.08 ~ 11.84 lb)
	EX.	4.57 ~ 5.37 kg (10.08 ~ 11.84 lb)

Model		XVZ12TDK
Tilt Limit *	IN.	2.5° / 1.6 mm (0.063 in)
	EX.	2.5° / 1.6 mm (0.063 in)
		
Direction of Winding	IN.	Left
	EX.	Left
Outer Spring:		
Free Length	IN.	39.45 mm (1.55 in)
	EX.	39.45 mm (1.55 in)
< Limit >	IN.	37.25 mm (1.47 in)
	EX.	37.25 mm (1.47 in)
Spring Rate	IN-K1	19.1 N/mm (1.95 kg/mm, 109 lb/in)
	IN-K2	24.8 N/mm (2.53 kg/mm, 142 lb/in)
	EX-K1	19.1 N/mm (1.95 kg/mm, 109 lb/in)
	EX-K2	24.8 N/mm (2.53 kg/mm, 142 lb/in)
Set Length (Valve Closed)	IN.	33.8 mm (1.33 in)
	EX.	33.8 mm (1.33 in)
Compressed Pressure (Installed)	IN.	10.1 ~ 11.9 kg (22.27 ~ 26.24 lb)
	EX.	10.1 ~ 11.9 kg (22.27 ~ 26.24 lb)
Tilt Limit *	IN.	2.5° / 1.7 mm (0.067 in)
	EX.	2.5° / 1.7 mm (0.067 in)
		
Direction of Winding	IN.	Right
	EX.	Right
Piston:		
Piston Clearance		0.055 ~ 0.075 mm (0.0022 ~ 0.0030 in)
< Limit >		0.15 mm (0.0059 in)
Piston Size "D"		75.905 ~ 75.955 mm (2.988 ~ 2.990 in)
Measuring Point "H"		6.5 mm (0.256 in)
		
Oversize	1st	76.25 mm (3.00 in)
Oversize	2nd	76.5 mm (3.01 in)

Model	XVZ12TDK
Piston Ring:	
Top Ring:	
Type	Plain (Barrel face)
Dimensions (B x T)	2.8 x 1.2 mm (0.110 x 0.047 in)
End Gap (Installed)	0.30 ~ 0.45 mm (0.0118 ~ 0.0177 in)
< Limit >	0.7 mm (0.0276 in)
Side Clearance (Installed)	0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in)
< Limit >	0.12 mm (0.0047 in)
2nd Ring:	
Type	Plain (Taper face)
Dimensions (B x T)	3.2 x 1.5 mm (0.126 x 0.059 in)
End Gap (Installed)	0.30 ~ 0.45 mm (0.0118 ~ 0.0177 in)
< Limit >	0.8 mm (0.0315 in)
Side Clearance	0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in)
< Limit >	0.12 mm (0.0047 in)
Oil Ring:	
Dimensions (B x T)	3.1 x 2.8 mm (0.122 x 0.110 in)
End Gap (Installed)	0.3 ~ 0.9 mm (0.0118 ~ 0.0354 in)
Connecting Rod:	
Oil Clearance	0.021 ~ 0.045 mm (0.0008 ~ 0.0018 in)
Bearing Color Code	1. Blue 2. Black 3. Brown 4. Green
Crankshaft:	
Crank Width "A"	83.92 ~ 83.97 mm (3.304 ~ 3.306 in)
Assembly Width "B"	242.72 ~ 243.17 mm (9.556 ~ 9.574 in)
Runout Limit "C"	0.03 mm (0.0012 in)
Big End Side Clearance "D"	0.320 ~ 0.924 mm (0.0126 ~ 0.0364 in)
Journal Oil Clearance	0.020 ~ 0.044 mm (0.0008 ~ 0.0017 in)
Bearing Color Code	1. Blue 2. Black 3. Brown 4. Green 5. Yellow
Clutch:	
Friction Plate Thickness	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
Quantity	8 pcs.
Wear Limit	2.8 mm (0.11 in)
Clutch Plate Thickness	2.2 ~ 2.4 mm (0.087 ~ 0.095 in)
Quantity	7 pcs.
Warp Limit	0.2 mm (0.0079 in)
Clutch Spring Free Length	41.6 mm (1.64 in)
Quantity	6 pcs.
Minimum Length	40.3 mm (1.59 in)
Push Rod Bending Limit	0.5 mm (0.0197 in)
Transmission:	
Main Axle Deflection Limit	0.08 mm (0.0031 in)
Drive Axle Deflection Limit	0.08 mm (0.0031 in)
Shifter:	
Shifter Type	Guide Bar
Guide Bar Bending Limit	0.025 mm (0.001 in)

Model		XVZ12TDK
Carburetor:		
I.D. Mark		26H 00
Main Jet	(M.J.)	#117.5
Main Air Jet	(M.A.J.)	#65
Jet Needle	(J.N.)	5GLZ18-3
Needle Jet	(N.J.)	X-6
Pilot Air Jet	(P.A.J.)	#80
Pilot Outlet	(P.O.)	0.8
Pilot Jet	(P.J.)	#42.5
Bypass	(B.P. 1)	0.8
	(B.P. 2)	0.8
	(B.P. 3)	0.9
Valve Seat Size	(V.S.)	1.5
Starter Jet	(G.S. 1)	#45
	(G.S. 2)	0.8
Fuel Level	(F.L.)	16.5 ~ 17.5 mm (0.650 ~ 0.689 in)
Engine Idling Speed		950 ~ 1,050 r/min
Vacuum Pressure at Idling Speed		Above 250 mm Hg (9.843 in Hg)
Vacuum Synchronous Difference		Below 10 mm Hg (0.394 in Hg)
Fuel Pump:		
Type		Electrical type
Consumption Amperage (Max.)		0.7A
Out-put Pressure		10.8 ~ 15.7 kPa (0.11 ~ 0.16 kg/cm^2, 1.16 ~ 2.28 psi)
Lubrication System:		
Oil Filter Type:		Paper type
Oil Pump Type:		Trochoid type
Tip clearance		0 ~ 0.12 mm (0 ~ 0.0047 in)
< Limit >		0.17 mm (0.0067 in)
Side Clearance		0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in)
< Limit >		0.08 mm (0.0031 in)
Bypass Valve Setting Pressure		167 ~ 235 kPa (1.7 ~ 2.4 kg/cm^2, 24.2 ~ 34.1 psi)
Relief Valve Operating Pressure		432 ~ 549 kPa (4.4 ~ 5.6 kg/cm^2, 62.6 ~ 79.6 psi)

Lubrication Chart:



Model		XVZ12TDK
Cooling System:		
Radiator Core Size:	Width	363.8 mm (14.3 in)
	Height	240 mm (9.45 in)
	Thickness	16 mm (0.63 in)
Radiator Cap Opening Pressure		74 ~ 103 kPa (0.75 ~ 1.05 kg/cm², 10.7 ~ 14.9 psi)
Reservoir Tank Capacity		0.39 L (0.343 Imp qt, 0.412 US qt)
< From Low to Full Level >		0.25 L (0.22 Imp qt, 0.264 US qt)
Water Pump		
Type		Single-suction centrifugal pump
Reduction Ratio		31/21 (1.476)
Shaft Drive:		
Middle Gear Backlash		0.1 ~ 0.2 mm (0.0039 ~ 0.0079 in)
< Limit >		0.3 mm (0.0118 in)
Final Gear Backlash		0.1 ~ 0.2 mm (0.0039 ~ 0.0079 in)
< Limit >		0.3 mm (0.0118 in)

Tightening torque

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Camshaft cap	Bolt	M6	32	10	1.0	7.2	
Cylinder head sand hole plug	Screw	M20	6	43	4.3	31	Apply Loctite
Spark plug	–	M12	4	17.5	1.75	12.5	
Cylinder head	Nut	M10	10	35	3.5	25	
Cylinder head cover	Bolt	M6	16	10	1.0	7.2	
Connecting rod	Bolt	M8	8	38	3.8	27	Apply molybdenum disulfide grease
AC magneto rotor	Bolt	M10	1	90	9.0	65	
Cam sprocket	Special	M7	8	20	2.0	14	
Plate (damper chain)	Flange bolt	M8	1	24	2.4	17	Apply Loctite
Tensioner	Bolt	M6	4	12	1.2	8.7	
Water pump cover	Bolt	M6	5	12	1.2	8.7	
Water pump housing	Bolt	M6	4	12	1.2	8.7	
Coolant drain plug	Bolt	M14	1	43	4.3	31	
Thermostatic valve housing	Bolt	M6	3	12	1.2	8.7	
Thermostatic valve cover	Bolt	M6	2	12	1.2	8.7	
Electric fan motor	Screw with washer	M5	3	4	0.4	2.9	
Radiator assembly	Bolt with washer	M6	4	7	0.7	5.1	
Radiator cover	Screw	M5	4	4	0.4	2.9	
Chamber cover (oil/water/breather)	Bolt	M6	6	12	1.2	8.7	
Oil pump cover	Screw	M6	4	7	0.7	5.1	
Oil pump housing	Screw	M6	3	7	0.7	5.1	
Oil pump	Bolt	M6	3	12	1.2	8.7	
Oil filter cover	Union bolt	M20	1	32	3.2	23	
Engine oil drain bolt	Bolt	M14	1	43	4.3	31	
Oil pan	Bolt	M6	12	12	1.2	8.7	
Oil baffle plate	Screw	M6	5	7	0.7	5.1	
Oil delivery pipe (lower)	Union bolt	M10	1	20	2.0	14	
Oil delivery pipe (upper)	Union bolt	M8	2	17.5	1.75	12.5	

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Carburator joint	Bolt	M6	8	12	1.2	8.7	
Fuel pump	Flange bolt	M6	2	12	1.2	8.7	
Exhaust pipe (# 1, # 3) & joint	Bolt	M6	2	7	0.7	5.1	
Exhaust pipe clamp	Bolt	M8	6	20	2.0	14	
Exhaust pipe flange	Nut	M8	8	20	2.0	14	
Muffler bracket	Flange bolt	M10	2	25	2.5	18	
Muffler stay & chamber	Bolt	M8	2	24	2.4	17	
Muffler stay & lower case	Bolt	M8	2	20	2.0	14	
Exhaust joint cover	Bolt	M6	3	10	1.0	7.2	
Crankcase	Bolt	M6	10	12	1.2	8.7	Apply oil to bolt threads
Crankcase	Bolt	M8	20	24	2.4	17	Apply oil to bolt threads
Crankcase	Bolt	M10	8	37	3.7	27	Apply oil to bolt threads
Bearing retainer	Torx screw	M8	4	25	2.5	18	Stake
Bearing retainer	Screw	M6	3	6	0.6	4.3	Apply Loctite
Crankcase cover (left)	Bolt	M6	11	12	1.2	8.7	
Lead clamp	Screw	M6	1	7	0.7	5.1	
Crankcase cover (right)	Bolt	M6	6	12	1.2	8.7	
Middle gear case cover	Bolt	M6	6	12	1.2	8.7	
Middle gear oil drain bolt	Bolt	M8	1	38	3.8	27	
Startor one-way clutch	Bolt	M8	3	24	2.4	17	Apply Loctite
Clutch housing	Nut	M20	1	70	7.0	50	Use lock washer
Clutch push lever	Special	M6	2	12	1.2	8.7	
Middle drive gear	Nut	M44	1	110	11	80	Stake, Apply Loctite
Middle drive shaft	Self-lock nut	M14	1	90	9.0	65	
Middle drive shaft bearing housing	Bolt	M8	3	30	3.0	22	
Shift cam segment	Screw	M6	1	12	1.2	8.7	Apply Loctite
Shift cam plate (neutral)	Screw	M5	1	4	0.4	2.9	Apply Loctite
Shift cam retainer	Screw	M6	3	6	0.6	4.3	Apply Loctite
Change lever adjustor	Screw	M8	1	22	2.2	16	Use lock washer
Change lever	Screw with washer	M6	1	8	0.8	5.8	
Change pedal adjustor lock	Nut	M6	4	10	1.0	7.2	
Change pedal/linkage pinch bolt	Bolt	M6	3	10	1.0	7.2	
Thermostatic switch	–	–	1	15	1.5	11	
Thermo-unit	–	–	1	15	1.5	11	
Neutral switch	Screw	M5	3	4	0.4	2.9	
Oil level switch	Bolt with washer	M6	2	10	1.0	7.2	

CHASSIS

Model		XVZ12TDK
Steering System:		
Steering Bearing Type		Taper roller bearing
Front Suspension:		
Front Fork Travel		140 mm (5.51 in)
Fork Spring Free Length		453.5 mm (17.9 in)
< Limit >		448.5 mm (17.7 in)
Collar Length		97 mm (3.82 in)
Spring Rate	K1	4.12 N/mm (0.42 kg/mm, 23.5 lb/in)
	K2	7.85 N/mm (0.8 kg/mm, 44.8 lb/in)
Stroke	K1	0 ~ 112 mm (0 ~ 4.41 in)
	K2	112 ~ 140 mm (4.41 ~ 5.51 in)
Optional Spring		No.
Oil Capacity		400 cm^3 (14.1 Imp oz, 13.5 US oz)
Oil Level		162.5 mm (6.4 in)
Oil Grade		Yamaha fork oil 10wt or equivalent
Enclosed Air Pressure (Std.)		78.5 kPa (0.8 kg/cm^2, 11.4 psi)
< Min. ~ Max. >		0 ~ 147.1 kPa (0 ~ 1.5 kg/cm^2, 0 ~ 21.3 psi)
Rear Suspension:		
Shock Absorber Travel		40 mm (1.57 in)
Spring Free Length		162 mm (6.38 in)
< Limit >		157 mm (6.18 in)
Fitting Length		115 mm (4.53 in)
Spring Rate	K1	71.1 N/mm (7.25 kg/mm, 406 lb/in)
Stroke	K1	40 mm (1.57 in)
Optional Spring		No.
Enclosed Gas/Air Pressure (Std.)		1,471 kPa (15 kg/cm^2, 213 psi)
< Min. ~ Max. >		49 ~ 588 kPa (0.5 ~ 6.0 kg/cm^2, 7.1 ~ 85.3 psi)
Rear Arm:		
Swingarm Free Play Limit	End	0 mm (0 in)
Swingarm Free Play Limit	Side	0 mm (0 in)
Front Wheel:		
Type		Cast wheel
Rim Size		MT2.15 x 18
Rim Material		Aluminum
Rim Runout Limit	Vertical	1 mm (0.0394 in)
	Lateral	0.5 mm (0.0197 in)
Rear Wheel:		
Type		Cast wheel
Rim Size		MT3.00 x 16
Rim Material		Aluminum
Rim Runout Limit	Vertical	1 mm (0.0394 in)
	Lateral	0.5 mm (0.0197 in)
Front Disc Brake:		
Type		Dual
Disc Outside Dia. x Thickness		298.0 x 8.5 mm (11.73 x 0.335 in)
Pad Thickness	Inner	5.5 mm (0.217 in)
< Limit >		0.5 mm (0.0197 in)
Pad Thickness	Outer	5.5 mm (0.217 in)
< Limit > *		0.5 mm (0.0197 in)



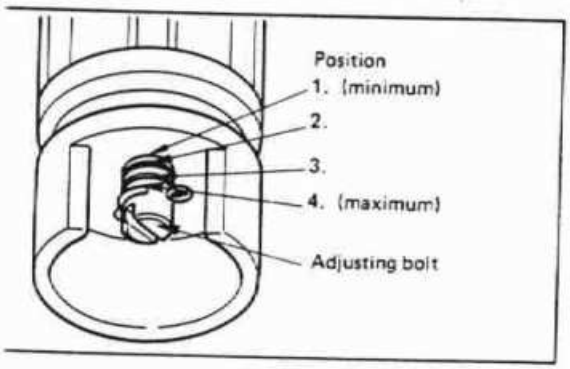
Model	XVZ12TDK
Master Cylinder Inside Dia.	12.7 mm (0.5 in)
Caliper Cylinder Inside Dia.	38.1 mm (1.5 in)
Brake Fluid Type	DOT #3
Rear Disc Brake:	
Type	Single
Disc Outside Dia. x Thickness	298.0 x 8.5 mm (11.73 x 0.335 in)
Pad Thickness Inner	5.5 mm (0.217 in)
< Limit >	0.5 mm (0.0197 in)
Pad Thickness Outer	5.5 mm (0.217 in)
< Limit > *	0.5 mm (0.0197 in)
	
Master Cylinder Inside Dia.	15.87 mm (0.6 in)
Caliper Cylinder Inside Dia.	42.8 mm (1.7 in)
Brake Fluid Type	DOT #3
Brake Lever and Brake Pedal:	
Brake Lever Free Play	5 ~ 8 mm (20 ~ 32 psi)
Brake Pedal Position	10 mm (0.4 in)
Brake Pedal Free Play	13 ~ 15 mm (0.5 ~ 0.6 in)

Recommended combinations of the front fork and the rear shock absorber.
Use this table as guidance to meet specific riding conditions and motorcycle load.

Front fork	Rear shock absorber		Loading condition			
Air pressure	Air pressure	Damping adjuster	Solo rider	With passenger	With accessory equipments	With accessory equipments and passenger
78.5 kPa (0.8 kg/cm², 12 psi)	98.1 kPa (1.0 kg/cm², 14 psi)	1 or 2	○			
78.5 ~ 98.1 kPa (0.8 ~ 1.0 kg/cm², 12 ~ 14 psi)	196 ~ 294 kPa (2.0 ~ 3.0 kg/cm², 28 ~ 42 psi)	2 or 3		○	○	
78.5 ~ 118 kPa (0.8 ~ 1.2 kg/cm², 12 ~ 18 psi)	294 ~ 490 kPa (3.0 ~ 5.0 kg/cm², 42 ~ 72 psi)	3 or 4				○

Recommended adjustment of the front fork anti-dive.
Use this table as guidance to meet specific riding conditions and motorcycle load.

Adjusting bolt position	Loading condition		
	Solo rider	With accessory equipments or passenger	With accessory equipments and passenger
1	○		
2	○	○	
3		○	○
4			○

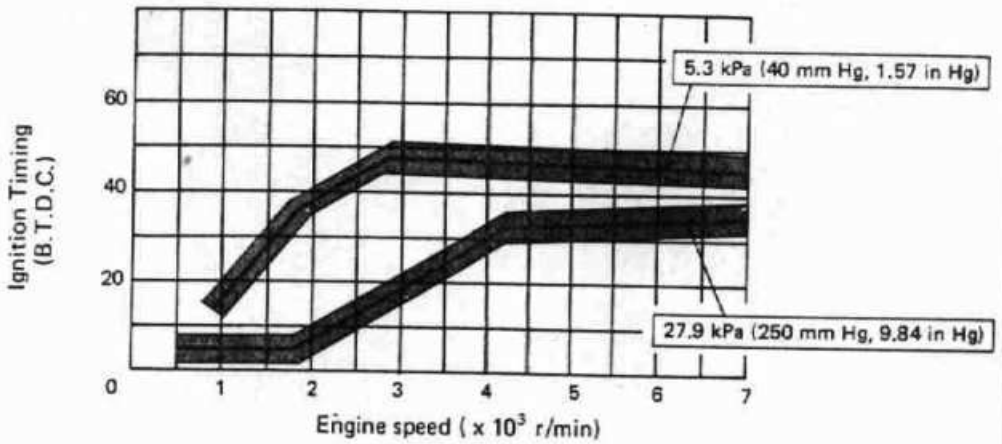


Tightening torque

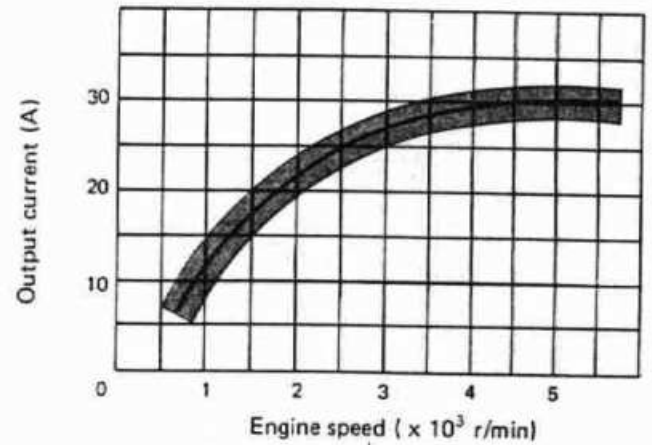
Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m·kg	ft·lb	
Front axle nut	M14 x 1.25	100	10	72	
Front axle pinch bolt	M8 x 1.25	20	2	14.0	
Under bracket & inner tube	M8 x 1.25	18	1.8	13	
Steering crown & inner tube	M8 x 1.25	20	2	14	
Steering stem	M22 x 1.0				
Steering shaft ring nut (Upper)	M25 x 1.0	110	11	8.0	
Steering shaft ring nut (Lower)	M25 x 1.0	6	0.6	5.1	
Caliper & front fork	M10 x 1.25	45	4.5	32	Front
Caliper & bracket	M10 x 1.25	45	4.5	32	Rear
Caliper & bleed screw	M8 x 1.25	6	0.6	4.3	
Brake hose union bolt	M10 x 1.25	26	2.6	19	
Clutch hose union bolt	M10 x 1.25	26	2.6	19	
Brake hose & brake pipe	M10 x 1.0	19	1.9	13	
Clutch hose & clutch pipe	M10 x 1.0	19	1.9	13	
Front master cylinder cap	M4 x 0.7	1	0.1	0.7	
Front master cylinder bracket	M8 x 1.25	26	2.6	19	
Clutch master cylinder bracket	M8 x 1.25	26	2.6	19	
Rear master cylinder union bolt	M10 x 1.25	26	2.6	19	
Rear master cylinder & frame	M8 x 1.25	23	2.3	17	
Pivot shaft (Left) & frame	M25 x 1.5	100	10	72	
Pivot shaft (Right) & frame	M25 x 1.5	6	0.6	4.3	
Pivot shaft (Right) & locknut	M25 x 1.5	100	10	72	
Front fender & front fork	M8 x 1.25	20	2.0	14	
Handlebar stopper nut	M10 x 1.0	35	3.5	25	
Handlebar pinch bolt	M6 x 1.0	17	1.7	12	
Handle stopper nut	M22 x 1.0	125	12.5	90	
Handle pinch bolt	M8 x 1.25	30	3.0	22	
Engine bracket (Front upper)	M10 x 1.25	42	4.2	30	
Engine bracket (Front lower)	M10 x 1.25	42	4.2	30	
Engine bracket (Rear)	M12 x 1.25	70	7.0	50	
Engine stay & frame	M8 x 1.25	16	1.6	11	
Stopper bolt & swingarm	M14 x 1.5	92	9.2	66	
Rear axle	M18 x 1.5	150	15	110	
Rear master cylinder cap	M4 x 0.7	1	0.1	0.7	
Fuel sendor	M6 x 1.0	5	0.5	3.6	
Relay arm & frame	M12 x 1.25	59	5.9	43	
Relay arm & rear shock absorber	M10 x 1.25	59	5.9	43	
Arm 1 & swingarm	M10 x 1.25	32	3.2	23	
Shock absorber & frame	M10 x 1.25	32	3.2	23	
Down tube & frame	M10 x 1.25	32	3.2	23	
Footrest & bracket	M10 x 1.25	32	3.2	23	
Frame & rear frame (Seat rail side)	M10 x 1.25	55	5.5	40	Upper
Frame & rear frame (Back stay side)	M10 x 1.25	55	5.5	40	Lower
Frame & cross bar assembly	M8 x 1.25	23	2.3	17	

ELECTRICAL

Model	XVZ12TDK
Voltage:	12V
Ignition System:	
Ignition Timing (B.T.D.C.)	5° at 1,000 r/min
Advanced Timing (B.T.D.C.)	32.5° at 4,500 r/min
Advancer Type	Electrical, vacuum



T.C.I.:	
Pickup Coil Resistance (Color)	110Ω ± 15% at 20°C (68°F) (Orange – Black), (Orange – Gray) (Orange – White/Green), (Orange – White/Red)
T.C.I. Unit-Model/Manufacturer	T1D14-17/HITACHI
Ignition Coil:	
Model/Manufacturer	CM11-61/HITACHI
Primary Winding Resistance	2.7Ω ± 10% at 20°C (68°F)
Secondary Winding Resistance	13.2 kΩ ± 20% at 20°C (68°F)
Charging System/Type:	A.C. magneto generator
A.C. Generator:	
Model/Manufacturer	F-X736/HITACHI
Nominal Output	14V, 30A at 5,000 r/min



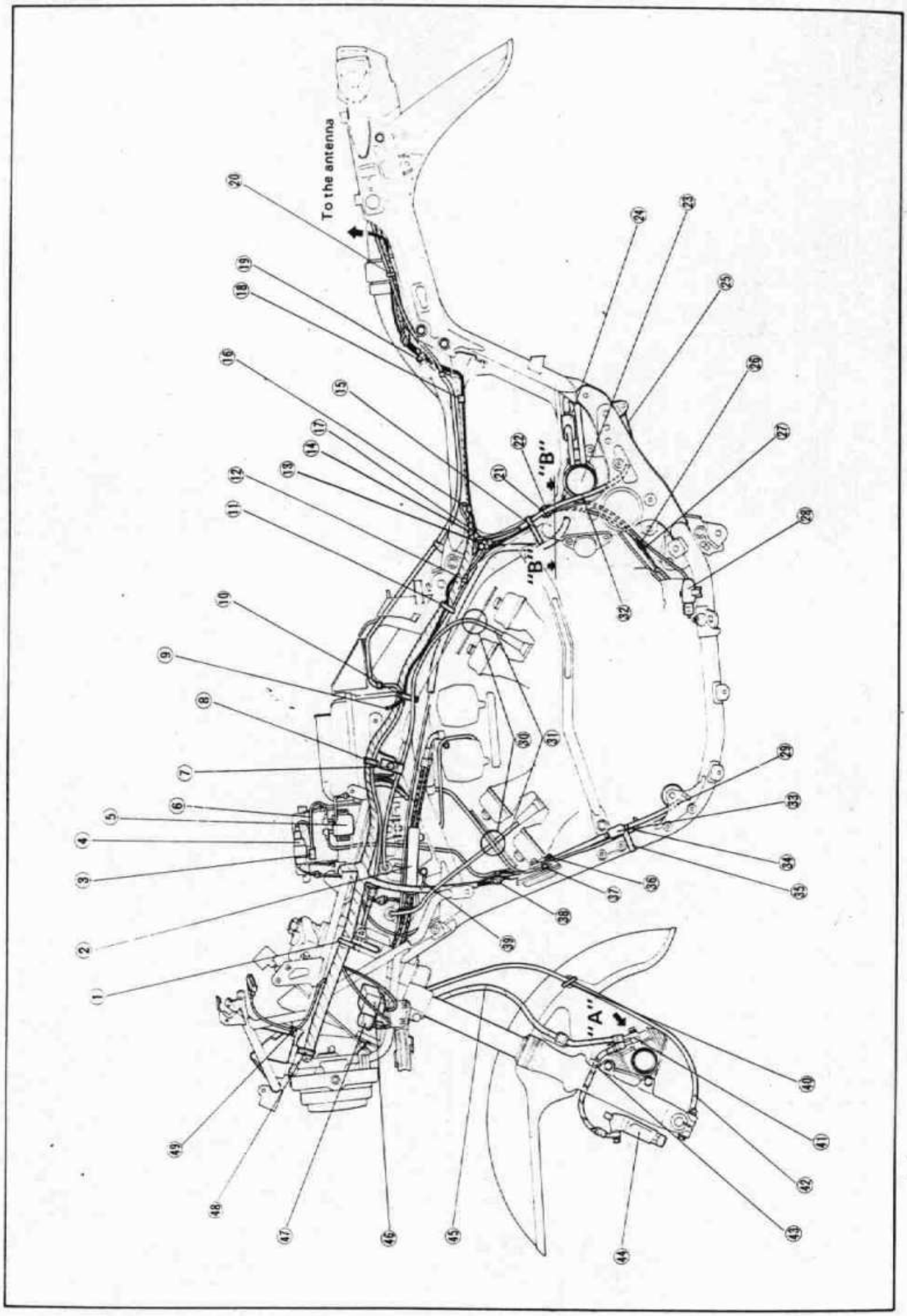
Startor Coil Resistance (Color)	0.42Ω ± 15% at 20°C (68°F) (White – White)

Model	XVZ12TDK
Voltage Regulator:	
Type	Short circuit
Model/Manufacture	SH545-12/SHINDENGEN
No Load Regulated Voltage	14 ~ 15V
Rectifier:	
Model/Manufacturer	SH545-12/SHINDENGEN
Capacity	26A
Withstand Voltage	200V
Battery:	
Capacity	12V, 20 AH
Specific Gravity	1.280
Electric Starter System:	
Type	Constant mesh type
Starter Motor:	
Model/Manufacturer	SM-229C/MITSUBA
ID. Number	SM-229C
Out put	0.6 kW
Brush Overall Length	12.5 mm (0.492 in)
< Limit >	5.5 mm (0.217 in)
Spring Pressure	560 ~ 680 g (19.751 ~ 23.984 oz)
Commutator Dia.	28 mm (1.1 in)
< Wear Limit >	27 mm (1.06 in)
Mica Undercut	0.5 mm (0.0197 in)
Starter Switch	
Model/Manufacturer	126-22011-D000/HONDALOCK
Amperage Rating	150A
Coil Winding Resistance	3.4Ω ± 10% at 20°C (68°F)
Horn:	
Type/Quantity	Plain type x 2
Model/Manufacturer	CF3-12/NIKKO
Maximum Amperage	3.0A
Flasher Relay:	
Type	Condenser type
Model/Manufacturer	FU257CD/NIPPONDENSO
Self Cancelling Device	Yes.
Flasher Frequency	75 ~ 95 cycle/min
Wattage	27W x 2 + 3.4W
Hazard Flasher Relay:	
Type	Heat plate type
Model/Manufacturer	FR-9H22/MITSUBA
Flasher Frequency	68 ~ 102 cycle/min
Wattage	27W x 4 + 3.4W
Self Cancelling Unit:	
Model/Manufacturer	YH-001/MATSUSHITA
Reserve Lighting Unit:	
Model/Manufacturer	337-81901/KOITO
Oil Level Switch:	
Model/Manufacturer	10L/NIPPONDENSO
Fuel gauge:	
Model/Manufacturer	26H/NIPPONSEIKI
Sender Unit Resistance	
Full	40.3Ω ± 10% at 20°C (68°F)
Empty	310Ω or more ± 12% at 20°C (68°F)

Model	XVZ12TDK
Starting Circuit Cut off Relay: Model/Manufacturer Coil Winding Resistance Diode	 G4MW-1121T-100-Y10/TATEISHI 75Ω ± 10% at 20°C (68°F) Yes.
Side Stand Relay: Model/Manufacturer Coil Winding Resistance Diode	 G2MW-1121T-010-Y4/TATEISHI 100Ω ± 10% at 20°C (68°F) No.
Fuel Pump Relay: Model/Manufacturer Coil Winding Resistance Color Code	 G2MW-1121T-010-Y4/TATEISHI 100Ω ± 10% Blue
Electric Fan: Model/Manufacturer	 26H/NIPPONDENSO
Fan Motor Relay: Model/Manufacturer Coil Winding Resistance	 G2MW-1121T-100-Y7/TATEISHI 100Ω ± 10% at 20°C (68°F)
Thermostatic Switch: Model/Manufacturer	 11H/NIPPONDENSO
Thermo-Unit: Model/Manufacturer	 11M/NIPPONSEIKI
Circuit Breaker: Type Amperage for Individual Circuit/Quantity Main Headlight Signal Ignition Tail Accessories Reserve	 Fuse 40A x 1 10A x 1 15A x 1 15A x 1 10A x 1 10A x 1 15A x 1 10A x 2

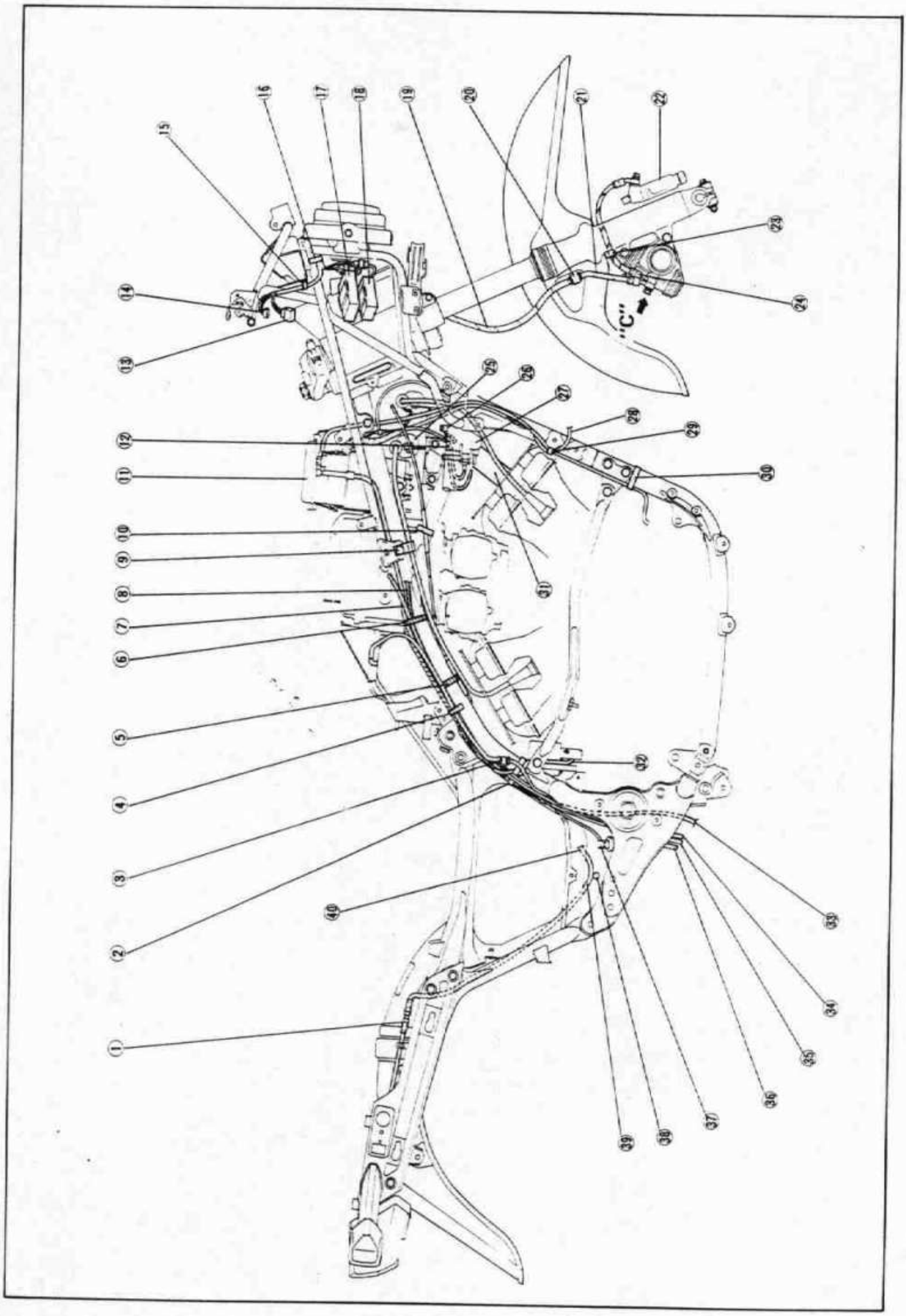
— MEMO —

CABLE ROUTING (1)



1. Clamp the wire harness at the white tape wound around it.
2. Throttle wire joint
3. Battery positive terminal
4. Fuse holder
5. Starter switch
6. Battery positive lead
7. Clamp the high tension cord
8. Band
9. Antenna cord to the tuner
10. Clamp the main harness, air hose and antenna cord. (Don't clamp the high tension cord.)
11. Clamp the wireharness and antenna cord.
12. Connector for the pick-up coil
13. Connector for the rectifier
14. Connector for the AC generator
15. Clamp all the leads
16. Clamp the wireharness, antenna cord and AC generator lead.
17. Insert the connector while lifting it so that it is not pinched by the fuel tank.
18. Clamp the wireharness and antenna lead
19. Clamp the wireharness
20. Clamp the sub lead, front air hose and antenna cord.
21. Connector for the sidestand
22. Connector for the fuel pump
23. Fuel pump (Pass the leads upward of the fuel pump)
24. Fuel strainer
25. Rectifier with regulator
26. Neutral switch lead
27. Oil level switch lead
28. Sidestand switch
29. Insert the air cleaner drain pipe between the frame and the engine mount bracket.
30. Clamp the high tension cord by the heat protector.
31. Pass the high tension cord outside of others except for the air cleaner drain pipe
32. Pass the rectifier lead outside the fuel pump
33. Locate the filter behind the under cowling and rout the drain pipe behind the water hose.
34. Positive lead
35. Clamp the positive lead not to touch the exhaust pipe
36. Horn lead
37. Clamp the horn lead and the positive lead
38. Fan motor lead
39. Ground (—) lead
40. Pass the speedometer cable through the guide.
41. Install the brake hose joints with the anti-dive hose placed at bottom.
42. Speedometer cable
43. Clamp the vinyl tube of the anti-dive hose behind the front fork.
44. Anti-dive unit
45. Front brake hose
46. Flasher relay
47. Hazard flasher relay
48. Band
49. Clamp

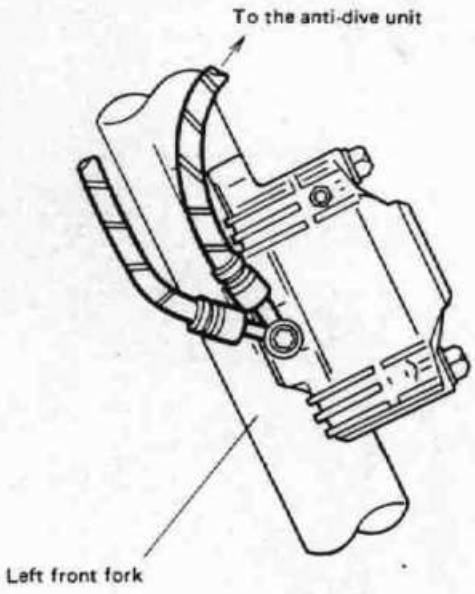
CABLE ROUTING (2)



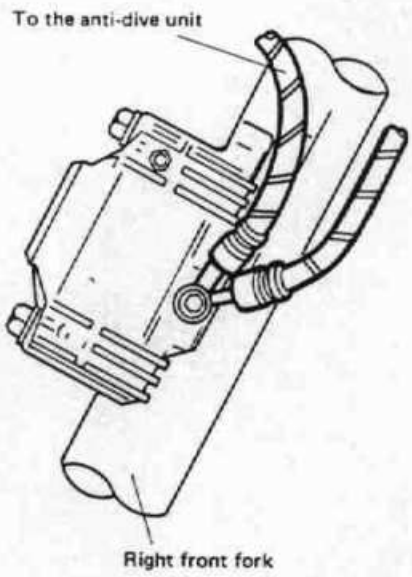
1. Air hose joint for the rear suspension
2. Clamp only the rear master cylinder lead and brake switch lead so that the former is not slack.
3. Be sure the roll over valve installed vertically.
4. Clamp the wireharness, battery breather pipe, fuel tank breather pipe, reservoir tank drain pipe and filler tube receiver drain pipe.
5. Clamp only the brake pipe.
6. Clamp the battery breather pipe, reservoir tank drain pipe and CLASS controller wireharness.
7. To the reservoir tank
8. CLASS controllar wireharness
9. Clamp only the high tension cord
10. Clamp only the brake pipe
11. Fuse box
12. Route the leads between the water hose (T-joint) and the tension pipe.
13. Connector for the hazard flasher
14. Connector for the flasher
15. Clamp the flasher lead and hazard flasher lead
16. Band
17. Reserve lighting unit
18. Flasher cancelling unit
19. Route the leads between the frame and T-joint.
20. Holder for the brake hose
21. Brake hose
22. Anti-dive
23. Clamp the anti-dive hose and vinyl tube of the brake hose behind the front fork.
24. Install the brake hose joints with the anti-dive hose placed a bottom.
25. Ignition coil
26. Ground (—) lead
27. T-joint
28. Horn lead
29. Clamp the horn lead and the negative lead
30. Band
31. Water hose
32. Route the master cylinder lead between the hose and the brake pipe.
33. Reservoir tank drain pipe
34. Battery breather pipe
35. Fuel tank breather pipe
36. Filler tube receiver drain pipe
37. Brake switch
38. Fuel hose
39. Route the air hose above the fuel hose
40. To rear shock absorber

CABLE ROUTING (3)

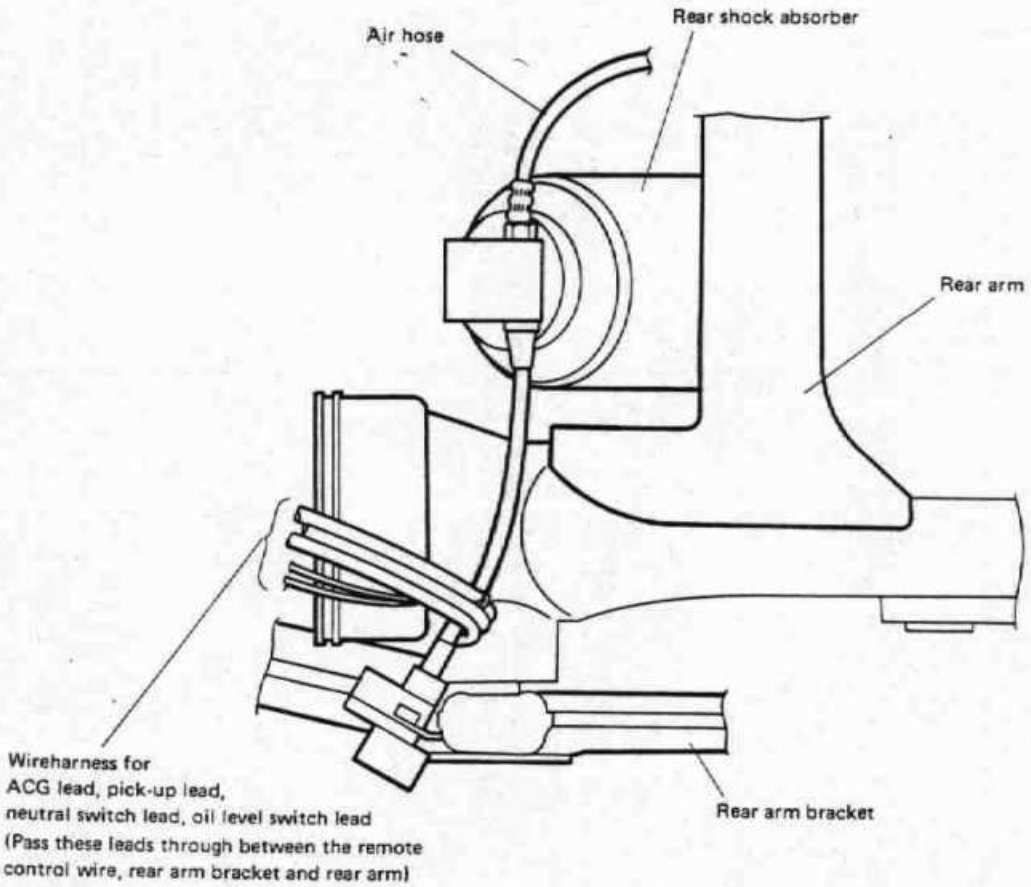
"A" VIEW (CABLE ROUTING (1))



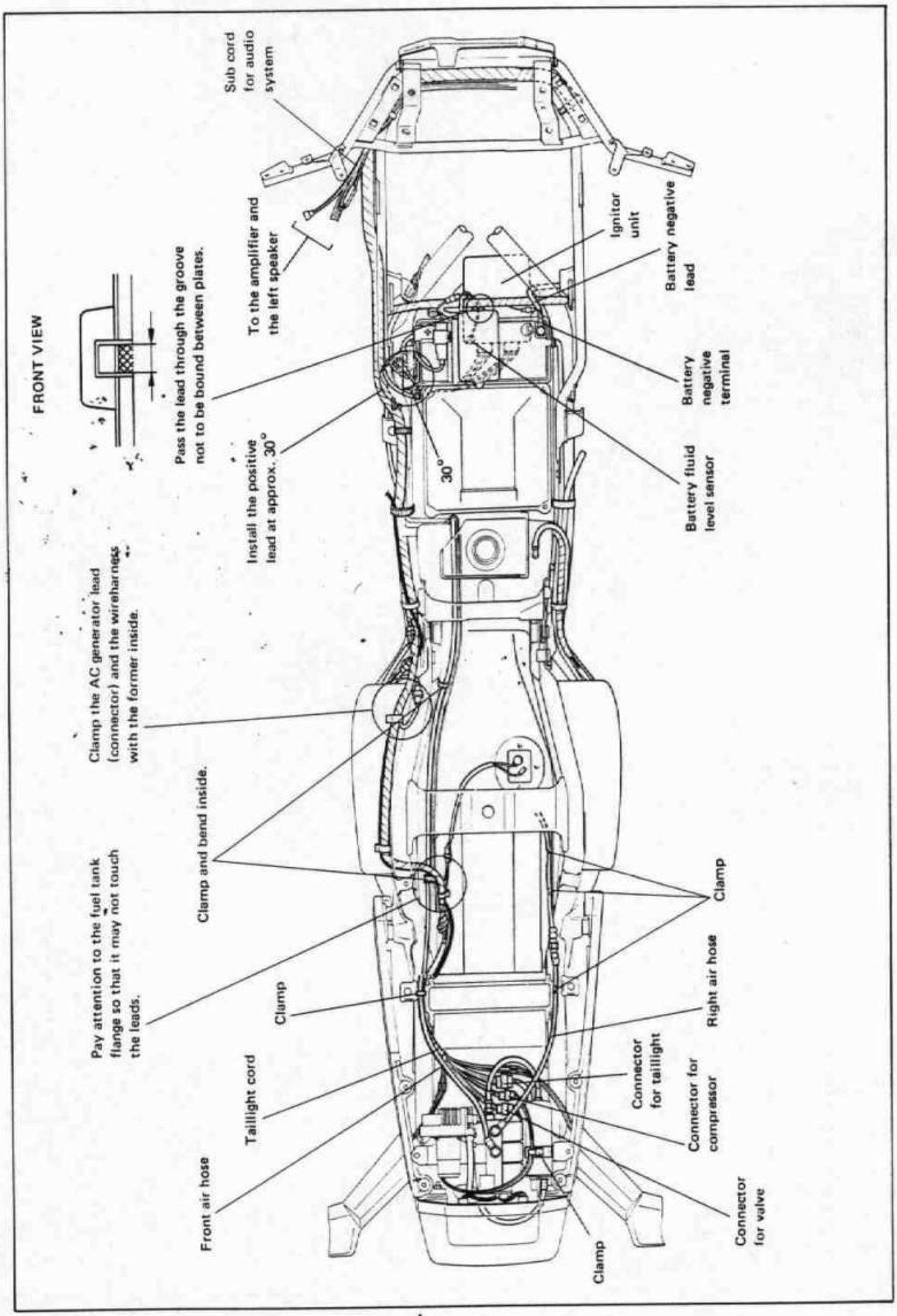
"C" VIEW (CABLE ROUTING (2))



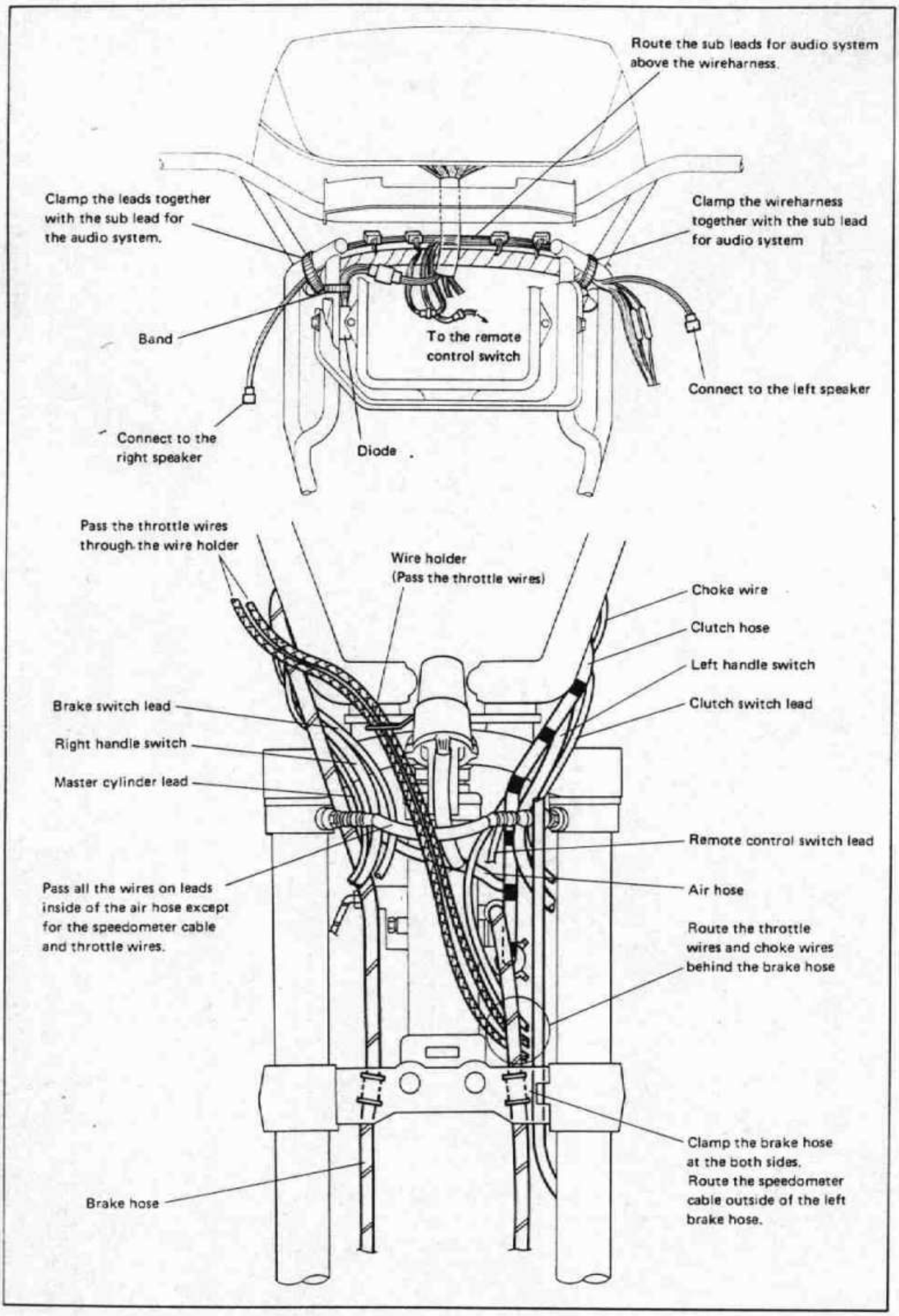
"B" – "B" VIEW (CABLE ROUTING (1))



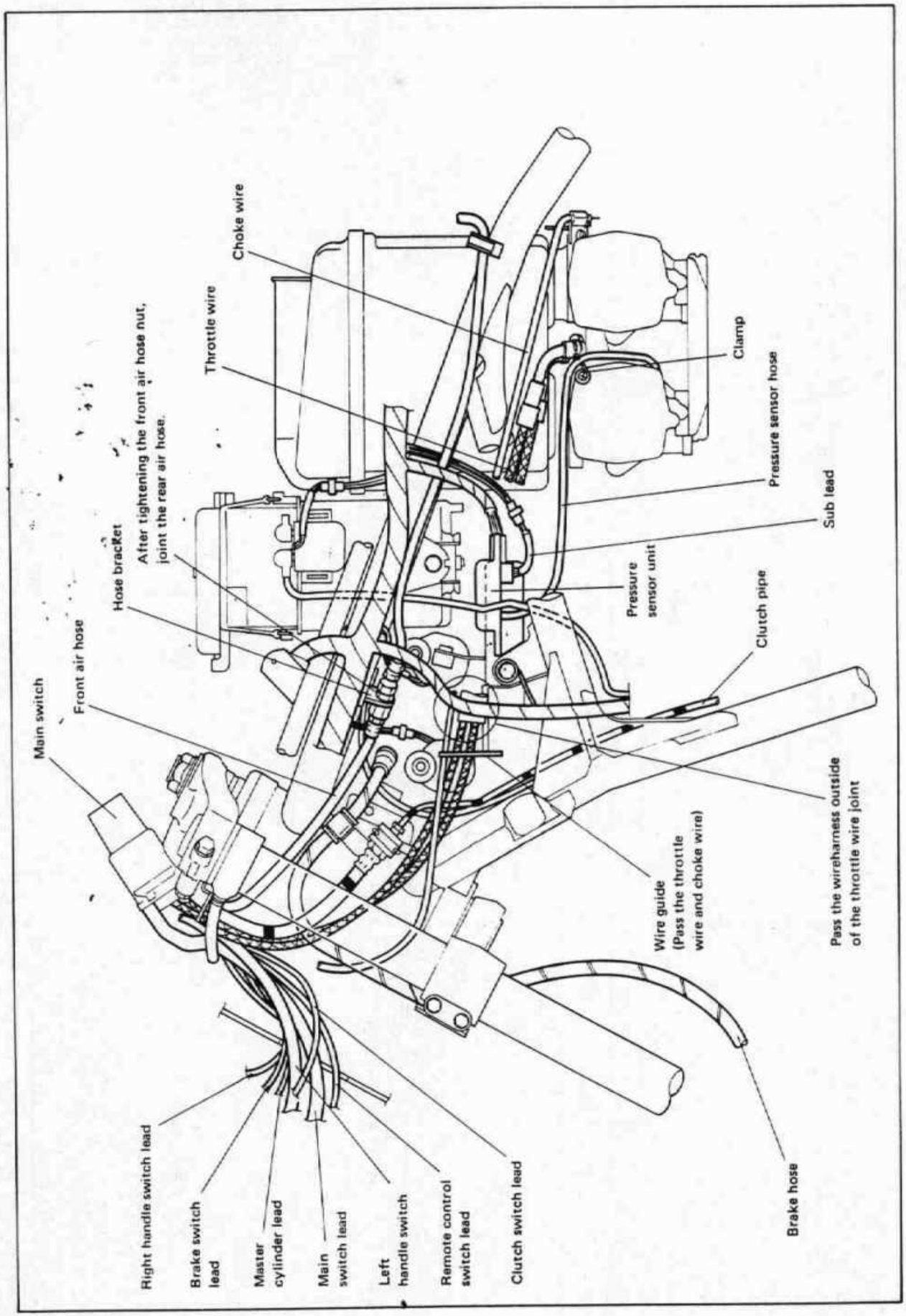
CABLE ROUTING (4)



CABLE ROUTING (5)

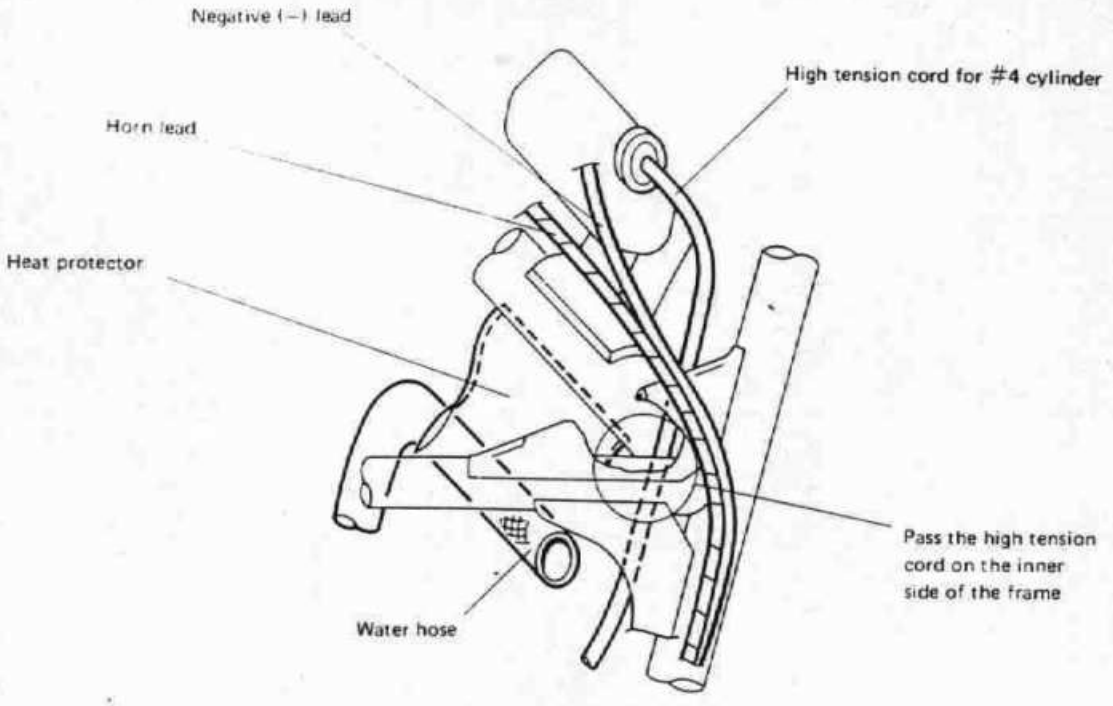


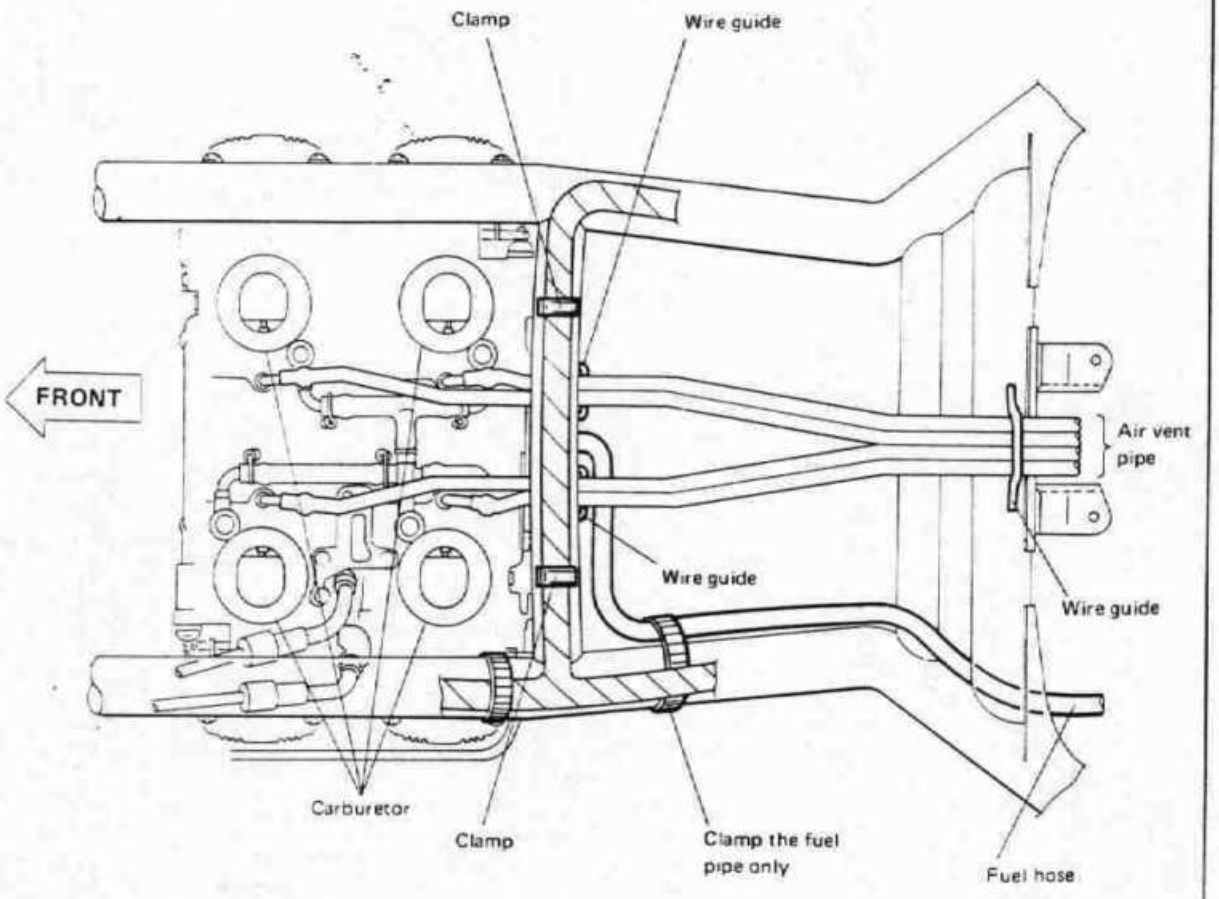
CABLE ROUTING (6)



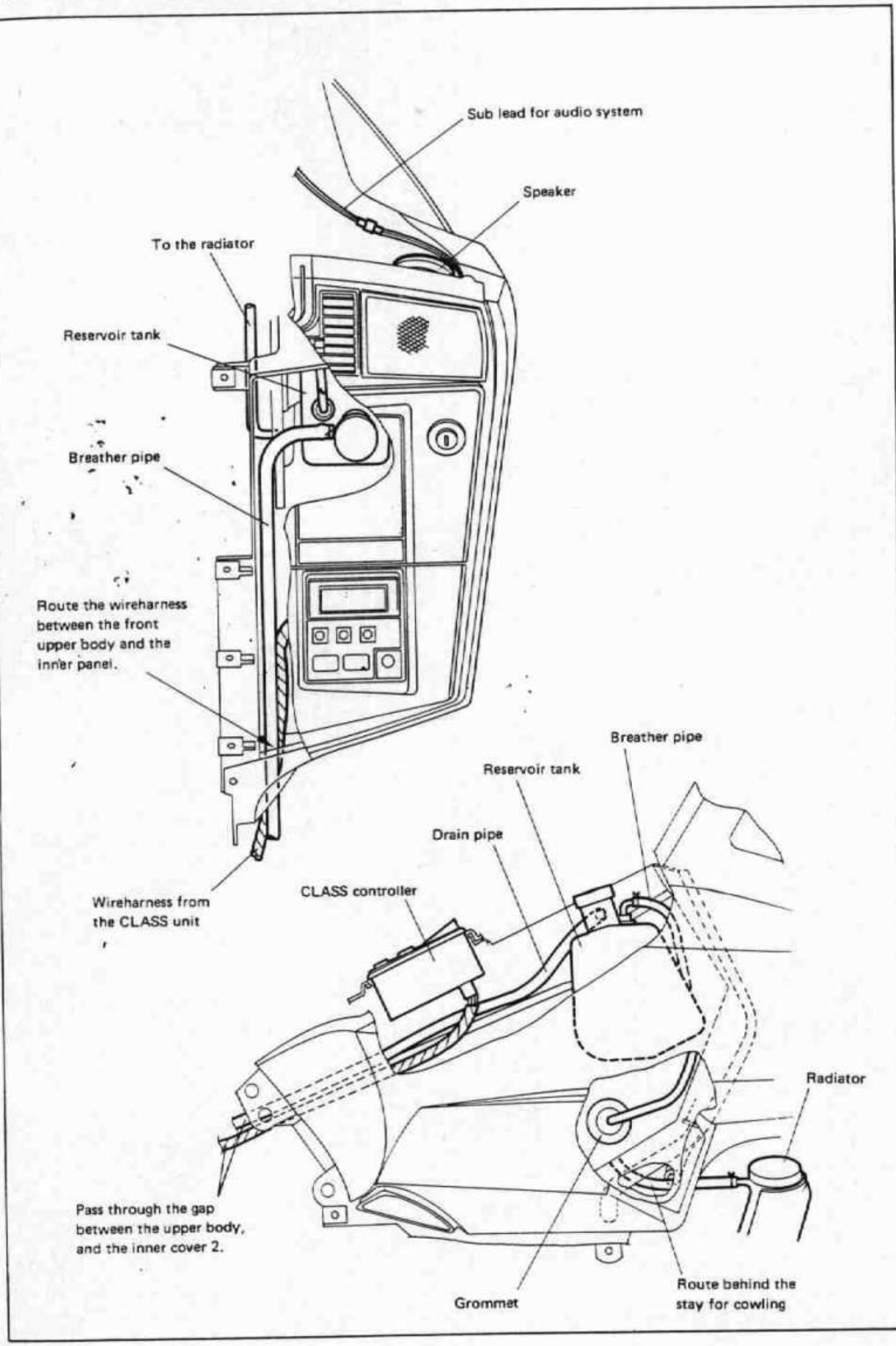
CABLE ROUTING (7)

HIGHTENSION CORD ROUTING FOR FRONT RIGHT SIDE

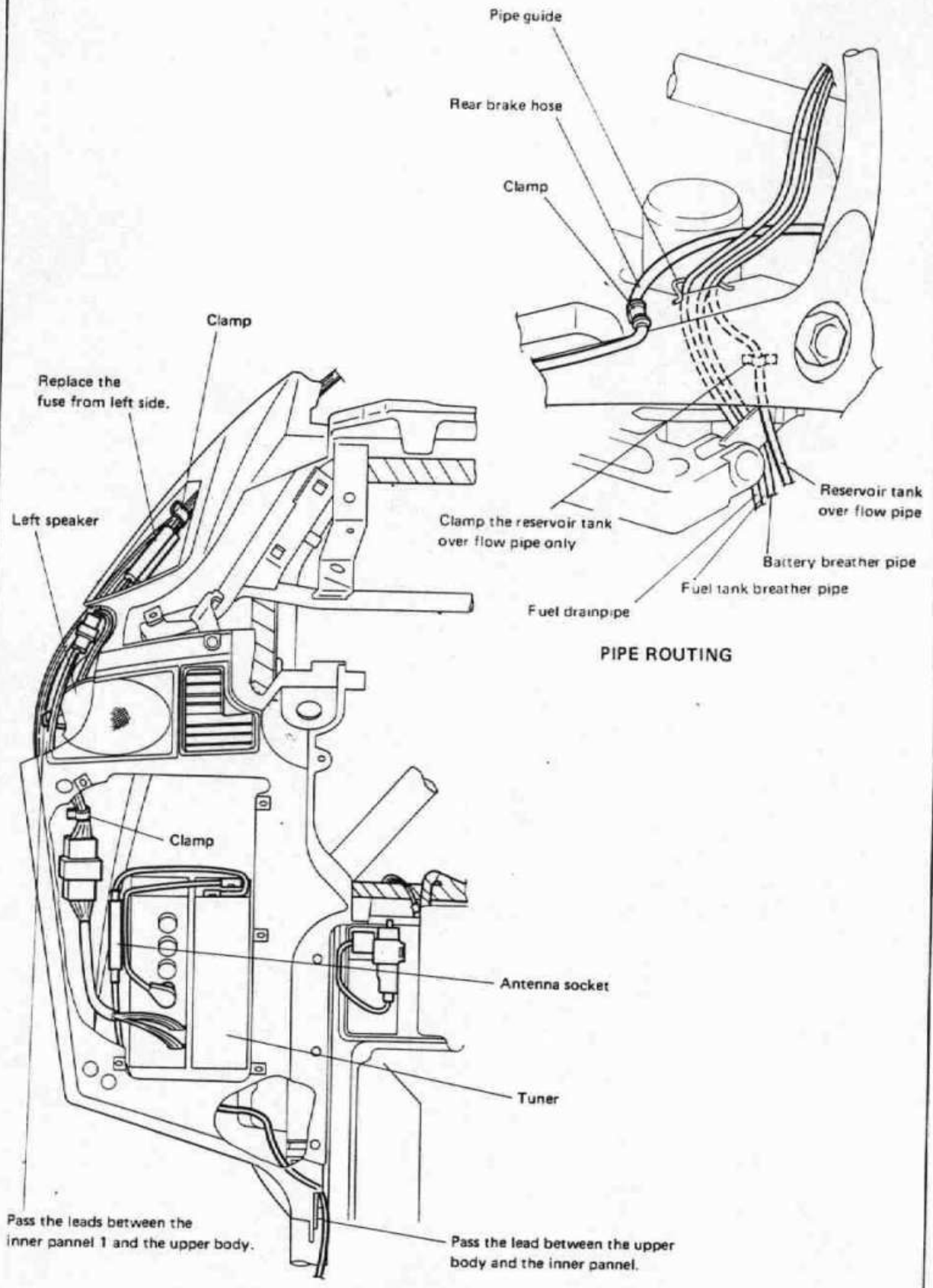




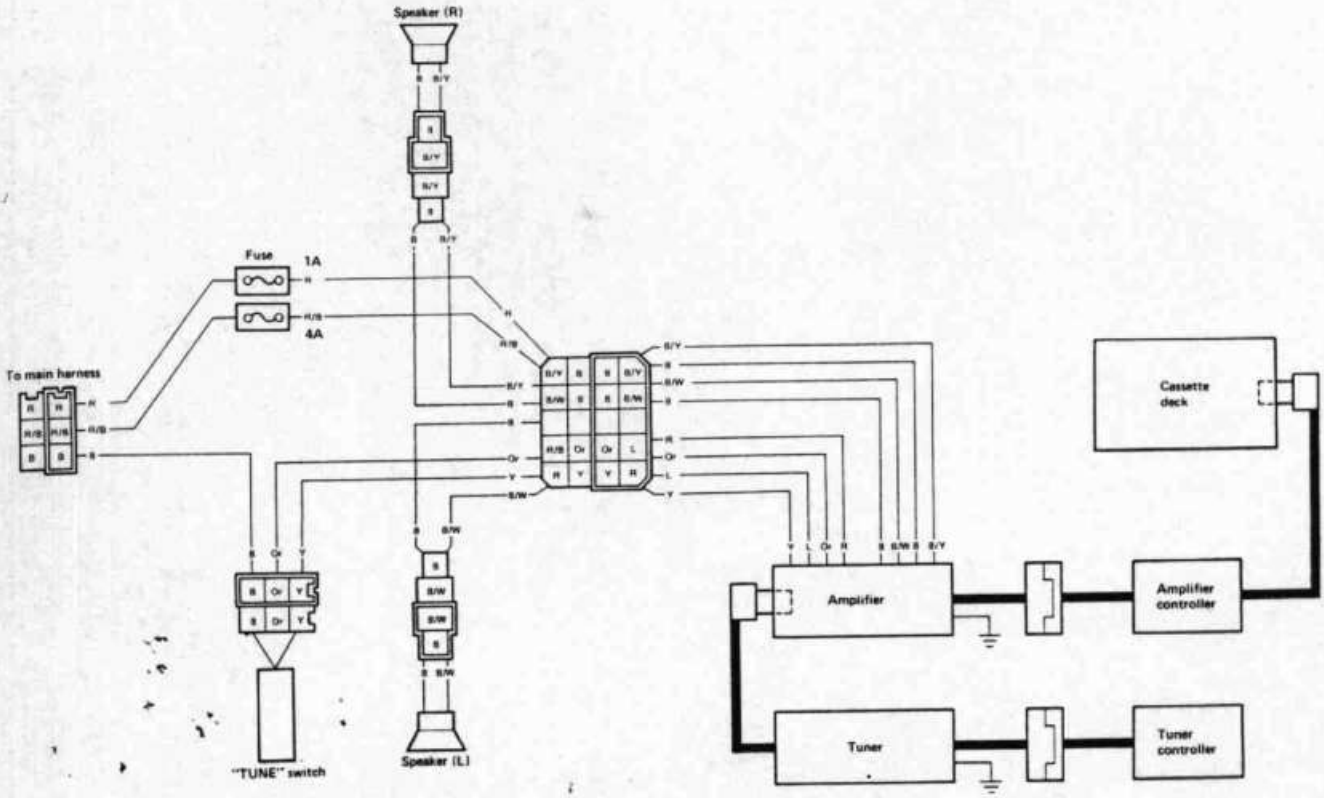
CABLE ROUTING (8)



CABLE ROUTING (9)



Audio system



Air suspension controller

