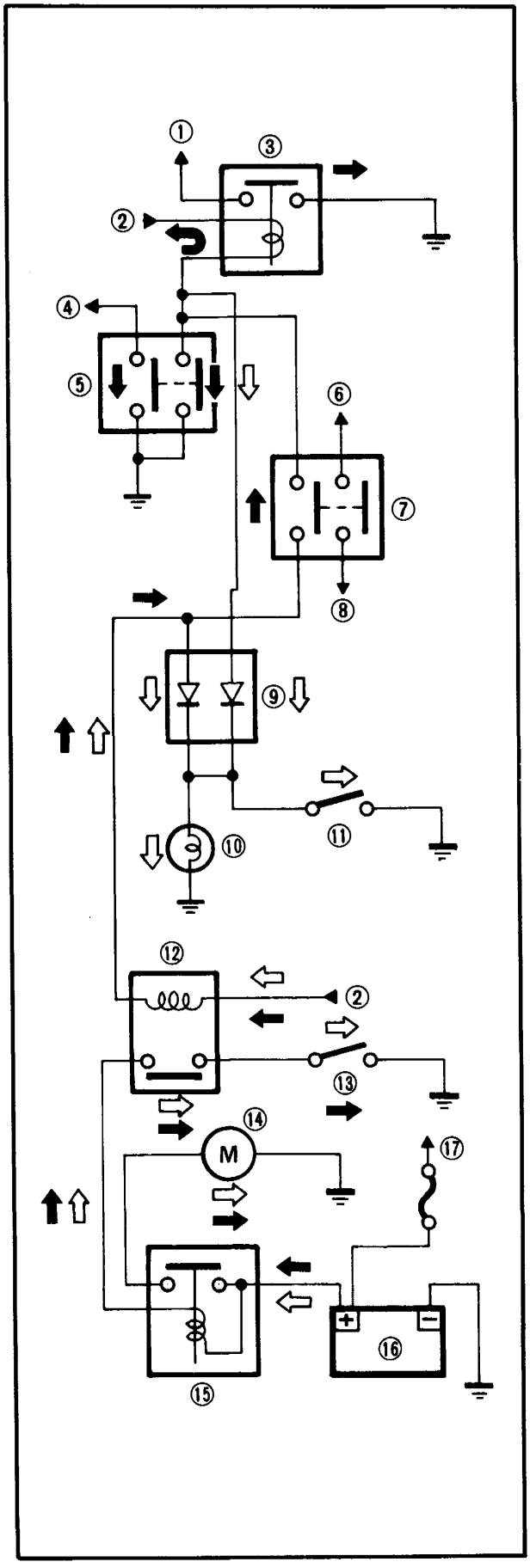


STARTING CIRCUIT CUT-OFF SYSTEM

A starting circuit cut-off system is employed, and operates as follows:

Starting Circuit Operation

The starting circuit on this model consist of the starter motor, starter relay, and the relay assembly (starting circuit cut-off relay). If the engine stop switch and the main switch are both on, the starter motor can operate only if:

> The transmission is in neutral (the neutral switch is on).
>
> **or if**
>
> The clutch lever is pulled to the handlebar (the clutch switch is on) and the sidestand is up (the sidestand switch is on.)

The starting circuit cut-off relay prevents the starter from operating when neither of these conditions has been met. In this instance, the starting circuit cut-off relay is off so current cannot reach the starter motor.

When one of both of the above conditons have been met, however, the starting circuit cut-off relay is on, and the engine can be started by pressing the starter switch.

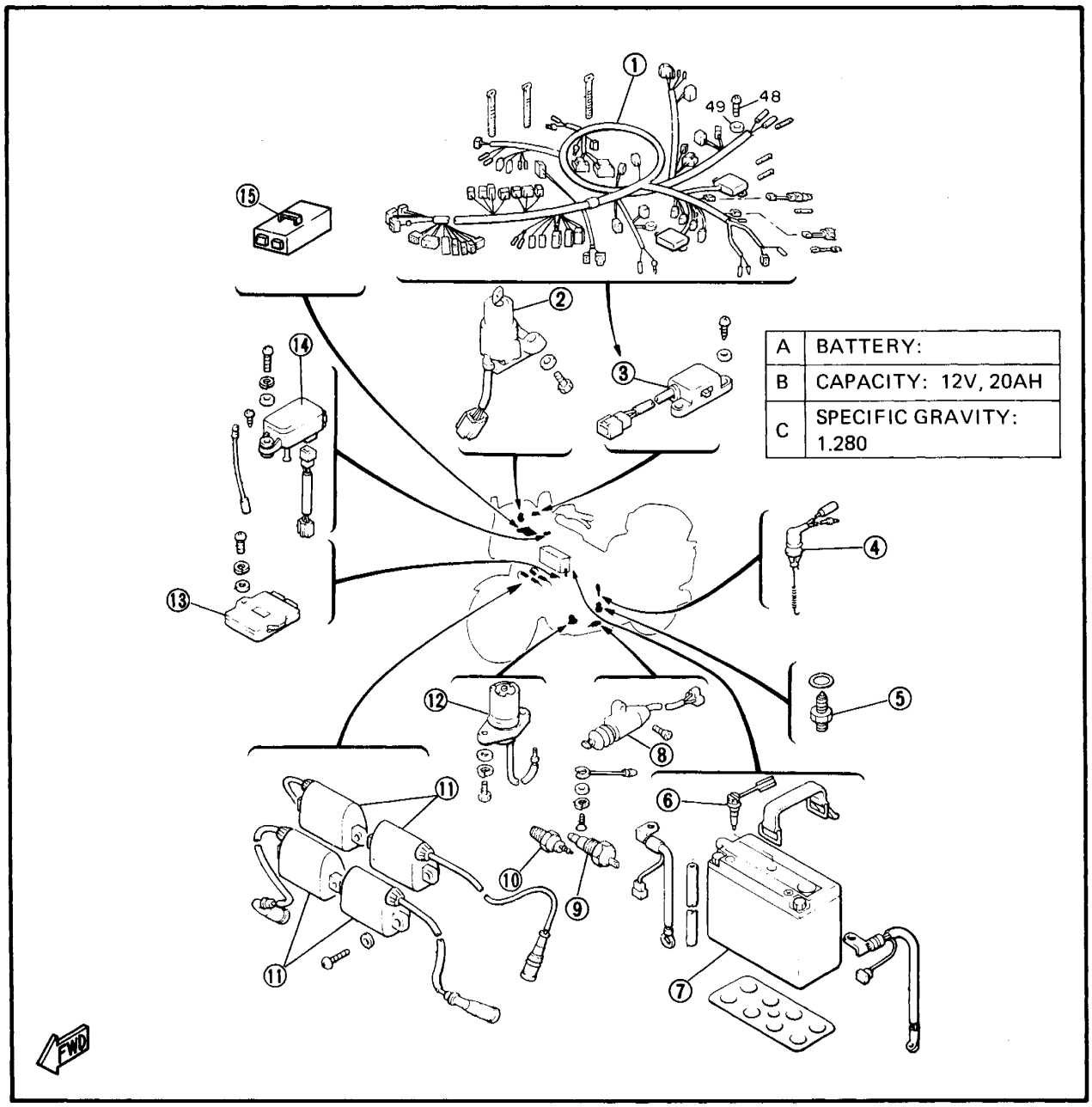
⇦ WHEN THE TRANSMISSION IS IN NEUTRAL
⇦ WHEN THE SIDESTAND IS UP AND THE CLUTCH LEVER IS PULLED IN

① To ignitor unit
② From engine stop switch
③ Sidestand relay
④ To computer monitor
⑤ Sidestand switch
⑥ To cruise control unit
⑦ Clutch switch
⑧ To front brake switch
⑨ Diode
⑩ "NEUTRAL" indicator light
⑪ Shift position switch
⑫ Starting circuit cut-off relay
⑬ Starter switch
⑭ Starter motor
⑮ Starter relay
⑯ Battery
⑰ To main switch

ELECTRICAL COMPONENTS (1)

① Wire harness
② Main switch
③ Hazard switch
④ Rear brake switch
⑤ Shift position switch
⑥ Battery fluid level sensor
⑦ Battery
⑧ Sidestand switch
⑨ Thermo switch
⑩ Thermo unit
⑪ Ignition coil
⑫ Oil level sender
⑬ Ignitor unit
⑭ Pressure sensor (Ignition)
⑮ Reserve lighting unit

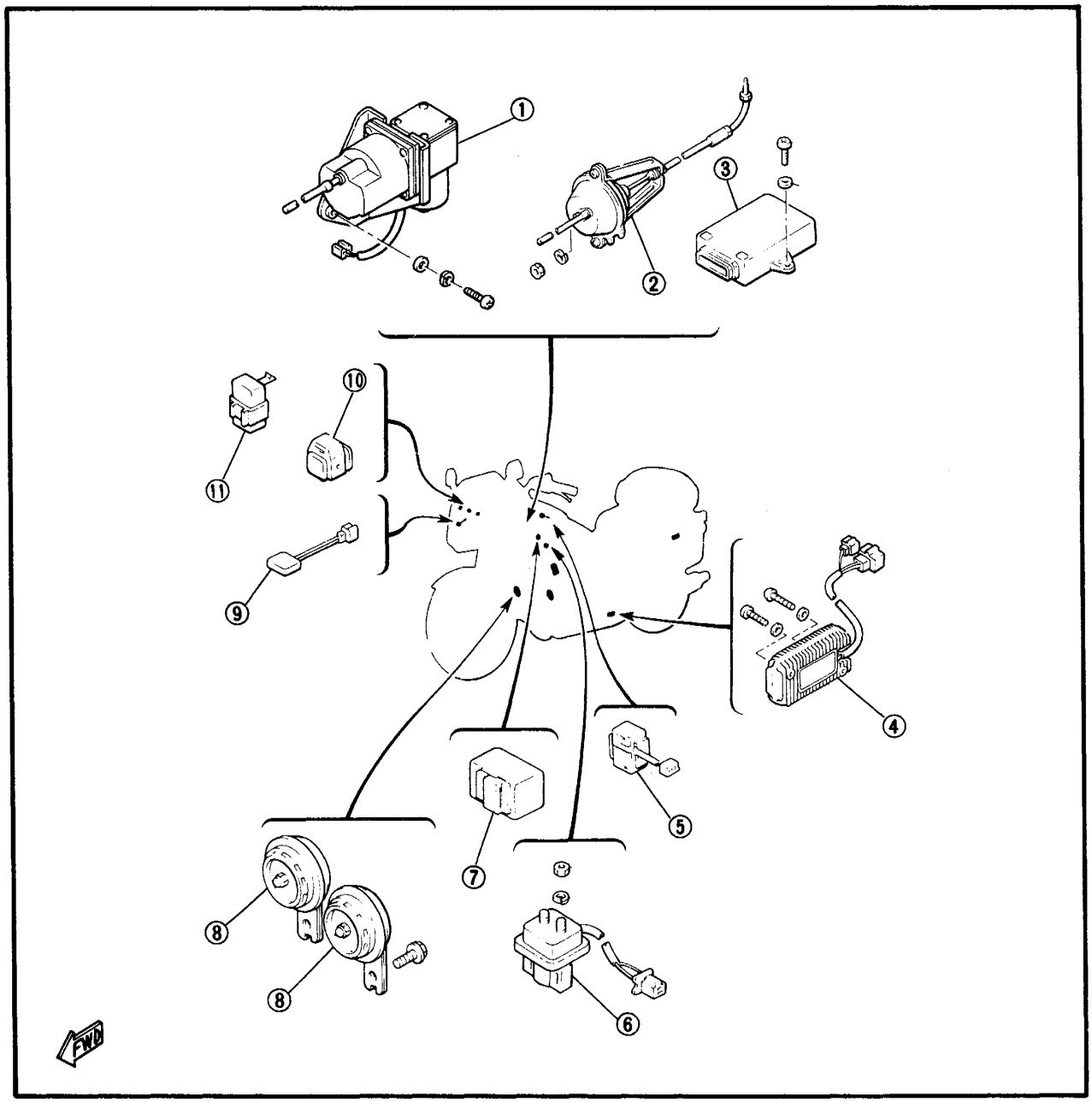
SPECIFICATIONS	RESISTANCE
IGNITION COIL:	
PRIMARY	2.4 ~ 3.0Ω
SECONDARY	10.6 ~ 15.8kΩ
PICK-UP COIL:	93.5 ~ 126.5Ω



A	BATTERY:
B	CAPACITY: 12V, 20AH
C	SPECIFIC GRAVITY: 1.280

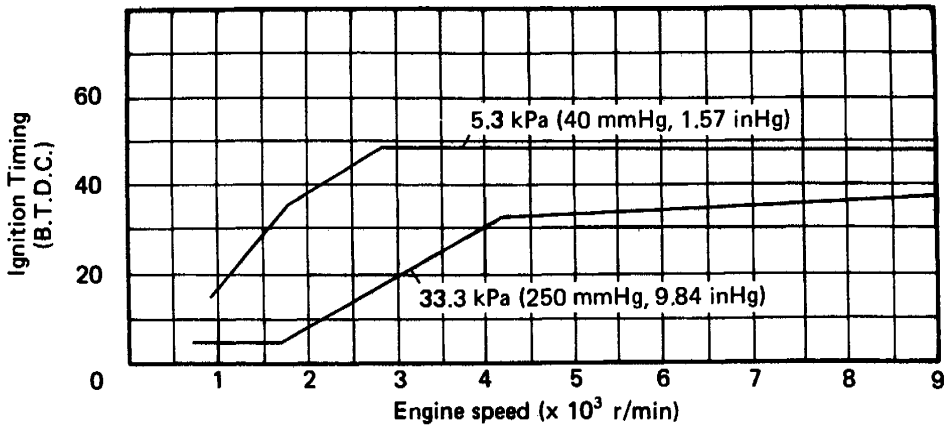
ELECTRICAL COMPONENTS (2)

① Vacuum pump (Venture cruise)
② Vacuum autuator (Venture cruise)
③ Cruise control unit
④ Rectifier with regulator
⑤ Emergency stop switch
⑥ Starter relay
⑦ Relay assembly
⑧ Horn
⑨ Diode
⑩ Sidestand relay
⑪ Fuel pump control relay

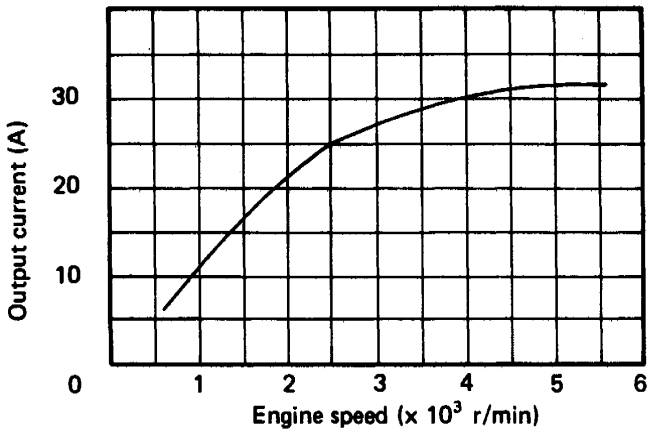


Electrical

Model	XVZ13DS/DSC
Voltage:	12V
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	 5° at 1,000 r/min Vacuum and electrical



T.C.I.: Pickup Coil Resistance (Color) T.C.I. Unit-Model/Manufacturer	 93.5 ~ 126.5Ω at 20°C (68°F) (Black – Orange) (Black – Gray) (Black – White/Green), (Black – White/Red) T1D14-17/HITACHI
Ignition Coil: Model/Manufacturer Primary Winding Resistance Secondary Winding Resistance	 CM11-61/HITACHI 2.4 ~ 3.0Ω at 20°C (68°F) 10.6 ~ 15.8 kΩ at 20°C (68°F)
Charging System/Type:	A.C. magneto generator
A.C. Generator: Model/Manufacturer Nominal Output	 F-X736/HITACHI 14V, 30A at 5,000 r/min



Chassis

Model	XVZ13DU/DUC/U/UC
Front Disc Brake: Brake Fluid Type	 DOT #3 or #4
Rear Disc Brake: Brake Fluid Type	 DOT #3 or #4
Clutch: Brake Fluid Type	 DOT #3 or #4

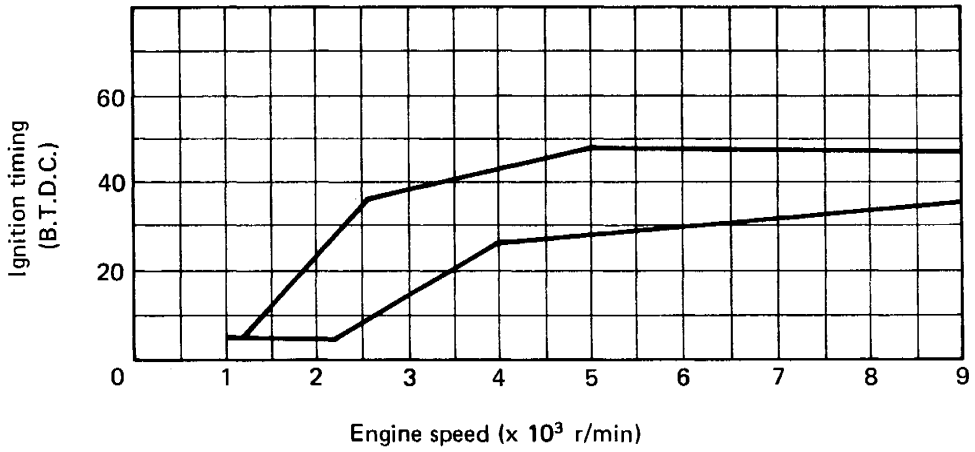
Electrical

Model	XVZ13DU/DUC/U/UC
Voltage Regulator: Type Model/Manufacturer No Load Regulated Voltage	 Short-control SH545A/SHINDENGEN (XVZ13DU/DUC) SH545-12/SHINDENGEN (XVZ13U/UC) 14 ~ 15V
Rectifier: Model/Manufacturer Capacity Withstand Voltage	 SH545A/SHINDENGEN (XVZ13DU/DUC) SH545-12/SHINDENGEN (XVZ13U/UC) 26A 200V

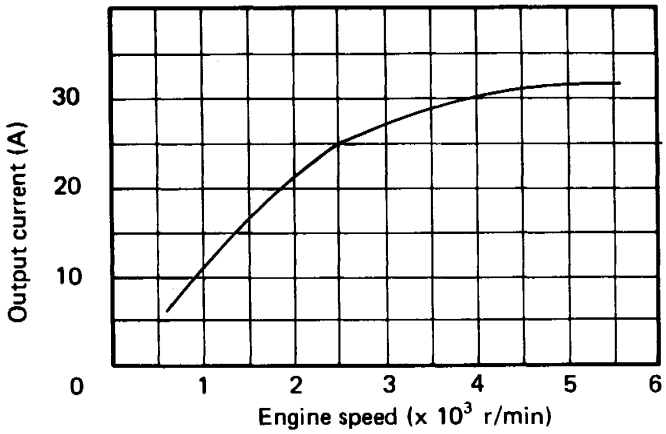
1988-1989 Electrical Specification Update

ELECTRICAL

Model	XVZ13DA/DAC
Ignition System: Ignition Timing (B.T.D.C.) Advancer Type	 5° at 1,000 r/min Vacuum and electrical



T.C.I.: Pickup Coil Resistance (Color) T.C.I. Unit-Model/Manufacturer	 81 ~ 121Ω at 20°C (68°F) (Black – Orange) T1D14-94/HITACHI
A.C. Generator: Model/Manufacturer Nominal Output	 FL-130-07/HITACHI 14V, 30A at 5,000 r/min



Stator Coil Resistance	0.26 ~ 0.35Ω at 20°C (68°F) (White – White)
Fuel Pump Control Relay: Model/Manufacturer	 25G/OMRON

1990-1993 Electrical Specification Update

SPECIFICATIONS

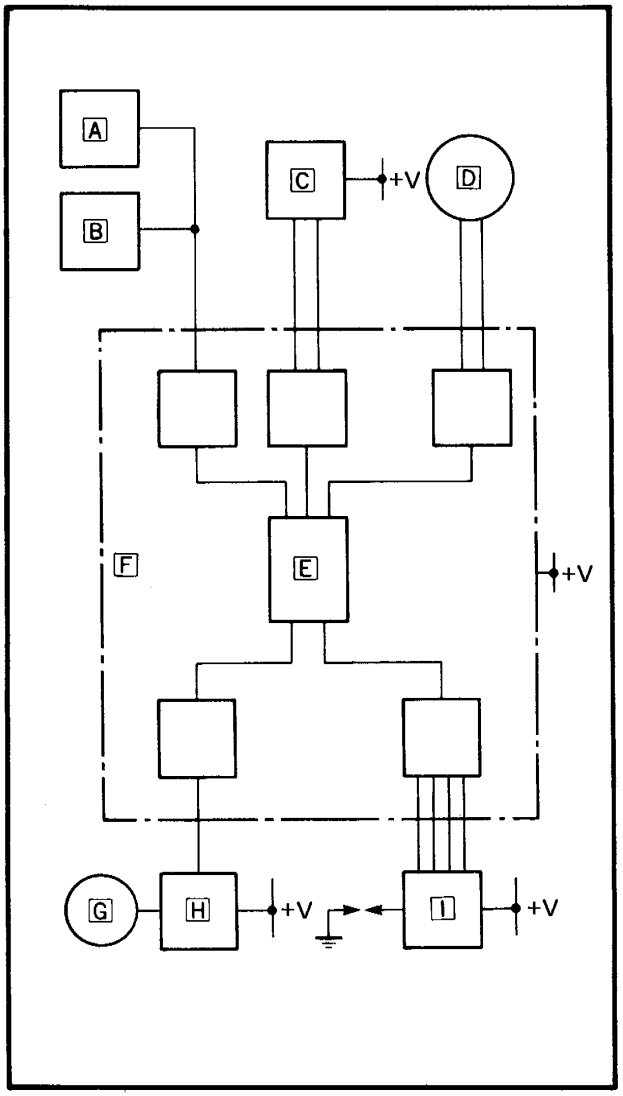
Model	XVZ13DS/DSC
Voltage Regulator:	
Type	Short control
Model/Manufacture	SH545-12/SHINDENGEN
No Load Regulated Voltage	14 ~ 15V
Rectifier:	
Model/Manufacturer	SH545-12/SHINDENGEN
Capacity	26A
Withstand Voltage	200V
Battery:	
Capacity	12V, 20AH
Specific Gravity	1.280
Electric Starter System:	
Type	Constant mesh type
Starter Motor:	
Model/Manufacturer	SM-229C/MITSUBA
Out put	0.6 kW
Bush:	
Overall Length	12.5 mm (0.49 in)
< Limit >	5.5 mm (0.22 in)
Spring Pressure	560 ~ 680 g (19.7 ~ 23.9 oz)
Commutator:	
Outside Diameter	28 mm (1.1 in)
< Wear Limit >	27 mm (1.06 in)
Mica Undercut	0.5 mm (0.020 in)
Starter Relay:	
Model/Manufacturer	A104-128/HITACHI
Amperage Rating	100A
Coil Winding Resistance	3.9 ~ 4.7Ω at 20°C (68°F)
Horn:	
Type/Quantity	Plain type x 2
Model/Manufacturer	CF3-12/NIKKO
Maximum Amperage	3A
Flasher Relay:	
Type	Semi transister type
Model/Manufacturer	FX257N/NIPPONDENSO
Self Cancelling Device	Yes.
Flasher Frequency	75 ~ 95 cycle/min
Wattage	27W x 2 + 3.4W x 2
Self Cancelling Unit:	
Model/Manufacturer	FX257N/NIPPONDENSO
Oil Level Switch:	
Model/Manufacturer	1NL/NIPPONDENSO
Fuel Gauge:	
Model/Manufacturer	26H/NIPPONSEIKI
Sender Unit Resistance: Full	36 ~ 44Ω at 20°C (68°F)
Empty	273 ~ 347Ω at 20°C (68°F)
Sidestand Relay:	
Model/Manufacturer	G2MW-1121T-01D-Y4/TATEISHI
Coil Winding Resistance	90 ~ 110Ω at 20°C (68°F)
Diode	No.

Model	XVZ13DS/DSC
Reserve Lighting Unit:	
Model/Manufacturer	337-81901/KOITO
Starting Circuit Cut-off Relay:	
Model/Manufacturer	FX257N/NIPPONDENSO
Coil Winding Resistance	203 ~ 248Ω at 20°C (68°F)
Diode	No.
Fuel Pump Control Relay:	
Model/Manufacturer	G8D-02Y/OMRON
Electric Fan:	
Model/Manufacturer	26H/NIPPONDENSO
Thermo Switch:	
Model/Manufacturer	47X/NIPPON THERMOSTAT
Thermo-unit:	
Model/Manufacturer	11H/NIPPONSEIKI
Circuit Breaker:	
Type	Fuse
Amperage for Individual Circuit x Quantity:	
MAIN	40A x 1
ACC	10A x 1
HEAD	15A x 1
TAIL	10A x 1
SIGNAL	20A x 1
IGNITION	15A x 1
RESERVE	10A x 1/15A x 1/20A x 1
CLASS	20A x 1
BACK UP	5A x 1
AUDIO CB	5A x 1
FAN	10A x 1
HAZARD	15A x 1
RESERVE	5A x 1/10A x 1/15A x 1

AUDIO SYSTEM AND C.B. RADIO SPECIFICATIONS

Model	XVZ13DS/DSC
AM/FM Radio:	
Tuning Range: AM	530 ~ 1,620 KHz
FM	87.9 ~ 107.9 MHz
Intermediate Frequency: AM	450 KHz
FM	10.7 MHz
Usable Sensitivity: AM	38 dBμV (Maximum)
FM	18 dBμV (Maximum)
Stop Sensitivity: AM	DX: 30 dBμV (Normal)
	LOC: 55 dBμV (Normal)
FM	DX: 15 dBμV (Normal)
	LOC: 45 dBμV (Normal)
Stereo Separation: FM	20 dB (Minimum)
Dimensions (Length x Width x Height):	
Radio Panel	93 x 82 x 30 mm (3.66 x 3.23 x 1.18 in)
Radio Black Box	160 x 50 x 99 mm (6.30 x 1.97 x 3.90 in)
Current Consumption: Switch ON	100 mA (Maximum)
Switch OFF	1 mA (Maximum)
Amplifier:	
Output Power	15W x 2 (SP)/70 mW x 2 (HP)
Auto-Vol. Range	20 dB
Output Impedance: Speaker	4Ω
Headphone	8Ω
Dimensions (Length x Width x Height):	
Panel	73 x 32 x 45 mm (2.87 x 1.26 x 1.77 in)
Black Box	160 x 50 x 99 mm (6.30 x 1.97 x 3.90 in)
Current Consumption: Switch ON	5.5A (Maximum)
Switch OFF	100 mA (Maximum)
Deck:	
Circuit System	4-track. 2-channel, Stereo for reproduction
Tape Speed	4.76 cm/sec.
Tape	Normal and Metal
Dimensions (Length x Width x Height):	
Deck	87 x 142 x 162 mm (3.43 x 5.59 x 6.38 in)
Current Consumption: Switch ON	1A (Maximum)
Switch OFF	5 mA (Maximum)
C.B. Radio:	
Channels	40
Frequency Range	26.965 ~ 27.405 MHz
Frequency Control	Phase Lock Loop (PLL) synthesizer
Frequency Tolerance	± 0.005%
Operating Temperature Range	–30°C ~ +70°C (–22°F ~ +158°F)
Humidity (Maximum)	95%
Power Voltage	13.8V negative ground
Operating Voltage Range	10 ~ 16V
Antenna Impedance	50Ω
Dimensions (Length x Width x Height):	
C.B. Radio	97 x 82 x 174 mm (3.82 x 3.23 x 6.85 in)
Weight	900 g (32 oz)

Model	XVZ13DS/DSC
Transmitter:	
Power Output	4W
Frequency Response	350 ~ 2,500 Hz
Spurious Harmonic Emission	–65 dB
AMC Range 50 ~ 95% MOD	60 dB
Output Protection	5 minutes for all VSWR's
Receiver:	
Sensitivity (S + N/N: 10 dB)	0.7 μV
Image Rejection Ratio (910 KHz)	60 dB
Adjacent Channel Rejection	120 dB
Squelch Sensitivity	Threshold: 0.5 μV Tight: 1,000 μV
Automatic Gain Control (AGC) Figure of Merit	85 dB
Frequency Response	400 ~ 2,500 Hz
THD at 50 kμV Input	3%
Back-up Current	180 μA
Indicators:	TX RX CH9 LO CHANNEL



DIGITAL IGNiTION CONTROL SYSTEM DESCRIPTION

The electronic ignition that sparks the engine is computer controlled and operated by the digital CPU (microprocessor). It has a pre-programed ignition advance curve.

This programed advance curve closely matches the spark timing to the engine's ignition requirements. Only one pickup coil is needed to meet the requirements of the digital ignitor unit.

The digital ignitor also includes the control unit for the electric fuel pump.

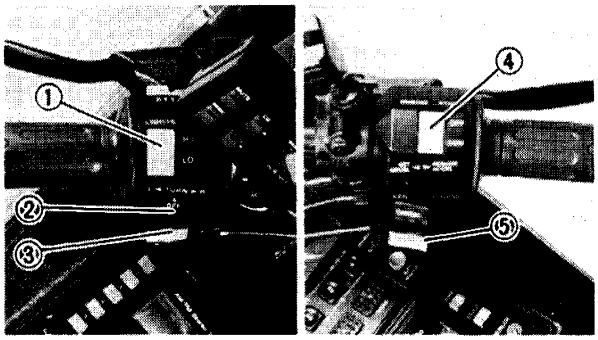
A Sidestand switch
B Emergency stop switch
C Pressure sensor
D Pickup coil
E CPU (Microprocessor)
F Digital ignitor unit
G Fuel pump
H Fuel pump control relay
I Ignition coil

OPERATION

The following operations are digitally-performed by signal from the pickup coil signal:

1. Determing proper ignition timing.
2. Sensing the engine revolution speed.
3. Determing timing for switching on ignition coil (duty control).
4. Increasing ignition coil primary current for starting the engine.
5. Sensing engine stall.
6. Preventing over-revolution of the engine.

1990-1993 Digital TCI Update



SWITCHES TEST

Switches may be checked for continuity with a Pocket Tester (YU-33263) on the "Ohm x 1" position.

① "LIGHTS" (Dimmer) switch
② "TURN" switch
③ "HORN" switch
④ "ENGINE STOP" switch
⑤ "START" switch

Main Switch

Switch Position	Lead Color				
	R	Br	L	R/B	R/L
ON	○	○	○	○	
ACC	○			○	○
OFF					
LOCK					
PARKING	○		○		

"LIGHTS" (Dimmer) Switch

Switch Position	Lead Color		
	Y/R	L/B	G
HI	○	○	
LO		○	○

"TURN" Switch

Switch Position		Lead Color				
		Dg	Br/W	Ch	Y/R	B
R		○	○		○	○
N	R	○	○			
	N					
	L		○	○		
L			○	○	○	○

"HORN" Switch

Switch Position	Lead Color	
	P	B
OFF		
ON	○	○

"ENGINE STOP" Switch

Switch Position	Lead Color	
	R/W	R/W
OFF		
ON	○——	——○

"START" Switch

Switch Position	Color Code			
	R/Y	L/B	L/W	B
OFF	○——	——○		
ON			○——	——○

Clutch Switch

Switch Position	Color Code			
	B/Y	L/Y	B/W	B/W
PUSH			○——	——○
FREE	○——	——○		

Front Brake Switch

Switch Position	Color Code			
	Br	Y	B/W	G/Y
PUSH			○——	——○
FREE	○——	——○		

Rear Brake Switch

Switch Position	Color Code		
	G/Y	Br	Y
FREE	○——	——○	
PULL		○——	——○

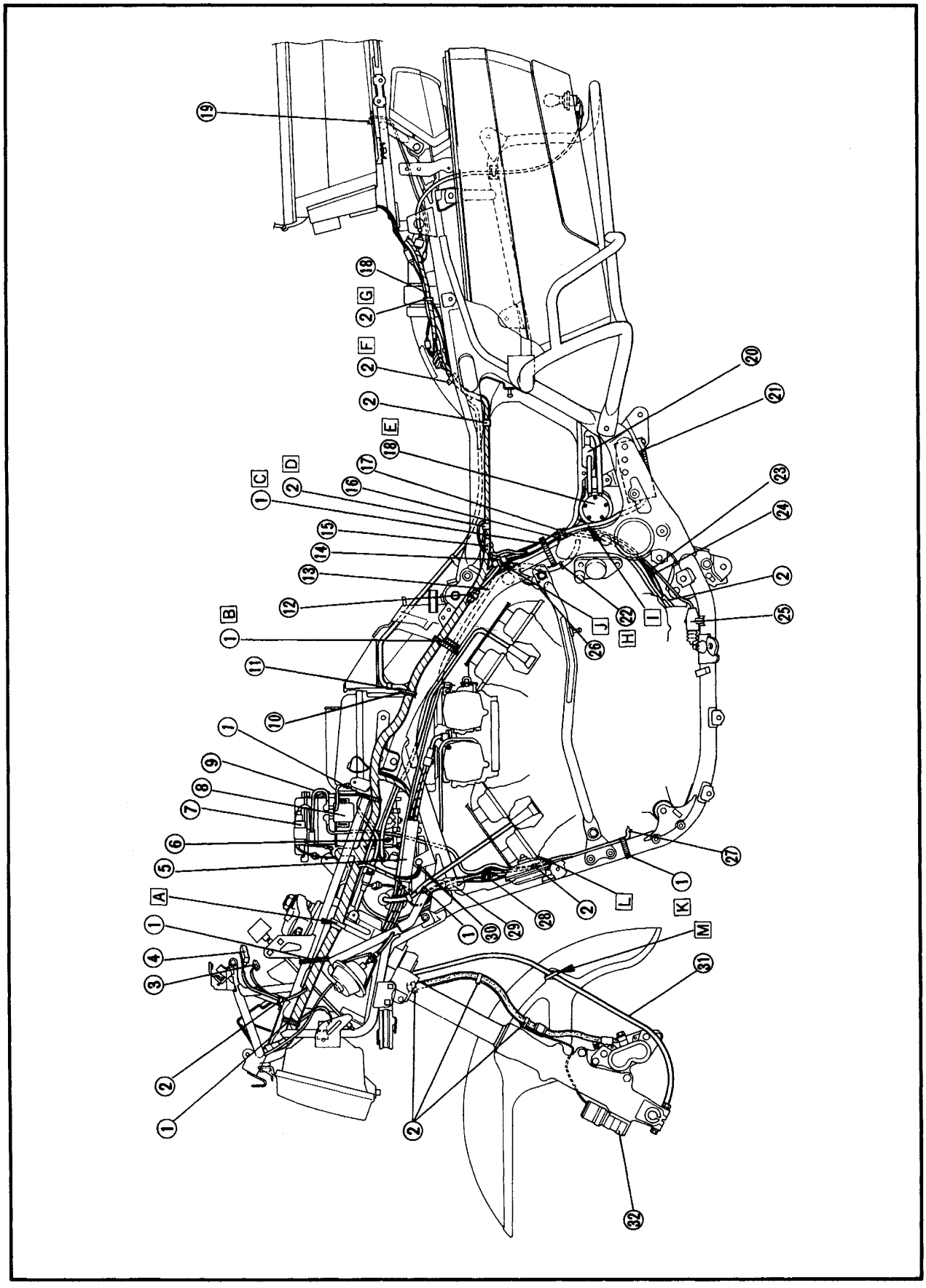
Sidestand Switch

Switch Position	Color Code		
	L/Y	G/L	B
FREE	○——	——○——	——○
PUSH			

Trunk Light Switch

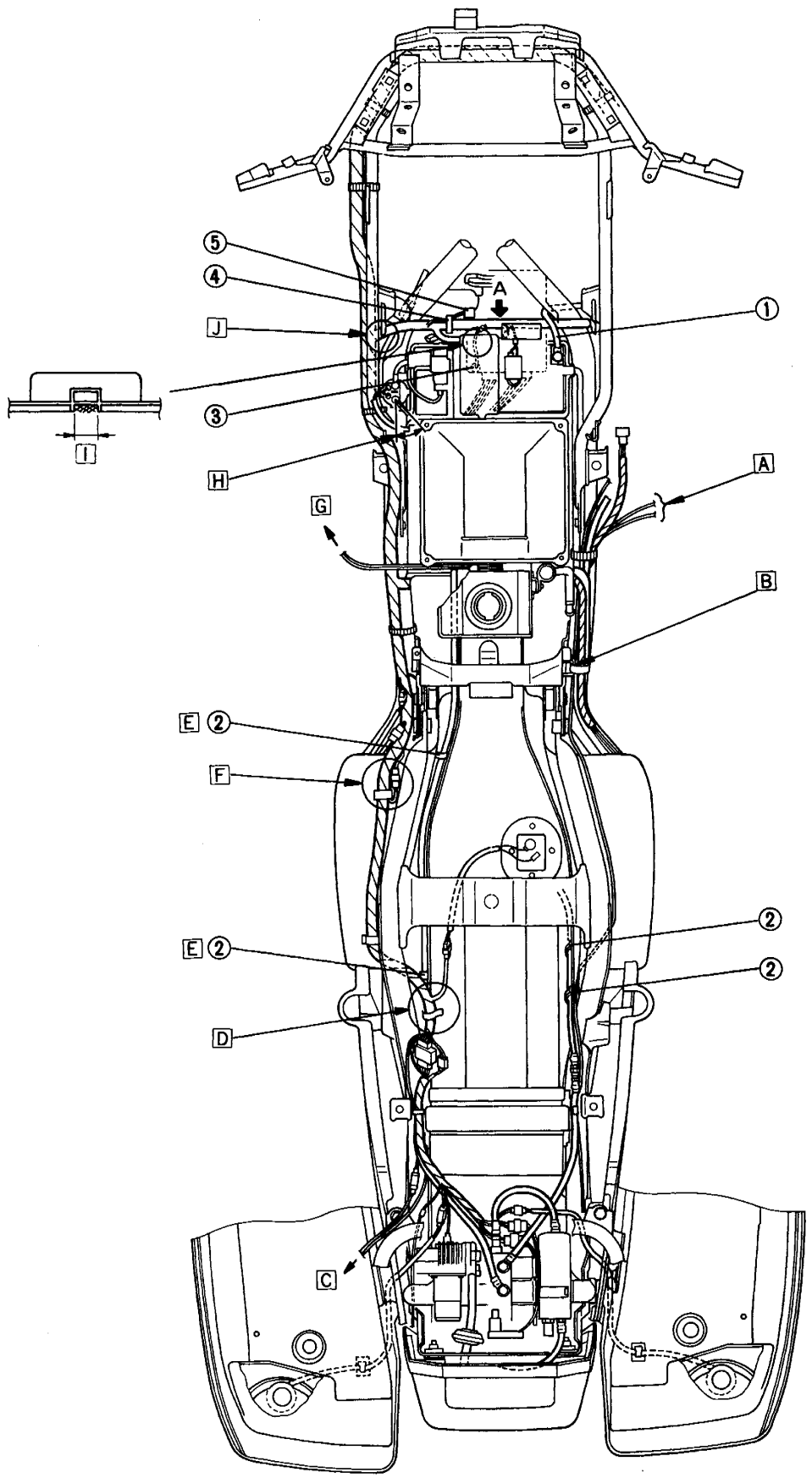
Switch Position	Color Code	
	B/R	B
OFF		
ON	○——	——○

CABLE ROUTING



① Band
② Clamp
③ Speaker lead
④ Front flasher light lead
⑤ Throttle cable housing
⑥ Pressure sensor lead
⑦ Fuse holder
⑧ Starter relay
⑨ Battery positive lead
⑩ C.B. radio cord
⑪ Audio antenna cord
⑫ Pick up coil lead
⑬ Fuel hose
⑭ Rectifier/regulator lead
⑮ A.C. generator lead
⑯ Sidestand switch lead
⑰ Fuel pump lead
⑱ Air hose
⑲ Trunk light lead
⑳ Fuel strainer
㉑ Rectifier with regulator
㉒ Holder
㉓ Shift position switch lead
㉔ Oil level sender lead
㉕ Sidestand switch
㉖ Condensor
㉗ Ground lead
㉘ Fan motor lead
㉙ Noise filter (Fan motor)
㉚ Earth
㉛ Speedometer cable
㉜ EAND unit

[A] Clamp the wire harness at the white tape would around it.
[B] Clamp only the wire harness.
[C] Clamp all leads.
[D] Clamp the A.C. generator lead and wire harness.
[E] Route the fuel pump lead on the upper side of the fuel pump.
[F] Clamp the wire harness and front air hose.
[G] Clamp the sub lead, front air hose and remote control unit cord.
[H] Pass the fuel hose into the holder.
[I] Pass the rectifier cord outside of the fuel pump.
[J] Do not pinch the rectifier/regulator lead coupler.
[K] Do not touch the ground lead to the exhaust pipe.
[L] Pass the horn leads under the horn.
[M] Pass the speedometer cable through the guide.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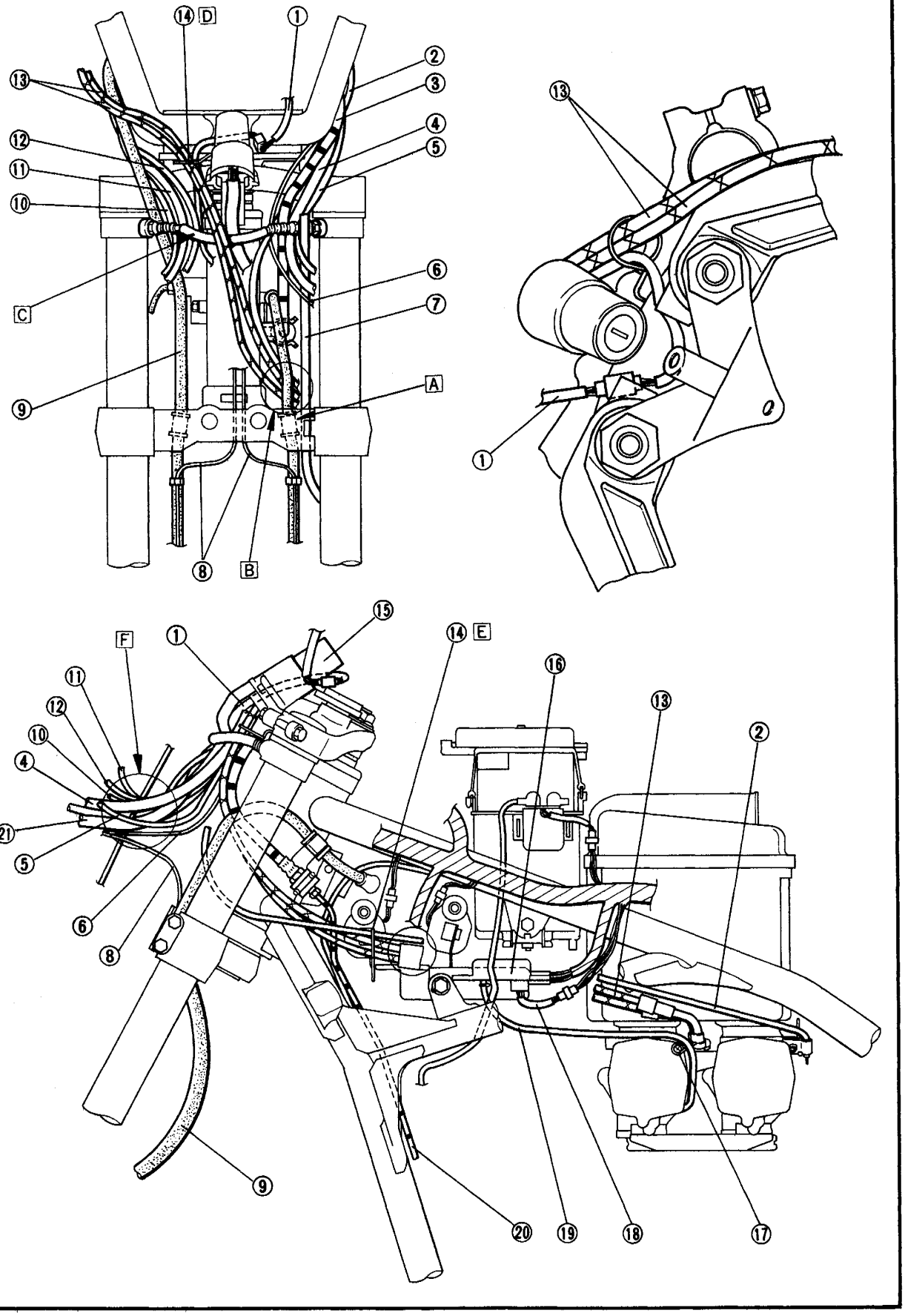
① Battery negative lead
② Clamp
③ Battery fluid level sensor
④ Band
⑤ Diode

[A] To C.B. radio and matching box.
[B] Secure all lead to the guide with band.
[C] To remote control unit.
[D] Do not touch the cords to the fuel tank flange.
[E] Clamp only the air hose.
[F] Clamp the A.C. generator lead coupler inside of the wire harness.
[G] To audio.
[H] Install the positive lead at approx. 30°.
[I] Viewed A:
Pass the lead through the groove so that the lead is not put between the plates.
[J] Pay attention so that the wire harness is not put between the frames.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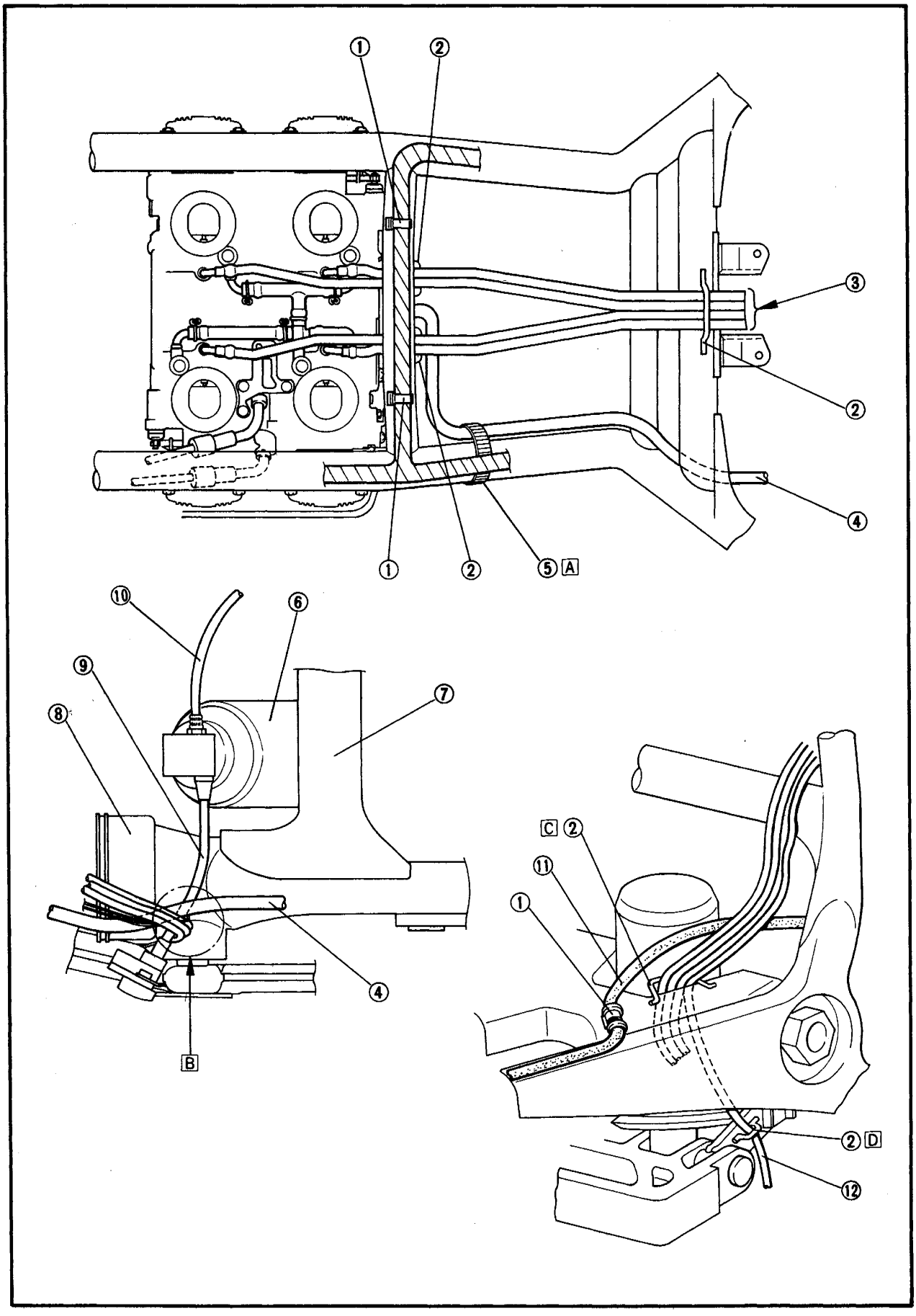
① Pilot light lead
② Choke cable
③ Clutch hose
④ Handlebar switch (Left) lead
⑤ Clutch switch lead
⑥ Remote controller lead (For rider)
⑦ Speedometer cable
⑧ EAND lead
⑨ Brake hose
⑩ Brake fluid level sensor lead
⑪ Handlebar switch (Right) lead
⑫ Front brake switch lead
⑬ Throttle cable
⑭ Cable holder
⑮ Main switch
⑯ Pressure sensor (Ignition)
⑰ Clamp
⑱ Sub lead
⑲ Vacuum hose
⑳ Clutch pipe
㉑ Main switch lead

[A] Clamp the brake hose at the both sides. Route the speedometer cable outside of the left brake hose.
[B] Route the throttle cables and choke cable inside of the brake hose.
[C] Pass all leads inside of the air hose except for the speedometer cable and throttle cables.
[D] Pass the throttle cables and pilot light lead into the cable holder.
[E] Pass the throttle cables and choke cable into the cable holder.
[F] Pass these leads of the main switch, brake fluid level sensor, handlebar switches (Left and right), clutch switch, front brake switch and EAND unit into the hole of the fairing.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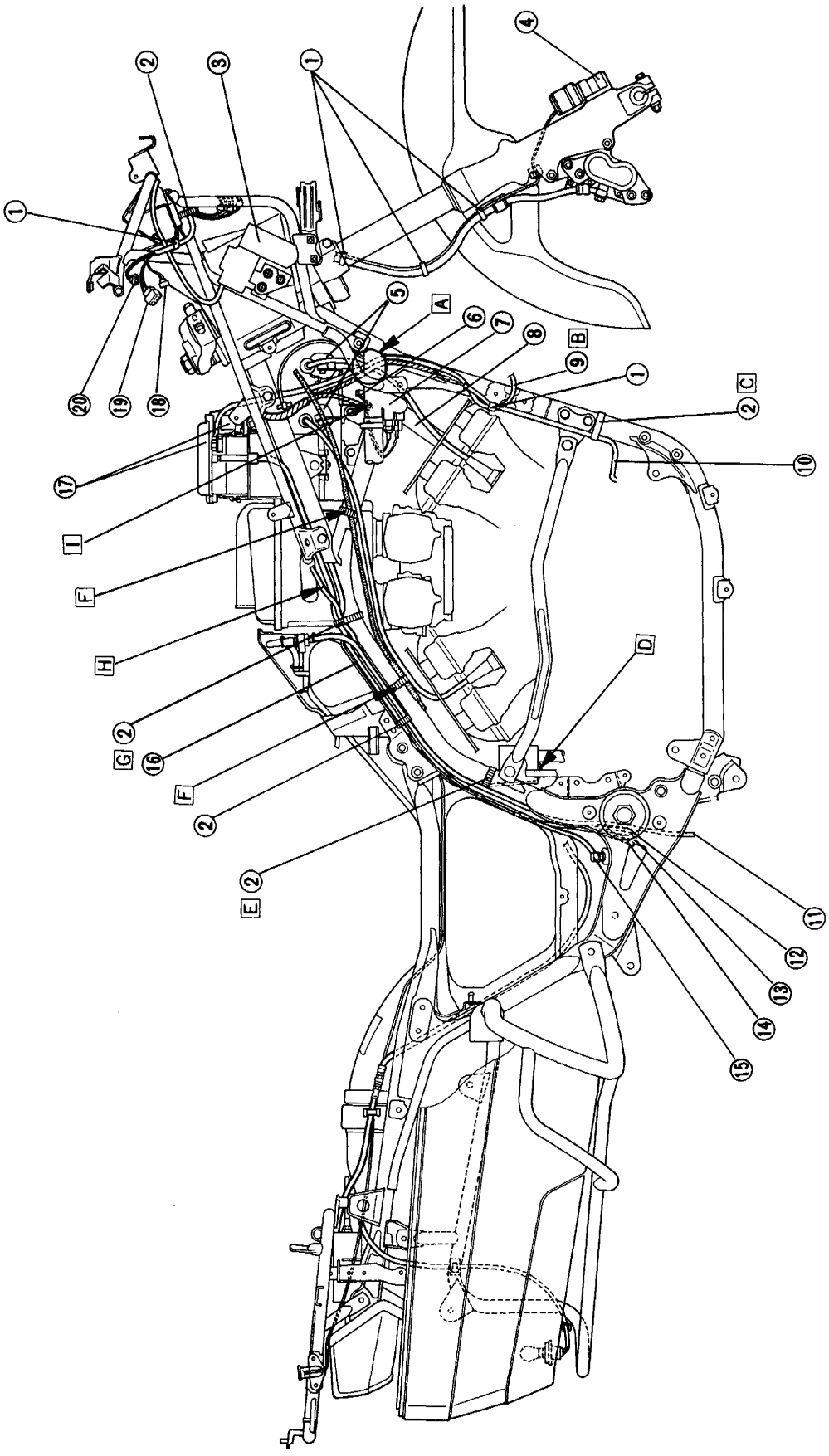
① Clamp
② Holder
③ Air vent pipe
④ Fuel hose
⑤ Band
⑥ Rear shock absorber
⑦ Swingarm
⑧ Rubber boot
⑨ Damper adjusting cable
⑩ Air hose
⑪ Brake hose
⑫ Battery breather hose

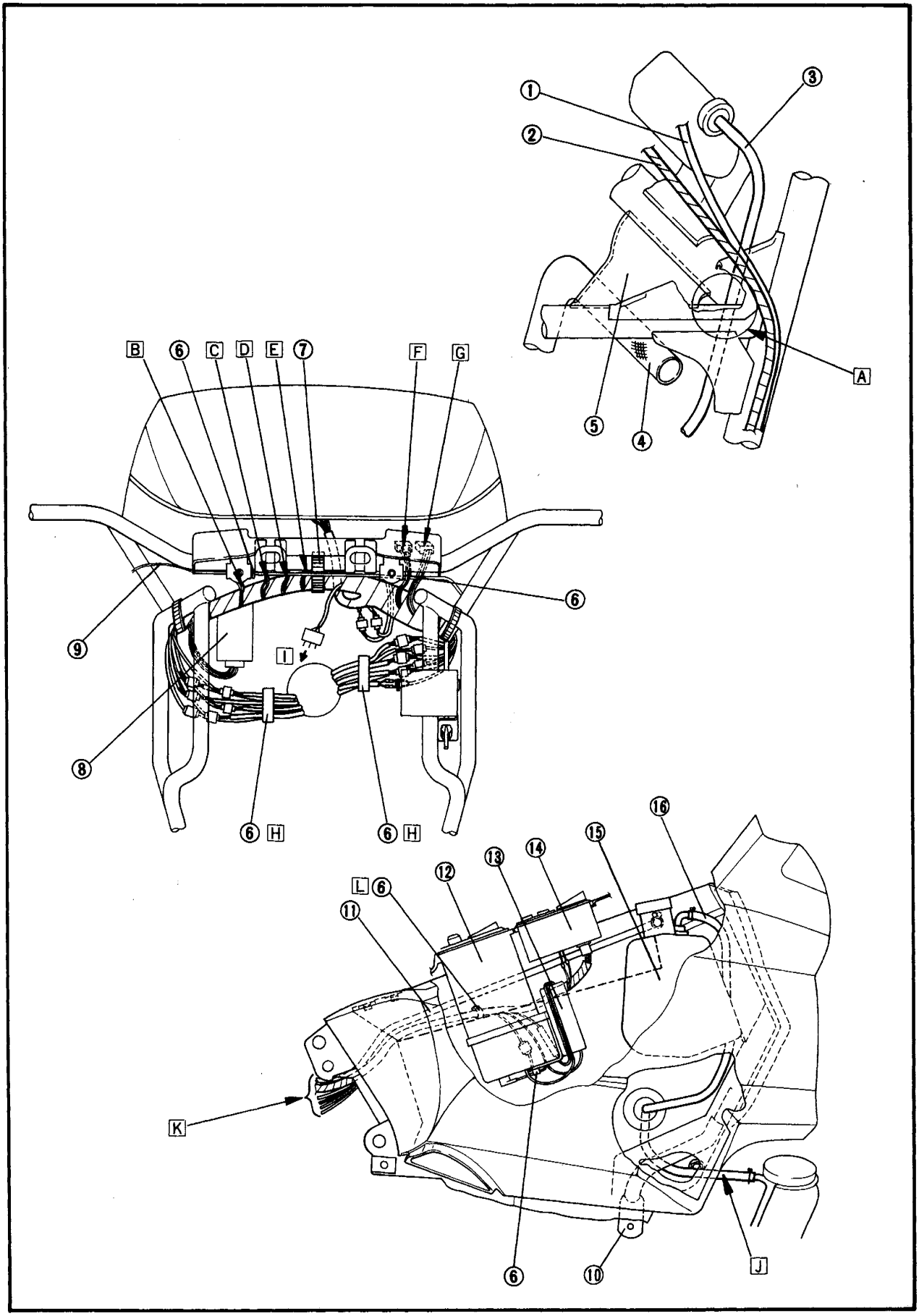
[A] Clamp only the fuel hose.
[B] Pass these leads of the A.C. generator, pick up coil, sidestand switch between the damper adjusting cable and swingarm, outside of the fuel hose.
[C] Pass the breather hoses through the holder.
[D] Pass only the battery breather hose through the holder.

CABLE ROUTING



① Clamp
② Band
③ Vacuum pump (Venture cruise)
④ EAND unit
⑤ Ignition coil
⑥ Earth
⑦ Joint
⑧ Water hose
⑨ Horn lead
⑩ Ground lead
⑪ Battery breather hose
⑫ Fuel tank breather hose
⑬ Filler tube drain hose
⑭ Reservoir tank hose
⑮ Rear brake switch
⑯ Antenna cord
⑰ Fuse box
⑱ Speaker lead
⑲ Hazard switch lead
⑳ Front flasher light lead

[A] Pass the high tension cord, ground lead and horn lead between the frame and joint.
[B] Pass the horn leads under the horn.
[C] Do not touch the ground lead to the exhaust pipe.
[D] Pass the brake fluid level sensor lead inside of the reservoir tank. Do not touch the lead to the exhaust pipe.
[E] Clamp the brake fluid level sensor lead and rear brake switch lead.
[F] Clamp only the brake pipe.
[G] Clamp the battery breather hose, reservoir tank hose, antenna cord and venture cruise cord.
[H] To reservoir tank.
[I] Pass the thermo switch lead and thermo unit lead between the joint and tension pipe.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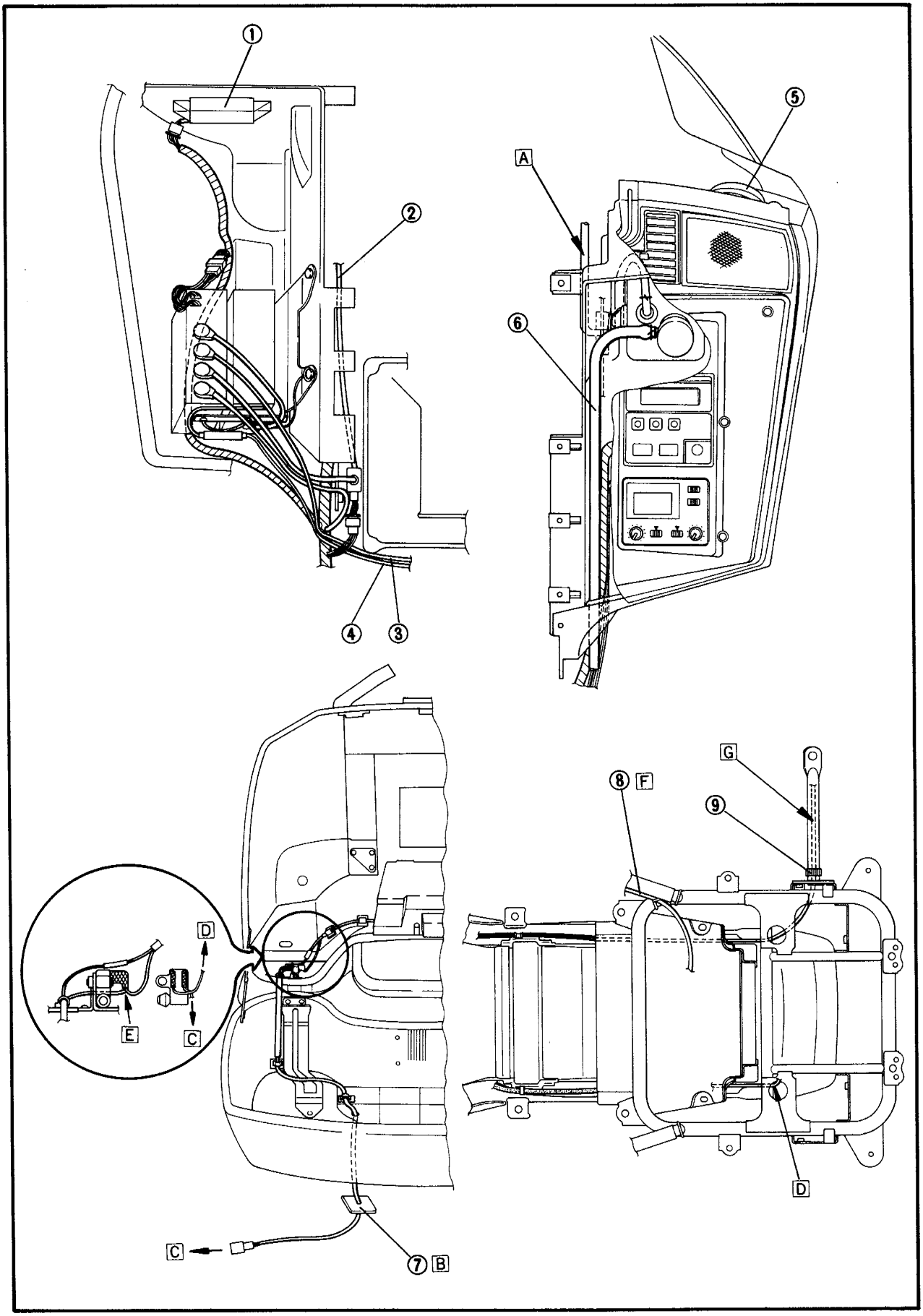
① Horn lead
② Ground lead
③ High tension cord
④ Water hose
⑤ Air baffle plate
⑥ Clamp
⑦ Band
⑧ Cruise control unit
⑨ Vacuum hose (Cruise control)
⑩ Fairing stay
⑪ Reservoir tank hose
⑫ C.B. radio
⑬ Matching box
⑭ CLASS controller unit
⑮ Reservoir tank
⑯ Breather hose

[A] Pass the high tension cord between the frame and air baffle plate.
[B] To EAND relay.
[C] To fuel pump control relay.
[D] To relay assembly.
[E] To reserve lighting unit.
[F] To sidestand relay.
[G] To CLASS relay.
[H] Clamp all leads.
[I] To headlight.
[J] Pass the breather hose inside of the fairing stay.
[K] Pass the reservoir tank hose, wire harness and cords between the frame and inner panel.


①
②
③
④
⑤
⑥
⑦ B
⑧ F
⑨
A
C
D
E
G

① Noise filter (Wire harness)
② Head set cord
③ C.B. radio cord
④ Audio antenna cord
⑤ Speaker
⑥ Reservoir tank hose
⑦ Seat
⑧ Back rest adjusting cable
⑨ Band

[A] To radiator.
[B] Put it between the travel trunk and the frame.
[C] To main wire harness.
[D] To trunk light.
[E] Insert the trunk light lead as shown.
[F] Pass the back rest adjusting cable into the guide.
[G] To antenna.