YAMAHA

TDM850

Service Manual supplement



LIT-11616-

YAMAHA

TDM850E
TDM850EC

SUPPLEMENTARY SERVICE MANUAL

LIT-11616-08-66

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the TDM850E/TDM850EC. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

TDM850D/TDM850DC SERVICE MANUAL: 4DT-28197-20

TDM850E/TDM850EC
SUPPLEMENTARY
SERVICE MANUAL
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1st Edition, July 1992
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NOTICE

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

NOTE:

This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

⚠ — The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING — Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander, or a person inspecting or repairing the motorcycle.

CAUTION: — A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

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

HOW TO USE THIS MANUAL

CONSTRUCTION OF THIS MANUAL

This manual consists of chapters for the main categories of subjects. (See "Illustrated symbols")

1 st title ① : This is a chapter with its symbol on the upper right of each page.

2nd title ② : This title appears on the upper of each page on the left of the chapter symbol. (For the chapter "Periodic inspection and adjustment" the 3rd title appears.)

3rd title ③ : This is a final title.

MANUAL FORMAT

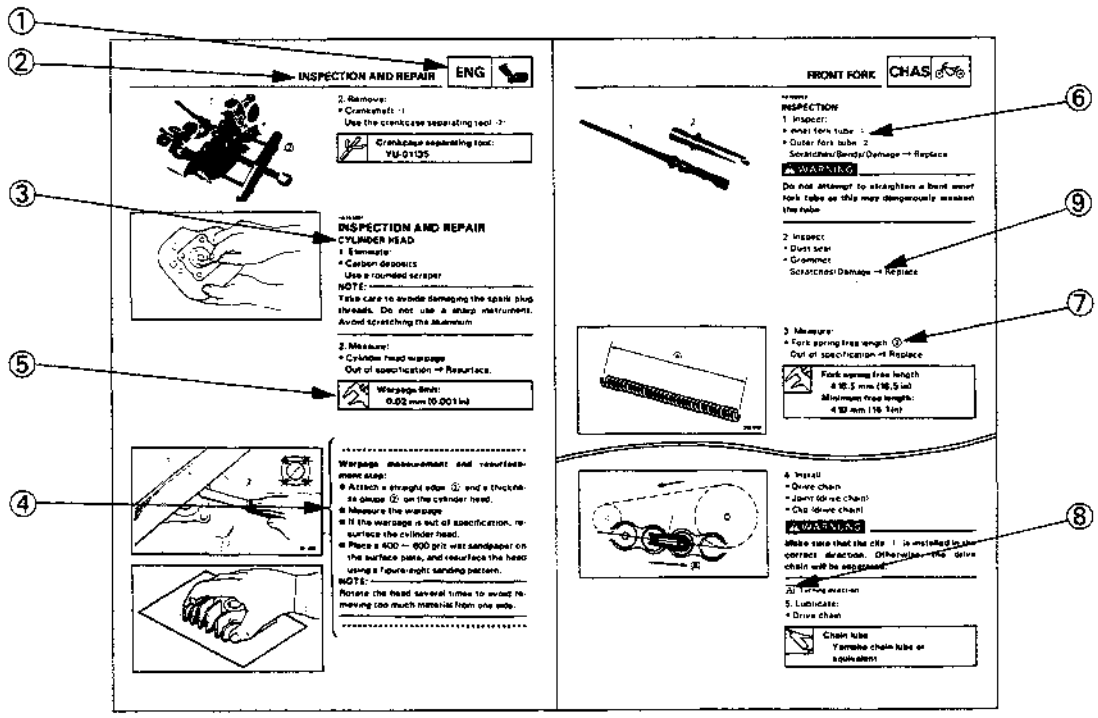
All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspections. A set of particularly important procedure ④ is placed between a line of asterisks " * " with each procedure preceded by " • ".

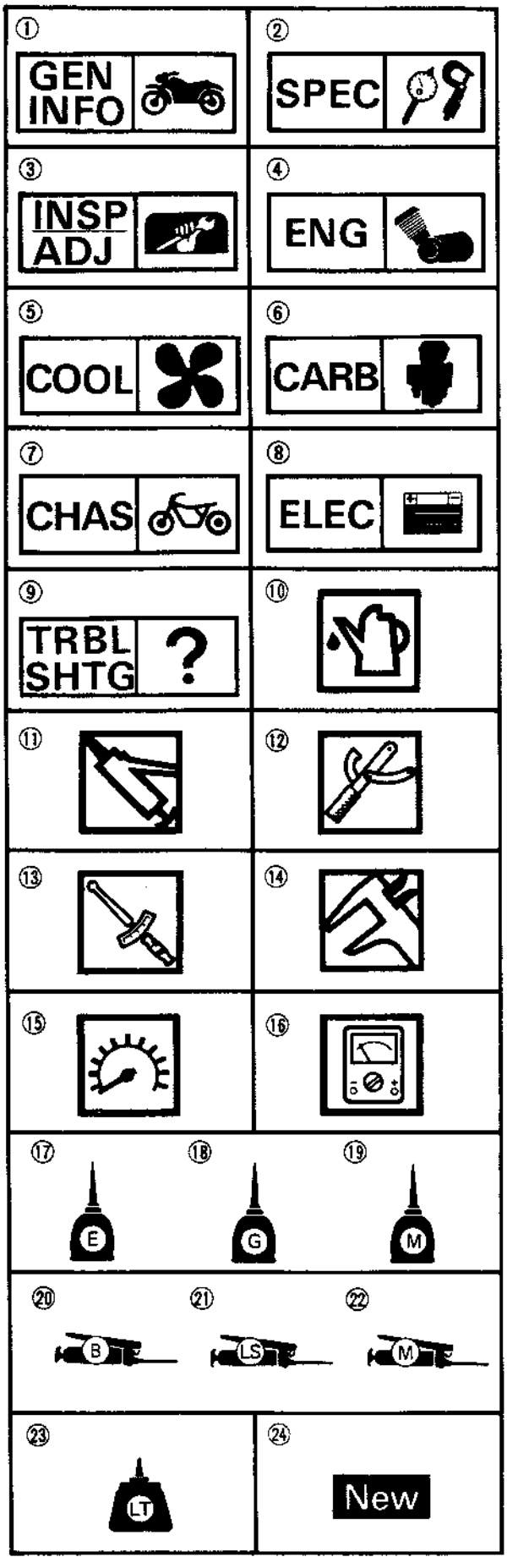
IMPORTANT FEATURES

- Data and a special tool are framed in a box preceded by a relevant symbol ⑤ .
- An encircled numeral ⑥ indicates a part name, and an encircled alphabetical letter data or an alignment mark ⑦ , the others being indicated by an alphabetical letter in a box ⑧ .
- A condition of a faulty component will precede an arrow symbol and the course of action required the symbol ⑨ .

EXPLODED DIAGRAM

Each chapter provides exploded diagrams before each disassembly section for ease in identifying correct disassembly and assembly procedures.





ILLUSTRATED SYMBOLS (Refer to the illustration)

Illustrated symbols ① to ⑨ are designed as thumb tabs to indicate the chapter's number and content.

① General information
② Specifications
③ Periodic inspection and adjustment
④ Engine
⑤ Cooling system
⑥ Carburetion
⑦ Chassis
⑧ Electrical
⑨ Troubleshooting

Illustrated symbols ⑩ to ⑯ are used to identify the specifications appearing in the text.

⑩ Filling fluid
⑪ Lubricant
⑫ Special tool
⑬ Tightening
⑭ Wear limit, clearance
⑮ Engine speed
⑯ Ω, V, A

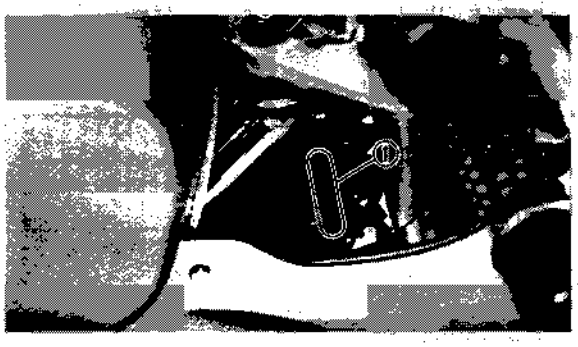
Illustrated symbols ⑰ to ㉔ in the exploded diagram indicate grade of lubricant and location of lubrication point.

⑰ Apply engine oil
⑱ Apply gear oil
⑲ Apply molybdenum disufide oil
⑳ Apply wheel bearing grease
㉑ Apply lightweight lithium-soap base grease
㉒ Apply molybdenum disulfide grease
㉓ Apply locking agent (LOCTITE®)
㉔ Use new one

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GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

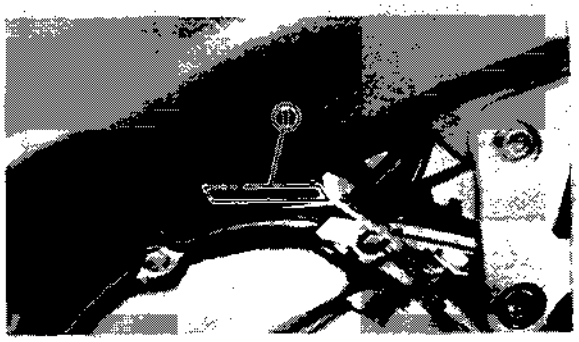
VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the right side of steering head.

Starting serial number:
JYA4DTE0 * PA006101
(USA–Except for California)
JYA4DTC0 * PA008101
(USA–For California)

NOTE:

The vehicle identification number is used to identify your motorcycle and may be used to register your motorcycle with the licensing authority in your state.



ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the right side the engine.

Starting serial number:
TDM850E 4DT-006101
(USA–Except for California)
TDM850EC ..4DT-008101
(USA–For California)

NOTE:

- The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.
- Designs and specifications are subject to change without notice.

SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	TDM850E/EC	
Model code number:	4DT4 (Except for California) 4DT5 (For California)	
Vehicle identification number:	JYA4DTE0 * PA006101 (Except for California) JYA4DTC0 * PA008101 (For California)	
Engine starting number:	4DT-006101 (Except for California) 4DT-008101 (For California)	
Tire:	Front	Rear
Type	Tubeless	Tubeless
Size	110/80-18 58H	150/70-17 69H
Manufacturer/(Type)	DUNLOP (K505F)	DUNLOP (K505)
<Wear limit>	<0.8 mm (0.03 in)>	<0.8 mm (0.03 in)>
Tire pressure (Cold tire):		
Maximum load*	205 kg (452 lb)	
Cold tire pressure	Front	Rear
Up to 90 kg (198 lb) load*	200 kPa (2.00 kg/cm², 28 psi)	225 kPa (2.25 kg/cm², 33 psi)
90 kg (198 lb) ~ Maximum load*	200 kPa (2.00 kg/cm², 28 psi)	250 kPa (2.5 kg/cm², 36 psi)
High speed riding	200 kPa (2.00 kg/cm², 28 psi)	250 kPa (2.5 kg/cm², 36 psi)
*Load is total weight of cargo, rider, passenger, and accessories.		

MAINTENANCE SPECIFICATIONS

ENGINE

Model			TDM850E/EC	
Carburetor:			4DT4	4DT5
I.D. mark			4DT 00	4DT 10
Main jet		(M.J.)	#140	←
Main air jet		(M.A.J.)	#50	←
Jet needle		(J.N.)	5EL79	←
Needle jet		(N.J.)	Y-4	←
Throttle valve size		(Th. V.)	#130	←
Pilot jet		(P.J.)	#37.5	←
Pilot air jet		(P.A.J.1)	#75	←
		(P.A.J.2)	1.4	←
Bypass	1	(B.P.1)	ø0.8	←
	2	(B.P.2)	ø0.9	←
	3	(B.P.3)	ø0.8	←
Pilot screw		(P.S.)	Preset	←
Valve seat		(V.S.)	ø1.7	←
Starter jet	1	(G.S.1)	#72.5	←
	2	(G.S.2)	ø0.8	←
Pilot outlet		(P.O.)	ø0.9	←
Fuel level			7.4 ~ 8.4 mm (0.29 ~ 0.33 in)	←
			Above from the float chamber line	←
Engine idling speed			1,050 ~ 1,150 r/min	←
Vacuum pressure at idling speed			32.59 ~ 35.25 kPa (245 ~ 265 mmHg, 9.65 ~ 10.63 in Hg)	←

CHASSIS

Model		TDM850E/EC
Front suspension:		
Front fork travel		160 mm (6.30 in)
Front fork spring free length		428 mm (16.9 in)
<Limit>		<406 mm (16.0 in)>
Spring rate	K1	5.5 N/mm (0.55 kg/mm, 30.8 lb/in)
	K2	20 N/mm (2.0 kg/mm, 112 lb/in)
Stroke	K1	0 ~ 100 mm (0 ~ 3.94 in)
	K2	100 ~ 160 mm (3.94 ~ 6.30 in)
Optional spring		No
Oil capacity		395 cm³ (13.9 Imp oz, 13.4 US oz)
Oil level		163.8 mm (6.45 in) From top of inner tube fully compressed without spring
Oil grade		Suspension oil 01 or equivalent

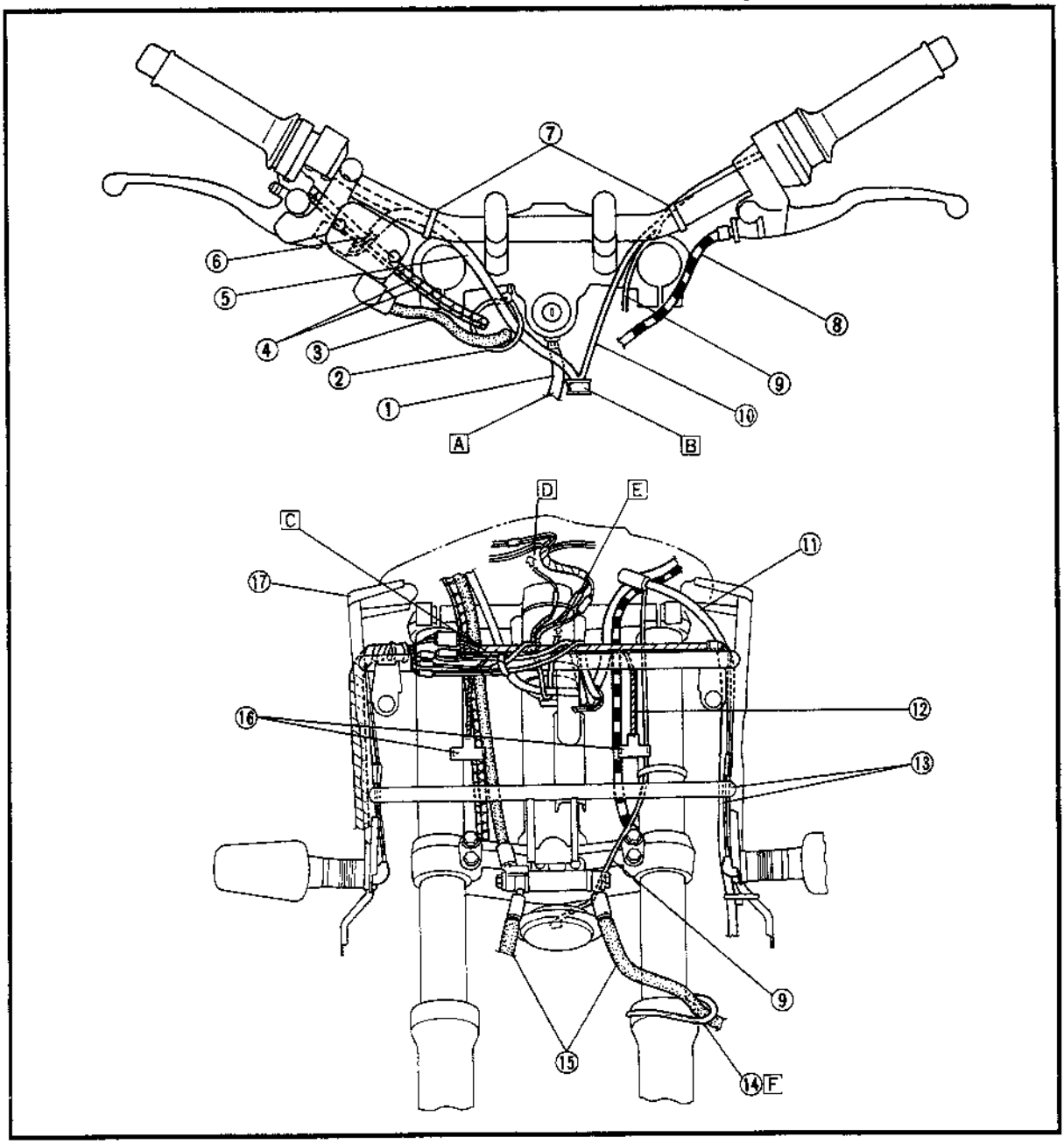
ELECTRICAL

Model	TDM850E/EC
Voltage:	12V
Ignition system:	
Ignition timing (B.T.D.C.)	10° at 1,200 r/min
Advanced timing (B.T.D.C.)	42° at 5,000 r/min
Advancer type	Electrical type
T.C.I.:	
Pickup coil resistance	184 ~ 276Ω at 20°C (68°F)
(Color)	(Blue/Yellow–Green/White)
T.C.I. Unit/Manufacturer	TNDF14/NIPPONDENSO
Rectifier/Regulator:	
Model/Manufacturer	SH650/SINDENGEN
Type	Semi conductor–Short circuit type
Voltage regulator	
No load regulated voltage	14.3 ~ 15.3V
Rectifier	
Capacity	18A
Withstand voltage	200V

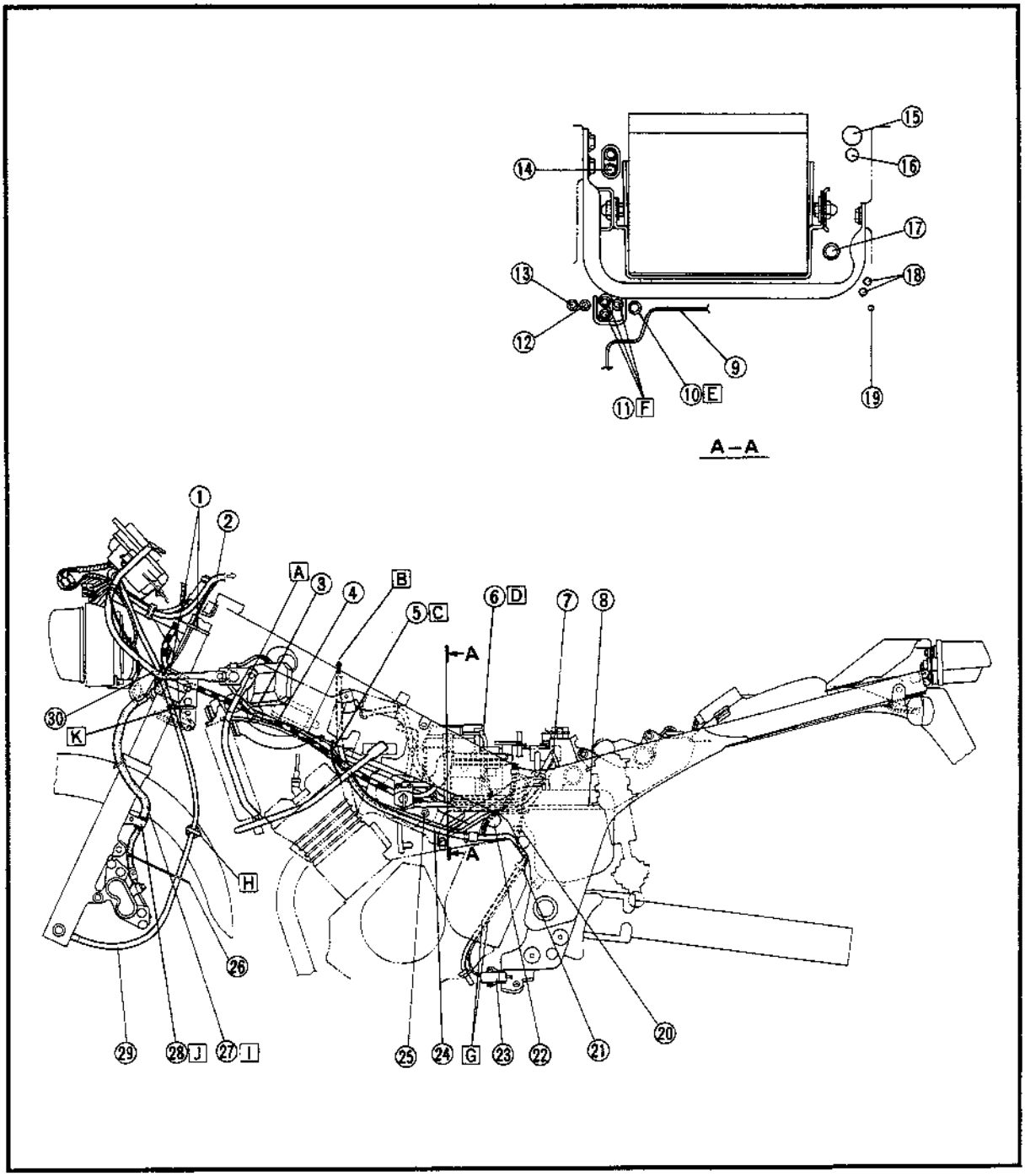
CABLE ROUTING

① Main switch lead
② Cable guide
③ Brake hose
④ Throttle cable
⑤ Handlebar switch lead (right)
⑥ Front brake switch lead
⑦ Band
⑧ Clutch cable
⑨ Horn lead
⑩ Handlebar switch lead (left)
⑪ Speedometer cable
⑫ Headlight lead
⑬ Front flasher light lead (left)
⑭ Cable guide
⑮ Brake hose
⑯ Headlight coupler
⑰ Cowling stay

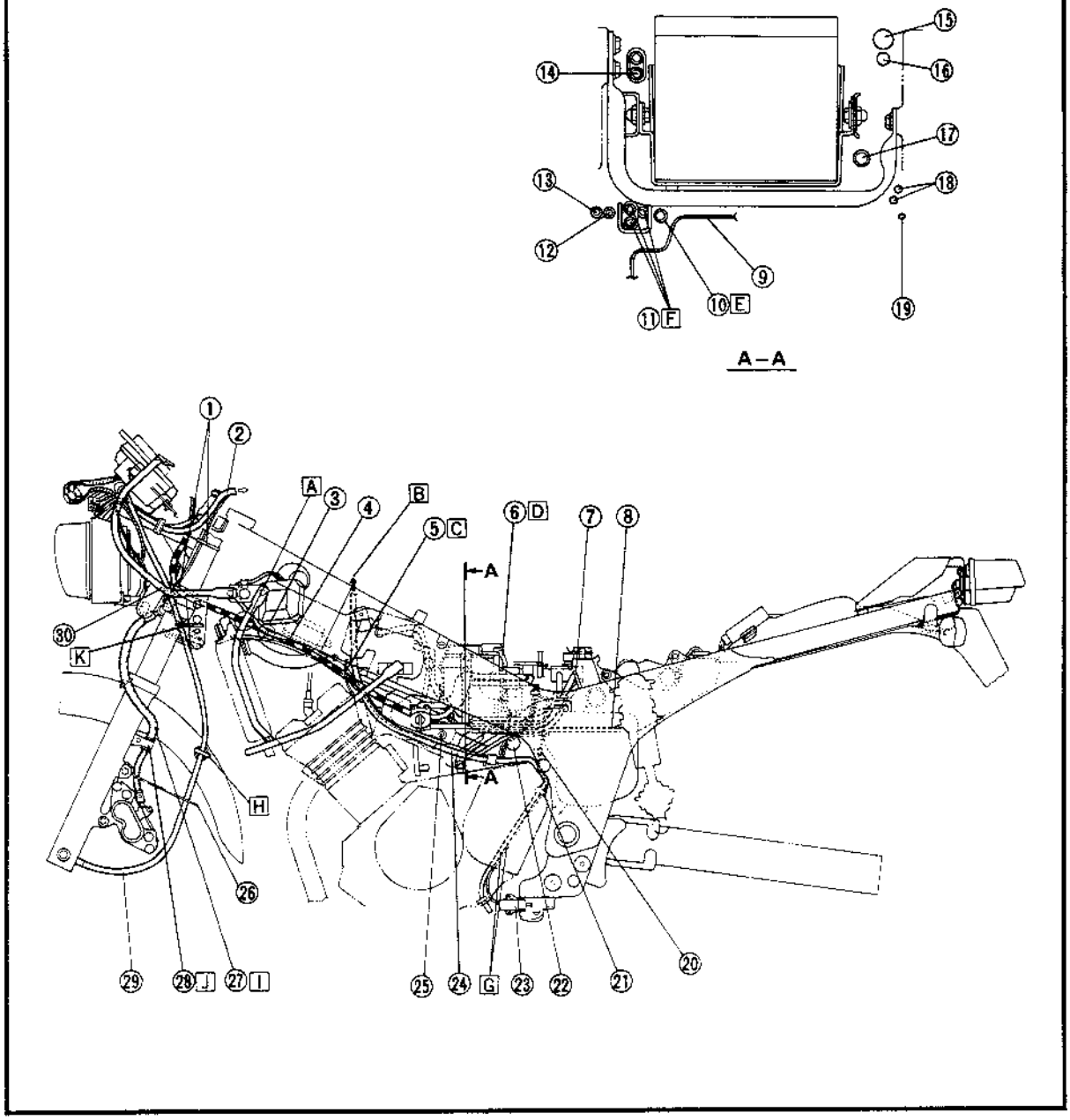
[A] Pass the main switch lead through the right side of the steering head pipe. Do not clamp the main switch lead.
[B] Clamp the left and right handlebar switch leads at the points marked with white tape.
[C] Do not clamp the cowling stay and headlight lead.
[D] To the indicator light
[E] To the main switch
[F] Pass the brake hose through the cable guide.



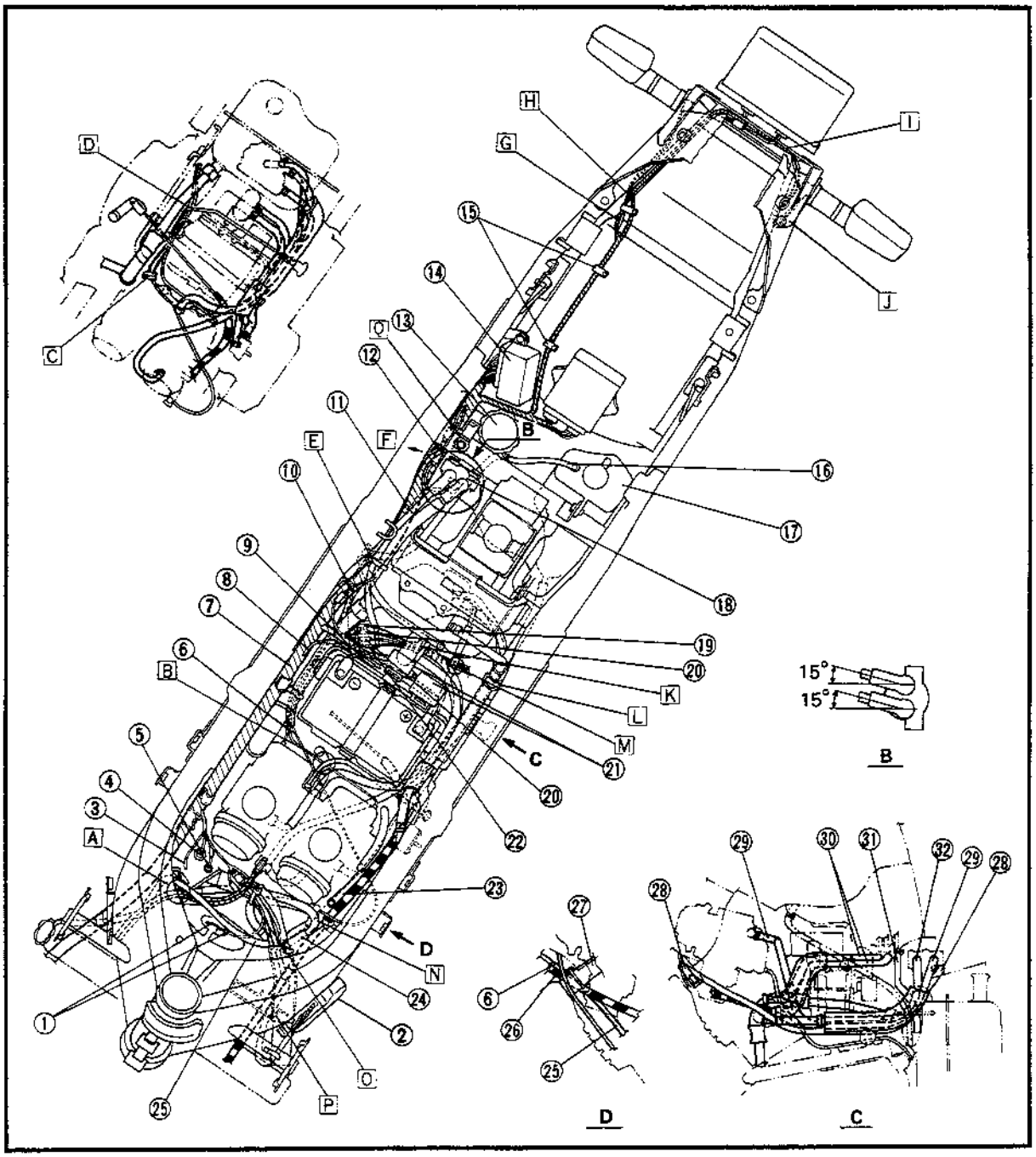
① Clamp
② Handlebar switch lead (left)
③ Cable guide
④ Clutch cable
⑤ Starter cable
⑥ Battery positive lead
⑦ Lace
⑧ Reservoir tank hose
⑨ Cover 2
⑩ Oil tank overflow pipe
⑪ Hose (from fuel pump)
⑫ Reservoir tank hose
⑬ Air filter drain hose
⑭ Hose (from fuel cock)
⑮ Wireharness
⑯ Carburetor vacuum hose
⑰ Oil pipe
⑱ Carburetor overflow pipe
⑲ Starter cable
⑳ Clamp (frame)
㉑ Clamp (engine)
㉒ Starter lever
㉓ Sidestand switch
㉔ Air cleaner breather hose
㉕ Throttle stop screw
㉖ Cable holder
㉗ Brake hose
㉘ Brake hose holder
㉙ Speedometer cable
㉚ Cowling stay guide



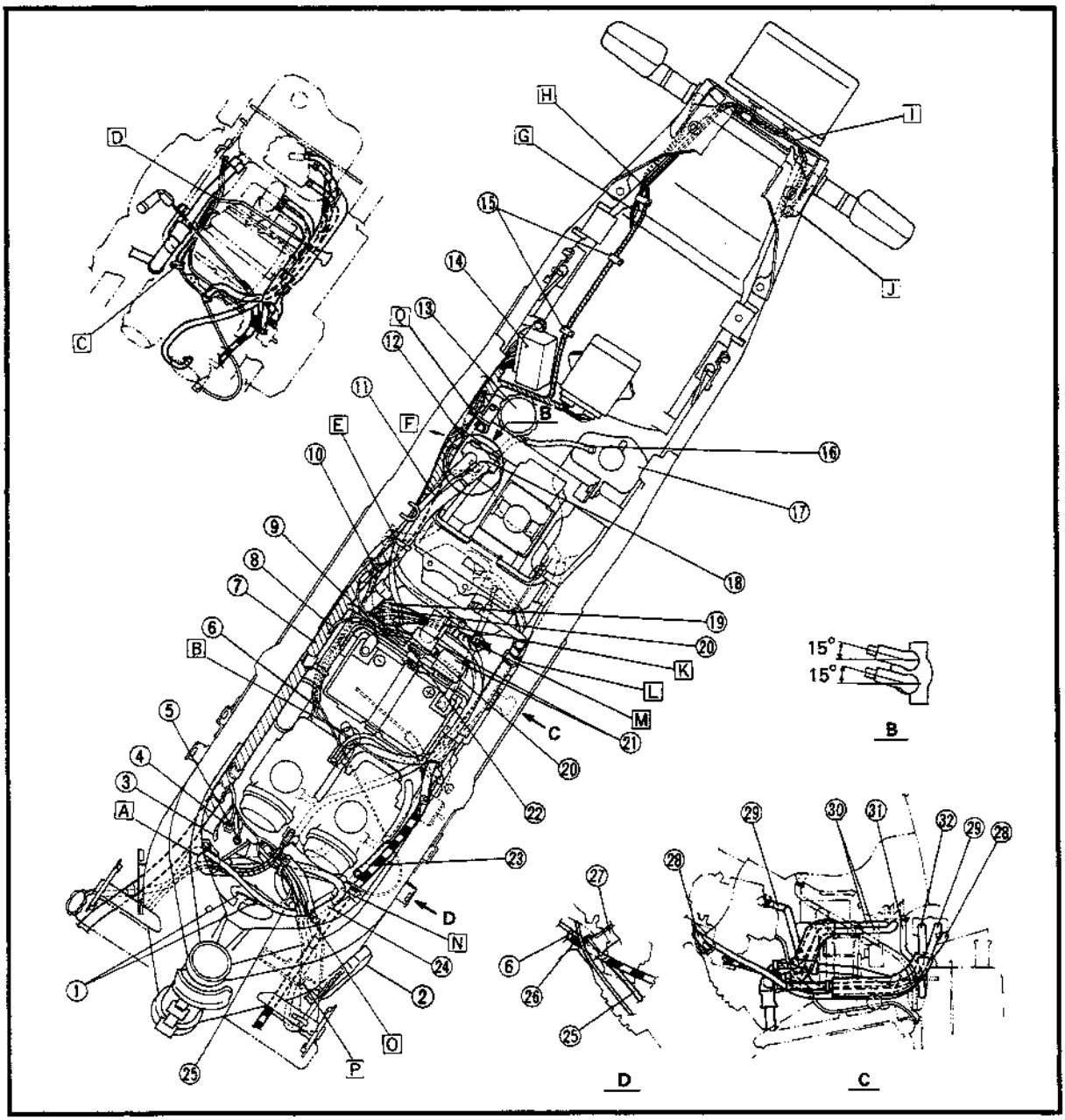
[A] Pass the clutch cable over the cowl stay cross pipe.
[B] To air filter case
[C] Pass the starter cable in front of the engine bracket and under all hoses.
[D] Pass the battery positive lead under the relay assemblies to the main wireharness.
[E] Pass the oil tank overflow pipe between the stay battery guide and the cover 2.
[F] Pass the vacuum hose through the inside of the fuel hose.
[G] Pass the sidestand lead and air filter case drain hose through the inside of the engine cover.
[H] Pass the speedometer cable through the guide.
[I] Pass the brake hose to the outside of the front fork.
[J] Pass the brake hose through the brake hose holder.
[K] Pass the speedometer cable through the guide.



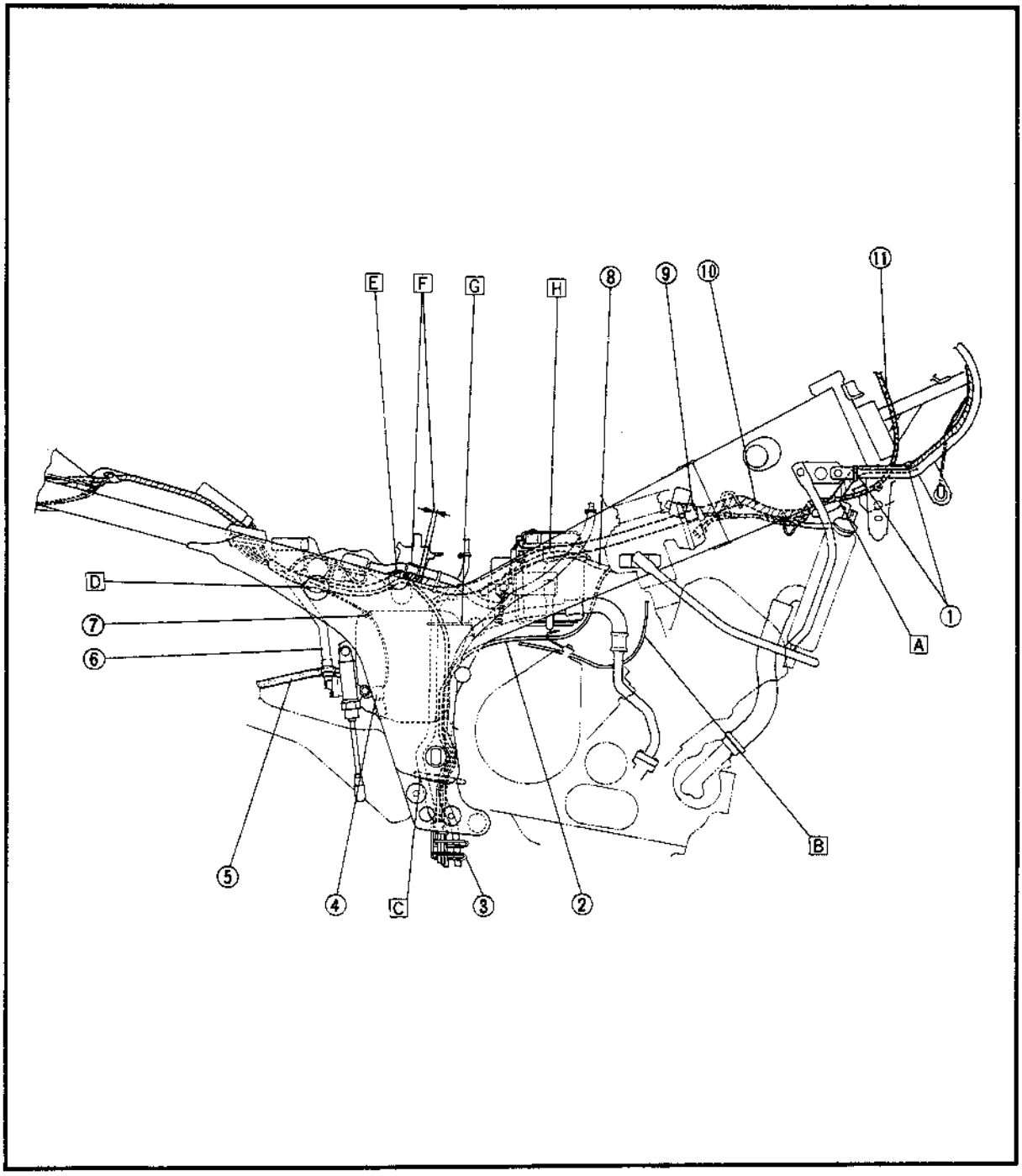
① Fan motor lead
② Rectifier/Regulator
③ Ground lead
④ Thermo switch
⑤ Thermo unit
⑥ Starter cable
⑦ Wireharness
⑧ Ground lead
⑨ Battery negative lead
⑩ Fuel tank breather hose
⑪ Starter relay lead
⑫ Rear brake switch lead
⑬ Rear brake reservoir tank
⑭ Fuse assembly
⑮ Clamp
⑯ Reservoir tank overflow hose
⑰ Reservoir tank
⑱ Starter relay
⑲ Sidestand switch connector
⑳ Pick-up lead connector
㉑ Relay assembly
㉒ Neutral switch lead connector
㉓ Air filter case breather hose
㉔ Ignition coil
㉕ Reservoir tank hose
㉖ Clutch cable
㉗ Breather hose
㉘ Vacuum hose (carburetor joint-fuel pump)
㉙ Fuel hose (carburetor-fuel pump)
㉚ Fuel hose (to fuel cock)
㉛ Fuel tank breather hose
㉜ Fuel hose (from fuel cock)



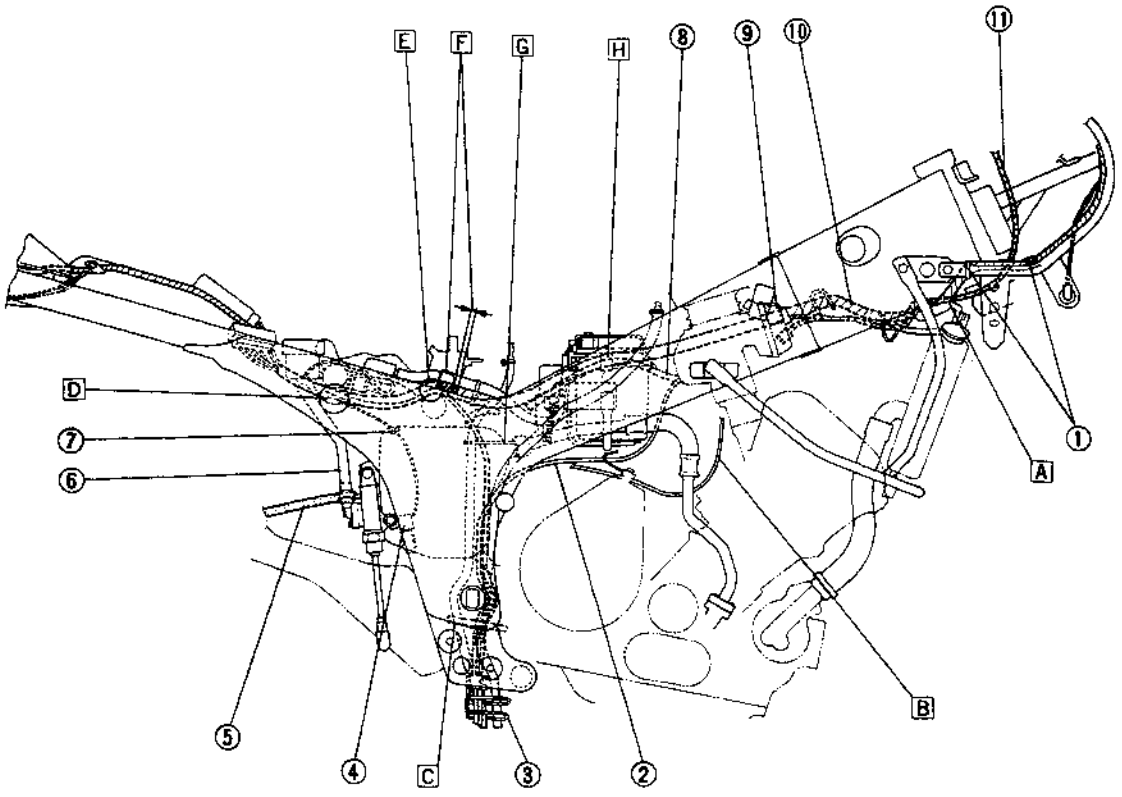
[A] Pass the reservoir tank hose and throttle cable through the frame guide.
[B] Pass the carburetor overflow hose under the throttle stop cable.
[C] Clamp the starter cable.
[D] Pass the starter cable outside the carburetor overflow hose clamp.
[E] Clamp the wireharness and starter relay leads.
[F] To rear brake switch
[G] To rear flasher light
[H] To taillight
[I] For rear flasher light (left)
[J] Pass the rear flasher light lead under the seat rail and through to the rear fender hole.
[K] Clamp the neutral switch lead, AC magneto lead, pick-up lead and sidestand switch lead.
[L] Clamp the fuel hose and reservoir tank hose.
[M] Pass the oil tank overflow pipe over the A.C. generator lead. Do not pinch the oil tank overflow pipe.
[N] Pass the high tension cord to the rear of the radiator hose.
[O] Clamp the radiator hose, high tension cord (left and right), ignition coil lead and fan motor lead.
[P] Pass the clutch cable and rectifier/regulator leads through the frame clamp.
[Q] Pass the starter relay lead through the clamp.



① Clamp
② Carburetor overflow hose
③ Cable holder
④ Rear brake switch
⑤ Brake hose
⑥ Reservoir hose
⑦ Clamp
⑧ Carburetor vacuum hose
⑨ Clamp
⑩ Wireharness
⑪ Throttle cable



[A] Pass the throttle cable over the stay.
[B] Pass the starter cable under the clutch cable.
[C] Pass the reservoir tank overflow hose, fuel tank breather hose and carburetor overflow hose through the guide, then pass the fuel tank breather hose to the rear.
[D] Pass the reservoir tank overflow hose, rear brake switch lead and starter relay lead under the frame cross pipe.
[E] Pass the reservoir tank overflow hose over the frame cross pipe.
[F] Secure the wireharness and starter switch leads with the guide.
Align the wireharness white tape with the guide. (0 mm (0 in))
[G] Pass the reservoir tank overflow hose and fuel tank breather hose through the guide.
[H] Clamp the wireharness and carburetor vacuum hose.



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