



YAMAHA

FZR1000 '89

3GM-SE1

**SERVICE
INFORMATION**



FOREWORD

This Service Information has been prepared to introduce new service and data for the FZR1000 ('89). For complete service information procedures it is necessary to use this publication together with the following microfiche service manual.

FZR1000 '89 SERVICE MANUAL: 3GM-ME1
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HANDLING OF ASBESTOS PARTS

WARNING:

CERTAIN COMPONENTS USED IN THE CONSTRUCTION OF THIS MACHINE CONTAIN ASBESTOS.

ASBESTOS MAY BE FOUND IN THE FOLLOWING:

BRAKE SHOES, BRAKE PADS, GASKETS, CLUTCH PLATES AND HEAT INSULATORS.

BREATHING ASBESTOS DUST IS HAZARDOUS TO HEALTH.

PLEASE TAKE CARE WHEN WORKING WITH OR SERVICING THE PARTS CONTAINING ASBESTOS.

(1) ALWAYS WORK OUT OF DOORS IN A WELL VENTILATED PLACE.

(2) DO NOT DRILL, FILE OR CUT THE COMPONENT UNLESS ESSENTIAL AND THEN USE ONLY LOW SPEED TOOLS EQUIPPED, IF POSSIBLE, WITH DUST EXTRACTORS.

IF HIGH SPEED TOOLS ARE USED THEY MUST BE EQUIPPED WITH DUST EXTRACTION FACILITY.

(3) WHEN POSSIBLE DAMPEN BEFORE CUTTING TO REDUCE POSSIBILITY OF DUST.

(4) DAMPEN DUST AND PLACE IT IN A PROPERLY SEALED RECEPTACLE AND DISPOSE OF IT SAFELY.

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 motorcycles have a basic understanding of the mechanical concepts and procedures inherent in motorcycle repair technology. Without such knowledge, attempted repairs or service to this model may render it unfit to use and/or unsafe.

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.

TECHNICAL PUBLICATIONS
SERVICE DIVISION
MOTORCYCLE GROUP
YAMAHA MOTOR CO., LTD.

HOW TO USE THIS MANUAL

PARTICULARLY IMPORTANT INFORMATION

This material is distinguished by the following notation.

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

⚠ CAUTION:

A CAUTION indicates special procedures that must be followed to avoid damage to the motorcycle.

⚠ WARNING:

A WARNING indicates special procedures that must be followed to avoid injury to a motorcycle operator or person inspecting or repairing the motorcycle.

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 inspection operations.

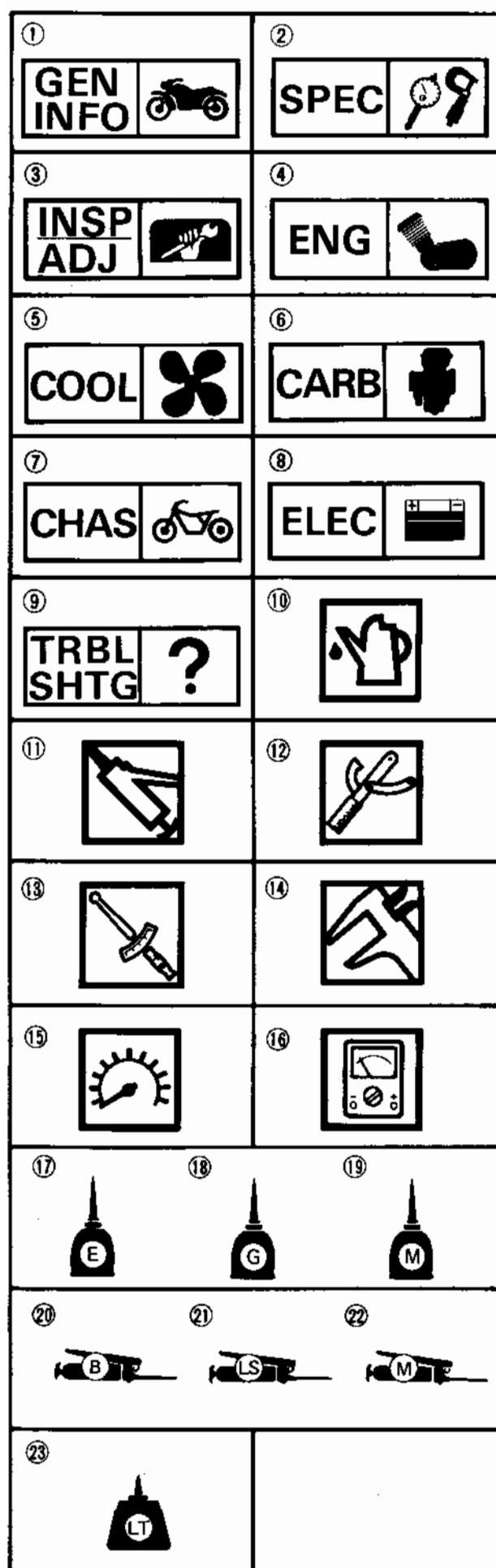
In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

● Bearings

Pitting/Damage → Replace.

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.

- 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 ㉓ in the exploded diagram indicate grade of lubricant and location of lubrication point.

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

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FZR1000 COLOR WIRING DIAGRAM



GENERAL INFORMATION



MOTORCYCLE IDENTIFICATION

FRAME SERIAL NUMBER (Except for AUS)

The frame serial number ① is stamped into the right side of the steering head.

Starting Serial Number:

FZR1000 ...3GM-000101
 FZR1000 ...3GM-007101 (E)
 FZR1000 ...3LE-000101 (D, S, A)
 FZR1000 ...3LF-000101 (F)
 FZR1000 ...3LG-000101 (GB)
 FZR1000 ...3LH-000101 (CH)
 FZR1000 ...3LJ-000101 (NZ)

VEHICLE IDENTIFICATION NUMBER

(For AUS)

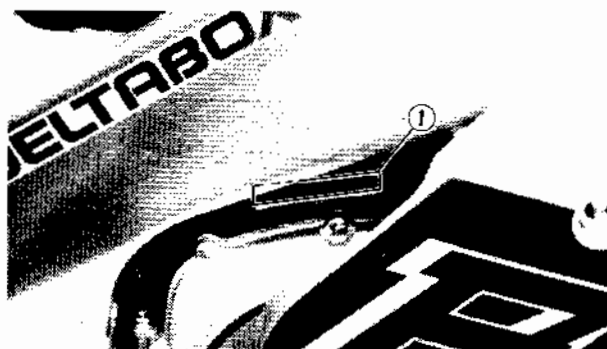
The vehicle identification number ① is stamped into the right side of the steering head.

Starting Serial Number:

JYA3LJT0 * KA000101

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 country.



ENGINE SERIAL NUMBER

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

Starting Serial Number:

FZR1000 ...3GM-000101
 FZR1000 ...3GM-007101 (E)
 FZR1000 ...3LE-000101 (D, S, A)
 FZR1000 ...3LF-000101 (F)
 FZR1000 ...3LG-000101 (GB)
 FZR1000 ...3LH-000101 (CH)
 FZR1000 ...3LJ-000101 (AUS, NZ)

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.

GENERAL SPECIFICATIONS

SPEC



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	FZR1000
Model Code Number:	3GM1 3GM2 (E) 3LE1 (D, S, A) 3LF1 (F) 3LG1 (GB) 3LH1 (CH) 3LJ1 (AUS, NZ)
Frame Starting Number:	3GM-000101 3GM-007101 (E) 3LE-000101 (D, S, A) 3LF-000101 (F) 3LG-000101 (GB) 3LH-000101 (CH) 3LJ-000101 (NZ)
Vehicle Identification Number:	JYA3LJT0 * KA000101 (AUS)
Engine Starting Number:	3GM-000101 3GM-007101 (E) 3LE-000101 (D, S, A) 3LF-000101 (F) 3LG-000101 (GB) 3LH-000101 (CH) 3LJ-000101 (AUS, NZ)
Dimensions:	
Overall Length	2,200 mm (86.8 in)
Overall Width	730 mm (28.7 in)
Overall Height	1,160 mm (45.7 in)
Seat Height	765 mm (30.1 in)
Wheelbase	1,460 mm (57.5 in)
Minimum Ground Clearance	135 mm (5.3 in)
Basic Weight:	
With Oil and Full Fuel Tank	235 kg (518 lb)
Minimum Turning Radius:	3,600 mm (142 in)
Engine:	
Engine Type	Liquid cooled 4-stroke, gasoline, DOHC
Cylinder Arrangement	4-cylinder parallel
Displacement	1,002 cm ³ (61.1 cu.in)
Bore x Stroke	75.5 x 56.0 mm (2.9724 x 2.2047 in)
Compression Ratio	12 : 1
Compression Pressure	1,400 kPa (14 kg/cm ² , 199 psi)
< Minimum ~ Maximum >	< 1,360 ~ 1,480 kPa (13.6 ~ 14.8 kg/cm ² , 194 ~ 210 psi) >
Starting System	Electric starter
Lubrication System:	Wet sump
Engine Oil Type or Grade:	
	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)

GENERAL SPECIFICATIONS

SPEC



Model	FZR1000	
Engine Oil Capacity: Engine Oil: Periodic Oil Change: With Oil Filter Replacement Total Amount	2.7 L (2.4 Imp qt, 2.9 US qt) 3.0 L (2.6 Imp qt, 3.1 US qt) 3.5 L (3.1 Imp qt, 3.7 US qt)	
Coolant Total Amount: (Including All Routes)	2.1 L (1.9 Imp qt, 2.2 US qt)	
Air Filter:	Dry type element	
Fuel: Type Tank capacity Reserve Amount	Regular gasoline Unleaded Fuel Only (AUS) 19.0 L (4.2 Imp gal, 5.0 US gal) 3.5 L (0.77 Imp gal, 0.92 US gal)	
Carburetor: Type x Quantity Manufacturer	BDST38 x 4 MIKUNI	
Spark Plug: Type (Manufacture) Gap	DR8ES-L (NGK), X24ESR-U (N.D.) 0.6 ~ 0.7 mm (0.024 ~ 0.028 in)	
Clutch Type:	Wet, multiple-disc	
Transmission: Primary Reduction System Primary Reduction Ratio Secondary Reduction System Secondary Reduction Ratio Transmission Type Operation Gear Ratio 1st 2nd 3rd 4th 5th	Spur gear 68/41 (1.659) Chain drive 47/17 (2.765) Constant-mesh, 5-speed Left foot operation 36/14 (2.571) 32/18 (1.778) 29/21 (1.381) 27/23 (1.174) 28/27 (1.037)	
Chassis: Frame Type Caster Angle Trail	Diamond 26.75° 110 mm (4.33 in)	
Tire: Type Size Manufacture (Type)	Front	Rear
	Tubeless 130/60 VR17-V280 130/60 ZR17 Bridgestone (CY15) Dunlop (K510F) Pirelli (MP7S) Michelin (A59X)	Tubeless 170/60 VR17-V280 170/60 ZR17 Bridgestone (CY16) Dunlop (K510) Pirelli (MP7S) Michelin (M59X)

GENERAL SPECIFICATIONS

SPEC

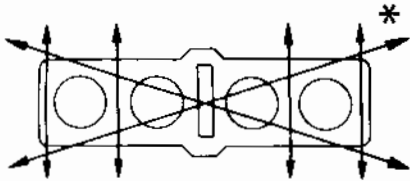
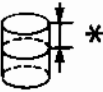
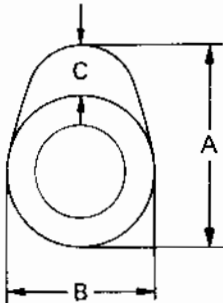
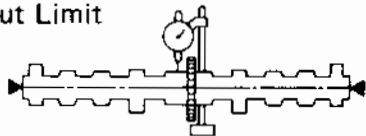
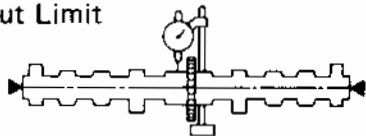
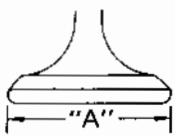
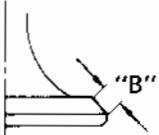
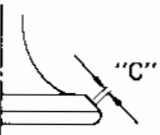
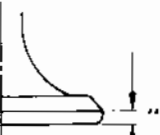


Model	FZR1000	
Maximum Load:	174 kg (384 lb) 205 kg (452 lb) (D, F)	
Tire Pressure (Cold tire):	Front	Rear
Up to 90 kg (198 lb) load*	250 kPa (2.5 kg/cm ² , 36 psi)	250 kPa (2.5 kg/cm ² , 36 psi)
90 kg (198 lb) ~ Maximum load*	250 kPa (2.5 kg/cm ² , 36 psi)	290 kPa (2.9 kg/cm ² , 42 psi)
High speed riding	250 kPa (2.5 kg/cm ² , 36 psi)	290 kPa (2.9 kg/cm ² , 42 psi)
*Load is total weight of cargo, rider, passenger, and accessories.		
Brake:		
Front Brake Type	Dual disc brake	
Operation	Right hand operation	
Rear Brake Type	Single disc brake	
Operation	Right foot operation	
Suspension:		
Front Suspension	Telescopic fork	
Rear Suspension	Swingarm (Link suspension)	
Shock Absorber:		
Front Shock Absorber	Coil spring, oil damper	
Rear Shock Absorber	Coil spring, gas, oil damper	
Wheel Travel:		
Front Wheel Travel	120 mm (4.72 in)	
Rear Wheel Travel	130 mm (5.12 in)	
Electrical:		
Ignition System	T.C.I. (Digital ignition)	
Generator System	AC generator	
Battery Type or Model	YB14L	
Battery Capacity	12V 14AH	
Headlight type:	Quartz bulb (D, B, S, F, CH, AUS, NZ) Bulb (A, DK, GR, I, NL, SF, E, N)	
Bulb Wattage x Quantity:		
Headlight	12V, 35W/35W x 2 (I, AUS, NZ) 12V, 55W x 1, 60W/55W x 1 (B, D, F, S) 12V, 45W/40W x 2 (A, DK, E, GR, N, NL, SF) 12V, 60W/55W x 1 (CH)	
Marker Light	12V, 5W x 1	
Tail/Brake Light	12V, 5W/21W x 2	
Flasher Light	12V, 21W x 4	
License Light	12V, 5W x 2	
Meter Light	12V, 3.4W x 4	
Indicator Light:		
Wattage x Quantity	"NEUTRAL"	12V, 3.4W x 1
	"HIGH BEAM"	12V, 3.4W x 1
	"TURN"	12V, 3.4W x 1
	"OIL LEVEL"	12V, 3.4W x 1



MAINTENANCE SPECIFICATIONS

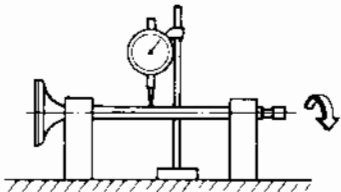
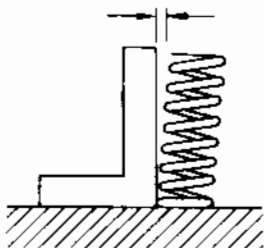
ENGINE

Model	FZR1000
Cylinder Head: Warp Limit* 	0.03 mm (0.0012 in) *Lines indicate straightedge measurement
Cylinder: Bore Size/Measuring Point* Taper Limit Out of Round Limit 	75.500 ~ 75.505 mm (2.9724 ~ 2.9726 in)/ 40 mm (1.57 in) 0.05 mm (0.002 in) 0.05 mm (0.002 in)
Camshaft: Drive Method Cam Cap Inside Dia. (I1, I4, E1, E4) (I2, I3, E2, E3) Camshaft Outside Dia. Shaft-to-Cap Clearance (I1, I4, E1, E4) (I2, I3, E2, E3) Cam Dimensions: Intake  Exhaust  Camshaft Runout Limit 	Chain drive (Center) 24.470 ~ 24.491 mm (0.9634 ~ 0.9642 in) 24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in) 24.437 ~ 24.450 mm (0.9621 ~ 0.9626 in) 0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in) 0.050 ~ 0.084 mm (0.0020 ~ 0.0033 in) 32.55 ~ 32.65 mm (1.2815 ~ 1.2854 in) 32.45 mm (1.278 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.978 in) 7.50 ~ 7.70 mm (0.2953 ~ 0.3031 in) 7.30 mm (0.287 in) 32.95 ~ 33.05 mm (1.2972 ~ 1.3012 in) 32.85 mm (1.293 in) 24.95 ~ 25.05 mm (0.9823 ~ 0.9862 in) 24.85 mm (0.978 in) 7.75 ~ 7.95 mm (0.3051 ~ 0.3130 in) 7.55 mm (0.297 in) 0.03 mm (0.0012 in)
Cam Chain: Cam Chain Type/No. of Links Cam Chain Adjustment Method Valve, Valve Seat, Valve Guide: Valve Clearance (Cold): IN. EX. Valve Dimensions:    	DID219FS (BUSH CHAIN)/108 Links Automatic 0.11 ~ 0.20 mm (0.004 ~ 0.008 in) 0.21 ~ 0.30 mm (0.008 ~ 0.012 in) Head Dia. Face Width Seat Width Margin Thickness

MAINTENANCE SPECIFICATIONS

SPEC

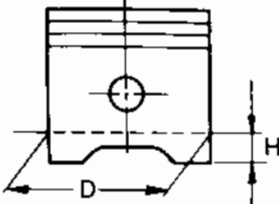
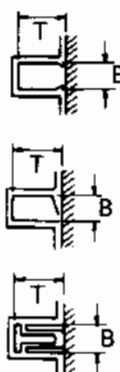
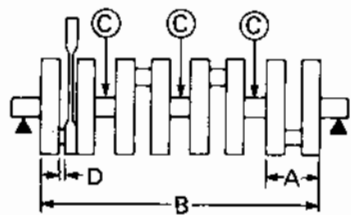


Model		FZR1000
"A" Head Dia.	IN. EX.	23.4 ~ 23.6 mm (0.9213 ~ 0.9291 in) 24.9 ~ 25.1 mm (0.9803 ~ 0.9882 in)
"B" Face Width	IN. EX.	1.63 ~ 2.90 mm (0.0642 ~ 0.1142 in) 1.63 ~ 2.90 mm (0.0642 ~ 0.1142 in)
"C" Seat Limit Width	IN. EX.	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in) 0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
"D" Margin Thickness Limit	IN. EX.	0.45 ~ 0.95 mm (0.0177 ~ 0.0374 in) 0.75 ~ 1.25 mm (0.0295 ~ 0.0492 in)
Stem Outside Diameter	IN. EX.	4.475 ~ 4.490 mm (0.1762 ~ 0.1768 in) 4.460 ~ 4.475 mm (0.1756 ~ 0.1762 in)
< Limit >	IN. EX.	4.445 mm (0.175 in) 4.43 mm (0.174 in)
Guide Inside Diameter	IN. EX.	4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in) 4.500 ~ 4.512 mm (0.1772 ~ 0.1776 in)
< Limit >	IN. EX.	4.55 mm (0.179 in) 4.55 mm (0.179 in)
Stem-to-Guide Clearance	IN. EX.	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in) 0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)
< Limit >	IN. EX.	0.08 mm (0.0031 in) 0.1 mm (0.0039 in)
Stem Runout Limit		0.01 mm (0.0004 in)
		
Valve Seat Width	IN. EX.	0.9 ~ 1.1 mm (0.035 ~ 0.043 in) 0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
< Limit >	IN. EX.	1.8 mm (0.071 in) 1.8 mm (0.071 in)
Valve Spring:		
Free Length	IN. EX.	40.73 mm (1.604 in) 44.01 mm (1.733 in)
Installed Length (Valve Closed)	IN. EX.	35.0 mm (1.378 in) 35.0 mm (1.378 in)
Compressed Pressure (Valve closed)	IN. EX.	12.2 ~ 13.2 kg (26.9 ~ 29.1 lb) at 35 mm (1.378 in) 21 ~ 23 kg (46.3 ~ 50.7 lb) at 35 mm (1.378 in)
Tilt Limit	IN. EX.	2.5°/1.7 mm (0.067 in) 2.5°/1.7 mm (0.067 in)
		
Direction of Winding (Top view)	IN. EX.	Clockwise Clockwise
		

MAINTENANCE SPECIFICATIONS

SPEC



Model	FZR1000
Piston: Piston Size "D" Measuring Point "H"  Piston-to-Cylinder Clearance Oversize: 2nd	75.425 ~ 75.440 mm (2.700 ~ 2.970 in) 3 mm (0.12 in) (From bottom line of piston skirt) 0.06 ~ 0.08 mm (0.0024 ~ 0.0031 in) 76.0 mm (3.00 in)
Piston Ring: Sectional Sketch  End Gap (Installed): Side Clearance:	Top Ring Barrel B = 0.8 mm (0.0315 in) T = 2.8 mm (0.1102 in) 2nd Ring Taper B = 0.8 mm (0.0315 in) T = 2.8 mm (0.1102 in) Oil Ring Expander B = 1.5 mm (0.0591 in) T = 2.5 mm (0.0984 in) Top Ring < Limit > 0.3 ~ 0.5 mm (0.0118 ~ 0.0197 in) 0.7 mm (0.0276 in) 2nd Ring < Limit > 0.3 ~ 0.5 mm (0.0118 ~ 0.0197 in) 0.7 mm (0.0276 in) Oil Ring 0.2 ~ 0.8 mm (0.0079 ~ 0.0315 in) Top Ring < Limit > 0.03 ~ 0.07 mm (0.0012 ~ 0.0028 in) 0.15 mm (0.0059 in) 2nd Ring < Limit > 0.02 ~ 0.06 mm (0.0008 ~ 0.0024 in) 0.15 mm (0.0059 in) Oil Ring —
Connecting Rod: Crank Pin Oil Clearance Bearing Size No. Color Code	0.032 ~ 0.056 mm (0.0013 ~ 0.0022 in) 1. Blue 2. Black 3. Brown 4. Green
Crankshaft:  Crank Width "A" Assembly Width "B" Runout Limit "C" Big End Side Clearance "D"	55.7 ~ 59.5 mm (2.19 ~ 2.34 in) 339.8 ~ 340.2 mm (13.38 ~ 13.39 in) 0.03 mm (0.0012 in) 0.160 ~ 0.262 mm (0.006 ~ 0.010 in)

MAINTENANCE SPECIFICATIONS

SPEC



Model	FZR1000	
Main Journal Oil Clearance	0.020 ~ 0.044 mm (0.0008 ~ 0.0017 in)	
Bearing Size No. Color Code	1. Blue 2. Black 3. Brown 4. Green 5. Yellow	
Thrust Bearing Position	#4 Journal	
Clutch:		
Friction Plate Thickness x Quantity	2.9 ~ 3.1 mm (0.114 ~ 0.122 in) x 9	
Location x Quantity/Identification	Outer x 1/Single semi-circular slot Center x 1/Blue painted mark Others x 7/Red painted mark	
< Wear Limit >	2.8 mm (0.110 in)	
Clutch Plate Thickness x Quantity	1.9 ~ 2.1 mm (0.075 ~ 0.083 in) x 8	
< Warp Limit >	0.1 mm (0.0039 in)	
Clutch Spring Free Length x Quantity	50.0 mm (1.97 in) x 6	
Clutch Spring Minimum Length	54.0 mm (2.126 in)	
Clutch Release Method	Hydraulic inner push	
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	0.1 mm (0.0039 in)	
Carburetor:		
Type/Manufacture x Quantity	BDST38/MIKUNI x 4	
	3GM1, 3GM2, 3LG1	3LE1, 3LF1, 3LH1
I.D. Mark	3GM00	3LE00, 3LF00, 3LH00
Main Jet (M.J.)	#125	#127.5
(#1, 4 Cylinder)	#122.5	#125
(#2, 3 Cylinder)	#85	#85
Main Air Jet (M.A.J.)	5CEW8-3.5	5CEW8-3.5
Jet Needle-Clip Position (J.N.)	Y-0	Y-0
Needle Jet (N.J.)	#40	#40
Pilot Jet (P.J.)	0.85	0.85
Pilot Outlet Size (P.O.)	#115	#115
Pilot Air Jet (P.A.J.)	2-1/2 turns out	2-1/2 turns out
Pilot Screw (P.S.)	1.7	1.7
Valve Seat Size (V.S.)	#60	#60
Starter Jet (G.S ₁)	0.6	0.6
(G.S ₂)	0.8	0.8
Bypass Size (B.P ₁)	#125	#125
Throttle Valve Size (Th.V.)		
Fuel Level (F.L.)	10.5 ~ 11.5 mm (0.41 ~ 0.45 in) Above from the float chamber line	

MAINTENANCE SPECIFICATIONS

SPEC



Model	FZR1000
Lubrication System: Oil Filter Type Oil Pump Type Tip Clearance < Limit > Side Clearance < Limit > Bypass Valve Setting Pressure Relief Valve Operating Pressure	Paper Trochoid pump 0.09 ~ 0.15 mm (0.0035 ~ 0.0060 in) < 0.2 mm (0.008 in) > 0.03 ~ 0.08 mm (0.0012 ~ 0.0031 in) < 0.15 mm (0.006 in) > 180 ~ 220 kPa (1.8 ~ 2.2 kg/cm ² , 25.6 ~ 31.3 psi) 390 ~ 470 kPa (3.9 ~ 4.7 kg/cm ² , 55.5 ~ 66.8 psi)
Cooling System: Radiator Core Size Width Height Thickness Radiator Cap Opening Pressure Reservoir Tank Capacity < From Low to Full Level > Water Pump Type Reduction Ratio	360 mm (14.2 in) 217.8 mm (8.57 in) 32 mm (1.26 in) 95 ~ 125 kPa (0.95 ~ 1.25 kg/cm ² , 13.5 ~ 17.8 psi) 0.4 L (0.35 Imp qt, 0.42 US qt) 0.15 L (0.13 Imp qt, 0.16 US qt) Single-suction centrifugal pump 68/41 x 41/43 (1.581)

MAINTENANCE SPECIFICATIONS

SPEC

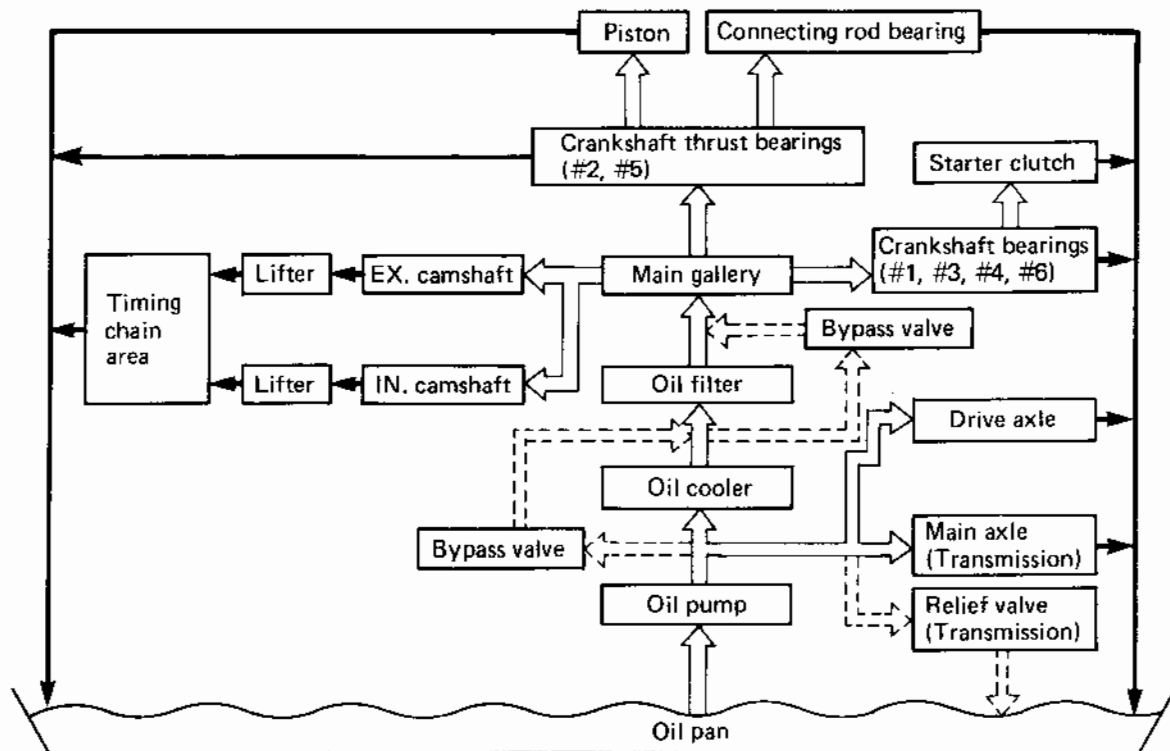


Model

FZR1000

Lubrication Chart:

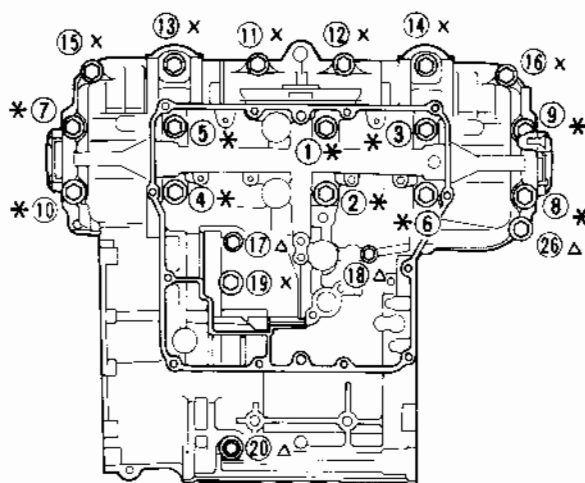
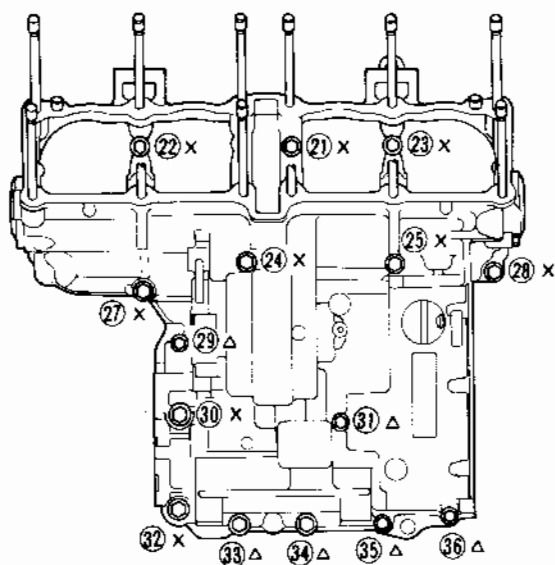
← Pressure feed
← Splashed



Crankcase Tightening Sequence:

Crankcase (Upper)

Crankcase (Lower)



- * : 9 mm Bolt: 32 Nm (3.2 m·kg, 23 ft·lb)
- x : 8 mm Bolt: 24 Nm (2.4 m·kg, 17 ft·lb)
- Δ : 6 mm Bolt: 12 Nm (1.2 m·kg, 8.7 ft·lb)

MAINTENANCE SPECIFICATIONS



Tightening Torque

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Camshaft Cap	Bolt	M6	40	10	1.0	7.2	
Cylinder Head (exhaust pipe)	Stud bolt	M8	8	15	1.5	11	
Cylinder Head	Nut	M10	8	41	4.1	30	
Cylinder Head	Cap nut	M10	4	41	4.1	30	
Spark Plug	—	M12	4	17.5	1.75	12.5	
Cylinder Head Cover	Bolt	M6	8	10	1.0	7.2	
Connecting Rod	Nut	M8	8	36	3.6	25	
Timing Chain Sprocket	Flange bolt	M7	4	24	2.4	17	
Timing Chain Tensioner	Bolt	M6	2	10	1.0	7.2	
Timing Chain Tensioner End	Cap bolt	M11	1	20	2.0	14	
Chain Guide (intake side)	Bolt	M6	2	10	1.0	7.2	
Oil Pump Housing	Screw	M6	1	10	1.0	7.2	
Oil Pump Mount	Bolt	M6	3	10	1.0	7.2	
Oil Filter Case	—	M20	1	15	1.5	11	
Oil Pan	Bolt	M6	12	10	1.0	7.2	
Drain Plug	—	M14	1	43	4.3	31	
Oil Pipe 1	Bolt	M6	3	7	0.7	5.1	
Oil Baffle Plate (lower)	Flange bolt	M6	4	10	1.0	7.2	
Oil Baffle Plate (upper)	Flange bolt	M6	10	10	1.0	7.2	
Oil Cooler House	Union bolt	M12	2	32	3.2	23	
Oil Level Switch	Bolt	M6	2	10	1.0	7.2	
Exhaust Pipe	Nut	M8	8	20	2.0	14	
Exhaust Pipe and Muffler	Flange bolt	M8	1	20	2.0	14	
Muffler and Muffler Stay	Flange bolt	M8	1	20	2.0	14	
Muffler Bracket	Flange bolt	M8	1	20	2.0	14	
Exhaust Pipe Blind Plug (CO test)	Bolt	M6	4	10	1.0	7.2	
Crankcase	Stud bolt	M10	12	10	1.0	7.2	
Main Axle Bearing Stopper	Torx	M6	3	10	1.0	7.2	
Crankshaft End Cover	Screw	M6	6	7	0.7	5.1	
Crankcase Cover (right)	Bolt	M6	11	10	1.0	7.2	
Crankcase	Flange bolt	M6	7	12	1.2	8.7	
Crankcase	Flange bolt	M8	17	24	2.4	17	
Crankcase	Flange bolt	M9	11	32	3.2	23	
Starter Clutch	Bolt	M8	3	25	2.5	18	
HY-VO Chain Guide	Bolt	M6	2	10	1.0	7.2	
Clutch Boss	Nut	M20	1	70	7.0	50	
Clutch Spring	Bolt	M6	6	8	0.8	5.8	
Drive Sprocket	Nut	M18	1	70	7.0	50	
Shift Cam Stopper Lever	Bolt	M6	1	10	1.0	7.2	
Shift Cam Stopper	Bolt	M6	1	10	1.0	7.2	
Guide Bar Stopper (shift fork)	Bolt	M6	1	10	1.0	7.2	
Neutral Switch	Screw	M6	2	4	0.4	2.9	

MAINTENANCE SPECIFICATIONS

SPEC



CHASSIS

Model		FZR1000
Steering System:		
Steering Bearing Type		Taper Roller Bearing
Front Suspension:		
Front Fork Travel		120 mm (4.72 in)
Front Spring Free Length		321.3 mm (12.6 in)
< Limit >		528 mm (20.79 in)
Spring Rate:	K1	16 N/mm (1.6 kg/mm, 89.6 lb/in)
Stroke	K1	0.0 ~ 120 mm (0.0 ~ 4.72 in)
Optional Spring		No
Oil Capacity		535 cm ³ (18.9 Imp oz, 18.1 US oz)
Oil Level (Fully Compression)		116 mm (4.57 in)
Oil Grade		Bellow the top of inner fork tube without fork spring
Adjustment		Yamaha Fork Oil 10W or equivalent
		← Soft—STD—Hard → Adjusting groove 1234
Rear Suspension:		
Shock Absorber Travel		70 mm (2.76 in)
Spring Free Length		218 mm (8.58 in)
Fitting Length		200 mm (7.87 in)
Spring Rate	K1	70 N/mm (7.0 kg/mm, 392 lb/in)
Stroke	K1	0.0 ~ 7.0 mm (0.0 ~ 2.76 in)
Optional Spring		No
Enclosed Gas/Air Pressure (STD)		120 kPa (1.2 kg/cm ² , 17.1 psi)
< Minimum ~ Maximum >		
Adjustment	Minimum	37.5 mm (1.48 in)
	Standard	40.5 mm (1.59 in)
	Maximum	47.5 mm (1.87 in)
Damping Adjustment		← Softer-STD — Stiffer → Adjusting position 970 ← turn out
		(from fully turned-in position)
Swingarm:		
Free Play Limit	End Side	1.0 mm (0.04 in)
		1.0 mm (0.04 in)
Front Wheel:		
Type		Cast Wheel
Rim Size		MT3.50 x 17
Rim Material		Aluminum
Rim Runout Limit	Radial	1 mm (0.04 in)
	Lateral	0.5 mm (0.02 in)
Rear Wheel:		
Type		Cast wheel
Rim Size		MT5.50 x 17
Rim Material		Aluminum
Rim Runout Limit	Radial	1 mm (0.04 in)
	Lateral	0.5 mm (0.02 in)

MAINTENANCE SPECIFICATIONS



Tightening Torque

Part to be tightened	Thread size	Tightening torque			Remarks
		Nm	m · kg	ft · lb	
Front Axle	M14	75	7.5	54	Refer to "NOTE"
Front Axle Pinch	M8	20	2.0	14	
Front Fender	M6	9	0.9	6.5	
Under Bracket and Inner Tube	M8	23	2.3	17	
Handle Crown and Inner Tube	M8	20	2.0	14	
Handle Crown and Steering Stem	M22	110	11.0	80	
Lower Ring Nut (steering shaft)	M22	—	—	—	
Brake Caliper (front/rear)	M10	35	3.5	25	
Brake Disc and Wheel	M10	20	2.0	14	
Master Cylinder and Holder (front brake)	M6	9	0.9	6.5	
Master Cylinder Cap (front brake)	M5	2	0.2	1.4	
Bleed Screw (brake caliper/clutch release cylinder)	M8	6	0.6	4.3	
Brake Hose	M10	25	2.5	18	
Handlebar and Handle Boss	M8	28	2.8	20	
Handlebar Boss and Handle Crown	M8	20	2.0	14	
Grip End (handlebar)	M6	7	0.7	5.1	
Engine Mounting:					
Pinch Bolt (cylinder head side)	M8	22	2.2	16	
Pinch Bolt (cylinder side)	M8	22	2.2	16	
Pinch Bolt (rear)	M8	15	1.5	11	
Mounting Bolt (cylinder head)	M10	60	6.0	43	
Mounting Bolt (cylinder)	M10	33	3.3	24	
Mounting Bolt (rear — upper)	M10	60	6.0	43	
Mounting Bolt (rear — lower)	M10	55	5.5	40	
Footrest Bracket and Frame (front)	M8	28	2.8	20	
Footrest and Footrest Bracket (front)	M10	55	5.5	40	
Pivot Axle and Locknut	M18	130	13.0	94	
Relay Arm and Frame	M10	45	4.5	32	
Arm and Swingarm	M12	70	7.0	50	
Arm and Relay Arm	M12	70	7.0	50	
Rear Shock Absorber and Frame	M10	42	4.2	30	
Rear Shock Absorber and Relay Arm	M10	40	4.0	28	
Footrest Bracket and Frame (rear)	M8	28	2.8	20	
Master Cylinder and Frame (rear)	M8	20	2.0	14	
Rear Frame and Frame	M10	55	5.5	40	
Tension Bar (front and rear)	M8	28	2.8	20	
Brake Disc and Clutch Hub	M8	20	2.0	14	
Sprocket and Hub	M10	60	6.0	43	
Rear Axle and Nut	M18	150	15.0	110	
Side Stand Bracket and Frame	M8	28	2.8	20	
Side Stand Pivot Bolt	M10	48	4.8	35	
Side Stand Pivot Nut	M10	38	3.8	27	

NOTE:

1. Tighten the lower ring nut 52 Nm (5.2 m · kg, 37 ft · lb) by using the torque wrench.
2. Loosen the lower ring nut completely and retighten it 3 Nm (0.3 m · kg, 2.2 ft · lb).
3. Install the upper ring nut, and then align the slots of both ring nut.

MAINTENANCE SPECIFICATIONS

SPEC



ELECTRICAL

Model	FZR1000
Voltage Ignition System: Ignition Timing (B.T.D.C.) Advanced Timing (B.T.D.C.) Advancer Type	12V 5° at 1,350 r/min 40° at 5,500 r/min 35° at 4,500 r/min (F, S, D, A) 41° at 6,000 r/min (CH) Electrical
Ignition Timing (B.T.D.C.) Engine Speed (x 10³ r/min) (F, S, D, A) (CH)	
T.C.I.: Pickup Coil Resistance (Color) T.C.I. Unit/Manufacturer	135 ~ 165Ω at 20°C (68°F) (Gray - Black) TID14-72/HITACHI TID14-81/HITACHI (F, S, D, A) TID14-89/HITACHI (CH)
Ignition Coil: Model/Manufacturer Minimum Spark Gap Primary Winding Resistance Secondary Winding Resistance Spark Plug Cap: Type Resistance	CM12-37/HITACHI 6 mm (0.24 in) or more at 500 r/min 1.8 ~ 2.2Ω at 20°C (68°F) 9.6 ~ 14.4 kΩ at 20°C (68°F) Resin type 10 kΩ
Charging System: Type	A.C. Generator
A.C. Generator: Model/Manufacturer Nominal Output Field Coil Resistance Starter Coil Resistance Brush - Overall Length < Limit > - Spring Force Voltage Regulator: Type No load Regulated Voltage	B3G/NIPPONDENSO 12V, 28A at 5,000 r/min 3.8 ~ 4.2Ω at 20°C (68°F) (Brown - Green) 0.16 ~ 0.18Ω at 20°C (68°F) (White - White) 13.7 mm (0.54 in) 4.7 mm (0.19 in) 230 ~ 330 gr (8.1 ~ 11.6 oz) Field control 14.2 ~ 14.8V
Battery: Capacity Specific Gravity	12V, 14AH 1.280

MAINTENANCE SPECIFICATIONS

SPEC



Model	FZR1000
Electrical Starter System: Type Starter Motor: Model/Manufacturer Output Armature Coil Resistance Brush – Overall Length < Limit > – Spring Force Commutator Dia. Wear Limit Mica Undercut Starter Switch: Model/Manufacturer Amperage Rating Coil Resistance	Constant mesh type SM-13/MITSUBA 0.7 kw $0.012\Omega \pm 10\%$ at 20°C (68°F) 12 mm (0.47 in) 5 mm (0.20 in) 680 ~ 920 g (24.0 ~ 32.4 oz) 28 mm (1.10 in) 27 mm (1.06 in) 0.8 mm (0.03 in) A104-128/HITACHI 100A $4.0 \sim 4.7\Omega$ at 20°C (68°F)
Horn: Type/Quantity Model/Manufacturer Maximum Amperage	Plane Type/1 pcs. YF-12/NIKKO 2.5A
Flasher Relay (Relay Assembly): Type Model/Manufacturer Self Cancelling Device Flasher Frequency Wattage	Semi transistor type FB257H/NIPPON DENSO Yes (Except for D) 75 ~ 95 cycle/min 21W x 2 pcs + 3.4W
Oil Level Switch: Model/Manufacturer	3GM/NIPPON DENSO
Fuel Pump Relay: Model/Manufacturer	3EN-00/OMRON
Thermostat Switch: Model/Manufacturer	2EL/NIPPON THERMOSTAT
Thermo Unit: Model/Manufacturer	11H/NIPPON SEIKI
Circuit Breaker: Type Amperage for Individual Circuit x Quantity: MAIN HEADLIGHT SIGNAL IGNITION RESERVE	Fuse 30A x 1 20A x 1 10A x 1 10A x 1 10A x 1, 20A x 1, 30A x 1

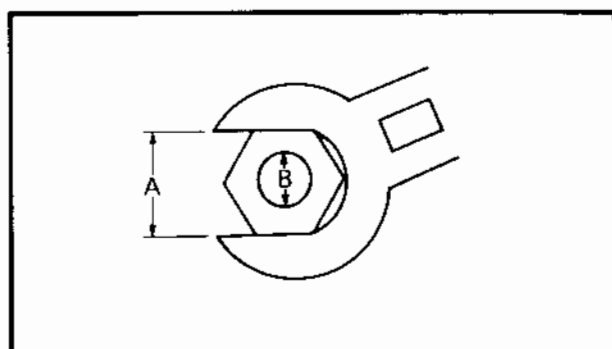
GENERAL TORQUE SPECIFICATIONS/ DEFINITION OF UNITS

SPEC


GENERAL TORQUE SPECIFICATIONS

This chart specifies torque for standard fasteners with standard I.S.O. pitch threads. Torque specifications for special components or assemblies are included in the applicable sections of this book. To avoid warpage, tighten multi-fastener assemblies in a crisscross fashion, in progressive stages, until full torque is reached. Unless otherwise specified, torque specifications call for clean, dry threads. Components should be at room temperature.

A (Nut)	B (Bolt)	General torque specifications		
		Nm	m·kg	ft·lb
10 mm	6 mm	6	0.6	4.3
12 mm	8 mm	15	1.5	11
14 mm	10 mm	30	3.0	22
17 mm	12 mm	55	5.5	40
19 mm	14 mm	85	8.5	61
22 mm	16 mm	130	13.0	94



A: Distance across flats

B: Outside thread diameter

DEFINITION OF UNITS

Unit	Read	Definition	Measure
mm	millimeter	10^{-3} meter	Length
cm	centimeter	10^{-2} meter	Length
kg	kilogram	10^3 gram	Weight
N	Newton	$1 \text{ kg} \times \text{m/sec}^2$	Force
Nm	Newton meter	$\text{N} \times \text{m}$	Torque
m·kg	Meter kilogram	$\text{m} \times \text{kg}$	Torque
Pa	Pascal	N/m^2	Pressure
N/mm	Newton per millimeter	N/mm	Spring rate
L	Liter		Volume or Capacity
cm^3	Cubic centimeter		
r/min	Rotation per minute		Engine Speed

LUBRICATION POINT AND GRADE OF LUBRICANT



LUBRICATION POINT AND GRADE OF LUBRICANT

ENGINE

Lubrication Point	Symbol	Grade of Lubricant
Oil seal lip		Lithium-soap base
O-Ring		Lithium-soap base
Bearing		Engine oil
Piston surface		Engine oil
Piston pin		Engine oil
Crankshaft pin		Engine oil
Crankshaft journal		Engine oil
Connecting rod bolt/Nut		Molybdeum disulfide oil
Camshaft cam lobe/Journal		Molybdeum disulfide oil
Valve stem (IN, EX)		Molybdeum disulfide oil
Valve stem end (IN, EX)		Molybdeum disulfide oil
Water pump impeller shaft		Engine oil
Oil pump rotor (Inner/Outer), housing		Engine oil
Oil strainer assembly		Engine oil
Outer starter clutch surface		Engine oil
Idle gear surface/Bearing		Engine oil
Starter clutch ball		Engine oil
Primary driven gear		Engine oil
Transmission gear (Wheel/Pinion)		Molybdeum disulfide oil
Axle (Main/Drive)		Molybdeum disulfide oil
Shift cam		Molybdeum disulfide oil
Shift fork/Guide bar		Engine oil
Shift shaft assembly		Engine oil

LUBRICATION POINT AND GRADE OF LUBRICANT



CHASSIS

Lubrication Point	Symbol	Grade of Lubricant
Steering bearing (Upper/Lower)		Molybdenum disulfide grease
Wheel bearing/Axle		Wheel bearing grease
Front wheel oil seal (Right/Left)		Wheel bearing grease
Rear wheel oil seal		Wheel bearing grease
Clutch hub oil seal		Wheel bearing grease
Clutch hub fitting area		Wheel bearing grease
Rear brake pedal shaft		Wheel bearing grease
Change pedal		Wheel bearing grease
Side stand sliding surface		Wheel bearing grease
Tube guide (Throttle grip) inner surface		Wheel bearing grease
Brake lever bolt, sliding surface		Wheel bearing grease
Clutch lever bolt, sliding surface		Wheel bearing grease
Rear shock absorber (Upper/Lower)		Molybdenum disulfide grease
Swingarm pivot bearing		Lithium-soap base grease
Pivot shaft		Lithium-soap base grease
Arm 1, 2 bearing		Lithium-soap base grease
Thrust cover (Inner)		Lithium-soap base grease
Relay arm bearing (Inner)		Lithium-soap base grease
Rear footrest ball		Wheel bearing grease
Rear footrest pin		Wheel bearing grease

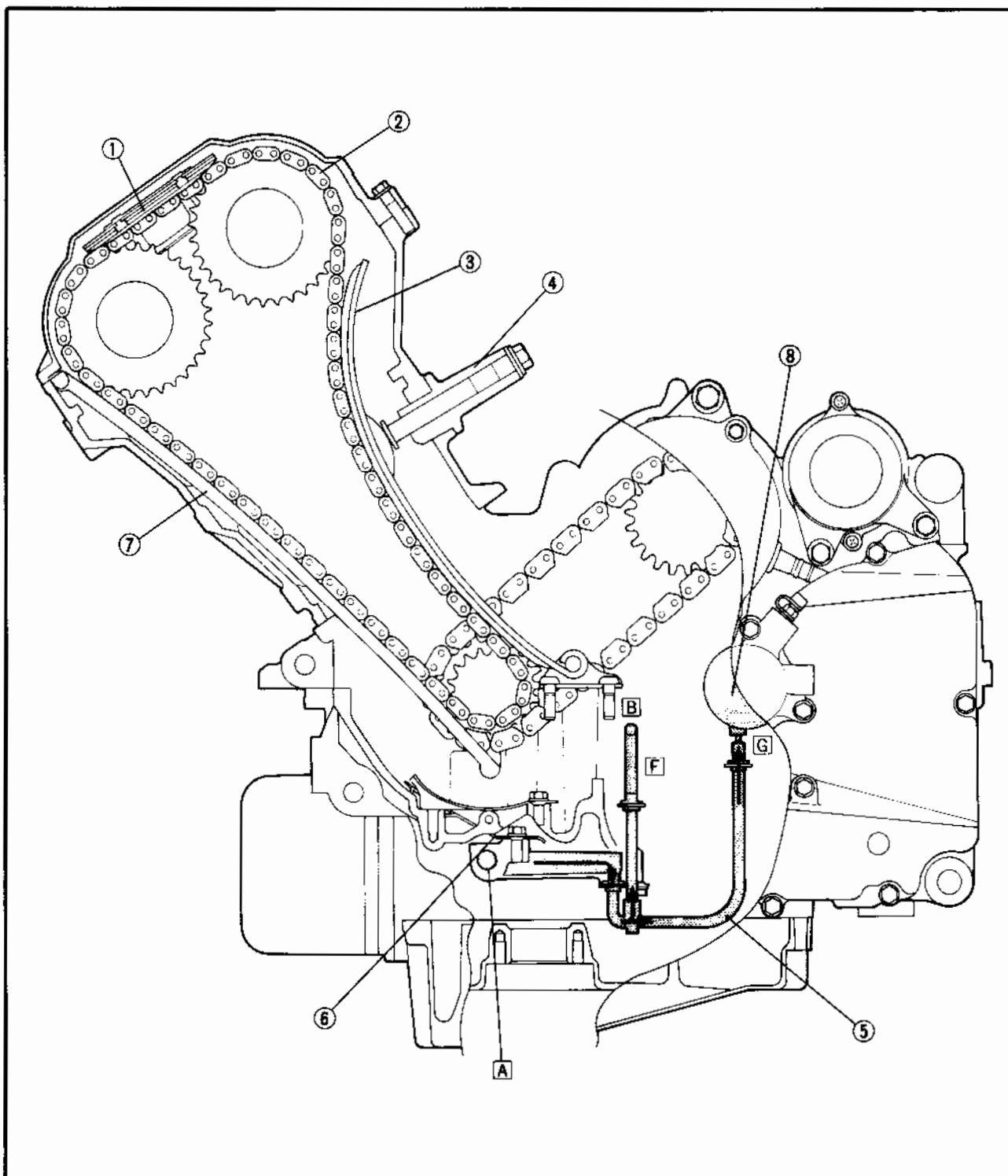
LUBRICATION DIAGRAMS

SPEC



- ① Timing chain guide (upper)
- ② Timing chain
- ③ Timing chain guide (intake side)
- ④ Timing chain tensioner
- ⑤ Oil pipe 1
- ⑥ Baffle plate
- ⑦ Timing chain guide (exhaust side)
- ⑧ Main axle

- F To F (see p. 23)
- G To G (see p. 23)

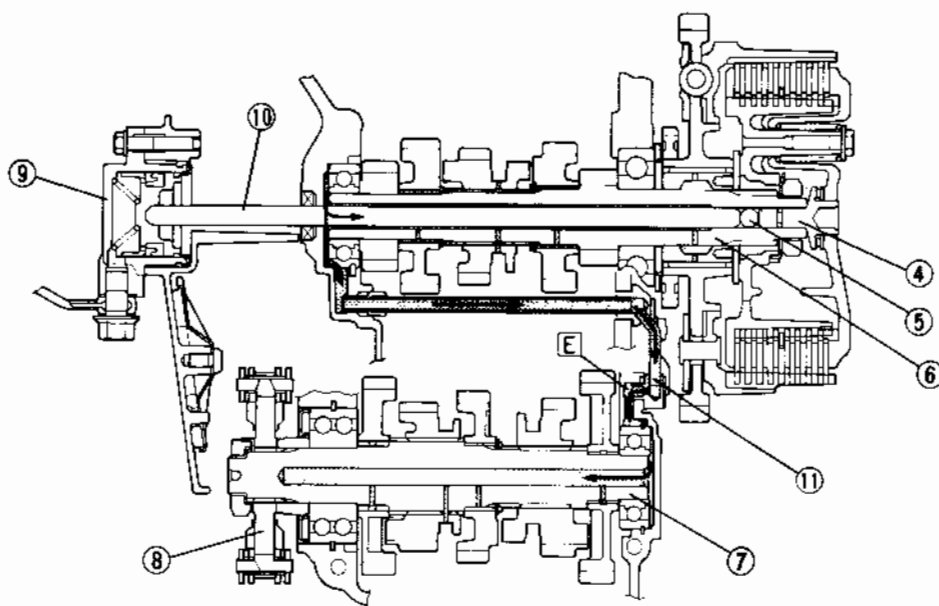
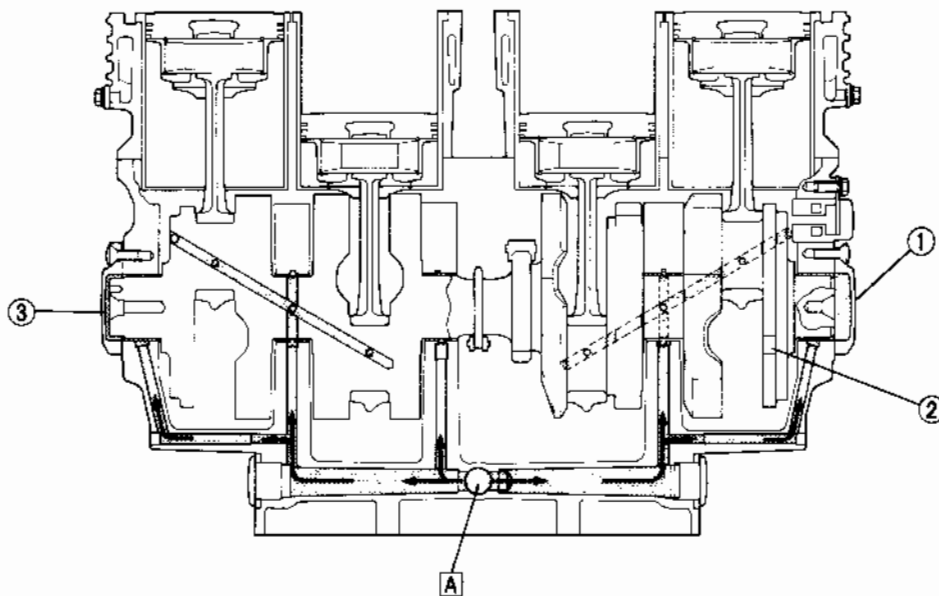


LUBRICATION DIAGRAMS

SPEC



- | | |
|--------------------------------|---------------------------|
| ① Crankshaft end cover (right) | ⑨ Clutch release cylinder |
| ② Crankshaft | ⑩ Push rod #2 |
| ③ Crankshaft end cover (left) | ⑪ Oil delivery pipe 5 |
| ④ Push rod #1 | |
| ⑤ Ball | |
| ⑥ Main axle | |
| ⑦ Drive axle | |
| ⑧ Drive sprocket | |

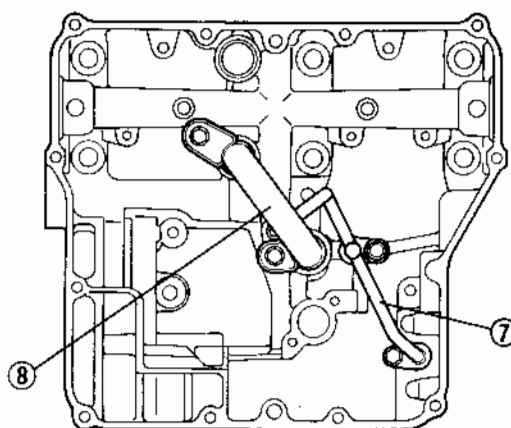
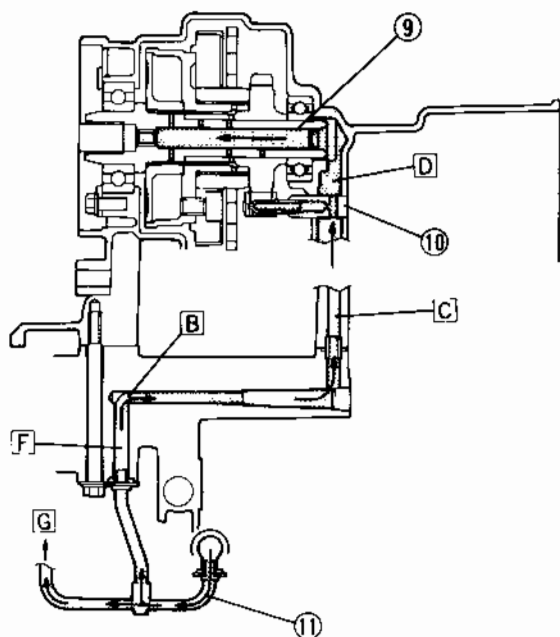
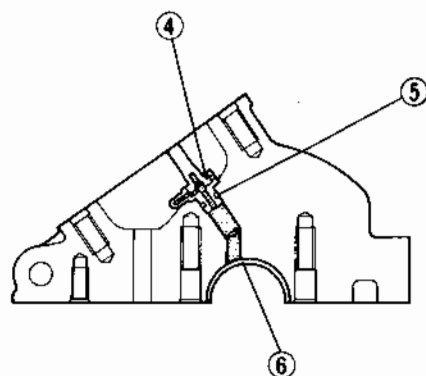
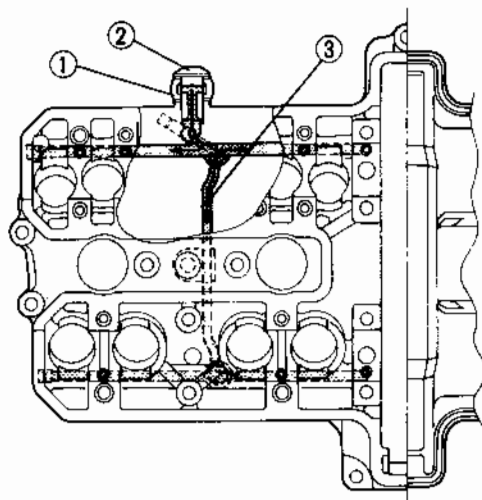


LUBRICATION DIAGRAMS

SPEC



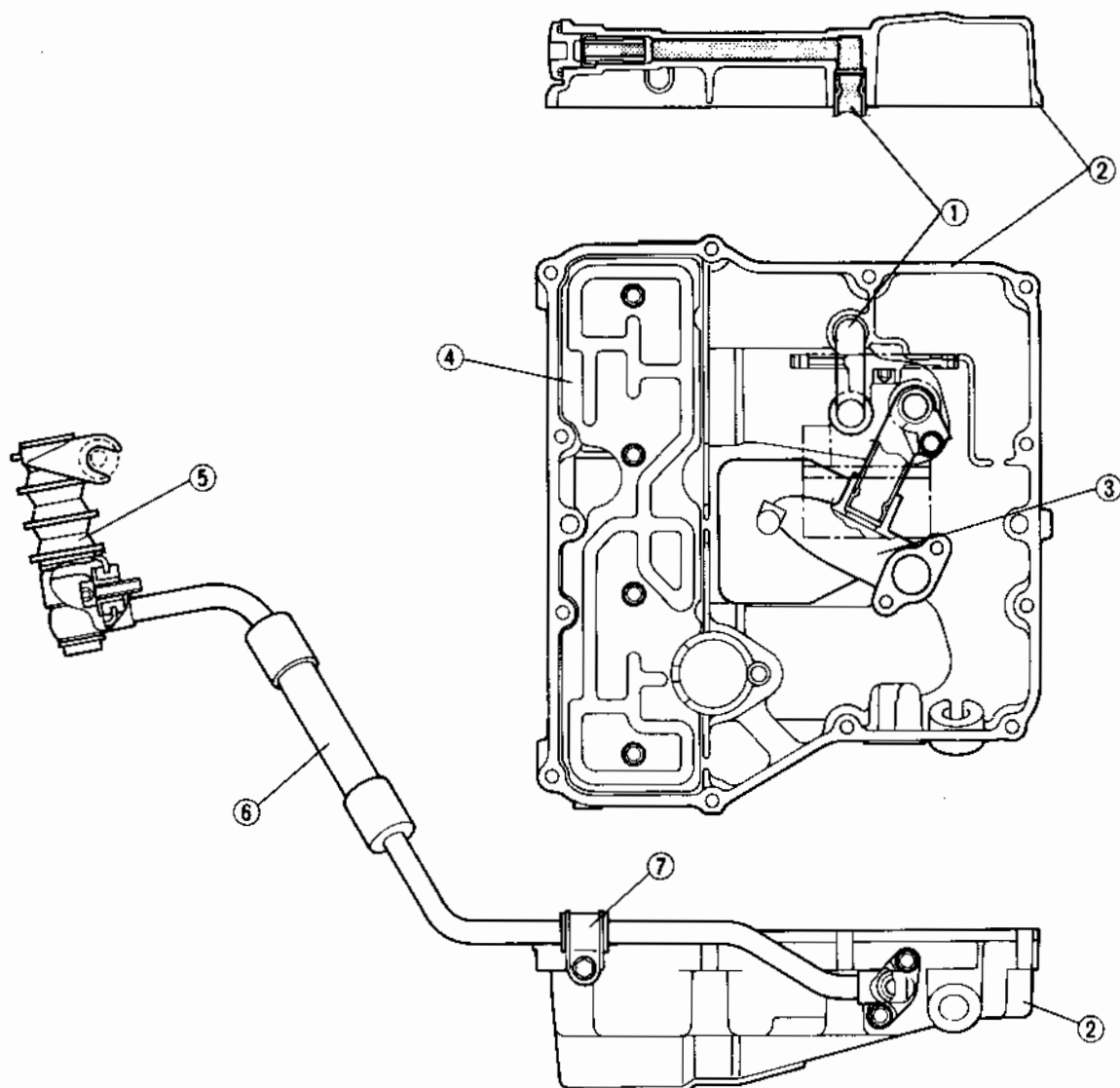
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|------------------------------|-----------------------|
| ① Oil delivery pipe 2 | ⑨ AC generator shaft |
| ② Union bolt | ⑩ Oil spray nozzle |
| ③ Oil delivery pipe 3 | ⑪ Oil delivery pipe 1 |
| ④ Oil jet nozzle | |
| ⑤ O-ring | |
| ⑥ Plain bearing (crankshaft) | |
| ⑦ Oil delivery pipe 1 | |
| ⑧ Oil pipe 2 | |



LUBRICATION DIAGRAMS

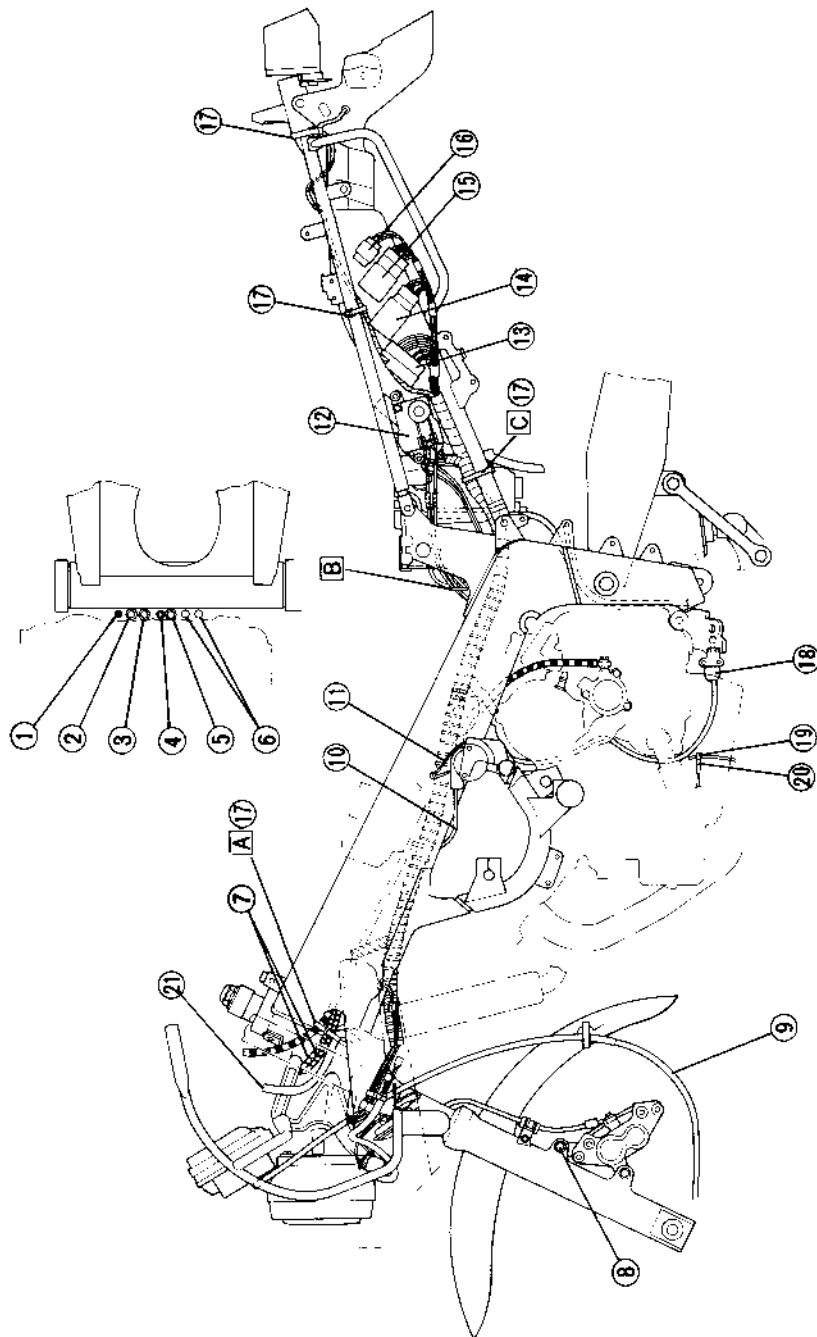


- ① Oil pipe 2
- ② Oil pan
- ③ Oil strainer
- ④ Baffle plate
- ⑤ Oil cooler
- ⑥ Pipe (oil cooler)
- ⑦ Clamp



CABLE ROUTING

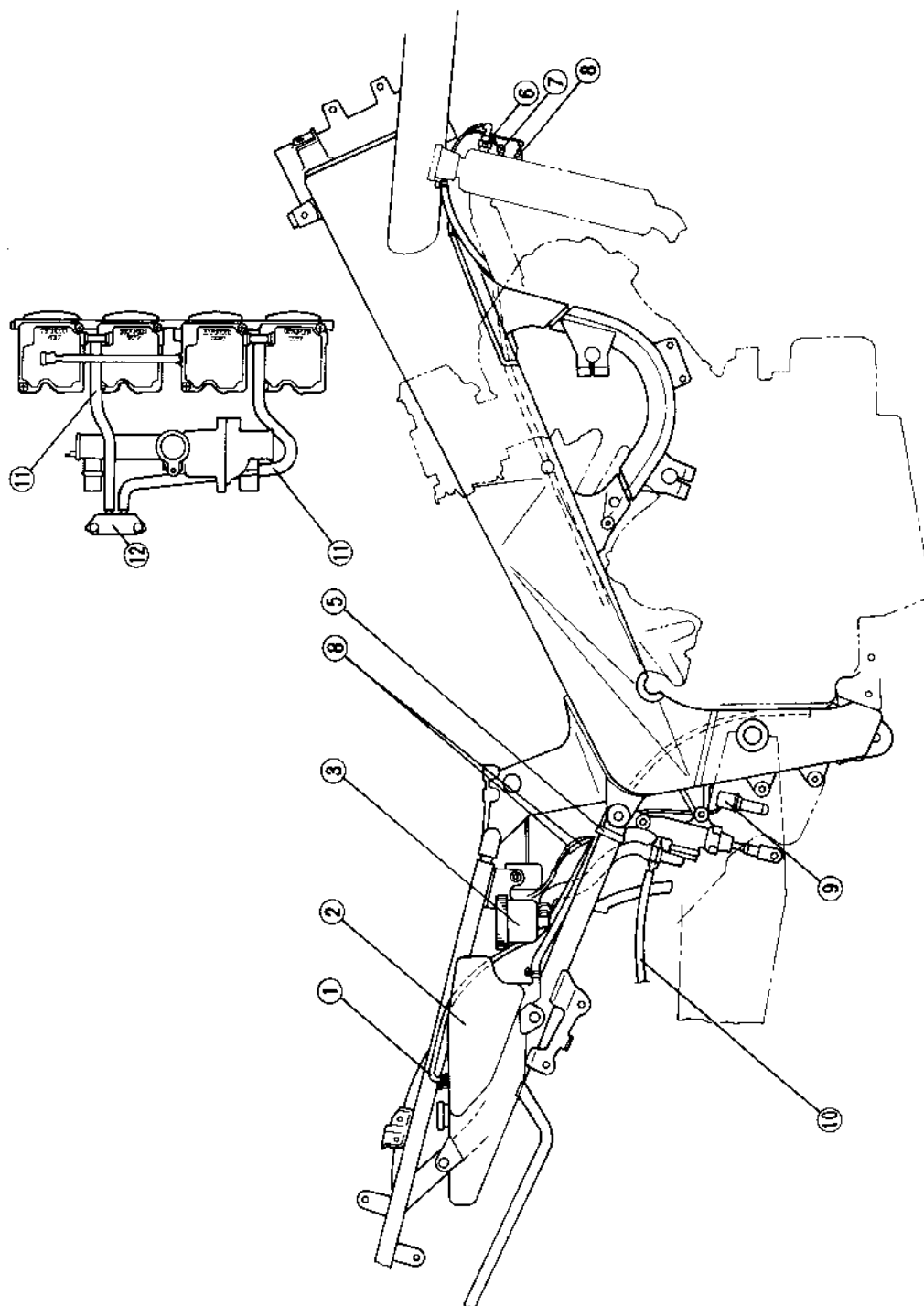
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|--|--------------------------|---|
| ① Ventilation hose
(coolant reservoir tank) | ⑨ Speedometer cable | ⑰ Band |
| ② Ventilation hose (air filter case) | ⑩ Starter cable | ⑱ Sidestand switch |
| ③ Breather hose (fuel tank) | ⑪ Starter lever assembly | ⑲ Oil level switch lead |
| ④ Breather hose (battery) | ⑫ EXUP servo motor | ⑳ Clamp |
| ⑤ Canister hose | ⑬ Fuse box | ㉑ Handlebar switch lead (left) |
| ⑥ EXUP cables | ⑭ Flasher relay | A Clamp the clutch hose and
throttle cables |
| ⑦ Throttle cables | ⑮ Relay unit | B Route the EXUP cables |
| ⑧ Brake hose | ⑯ Fuse (main) | C Clamp the wireharness, starter motor
lead and battery negative lead |



CABLE ROUTING



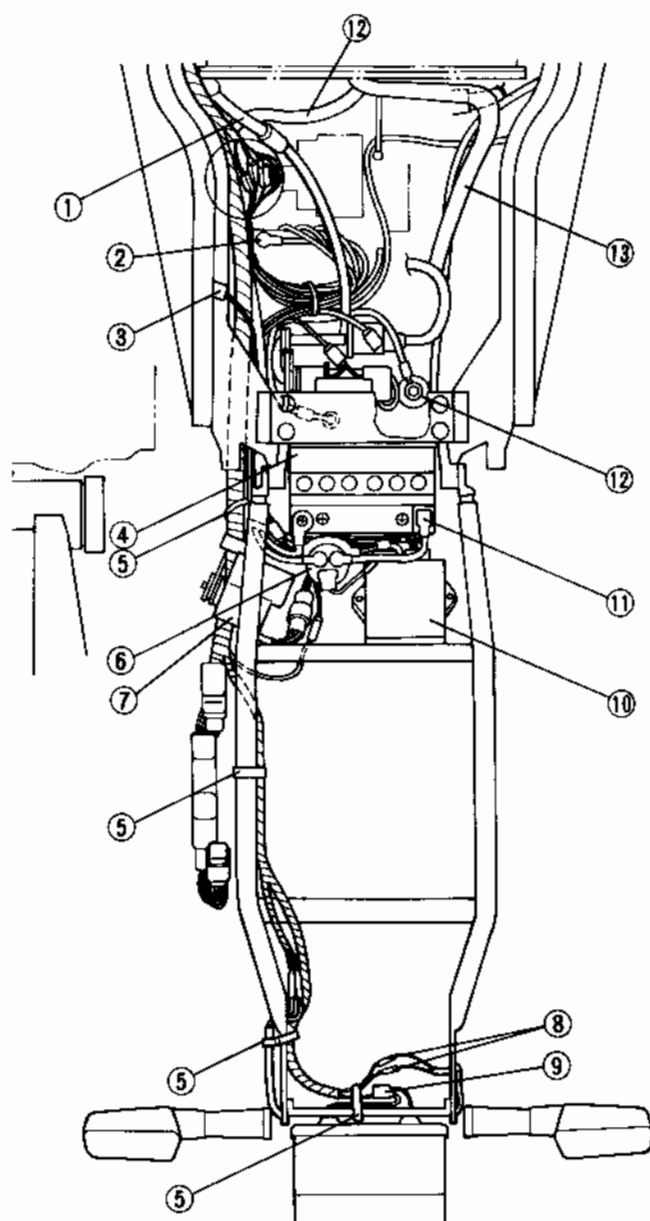
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| ① Ventilation hose (coolant reservoir tank) | ⑦ Ground lead |
| ② Reservoir tank (coolant) | ⑧ Thermo unit |
| ③ Reservoir tank (rear brake) | ⑨ Rear brake switch |
| ④ Rear brake switch leads | ⑩ Rear brake hose |
| ⑤ Band | ⑪ Overflow hose (carburetor) |
| ⑥ Thermo switch | ⑫ Hose guide |



CABLE ROUTING



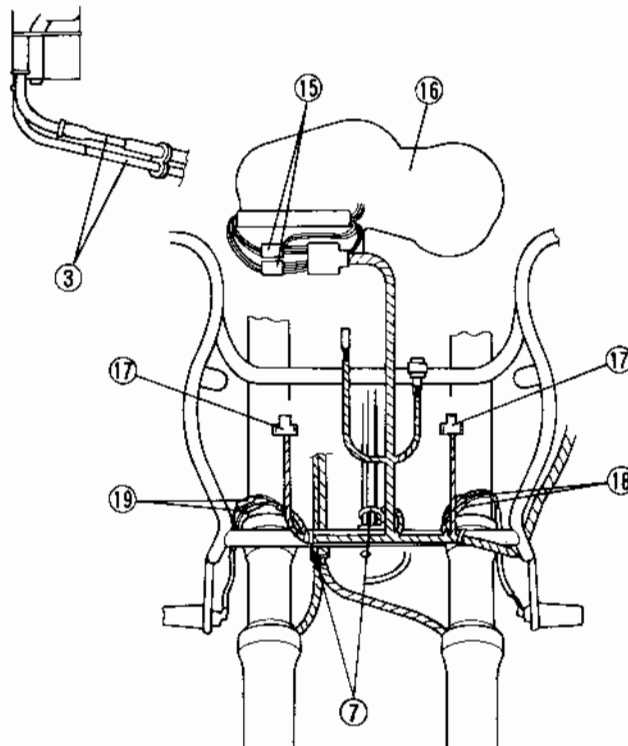
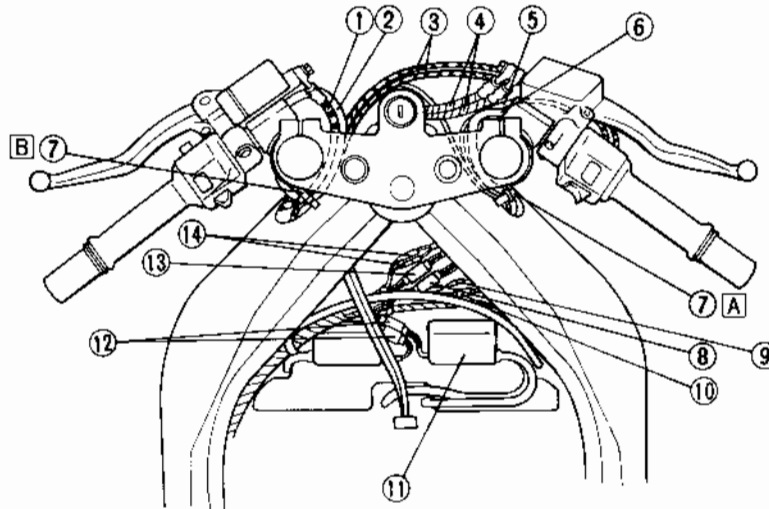
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|--------------------------------------|----------------------------------|
| ① Ventilation hose (air filter case) | ⑧ Rear flasher light leads |
| ② Starter motor lead | ⑨ Tail/brake light coupler |
| ③ Fuel sender | ⑩ Digital ignitor unit |
| ④ Battery | ⑪ Battery positive lead |
| ⑤ Band | ⑫ Sub tank (rear shock absorber) |
| ⑥ Starter relay | ⑬ Ventilation hose (crankcase) |
| ⑦ EXUP servo motor | |



CABLE ROUTING



- | | | |
|------------------------------------|------------------------------------|---|
| ① Clutch hose | ⑩ Fan motor coupler | ⑲ Front flasher light leads (right) |
| ② Handlebar switch leads (left) | ⑪ Ignition coil | A Clamp the main switch lead, handlebar switch leads and front brake switch leads. |
| ③ Throttle cables | ⑫ Ignition coil couplers | B Clamp the clutch switch lead and handlebar switch leads. |
| ④ Front brake hoses | ⑬ Main switch coupler | |
| ⑤ Front brake switch lead | ⑭ Front brake switch lead | |
| ⑥ Handlebar switch leads (right) | ⑮ Motor leads | |
| ⑦ Band | ⑯ Motor assembly | |
| ⑧ Handlebar switch coupler (right) | ⑰ Headlight coupler | |
| ⑨ Handlebar switch lead (left) | ⑱ Front flasher light leads (left) | |



INTRODUCTION/ PERIODIC MAINTENANCE/LUBRICATION

**INSP
ADJ**



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 as well as new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE/LUBRICATION

Unit: km (miles)

ITEM	REMARKS	BREAK-IN 1,000 (600)	EVERY	
			6,000 (4,000) or 6 months	12,000 (8,000) or 12 months
Valve(s)*	Check valve clearance. Adjust if necessary.	EVERY 42,000 (28,000)		
Spark plug(s)	Check condition. Clean or replace if necessary.	○	○	○
Air filter*	Clean. Replace if necessary.		○	○
Carburetor*	Check idle speed/synchronization/starter operation. Adjust if necessary.	○	○	○
Fuel line*	Check fuel hose and vacuum hose for cracks or damage. Replace if necessary.		○	○
Fuel filter*	Check condition. Replace every 30,000 (20,000).			○
Engine oil	Replace (Warm engine before draining).	○	○	○
Engine oil filter*	Replace.	○		○
Brake*	Check operation/fluid leakage/See NOTE. Correct if necessary.		○	○
Clutch*	Check operation/fluid leakage/See NOTE. Correct if necessary.		○	○
Swingarm pivot*	Check swingarm assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.* **			○
Rear suspension link pivots*	Check operation. Apply grease lightly every 24,000 (16,000) or 24 months.* **			○
Wheels*	Check balance/damage/runout. Repair if necessary.		○	○
Wheel bearings*	Check bearings assembly for looseness/damage. Replace if damaged.		○	○
Steering bearing*	Check bearings assembly for looseness. Correct if necessary. Moderately repack every 24,000 (16,000) or 24 months.* **	○		○
Front forks*	Check operation/oil leakage. Repair if necessary.		○	○
Rear shock absorber*	Check operation/oil leakage. Repair if necessary.		○	○
Cooling system	Check coolant leakage. Repair if necessary. Replace coolant every 24,000 (16,000) or 24 months.		○	○
Drive chain	Check chain slack/alignment. Adjust if necessary. Clean and lube.	EVERY 500 (300)		

PERIODIC MAINTENANCE/LUBRICATION



Unit: km (miles)

Item	Remarks	Break-in 1,000 (600)	EVERY	
			6,000 (4,000) or 6 months	12,000 (8,000) or 12 months
Fittings/Fasteners*	Check all chassis fittings and fasteners. Correct if necessary.	○	○	○
Sidestand*	Check operation. Repair if necessary.	○	○	○
Sidestand switch*	Check operation. Clean or replace if necessary.	○	○	○
Battery*	Check specific gravity. Check breather pipe for proper operation. Correct if necessary.		○	○
AC Generator*	Replace generator brushes every 100,000 (62,000).			

*: It is recommended that these items be serviced by a Yamaha dealer.

**: Medium weight wheel bearing grease.

***: Molybdenum disulfide grease.

NOTE:

Brake fluid replacement:

1. When disassembling the master cylinder or caliper cylinder (clutch release cylinder), replace the brake fluid. Normally check the brake fluid level and add the fluid as required.
2. On the inner parts of the master cylinder and caliper cylinder (clutch release cylinder), replace the oil seals every two years.
3. Replace the brake (clutch) hoses every four years, or if cracked or damaged.

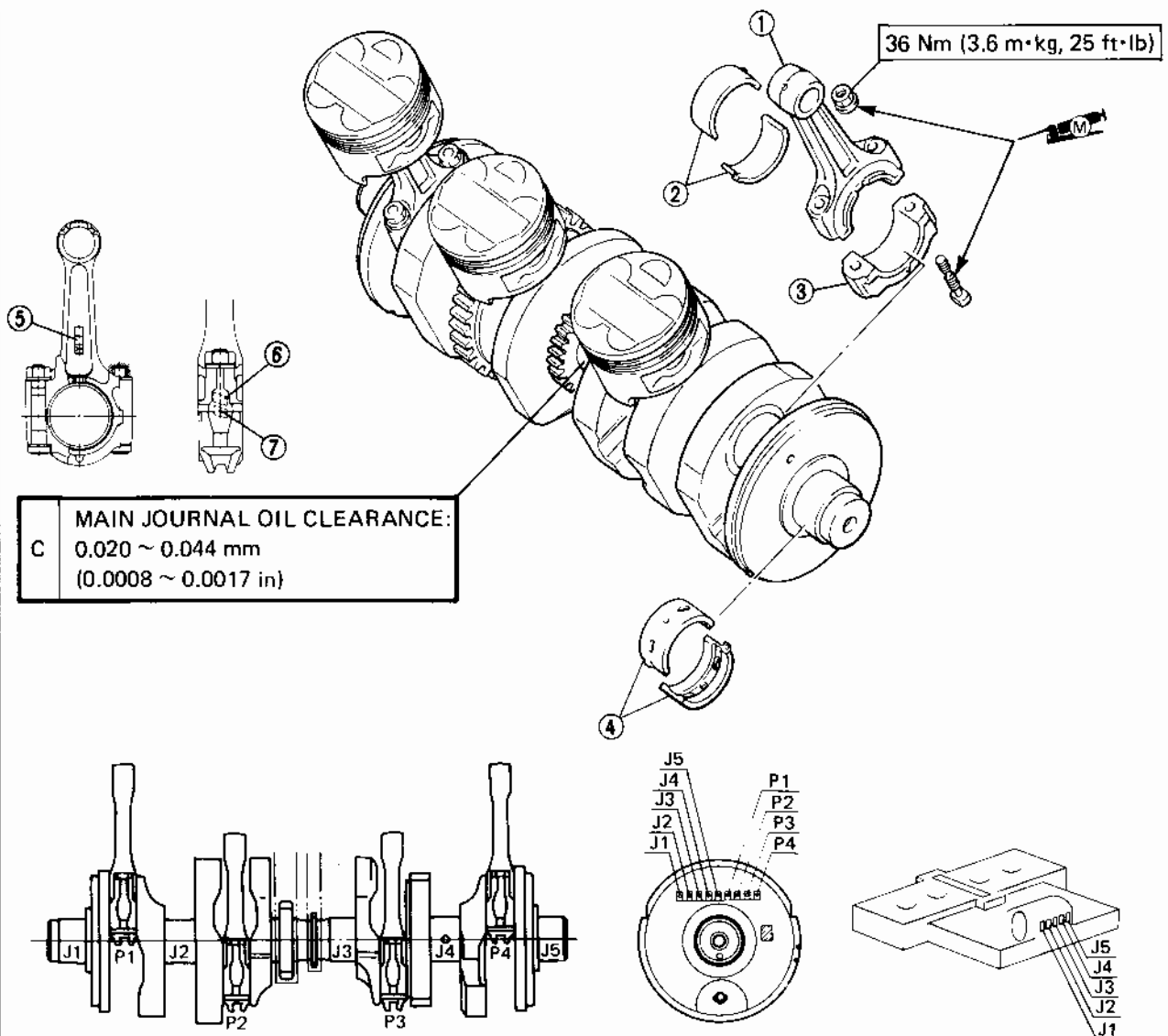


EXPLODED DIAGRAM

CONNECTING ROD AND CRANKSHAFT

- ① Connecting rod
- ② Connecting rod bearing
- ③ Connecting rod cap
- ④ Main journal bearing
- ⑤ "Y" mark
- ⑥ Matching mark
- ⑦ Crank pin bearing size

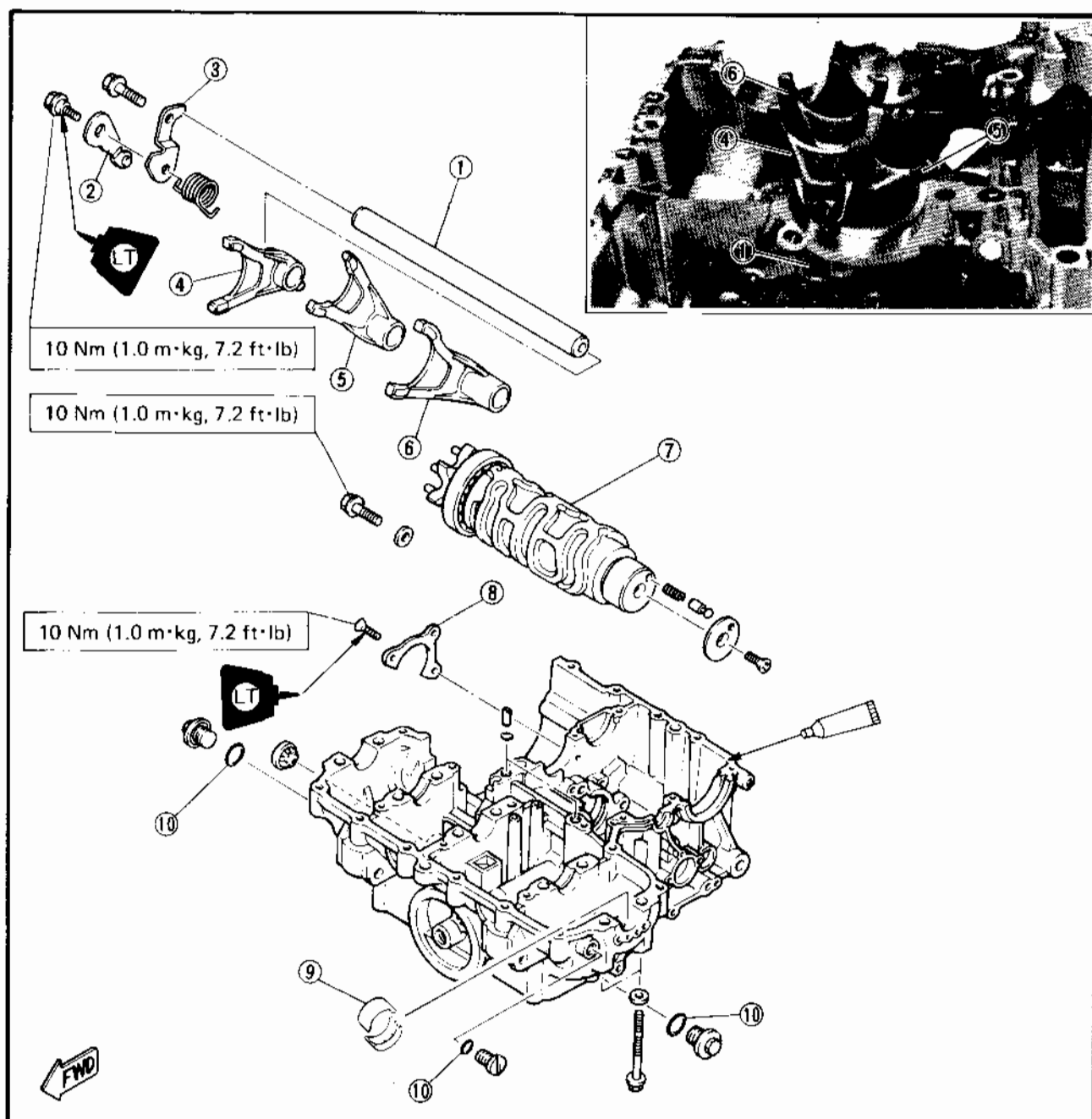
A	CRANKSHAFT RUNOUT LIMIT: 0.03 mm (0.0012 in)
B	CRANK PIN OIL CLEARANCE: 0.032 ~ 0.056 mm (0.0013 ~ 0.0022 in)





LOWER CRANKCASE

- ① Guide bar
- ② Stopper lever
- ③ Guide bar stopper
- ④ Shift fork (R)
- ⑤ Shift fork (C)
- ⑥ Shift fork (L)
- ⑦ Shift cam
- ⑧ Main axle bearing retainer
- ⑨ Crankshaft main bearing
- ⑩ O-ring



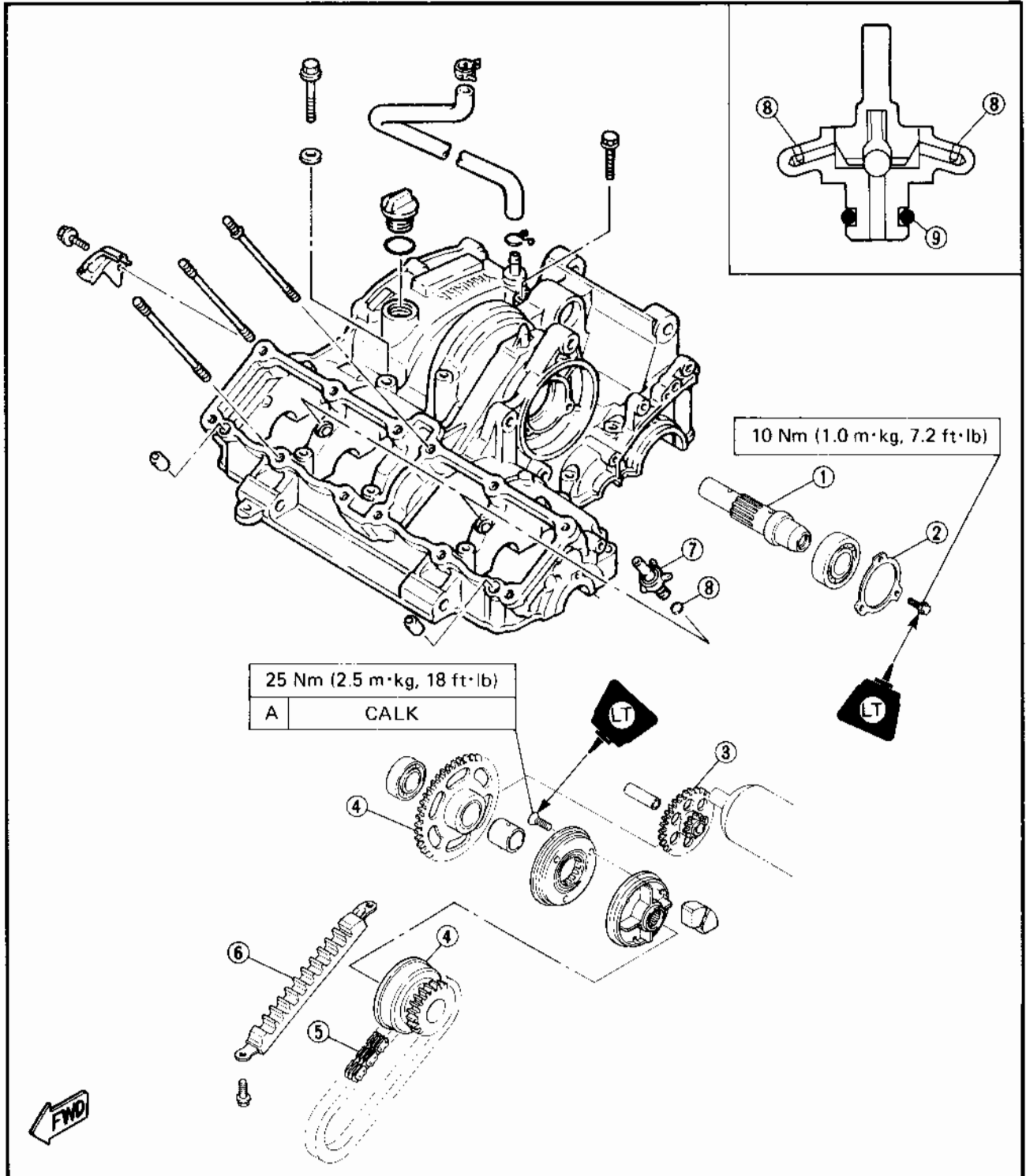
ENGINE ASSEMBLY AND ADJUSTMENT

ENG



UPPER CRANKCASE

- ① AC generator shaft
- ② Bearing retainer
- ③ Starter idle gear
- ④ Starter clutch gear
- ⑤ Starter clutch
- ⑥ HY-VO chain
- ⑦ HY-VO chain guide
- ⑧ Oil-Jet nozzle
- ⑨ O-ring



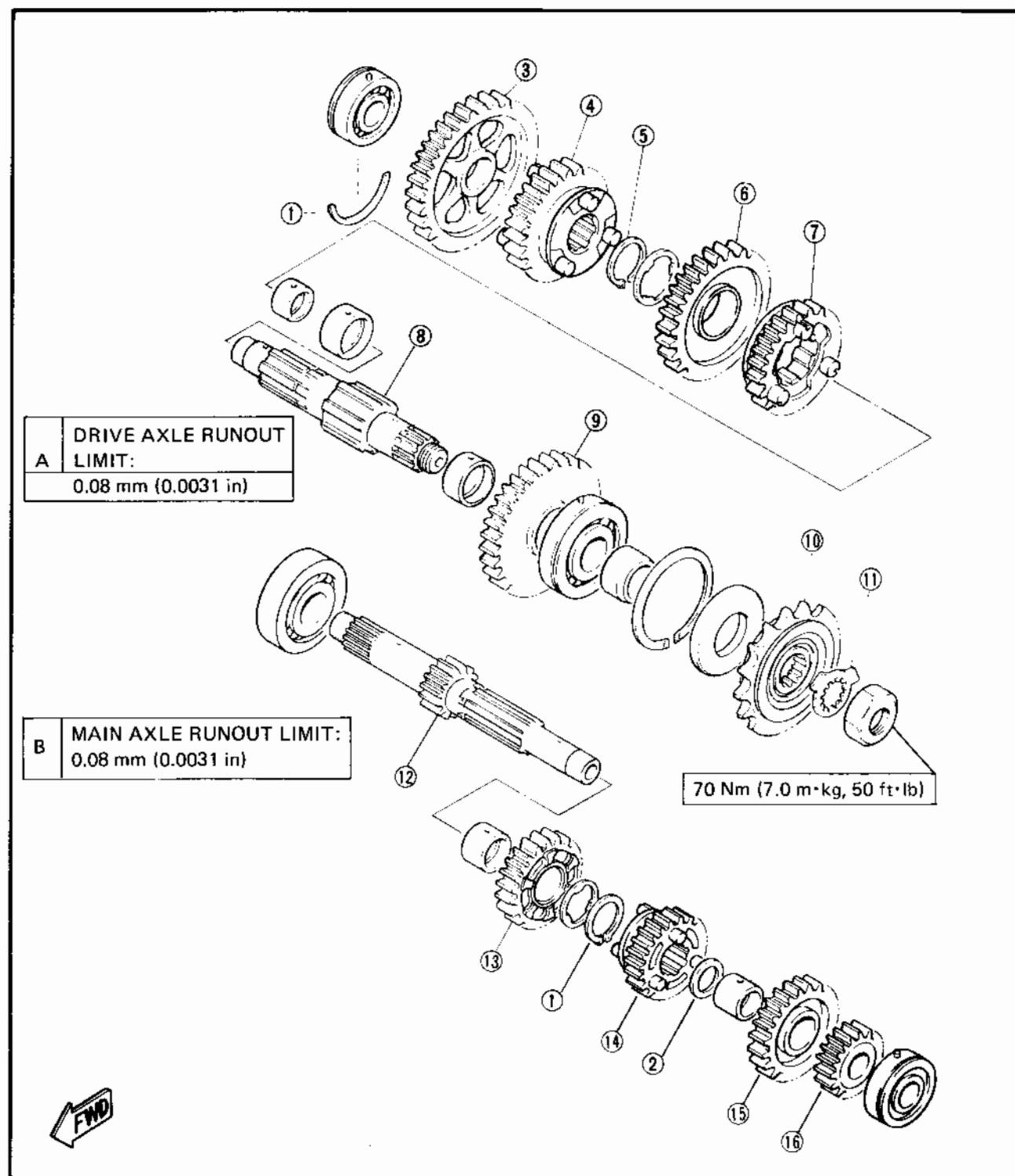
ENGINE ASSEMBLY AND ADJUSTMENT

ENG



TRANSMISSION

- | | | |
|------------------------|------------------------|-------------------------|
| ① Circlip | ⑦ 5th wheel gear (28T) | ⑬ 4th pinion gear (27T) |
| ② Plain washer | ⑧ Drive axle | ⑭ 3rd pinion gear (21T) |
| ③ 1st wheel gear (36T) | ⑨ 2nd wheel gear (32T) | ⑮ 5th pinion gear (27T) |
| ④ 4th wheel gear (27T) | ⑩ Drive sprocket | ⑯ 2nd pinion gear (18T) |
| ⑤ Circlip | ⑪ Lock washer | |
| ⑥ 3rd wheel gear (29T) | ⑫ Main axle | |



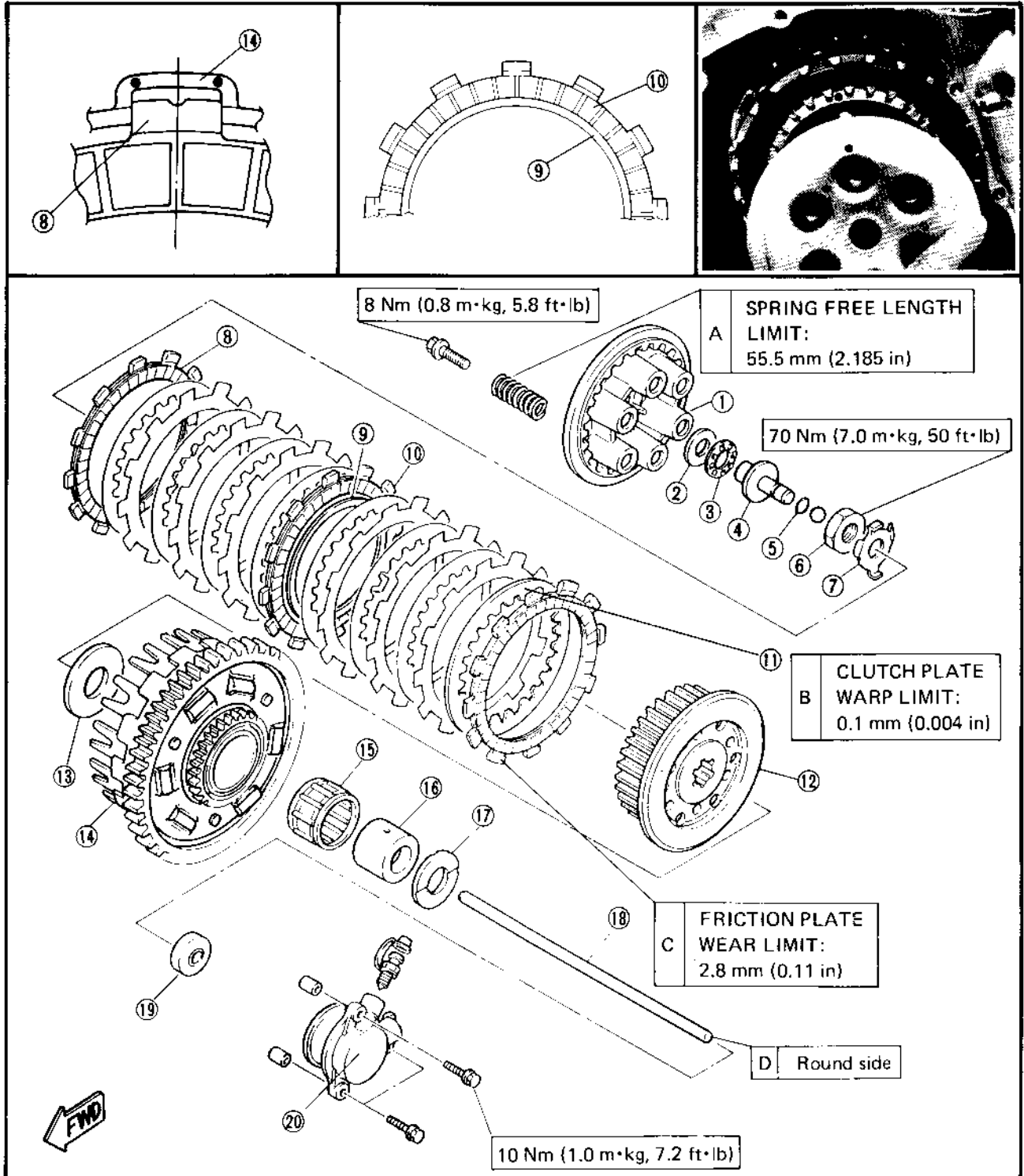
ENGINE ASSEMBLY AND ADJUSTMENT

ENG



CLUTCH

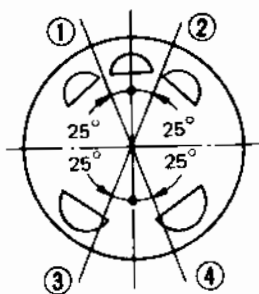
- | | | |
|------------------|---------------------------|---------------------------|
| ① Pressure plate | ⑧ Friction plate (outer) | ⑮ Bearing |
| ② Plate washer | ⑨ Cushion spring | ⑯ Spacer |
| ③ Bearing | ⑩ Friction plate (center) | ⑰ Thrust washer |
| ④ Push rod # 1 | ⑪ Clutch plate | ⑱ Push rod # 2 |
| ⑤ O-ring | ⑫ Clutch boss | ⑲ Oil seal |
| ⑥ Ball | ⑬ Washer | ⑳ Clutch release cylinder |
| ⑦ Lock washer | ⑭ Primary driven gear | |



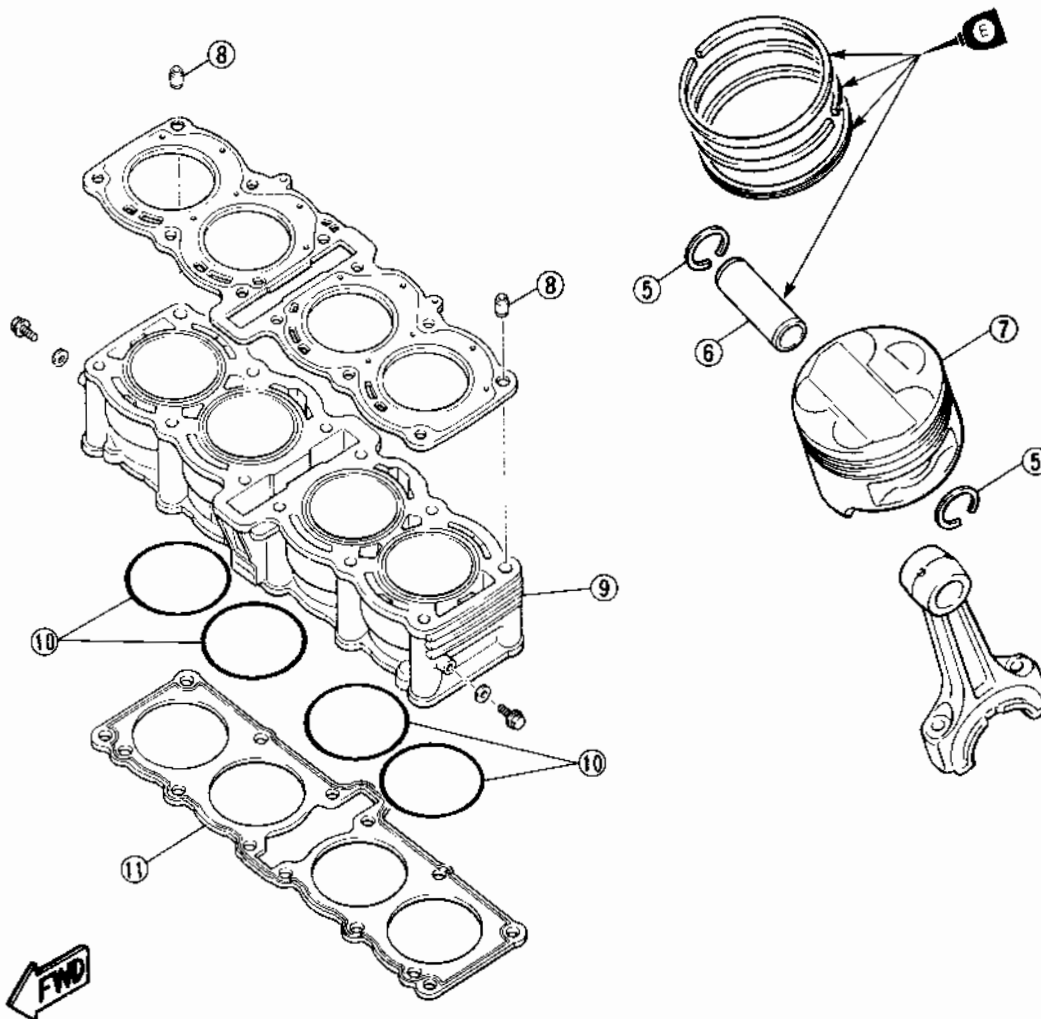


PISTON AND CYLINDER

- ① Top ring
- ② Oil ring (Lower)
- ③ Oil ring (Upper)
- ④ Second ring
- ⑤ Circlip
- ⑥ Piston pin
- ⑦ Piston
- ⑧ Dowel pin
- ⑨ Cylinder
- ⑩ O-ring
- ⑪ Gasket



A	SIDE CLEARANCE LIMIT;
	Top: 0.15 mm (0.0059 in) 2nd: 0.15 mm (0.0059 in)
B	END GAP LIMIT:
	Top: 0.7 mm (0.0276 in) 2nd: 0.7 mm (0.0276 in)
C	PISTON - TO - CYLINDER
	CLEARANCE: 0.06 ~ 0.08 mm (0.0024 ~ 0.0032 in)



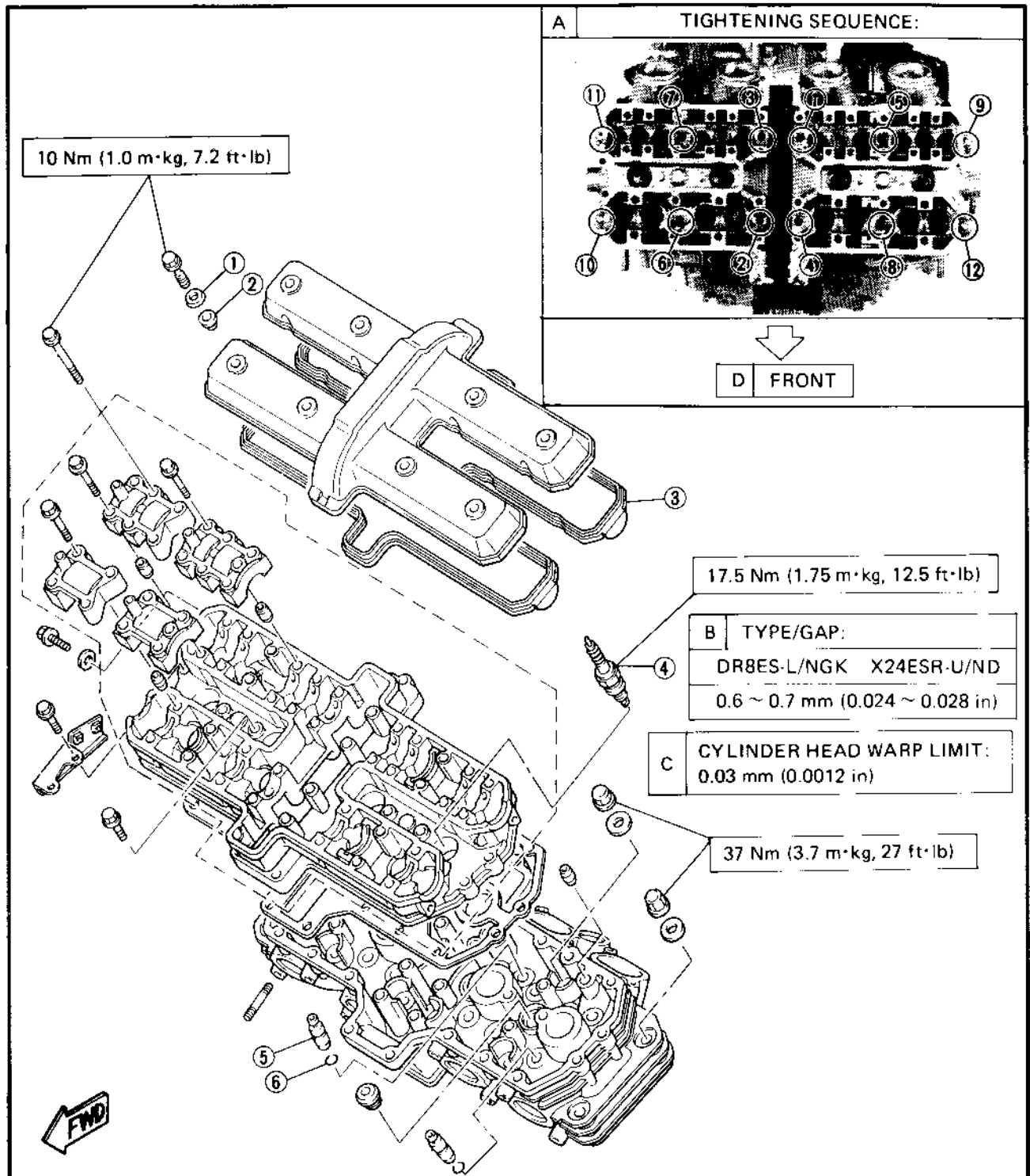
ENGINE ASSEMBLY AND ADJUSTMENT

ENG



CYLINDER HEAD

- ① Washer
- ② Rubber washer
- ③ Gasket
- ④ Spark plug
- ⑤ Valve guide
- ⑥ Circlip



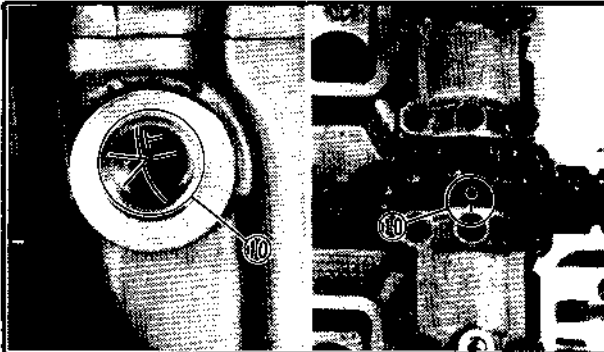
ENGINE ASSEMBLY AND ADJUSTMENT

ENG

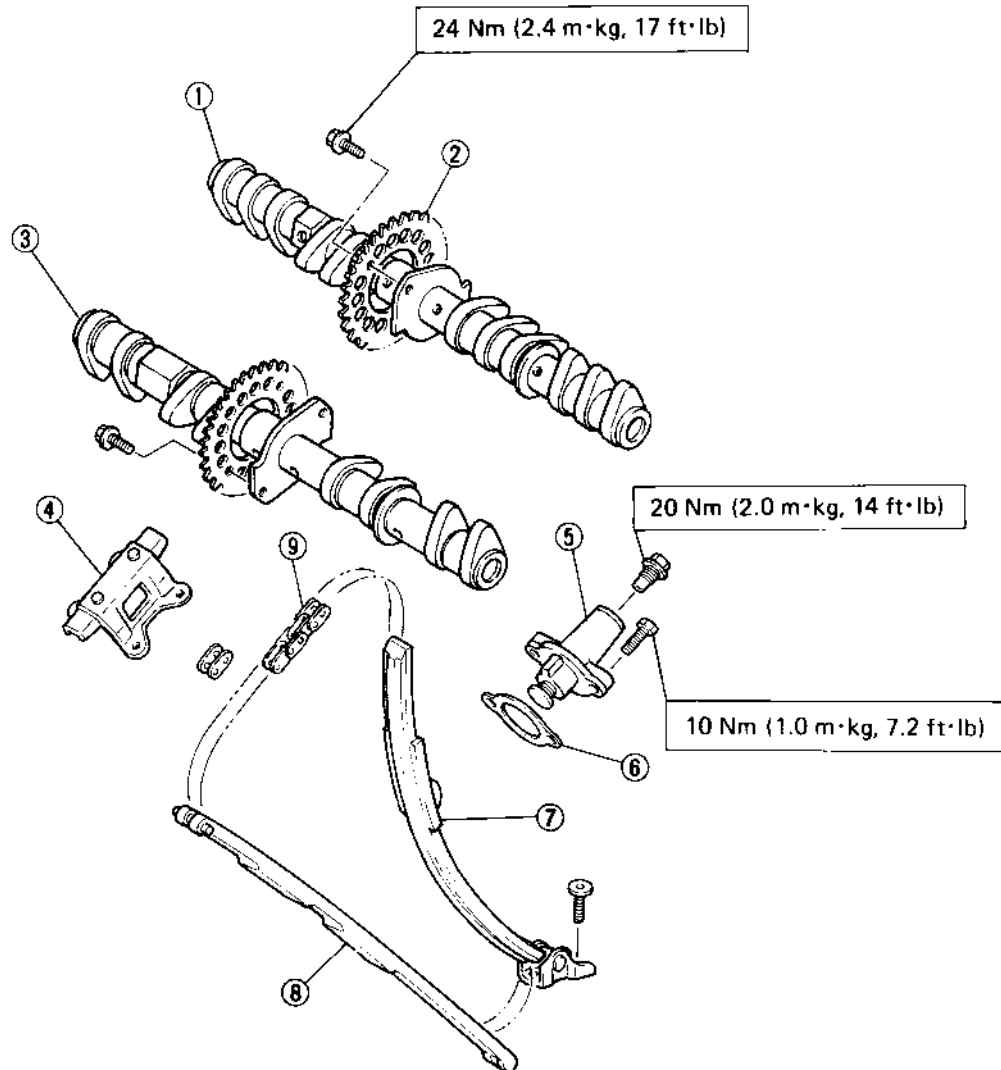


CAMSHAFT

- ① Camshaft (intake)
- ② Timing chain sprocket
- ③ Camshaft (exhaust)
- ④ Chain guide (upper)
- ⑤ Timing chain tensioner
- ⑥ Gasket
- ⑦ Timing chain guide (intake side)
- ⑧ Timing chain guide (exhaust side)
- ⑨ Timing chain
- ⑩ Match mark



A	VALVE CLEARANCE (COLD):
B	INTAKE: 0.11 ~ 0.20 mm (0.004 ~ 0.008 in)
C	EXHAUST: 0.21 ~ 0.30 mm (0.008 ~ 0.012 in)



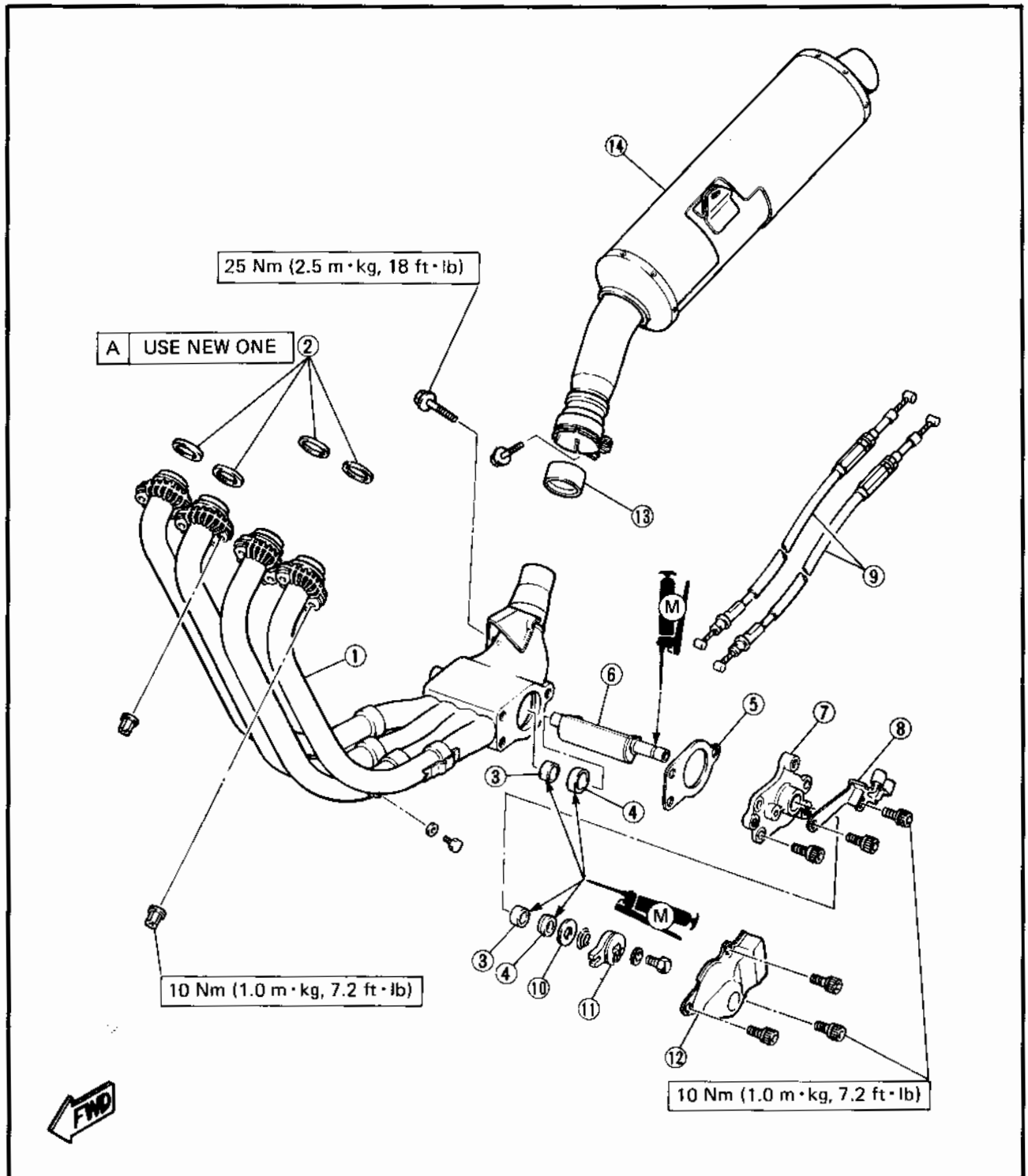
ENGINE ASSEMBLY AND ADJUSTMENT

ENG



EXUP

- | | |
|-------------------------|-----------------------|
| ① Exhaust pipe assembly | ⑧ Holder (EXUP cable) |
| ② Gasket (exhaust pipe) | ⑨ Cables |
| ③ Bush | ⑩ Washer |
| ④ Oil seal | ⑪ Pulley |
| ⑤ Gasket | ⑫ Valve cover |
| ⑥ Valve (EXUP) | ⑬ Gasket (muffler) |
| ⑦ Housing | ⑭ Muffler assembly |



CARBURETOR

CARB



CARBURETOR

- | | |
|---------------------|----------------------------|
| ① Fuel strainer | ⑫ Pilot air screw |
| ② Joint (fuel feed) | ⑬ Joint (overflow hose) |
| ③ Valve seat | ⑭ Joint (ventilation hose) |
| ④ Needle valve | ⑮ Joint (starter lever) |
| ⑤ O-ring | ⑯ Starter plunger |
| ⑥ Floats | ⑰ Starter joint |
| ⑦ Jet housing | ⑱ Stopper |
| ⑧ Starter jet | ⑲ Jet needle set |
| ⑨ Main jet | ⑳ Throttle valve |
| ⑩ Pilot jet | ㉑ Needle jet |
| ⑪ Pilot air jet | ㉒ Throttle valve support |

SPECIFICATIONS

ID Mark	3GM00	3LE00, 3LF00, 3LH00
MAIN JET (#1, 4 cylinder)	#125	#127.5
(#2, 3 cylinder)	#122.5	#125
MAIN AIR JET	#85	#85
PILOT JET	#40	#40
PILOT AIR JET	#115	#115
JET NEEDLE	5CEW8-35	5CEW8-35
PILOT SCREW	2-1/2 turns out	2-1/2 turns out
THROTTLE VALVE	#125	#125
ENGINE IDLE SPEED	950 ~ 1,050 r/min	
FUEL LEVEL	10.5 ~ 11.5 mm (0.41 ~ 0.45 in)	

5 Nm (0.5 m·kg,
3.6 ft·lb)

3 Nm (0.3 m·kg, 2.2 ft·lb)

A FUEL LEVEL

10.5 ~ 11.5 mm
(0.41 ~ 0.45 in)

Float
chamber line

4 Nm (0.4 m·kg,
2.9 ft·lb)



FRONT AND REAR BRAKE

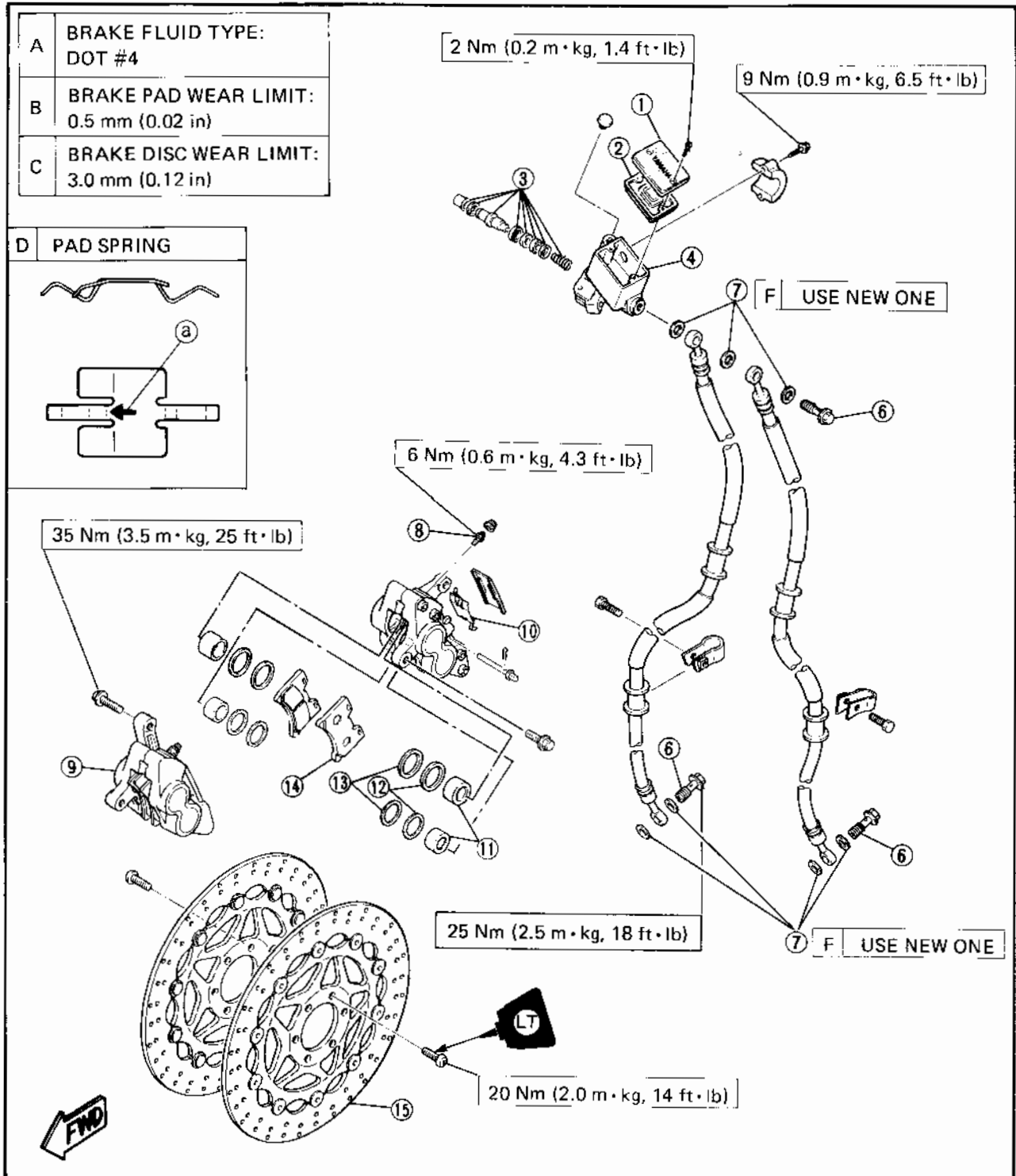
CHAS



FRONT AND REAR BRAKE

- | | |
|-----------------------|-----------------|
| ① Master cylinder cap | ⑨ Brake caliper |
| ② Diaphragm | ⑩ Pad spring |
| ③ Master cylinder kit | ⑪ Piston |
| ④ Master cylinder | ⑫ Piston seal |
| ⑤ Brake hose | ⑬ Dust seal |
| ⑥ Union bolt | ⑭ Brake pad |
| ⑦ Copper washer | ⑮ Brake disc |
| ⑧ Bleed screw | |

ⓓ The arrow mark ⓐ on the pad spring must point the disc rotating direction.

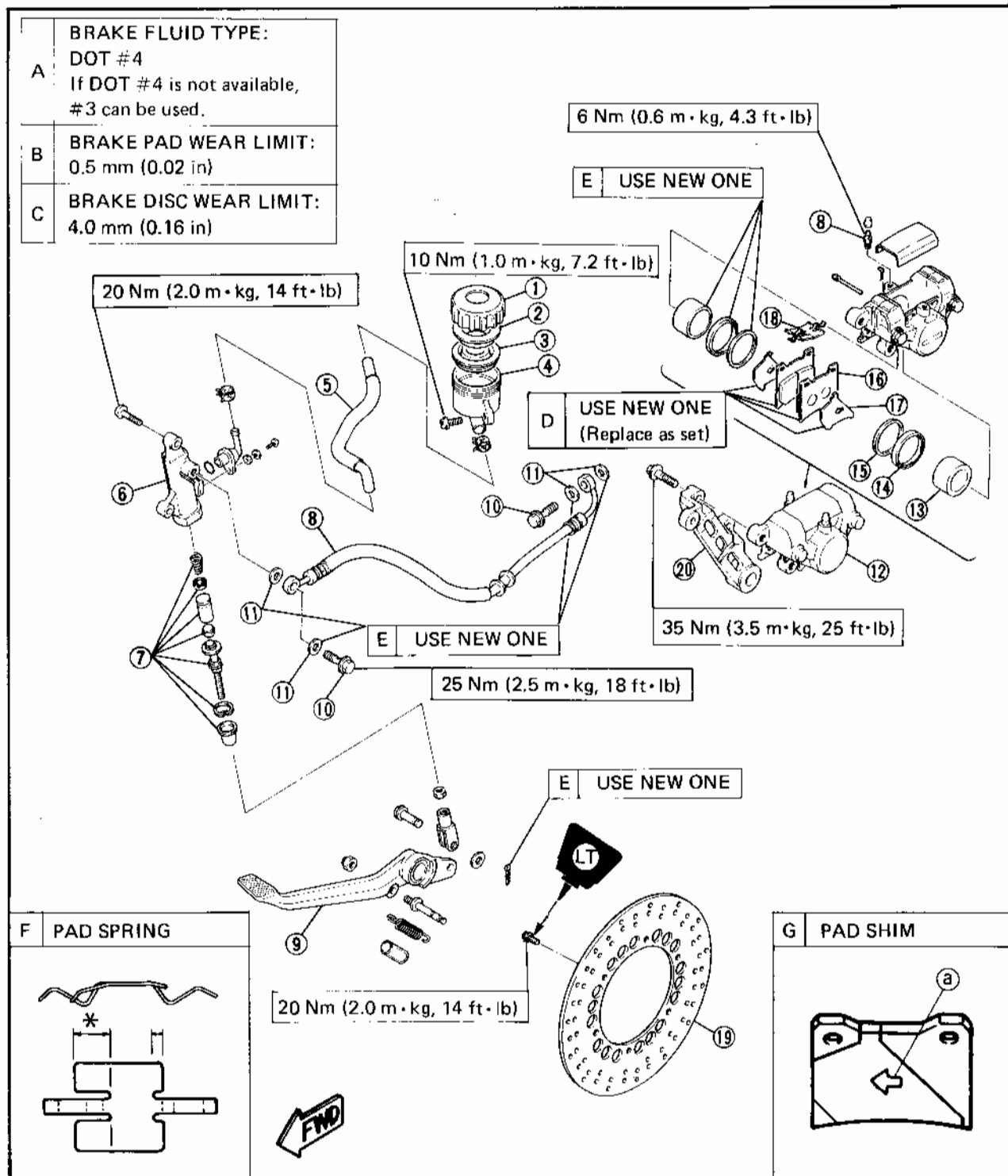


FRONT AND REAR BRAKE



- | | |
|-----------------------|-------------------|
| ① Reservoir tank cap | ⑪ Copper washer |
| ② Holder (diaphragm) | ⑫ Brake caliper |
| ③ Diaphragm | ⑬ Piston |
| ④ Reservoir tank | ⑭ Piston seal |
| ⑤ Reservoir hose | ⑮ Dust seal |
| ⑥ Master cylinder | ⑯ Brake pad |
| ⑦ Master cylinder kit | ⑰ Shim |
| ⑧ Brake hose | ⑱ Pad spring |
| ⑨ Brake pedal | ⑲ Brake disc |
| ⑩ Union bolt | ⑳ Caliper bracket |

- [F] The longer tangs (*) of the pad spring must point in the disc rotating direction.
- [G] The allow mark (a) on the pad shim must point in the disc rotating direction.



FRONT FORK

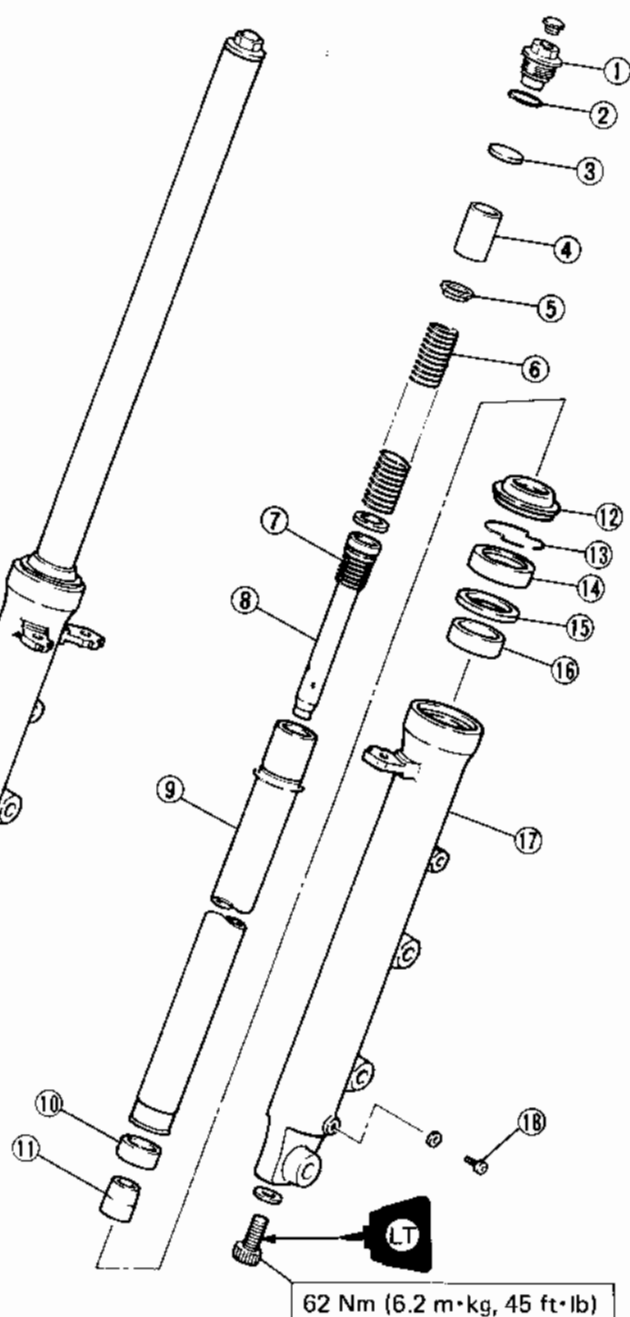
- | | |
|-------------------|-------------------|
| ① Cap bolt | ⑪ Oil lock piece |
| ② O-ring | ⑫ Dust seal |
| ③ Washer | ⑬ Retaining clip |
| ④ Spacer collar | ⑭ Oil seal |
| ⑤ Spring seat | ⑮ Seal spacer |
| ⑥ Fork spring | ⑯ Guide bushing |
| ⑦ Rebound spring | ⑰ Outer fork tube |
| ⑧ Damper rod | ⑱ Drain screw |
| ⑨ Inner fork tube | |
| ⑩ Slide bushing | |

A	FORK OIL (EACH):
B	CAPACITY: 535 cm ³ (18.9 Imp oz, 18.1 US oz)
C	OIL LEVEL: 116 mm (4.57 in) From top of inner fork tube Fully compression without spring
D	GRADE: Fork oil 10W or equivalent

23 Nm (2.3 m·kg, 17 ft·lb)

E FORK SPRING FREE LENGTH:
321.3 mm (12.6 in)

20 Nm (2.0 m·kg, 14 ft·lb)



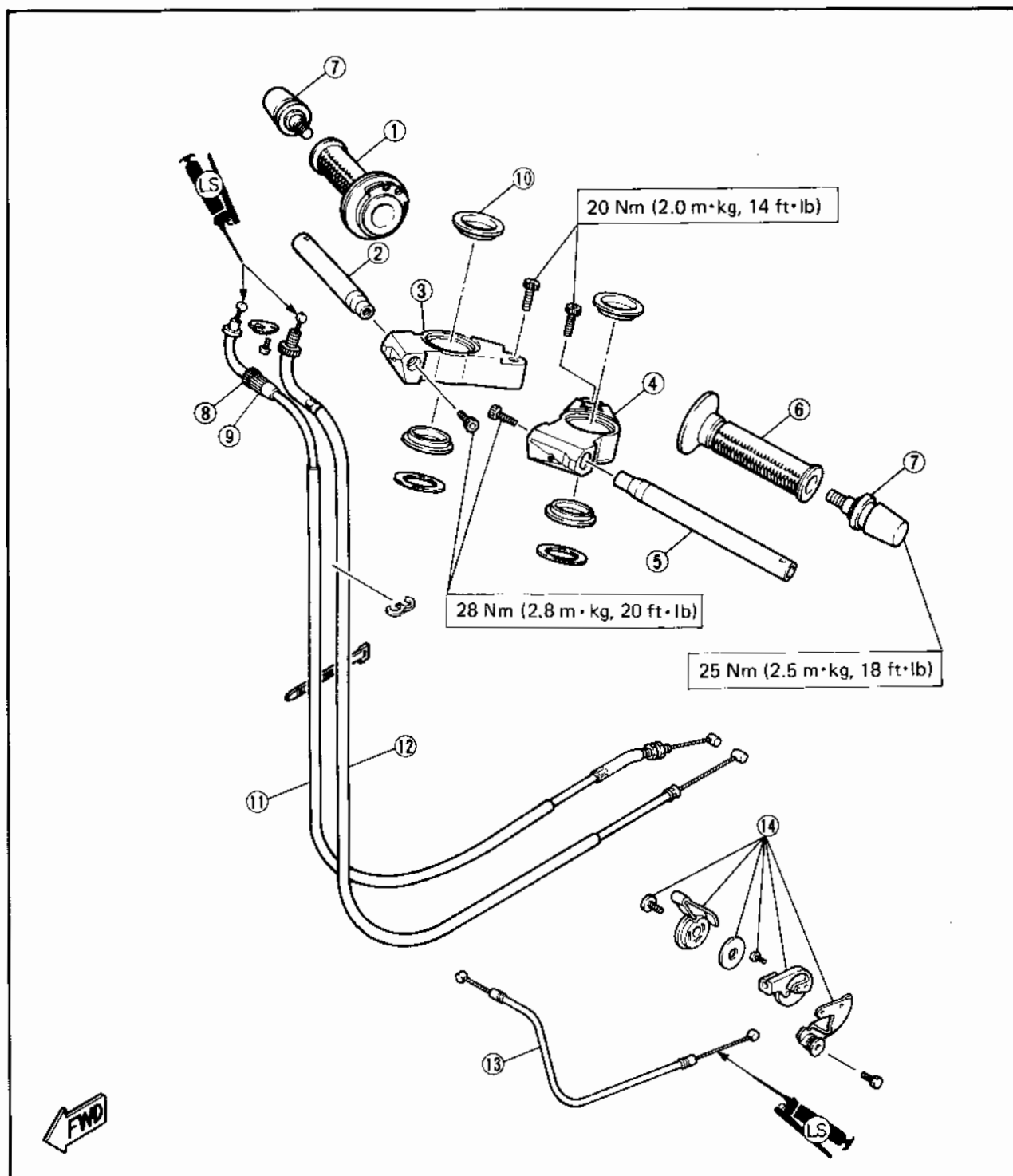
STEERING HEAD AND HANDLEBAR

CHAS



STEERING HEAD AND HANDLEBAR

- | | |
|--------------------------|--------------------------|
| ① Throttle grip | ⑧ Locknut |
| ② Handlebar (right) | ⑨ Adjuster |
| ③ Handlebar boss (right) | ⑩ Damper rubber |
| ④ Handlebar boss (left) | ⑪ Throttle cable 1 |
| ⑤ Handlebar (left) | ⑫ Throttle cable 2 |
| ⑥ Grip rubber | ⑬ Starter cable |
| ⑦ Handlebar grip end | ⑭ Starter lever assembly |

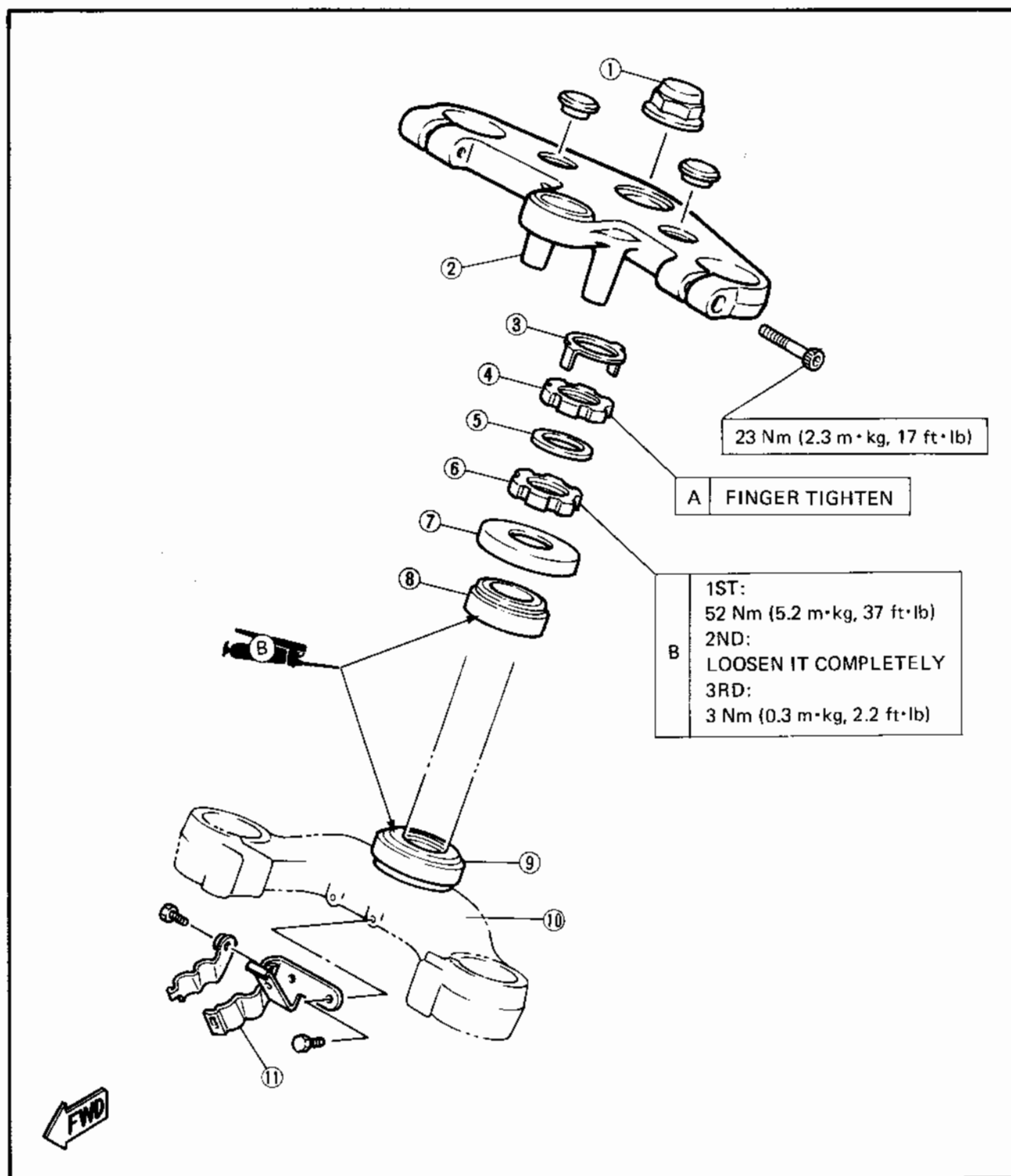


STEERING HEAD AND HANDLEBAR

CHAS



- ① Steering stem nut
- ② Upper bracket
- ③ Lock washer
- ④ Ring nut (upper)
- ⑤ Washer (rubber)
- ⑥ Ring nut (lower)
- ⑦ Bearing cover
- ⑧ Bearing (upper)
- ⑨ Bearing (lower)
- ⑩ Steering stem
- ⑪ Stay



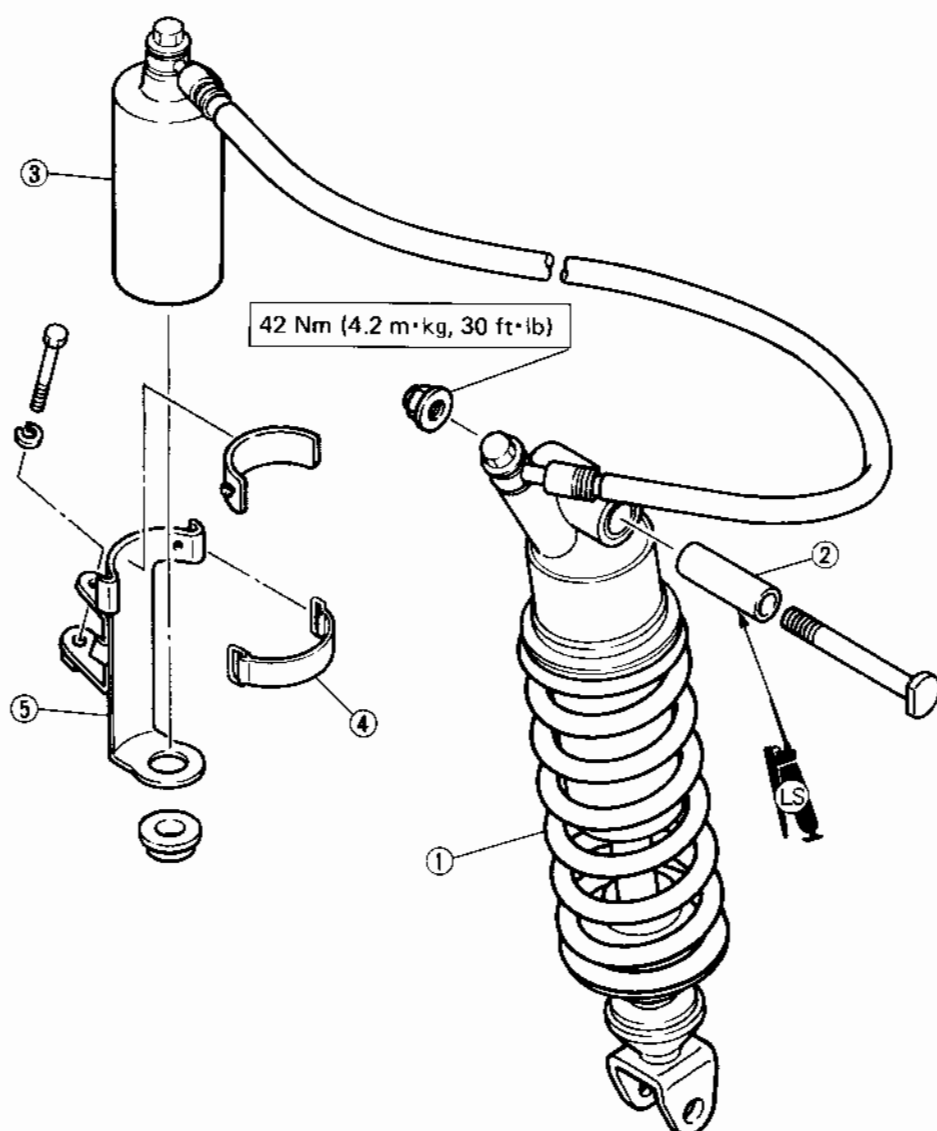
REAR SHOCK ABSORBER AND SWINGARM

CHAS



REAR SHOCK ABSORBER AND SWINGARM

- ① Shock absorber
- ② Collar
- ③ Sub tank (shock absorber)
- ④ Band
- ⑤ Stay



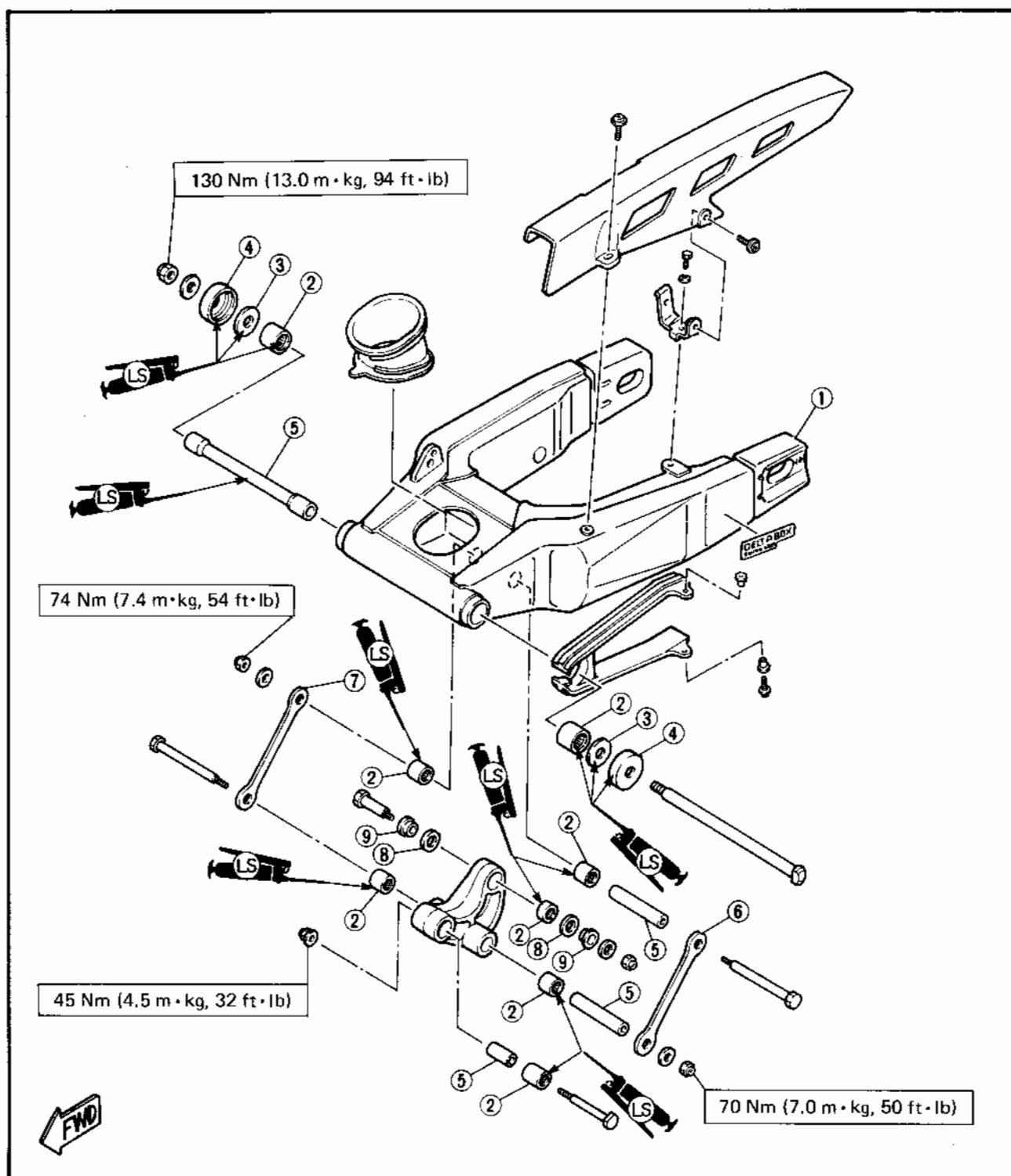
REAR SHOCK ABSORBER AND SWINGARM



- | | |
|-----------------|--------------|
| ① Swingarm | ⑥ Arm 1 |
| ② Bearing | ⑦ Arm 2 |
| ③ Thrust washer | ⑧ Oil seal |
| ④ Thrust cover | ⑨ Dust cover |
| ⑤ Collar | |

NOTE:

Coat the bearings, bushings, thrust covers, oil seals, and collars with a liberal amount of light weight lithium-soap base grease before installing. After installing, thoroughly wipe off excess grease.



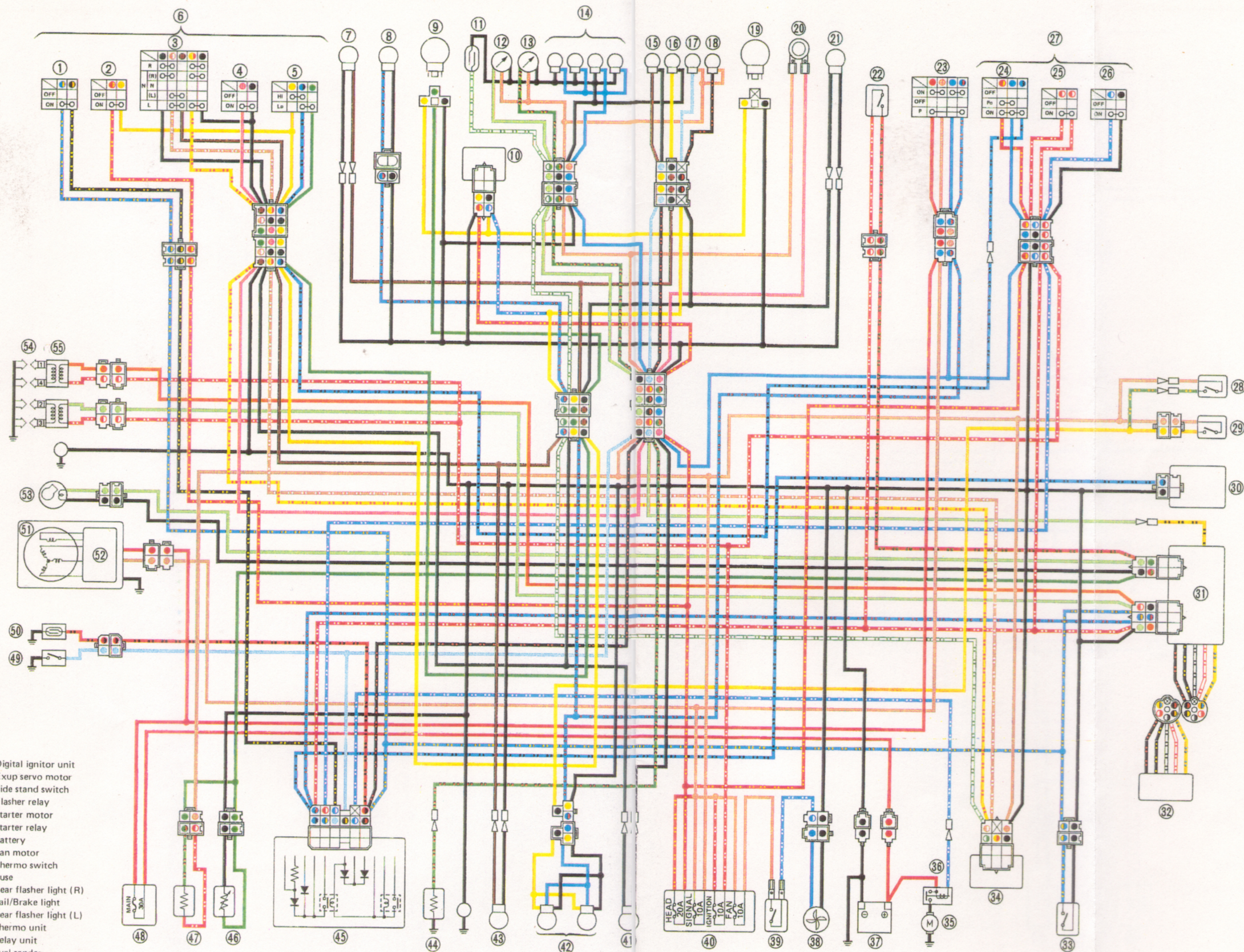


YAMAHA MOTOR CO., LTD.

IWATA, JAPAN

PRINTED IN JAPAN
89 - 2 - 2.0 x 1 CR
(英)

WIRING DIAGRAM FZR1000



- | | |
|---------------------------------|----------------------------|
| 1. Clutch switch | 31. Digital ignitor unit |
| 2. "PASS" switch | 32. Exup servo motor |
| 3. "TURN" switch | 33. Side stand switch |
| 4. "HORN" switch | 34. Flasher relay |
| 5. "LIGHTS" (Dimmer) switch | 35. Starter motor |
| 6. Handlebar switch (L) | 36. Starter relay |
| 7. Front flasher light (L) | 37. Battery |
| 8. Auxiliary light | 38. Fan motor |
| 9. Headlight (L) | 39. Thermo switch |
| 10. Headlight relay | 40. Fuse |
| 11. Lead switch | 41. Rear flasher light (R) |
| 12. Tachometer | 42. Tail/Brake light |
| 13. Engine temperature gauge | 43. Rear flasher light (L) |
| 14. Meter light | 44. Thermo unit |
| 15. "TURN" indicator light | 45. Relay unit |
| 16. "HIGH BEAM" indicator light | 46. Fuel sender |
| 17. "NEUTRAL" indicator light | 47. Resistor |
| 18. "OIL LEVEL" indicator light | 48. Fuse (main) |
| 19. Headlight (R) | 49. Neutral switch |
| 20. Horn | 50. Oil level switch |
| 21. Front flasher light (R) | 51. AC generator |
| 22. Reserve switch | 52. Rectifier/regulator |
| 23. Main switch | 53. Pick up coil |
| 24. "LIGHTS" switch | 54. Spark plug |
| 25. "ENGINE STOP" switch | 55. Ignition coil |
| 26. "START" switch | A For GB, E, N, DK, and GR |
| 27. Handlebar switch (R) | B For SF, NZ and A |
| 28. Front brake switch | C For I |
| 29. Rear brake switch | D For S and D |
| 30. Fuel pump | E For CH |

Blue Bleu Blau	Dark Green Vert Foncé Dunkelgrün	Red/Yellow Rouge/Jaune Rot/Gelb	Black/Red Noir/Rouge Schwarz/Rot	Yellow Jaune Gelb	Orange Orange Orange	Blue/Red Bleu/Rouge Blau/Rot	Green/Yellow Vert/Jaune Grün/Gelb
Red Rouge Rot	Gray Gris Grau	Red/Black Rouge/Noir Rot/Schwarz	Black/Yellow Noir/Jaune Schwarz/Gelb	Pink Rose Rosa	Yellow/Red Jaune/Rouge Gelb/Rot	Blue/White Bleu/Blanc Blau/Weiß	White/Green Blanc/Vert Weiß/Grün
Green Vert Grün	Brown Brun Braun	Red/White Rouge/Blanc Rot/Weiß	Black/Blue Noir/Bleu Schwarz/Blau	Sky Blue Bleu Ciel Himmelblau	Yellow/Blue Jaune/Bleu Gelb/Blau	Blue/Black Bleu/Noir Blau/Schwarz	White/Black Blanc/Noir Weiß/Schwarz
Black Noir Schwarz	Chocolate Chocolat Schokoladenfarbe	Red/Green Rouge/Vert Rot/Grün	Green/Red Vert/Rouge Grün/Rot	White Blanc Weiß	Brown/White Brun/Blanc Braun/Weiß	Blue/Yellow Bleu/Jaune Blau/Gelb	White/Red Blanc/Rouge Weiß/Rot

