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# YAMAHA

# FZS600 '98

5DM1-AE1

# SERVICE MANUAL

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EB000000

**FZS600**

**SERVICE MANUAL**

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**First edition, December 1997**

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## NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha scooter has a basic understanding of the mechanical ideas and the procedures of scooter repair. Repairs attempted by anyone without this knowledge are likely to render the scooter unfit for use.

Yamaha Motor Company, Ltd. is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

**NOTE:**

Designs and specifications are subject to change without notice.

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## IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following.



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

This manual is intended as a handy, easy-to-read reference book for the mechanic. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and inspection procedures are laid out with the individual steps in sequential order.

① The manual is divided into chapters. An abbreviation and symbol in the upper right corner of each page indicate the current chapter. Refer to "SYMBOLS" on the following page.

② Each chapter is divided into sections. The current section title is shown at the top of each page, except in Chapter 3 ("Periodic Inspections and Adjustments"), where the sub-section title (-s) appear.

(In Chapter 3, "Periodic Inspections and Adjustments", the sub-section title appears at the top of each page, instead of the section title.)

③ Sub-section titles appear in smaller print than the section title.

④ To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

⑤ Numbers are given in the order of the jobs in the exploded diagram. A circled number indicates a disassembly step.

⑥ Symbols indicate parts to be lubricated or replaced (see "SYMBOLS").

⑦ A job instruction chart accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.

⑧ Jobs requiring more information (such as special tools and technical data) are described sequentially.

CLUTCH    ENG

CLUTCH

CLUTCH

Order	Job name/Part name	Q'ty	Remarks
<b>Removing the clutch</b>			
1	Compression spring	6	Remove the parts in the order listed.
2	Pressure plate	1	
3	Short clutch push rod	1	
4	O-ring	1	
5	Ball	1	
6	Long clutch push rod	1	
7	Friction plate	8	
8	Clutch plate	8	
9	Friction plate (large)	1	
10	Clutch spring plate	1	
11	Nut	1	

CLUTCH

CLUTCH    ENG

CLUTCH

**REMOVING THE CLUTCH**

- Straighten the lock washer tab.
- Loosen:
  - clutch boss nut ①

**NOTE:**  
While holding the clutch boss ② with the universal clutch holder ③, loosen the clutch boss nut.

Universal clutch holder ③  
90890-04086

- Remove:
  - spacer ①
  - bearing ②

**NOTE:**  
Insert two M6-mm bolts ④ into the spacer and then remove the spacer by pulling on the bolts.

**CHECKING THE FRICTION PLATES**  
The following procedure applies to all of the friction plates.

- Check:
  - friction plate  
Damage/wear → Replace the friction plates as a set.
- Measure:
  - friction plate thickness  
Out of specification → Replace the friction plates as a set.

**NOTE:**  
Measure the friction plate at four places.

Friction plate thickness  
2.94 - 3.06 mm  
◀Limit: 2.8 mm

**CHECKING THE CLUTCH PLATES**  
The following procedure applies to all of the clutch plates.

- Check:
  - clutch plate  
Damage → Replace the clutch plates as a set.
- Measure:
  - clutch plate warpage (with a surface plate and thickness gauge ①)  
Out of specification → Replace the clutch plates as a set.

Clutch plate warpage limit  
Less than 0.1 mm

4-32

4-34

**SYMBOLS**

The following symbols are not relevant to every vehicle.

Symbols ① to ⑨ indicate the subject of each chapter.

- ① General information
- ② Specifications
- ③ Periodic inspection and adjustment
- ④ Engine
- ⑤ Cooling system
- ⑥ Carburetor(-s)
- ⑦ Chassis
- ⑧ Electrical system
- ⑨ Troubleshooting

Symbols ⑩ to ⑰ indicate the following.

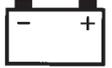
- ⑩ Serviceable with engine mounted
- ⑪ Filling fluid
- ⑫ Lubricant
- ⑬ Special tool
- ⑭ Tightening torque
- ⑮ Wear limit, clearance
- ⑯ Engine speed
- ⑰ Electrical data

Symbols ⑱ to ⑳ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑱ Apply engine oil
- ⑲ Apply gear oil
- ⑳ Apply molybdenum disulfide oil
- ㉑ Apply wheel bearing grease
- ㉒ Apply lightweight lithium-soap base grease
- ㉓ Apply molybdenum disulfide grease

Symbols ㉔ to ㉕ in the exploded diagrams indicate the following:

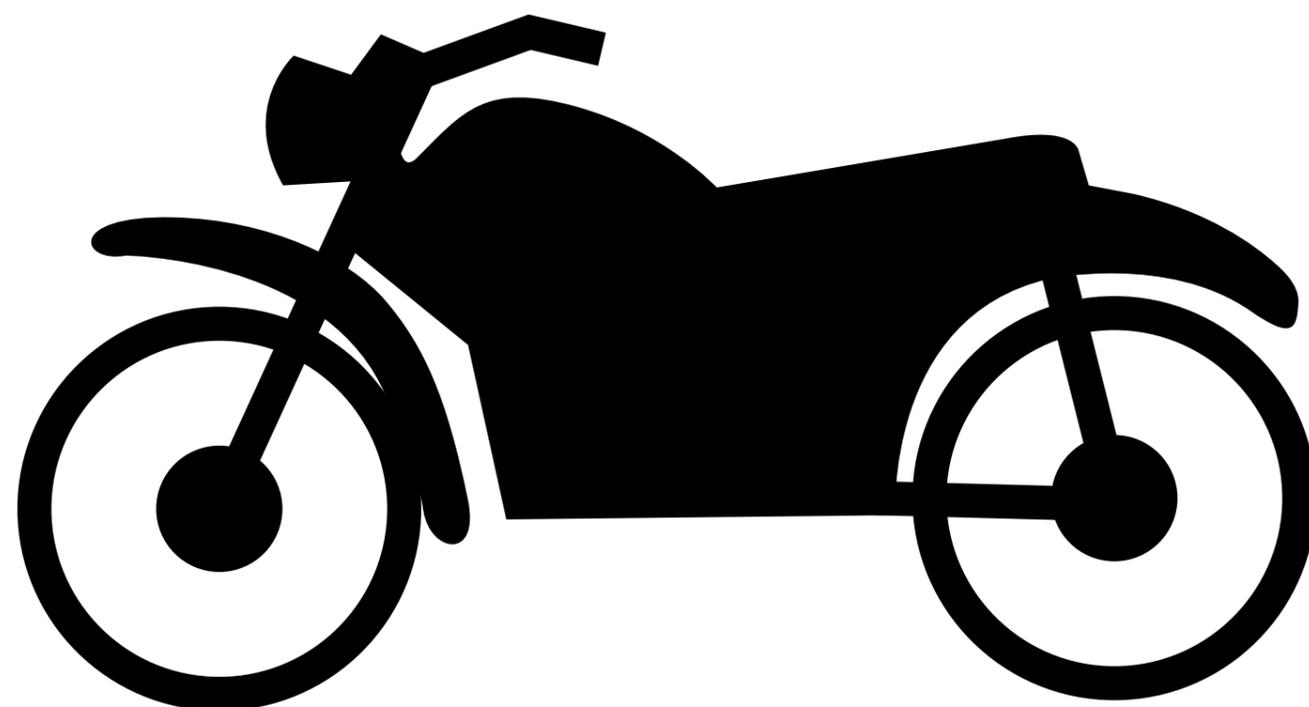
- ㉔ Apply locking agent (LOCTITE®)
- ㉕ Use new one

① <b>GEN INFO</b> 	② <b>SPEC</b> 	
③ <b>INSP ADJ</b> 	④ <b>ENG</b> 	
⑤ <b>COOL</b> 	⑥ <b>CARB</b> 	
⑦ <b>CHAS</b> 	⑧ <b>ELEC</b> 	
⑨ <b>TRBL SHTG</b> 	⑩ 	
⑪ 	⑫ 	
⑬ 	⑭ 	
⑮ 	⑯ 	⑰ 
⑱ 	⑲ 	⑳ 
㉑ 	㉒ 	㉓ 
㉔ 	㉕ <b>New</b>	

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<b>GENERAL INFORMATION</b>	
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	<b>SPEC</b> <b>2</b>
<b>PERIODIC INSPECTIONS AND ADJUSTMENTS</b>	
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<b>TROUBLESHOOTING</b>	<b>?</b>
	<b>TRBL SHTG</b> <b>9</b>





**GEN  
INFO**

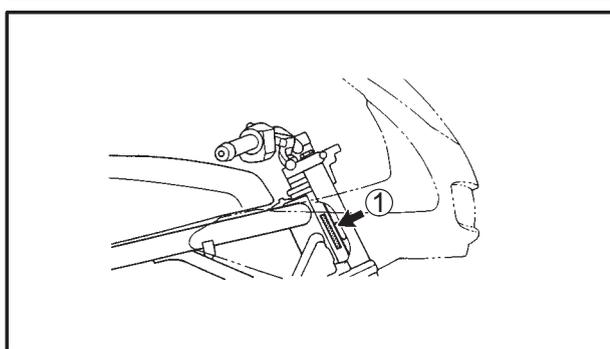
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## CHAPTER 1 GENERAL INFORMATION

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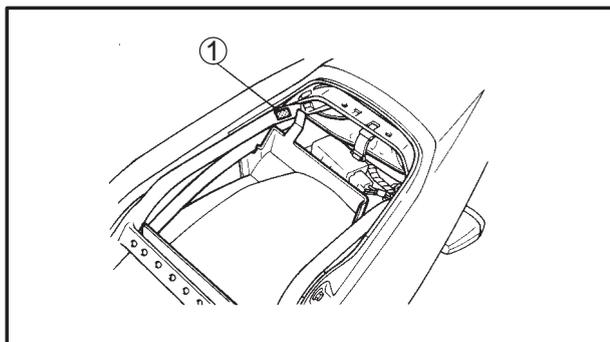
EB100000

## GENERAL INFORMATION MOTORCYCLE IDENTIFICATION

EB100010

### VEHICLE IDENTIFICATION NUMBER

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



EB100020

### MODEL CODE

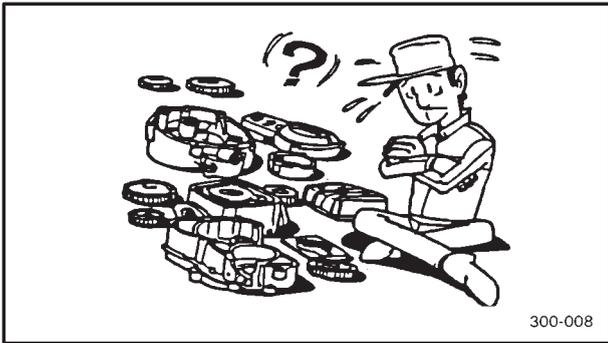
The model code label ① is affixed to the frame. This information will be needed to order spare parts.



EB102000

**IMPORTANT INFORMATION  
PREPARATION FOR REMOVAL AND  
DISASSEMBLY**

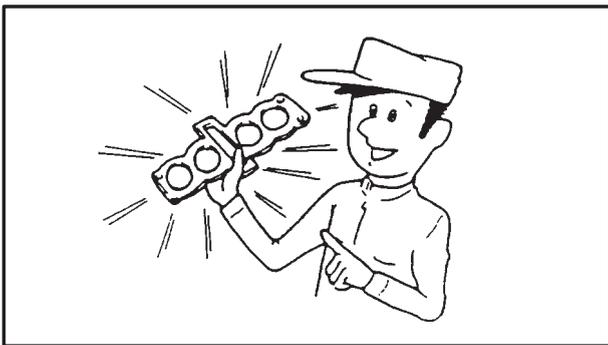
1. Before removal and disassembly, remove all dirt, mud, dust and foreign material.
2. Use only the proper tools and cleaning equipment.  
Refer to the "SPECIAL TOOLS" section.
3. When disassembling, always keep mated parts together. This includes gears, cylinders, pistons and other parts that have been "mated" through normal wear.  
Mated parts must always be reused or replaced as an assembly.
4. During disassembly, clean all of the parts and place them in trays in the order of disassembly. This will speed up assembly and allow for the correct installation of all parts.
5. Keep all parts away from any source of fire.



EB102010

**REPLACEMENT PARTS**

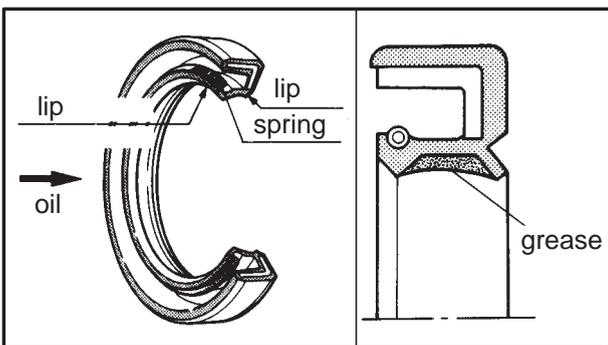
1. Use only genuine Yamaha parts for all replacements. Use oil and grease recommended by Yamaha for all lubrication jobs. Other brands may be similar in-function and appearance, but inferior in quality.

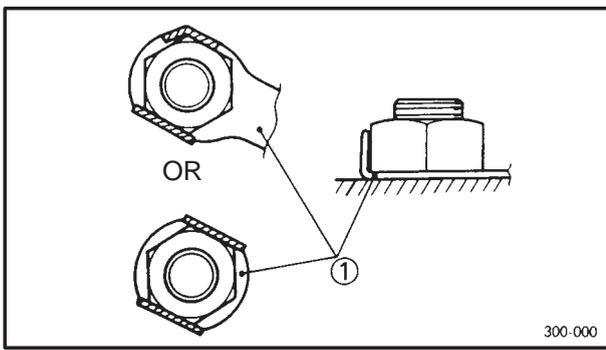


EB102020

**GASKETS, OIL SEALS AND O-RINGS**

1. When overhauling the engine, replace all gaskets, seals and O-rings. All gasket surfaces, oil seal lips and O-rings must be cleaned.
2. During reassembly, properly oil all mating parts and bearings and apply grease onto the oil seal lips.

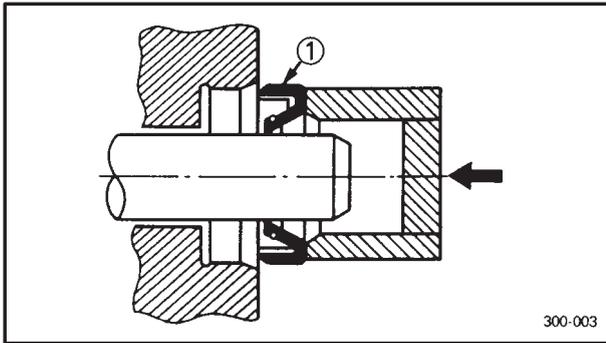




EB102030

## LOCK WASHERS/PLATES AND COTTER PINS

1. After removal, replace all lock washers/plates ① and cotter pins. After the bolt or nut has been tightened to specification, bend the lock tabs along a flat of the bolt or nut.



EB102040

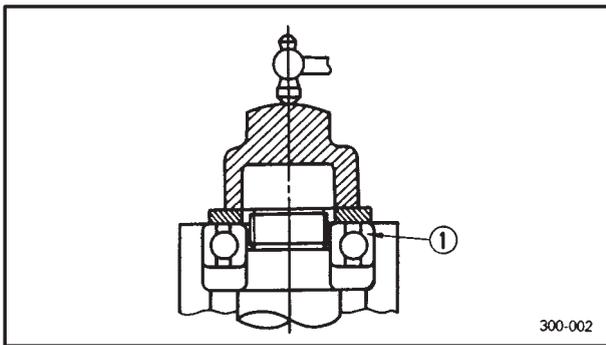
## BEARINGS AND OIL SEALS

1. Install bearings and oil seals so that the manufacturer's marks or numbers are visible. When installing oil seals, apply a light coat of lithium soap base grease onto the oil seal lips. Oil bearings liberally when installing, if appropriate.

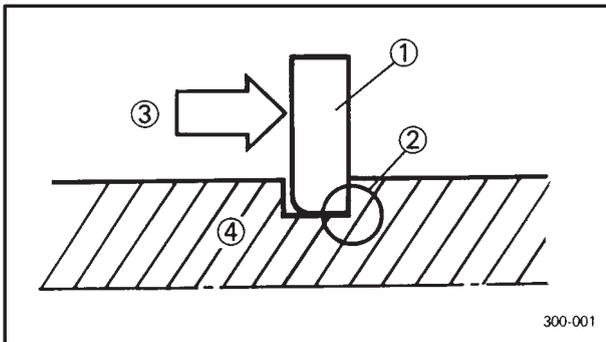
① Oil seal

### CAUTION:

**Do not spin the bearing with compressed air because this will damage the bearing surfaces.**



① Bearing

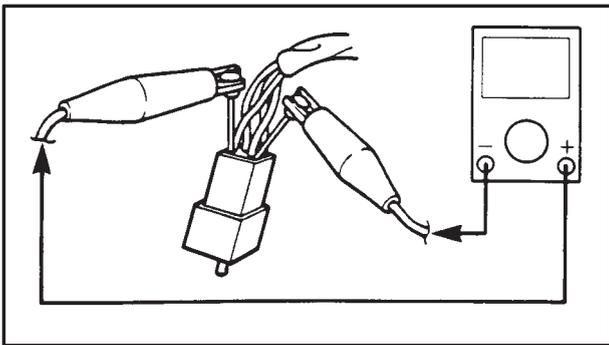
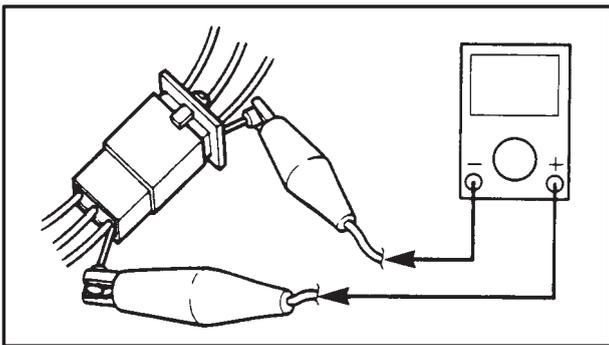
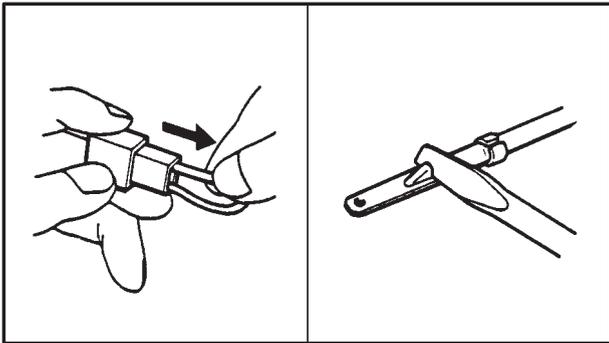
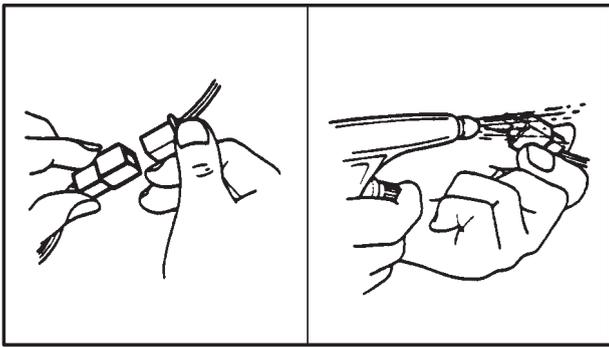


EB102050

## CIRCLIPS

1. Before reassembly, check all circlips carefully and replace damaged or distorted circlips. Always replace piston pin clips after one use. When installing a circlip ①, make sure that the sharp-edged corner ②, is positioned opposite the thrust ③ that the circlip receives.

④ Shaft



EB103000

## CHECKING THE CONNECTIONS

Check the leads, couplers, and connectors for stains, rust, moisture, etc.

1. Disconnect:

- lead
- coupler
- connector

2. Check:

- lead
- coupler
- connector

Moisture → Dry with an air blower.

Rust/stains → Connect and disconnect several times.

3. Check:

- all connections

Loose connection → Connect properly.

**NOTE:** \_\_\_\_\_

If the pin 2 on the terminal is flattened, bend in up.

4. Connect:

- lead
- coupler
- connector

**NOTE:** \_\_\_\_\_

Make sure that all connections are tight.

5. Check:

- continuity  
(with a pocket tester)



**Pocket tester**  
**90590-03112**

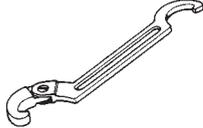
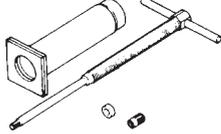
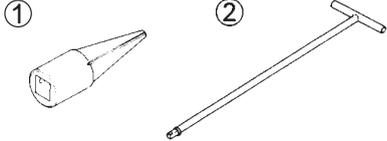
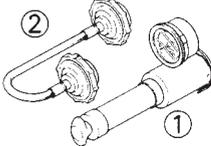
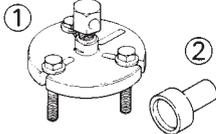
**NOTE:** \_\_\_\_\_

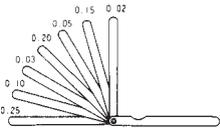
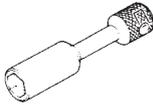
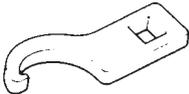
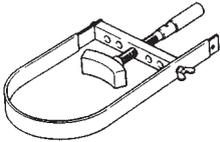
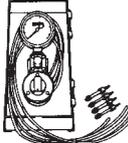
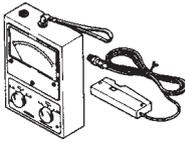
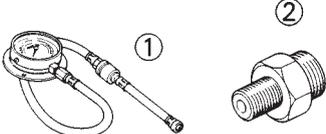
- If there is no continuity, clean the terminals.
- When checking the wire harness, perform steps 1 to 3.
- As a quick remedy, use a contact revitalizer available at most part stores.

EB104000

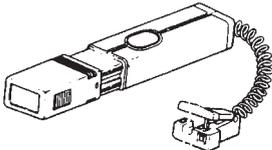
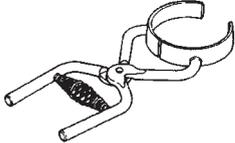
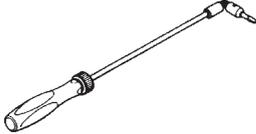
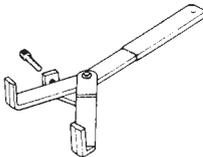
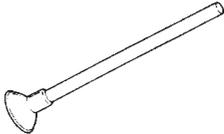
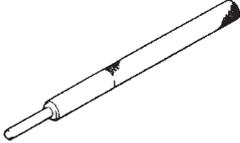
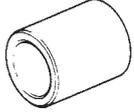
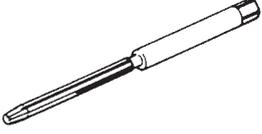
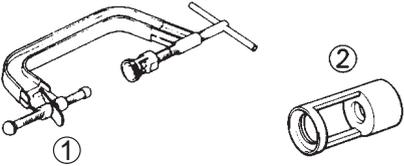
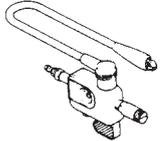
**SPECIAL TOOLS**

The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. When placing an order, refer to the list provided below to avoid any mistakes.

Tool No.	Tool name/Usage	Illustration
90890-01268	Ring nut wrench  This tool is used to loosen and tighten the steering ringnut.	
90890-01304	Piston pin puller  This tool is used to remove the piston pin.	
90890-01460 -01326	Damper rod holder ① T-handle ②  These tool ar used for holding the damper rod when removing or installing the damper rod.	
90890-01312	Fuel level gauge  This gauge is used to measure the fuel level in the float chamber.	
90890-01325 -01352	Radiator cap tester ① Adaptor ②  These tools are used for checking the cooling system.	
90890-01362 -01382	Flywheel puller ① Crank shaft protector ②  These tools are used for removing the rotor and starter clutch.	
90890-01367 -01381	Fork seal driver weight Fork seal driver attachment (ø41 mm)  These tools are used when installing the forkseal.	

Tool No.	Tool name/Usage	Illustration
90890-01399	<p>Special thickness gauge</p> <p>This tool is used to measure the valve clearance.</p>	
90890-01401	<p>Spark plug wrench</p> <p>This tool is used for removing or installing the spark plug.</p>	
90890-01403	<p>Ring nut wrench</p> <p>This tool is used to tighten the steering ring nut.</p>	
90890-01469	<p>Oil filter wrench</p> <p>This tool is used for removing or installing the oil filter.</p>	
90890-01701	<p>Sheave holder</p> <p>This tool is used for holding the magneto rotor.</p>	
90890-03081	<p>Compression gauge</p> <p>This tool is used to measure the engine compression</p>	
90890-03094	<p>Vacuum gauge</p> <p>This tool is used to measure the synchronizing the carburetors.</p>	
90890-03112	<p>Pocket tester ①</p> <p>These instruments are invaluable for checking the electrical system.</p>	
90890-03133	<p>Engine tachometer</p> <p>This tool is needed for detecting engine rpm.</p>	
90890-03153 -03139	<p>Oil pressure gauge Oil pressure adaptor H</p> <p>These tools are used to measure the engine oil pressure.</p>	

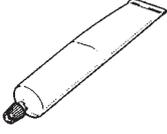


Tool No.	Tool name/Usage	Illustration
90890-03141	Timing light  This tool is necessary for checking ignition timing.	
90890-04044	Piston ring compressor  This tool is used to compress piston rings when installing the cylinder.	
90890-03158	Carburetor angle driver  This tool is used to adjust the pilot screw.	
90890-04086	Clutch holding tool  This tool is used for holding the clutch boss.	
90890-04101	Valve lapper  This tool is used for removing and installing the valve lifter and for lapping the valve.	
90890-04111	Valve guide remover (4.0 mm)  This tool is used to remove the valve guides.	
90890-04112	Valve guide installer (4.0 mm)  This tool is needed to install the valve guides properly.	
90890-04113	Valve guide reamer (4.0 mm)  This tool is used to rebore the new valve guide.	
90890-04019 -04114	Valve spring compressor ① Valve spring compressor attachment ②  These tools are used when removing or installing the valve and the valve spring.	
90890-06754	Ignition checker  This instrument is necessary for checking the ignition system components.	

# SPECIAL TOOLS

**GEN  
INFO**



Tool No.	Tool name/Usage	Illustration
90890-85505	Yamaha bond No.1215  This sealant (bond) is used for crankcase mating surface, etc.	 A simple line drawing of a tube of sealant, oriented horizontally with a small nozzle at the left end.



**SPEC**

**2**

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## CHAPTER 2 SPECIFICATIONS

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SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	FZS600
Model code:	5DM1
Dimensions:	
Overall length	2,080 mm
Overall width	710 mm
Overall height	1,170 mm
Seat height	790 mm
Wheelbase	1,415 mm
Minimum ground clearance	130 mm
Minimum turning radius	2,900 mm
Basic weight:	
With oil and full fuel tank	210 kg
Engine:	
Engine type	Liquid cooled 4-stroke, DOHC
Cylinder arrangement	Forward inclined parallel 4-cylinder
Displacement	599 cm <sup>3</sup>
Bore × stroke	62.0 × 49.6 mm
Compression ratio	12 : 1
Compression pressure (STD)	1,550 kPa/400 r/min (15.5 kgf/cm <sup>2</sup> )
Starting system	Electric starter
Lubrication system:	Wet sump
Oil type or grade:	
Engine oil	<p>Temp. °C</p> <p>API STANDARD: SE or higher grade ACEA STANDARD: G4 or G5</p>
Periodic oil change	2.5 L
With oil filter replacement	2.7 L
Total amount	3.5 L
Radiator capacity	1.95 L
Total amount (including all routes)	
Air filter:	Dry type element
Fuel:	
Type	Regular unleaded gasoline
Fuel tank capacity	18 L
Fuel reserve amount	3.5 L

# GENERAL SPECIFICATIONS

**SPEC**



Model	FZS600
<b>Carburetor:</b> Type/quantity Manufacturer	BSR 33/4 MIKUNI
<b>Spark plug:</b> Type Manufacturer Spark plug gap	CR9E, CR8E/U27ESR-NU24ESR-N NGK/DENSO 0.7 ~ 0.8 mm
<b>Clutch type:</b>	Wet, multiple-disc
<b>Transmission:</b> Primary reduction system Primary reduction ratio Secondary reduction system Secondary reduction ratio Transmission type Operation Gear ratio      1st 2nd 3rd 4th 5th 6th	Spur gear 82/48 (1.708) Chain drive 48/15 (3.200) Constant mesh 6-speed Left foot operation 37/13 (2.846) 37/19 (1.947) 34/22 (1.545) 28/21 (1.333) 25/21 (1.190) 29/27 (1.074)
<b>Chassis:</b> Frame type Caster angle Trail	Double cradle 24° 88 mm
<b>Tire:</b> Type Size              front rear Manufacturer   front rear Type                front rear	Tubeless 110/70ZR 17 (54W) 160/60ZR 17 (69W) BRIDGESTONE/DUNLOP BRIDGESTONE/DUNLOP BT-57F/D207F BT-57R/D207J
<b>Tire pressure:</b> Maximum load-except motorcycle Loading condition A* front rear Loading condition B* front rear High-speed riding front rear	187 kg 0 ~ 90 kg 225 kPa (2.25 kg/cm <sup>2</sup> , 2.25 bar) 250 kPa (2.5 kg/cm <sup>2</sup> , 2.5 bar) 90 ~ 187 kg 225 kPa (2.25 kg/cm <sup>2</sup> , 2.25 bar) 280 kPa (2.8 kg/cm <sup>2</sup> , 2.8 bar) 225 kPa (2.25 kg/cm <sup>2</sup> , 2.25 bar) 280 kPa (2.8 kg/cm <sup>2</sup> , 2.8 bar)

\*Load is the total weight of cargo, rider, passenger, and accessories.

# GENERAL SPECIFICATIONS

**SPEC**



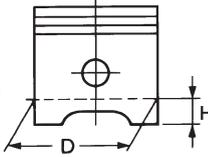
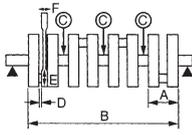
Model	FZS600
<b>Brake:</b> Front brake    type operation Rear brake    type operation	Dual disc brake Right hand operation Single disc brake Right foot operation
<b>Suspension:</b> Front suspension Rear suspension	Telescopic fork Swingarm (link suspension)
<b>Shock absorber:</b> Front shock absorber Rear shock absorber	Coil spring/Oil damper Coil spring/Gas-oil damper
<b>Wheel travel:</b> Front wheel travel Rear wheel travel	120 mm 120 mm
<b>Electrical:</b> Ignition system Generator system Battery type Battery capacity	T.C.I. (digital) A.C. magneto GT12B-4 12V 10 AH
<b>Headlight bulb type:</b>	Halogen bulb
<b>Bulb voltage, wattage × quantity:</b> Headlight Brake/tail light Front turn signal light Rear turn signal light License light Meter light Indicator light Neutral indicator light High beam indicator light Oil level warning light Turn indicator light Fuel level warning light Engine temperature warning light	12V 60 W/55 W × 2 12V 21W/5W × 2 12V 21 W × 2 12V 21 W × 2 12V 5 W × 2 12V 2 W × 3 12V 1.4 W × 1 12V 1.4 W × 1 12V 1.4 W × 1 12V 1.4 W × 2 12V 1.4 W × 1 LED



# MAINTENANCE SPECIFICATIONS

**SPEC**



Item	Standard	Limit	
Stem-to-guide clearance	IN EX	0.010 ~ 0.037 mm 0.025 ~ 0.052 mm	0.08 mm 0.1 mm
Stem runout limit	•••	•••	0.04 mm
Valve seat width	IN EX	0.9 ~ 1.1 mm 0.9 ~ 1.1 mm	1.6 mm 1.6 mm
Valve spring:			
Free length	IN/EX	40.09 mm	37.5 mm
Set length (valve closed)	IN/EX	34.5 mm	•••
Compressed pressure	IN/EX	134 ~ 156 N (13.4 ~ 15.6 kg)	•••
Tilt limit	IN/EX	•••	2.5°/1.8 mm
Direction of winding	IN/EX	Clockwise	•••
Piston:			
Piston clearance		0.025 ~ 0.050 mm	0.07 mm
Piston size "D"		61.960 ~ 61.975 mm	•••
Measuring point "H"		5 mm	•••
Piston off-set		0.5 mm	•••
Piston off-set direction		In side	•••
Piston pin bore inside dia.		17.002 ~ 17.013 mm	•••
Piston pin outside dia.		16.991 ~ 17.000 mm	•••
Piston rings:			
Top ring:			
Type		Barrel	•••
Dimensions (B × T)		0.8 × 2.2 mm	•••
End gap (installed)		0.15 ~ 0.30 mm	0.6 mm
Side clearance (installed)		0.020 ~ 0.075 mm	0.1 mm
2nd ring:			
Type		Taper	•••
Dimensions (B × T)		0.8 × 2.3 mm	•••
End gap (installed)		0.25 ~ 0.40 mm	0.7 mm
Side clearance (installed)		0.020 ~ 0.055 mm	0.1 mm
Oil ring:			
End gap (installed)		1.5 × 2.3 mm	•••
		0.10 ~ 0.35 mm	•••
Connecting rod:			
Oil clearance		0.043 ~ 0.066 mm	0.08 mm
Color code (corresponding size)		1. Blue 2. Black 3. Brown 4. Green	•••
Crankshaft:			
Crankshaft width "A"		48.4 mm	•••
Assembly width "B"		296.8 ~ 298.0 mm	•••
Runout limit "C"		•••	0.03 mm
Big end side clearance "D"		0.160 ~ 0.262 mm	0.5 mm
Big end radial clearance "E"		0.043 ~ 0.066 mm	0.08 mm
Small end free play "F"		0.32 ~ 0.50 mm	0.8 mm
Journal oil clearance		0.025 ~ 0.043 mm	0.08 mm
Color code (corresponding size)		1. Black 2. Brown 3. Green 4. Yellow 5. Pink	•••

# MAINTENANCE SPECIFICATIONS

**SPEC**



Item	Standard	Limit
<b>Clutch:</b>		
Friction plate thickness	2.94 ~ 3.06 mm	•••
Quantity	8 pcs	•••
Wear limit	•••	2.8 mm
Friction plate thickness	2.94 ~ 3.06 mm	•••
Quantity	1 pcs	•••
Clutch plate thickness	1.9 ~ 2.1 mm	•••
Quantity	8 pcs	•••
Warp limit	•••	0.1 mm
Clutch spring free length	34.9 mm	•••
Quantity	6 pcs	•••
Minimum length	•••	34.3 mm
Clutch housing thrust clearance	0.05 ~ 0.13 mm	0.2 mm
Clutch housing radial clearance	0.005 ~ 0.041 mm	•••
Clutch release method	Inner push, screw push	•••
Push rod bending limit	•••	0.3 mm
<b>Transmission:</b>		
Main axle deflection limit	•••	0.02 mm
Drive axle deflection limit	•••	0.02 mm
<b>Shifter:</b>		
Shifter type	Guide bar	•••
Guide bar bending limit	•••	0.05 mm
<b>Carburetor:</b>		
I.D. mark	5DM1 00	•••
Main jet (M.J)	#115	•••
Main air jet (M.A.J)	#80	•••
Jet needle (J.N)	5D86	•••
Needle jet (N.J)	P-O	•••
Pilot air jet (P.A.J.1)	#130	•••
Pilot outlet (P.O)	0.9	•••
Pilot jet (P.J)	#12.5	•••
Bypass 1 (B.P.1)	0.9	•••
Bypass 2 (B.P.2)	0.8	•••
Bypass 3 (B.P.3)	0.8	•••
Pilot screw (P.S)	2	•••
Valve seat size (V.S)	1.0	•••
Starter jet (G.S.1)	0.6	•••
Starter jet (G.S.2)	0.8	•••
Throttle valve size (TH.V)	#110	•••
Fuel level (F.L) (with special tool)	4.5 mm	•••
Engine idle speed	1,150 ~ 1,250 r/min	•••
Intake vacuum	30.7 ~ 33.3 kPa (230 ~ 250 mmHg)	•••

# MAINTENANCE SPECIFICATIONS

**SPEC**



Item	Standard	Limit
Lubrication system:		
Oil filter type	Paper type	•••
Oil pump type	Trochoid type	•••
Tip clearance "A" or "B"	0.03 ~ 0.09 mm	0.15 mm
Side clearance	0.03 ~ 0.08 mm	0.15 mm
Bypass valve setting pressure	80 ~ 120 kPa (0.8 ~ 1.2 kg/cm <sup>2</sup> )	•••
Relief valve operating pressure	450 ~ 550 kPa (4.5 ~ 5.5 kg/cm <sup>2</sup> )	•••
Pressure check location	Main gallery	•••
Cooling system:		
Radiator core size:		
Width	320 mm	•••
Height	161.4 mm	•••
Thickness	27 mm	•••
Radiator cap opening pressure	95 ~ 125 kPa (0.95 ~ 1.25 kg/cm <sup>2</sup> )	•••
Radiator capacity	0.6 L	•••
Reservoir tank capacity	0.61 L	•••
From low to full level	0.22 L	•••
Water pump:		
Type	Single suction centrifugal pump	•••
Reduction ratio	82/48 × 48/49 (1.673)	•••

Item	Size
Bearings and oil seals:	
Big end bearing	Plane 30 × 15
Crankshaft bearing	Plane 30 × 16
Crankshaft oil seal	S3-29-40-7.5L HS
Water pump bearing	BWF26-44R
Water pump oil seal	SD-12-28-7-1 HS
Main axle bearing (left)	Ball 6204DLA8NUR
Main axle bearing (right)	83B285SH2C3 22 × 56 × 16
Drive axle bearing (left)	83424ASH2CS41
Drive axle bearing (right)	20NQ3315NE 20 × 33 × 15
Drive axle oil seal	SD7-35-52-8 VS
Shift shaft oil seal	SD-12-22-5 HS

**TIGHTENING TORQUES**  
**ENGINE**

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque		Remarks
				Nm	m•kg	
Camshaft cap	Bolt	M6	24	10	1.0	
Cylinder head	Nut	M9	12	35	3.5	
Spark plug	—	M10	4	13	1.3	
Cylinder head cover	Bolt	M6	8	10	1.0	
Cylinder head side cover	Bolt	M5	8	9	0.9	
Connecting rod cap	Nut	M7	8	See NOTE		
Camshaft sprocket	Bolt	M7	4	24	2.4	
Timing chain tensioner case	Bolt	M6	2	10	1.0	
Timing chain guide (intake side)	Bolt	M6	2	10	1.0	
Timing chain tensioner cap	Bolt	M11	1	20	2.0	
Pipe 2	Bolt	M6	2	10	1.0	
Pipe 3/Pipe 4	Bolt	M6	2	10	1.0	
Thermostat cover	Bolt	M6	3	10	1.0	
Conduction assembly	Bolt	M6	1	10	1.0	
Radiator	Bolt	M6	3	7	0.7	
Joint	Bolt	M6	4	10	1.0	
Water pump	Bolt	M6	2	10	1.0	
Water pump housing	Bolt	M6	2	10	1.0	
Radiator cover	Bolt	M6	4	8	0.8	
Pipe 5/Pipe 6	Bolt	M6	4	10	1.0	
Roter housing	Screw	M6	1	7	0.7	
Oil pump assembly	Bolt	M6	3	10	1.0	
Strainer housing	Bolt	M6	2	10	1.0	
Strainer cover	Bolt	M6	14	12	1.2	
Oil cooler	Union bolt	M20	1	63	6.3	
Oil drain bolt	Bolt	M14	1	43	4.3	
Delivery pipe	Bolt	M10	2	20	2.0	
Delivery pipe holder	Bolt	M6	1	10	1.0	
Oil filter element	—	M20	1	17	1.7	
Carburetor joint 1.2	Bolt	M6	8	10	1.0	
Cap case to air filter case	Screw	M5	4	1	0.1	
Air filter case	Bolt	M6	3	7	0.7	
Air filter cover to air clearance	Screw	M6	6	2	0.2	
Exhaust pipe	Nut	M6	8	10	1.0	
Exhaust joint	Bolt	M8	1	20	2.0	
Crankcase	Bolt	M8	12	24	2.4	
Crankcase	Bolt	M6	21	12	1.2	
Crankcase	Bolt	M8	1	24	2.4	
Breather plate	Screw	M6	6	7	0.7	
Oil seal stopper plate	Bolt	M6	2	10	1.0	
A.C magneto cover	Bolt	M6	5	12	1.2	
Drive sprocket cover	Bolt	M6	5	10	1.0	
Drive sprocket cover	Screw	M5	4	4	0.4	