YAMAHA 2006

XT125R(V)
XT125X(V)

SERVICE MANUAL

3D6-F8197-E0

XT125R(V)/XT125X(V) 2006
SERVICE MANUAL

First edition, 2006

WARNING

This manual was written by Yamaha Motor Europe N.V. primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to provide a mechanic with all necessary information with only one manual. For this reason, persons using this book to perform maintenance and repairs on Yamaha motorcycles should have a basic understanding of the mechanical concepts and procedures concerning motorcycle repair technology. Without such knowledge, attempted repairs or service to the motorcycle may render it unfit to use and/or unsafe.

Yamaha Motor Europe N.V. is continuously 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, where applicable, they will appear in future editions of this manual.

NOTE:

Designs and specifications are subject to change without notice.

PARTICULARLY IMPORTANT INFORMATION ABOUT THE MANUAL

Particularly important information is shown with the following symbols.

⚠	This symbol shows a danger and means CAUTION! DANGER! YOUR SAFETY IS INVOLVED!
⚠ WARNING	Failure to follow WARNING instructions could result in severe injury or death for the motorcycle operator, a bystander, or a person inspecting or repairing the motorcycle.
CAUTION:	The CAUTION symbol 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

STRUCTURE OF THE MANUAL

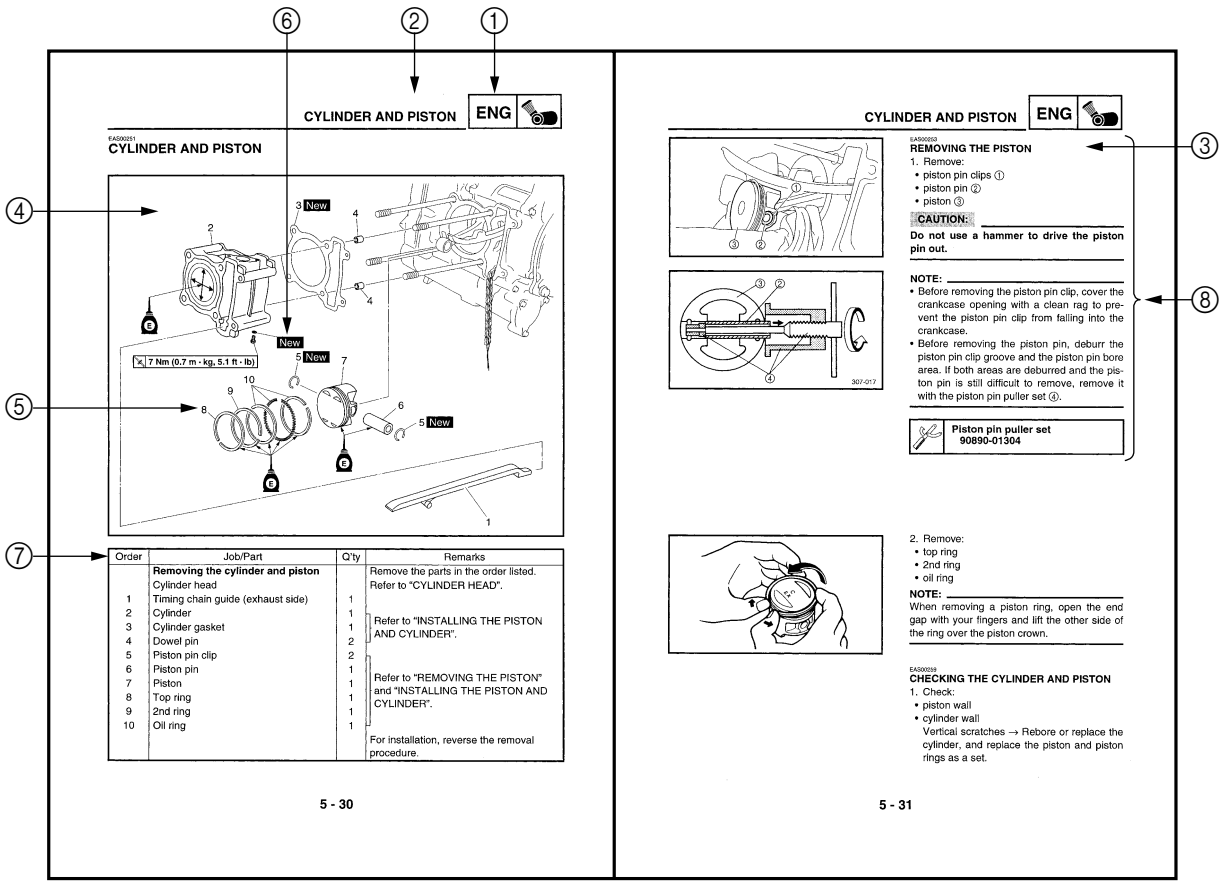
This manual is divided into chapters according to the main subject categories.
See “EXPLANATORY SYMBOLS”

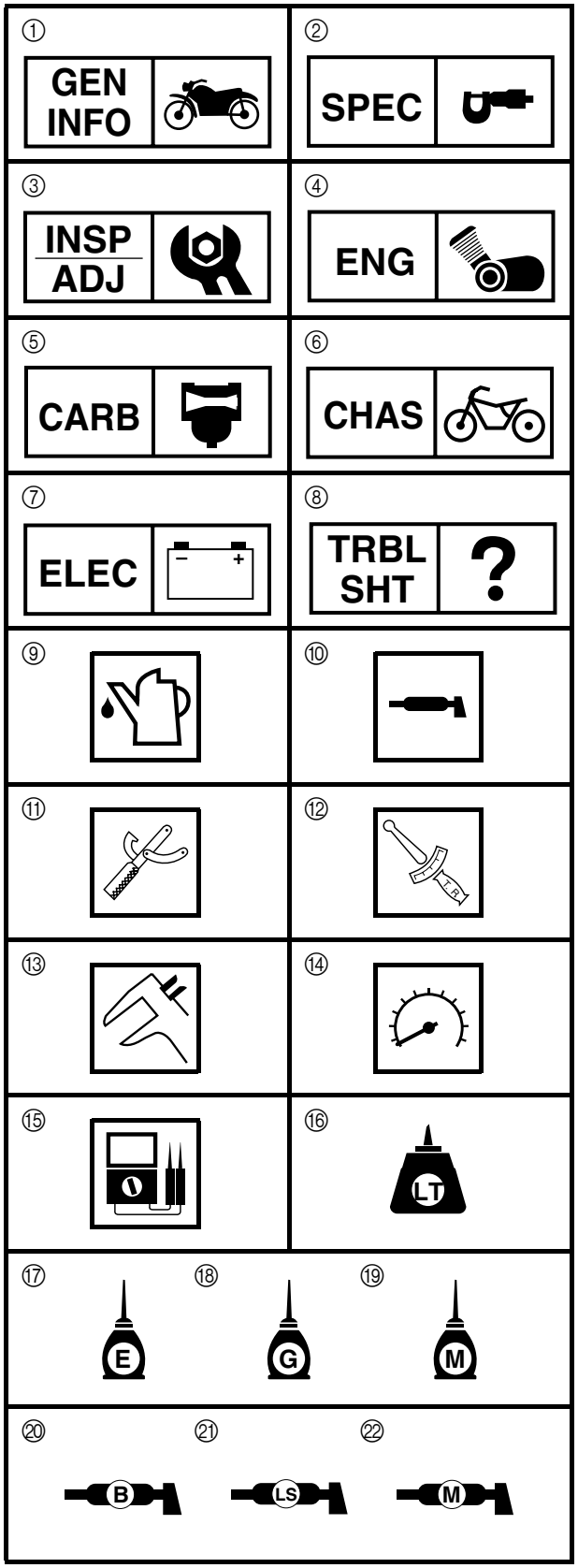
1st title 1: This is the title of the chapter with its symbol on the upper right corner of each page.
2nd title 2: This title indicates the section of each chapter and it is located in the upper left corner of the first page of each section.
3rd title 3: This title indicates a sub-section that is followed by step-by-step procedures accompanied by illustrations.

EXPLODED DIAGRAMS

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

1. Each section is characterised by an exploded drawing (4) that can be easily understood and that facilitates assembly and disassembly operations.
2. The numeric references (5) in the exploded drawings show the order of the operations to be carried out. A number inside a circle shows a disassembly phase.
3. The symbols (6) supply precise information easy to be understood about the operations to be carried out with the relevant notes.
4. The exploded drawing is provided with an instruction box (7) that contains the description of the sequence of operations to be carried out, the name of the components, the notes, etc.
5. For operations that require further information, a supplement (8) with the description of step-by-step operations is supplied with the exploded drawings and the instruction box.





EXPLANATORY SYMBOLS

The explanatory symbols from (1) to (8), shown in the side figure show the numbers and the content of the different chapters.

(1) General information
(2) Specifications
(3) Periodic inspections and adjustments
(4) Engine
(5) Carburetor
(6) Chassis
(7) Electrical
(8) Troubleshooting

The explanatory symbols from (9) to (15) show some specifications that can be found in the text

(9) Fill up
(10) Lubricant
(11) Special tool
(12) Tighten with torque wrench
(13) Wear limit, clearance
(14) Engine speed
(15) Multimeter Ω, V, A

The explanatory symbols from (16) to (22), inserted in the exploded drawings show the type of sealant and/or lubricant and the application points

(16) Apply sealant LOCTITE
(17) Apply engine oil
(18) Apply gear oil
(19) Apply molybdenum disulfide oil
(20) Apply bearing grease
(21) Apply lithium-soap base grease
(22) Apply molybdenum disulfide grease

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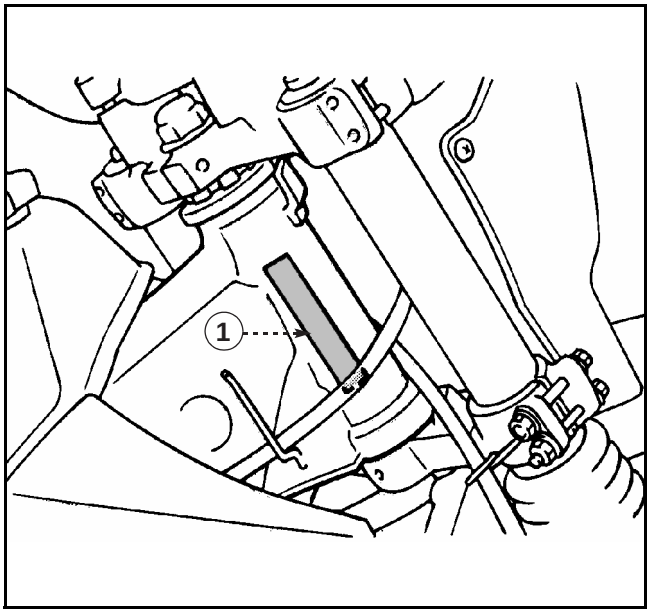
CHAPTER 1
GENERAL INFORMATION

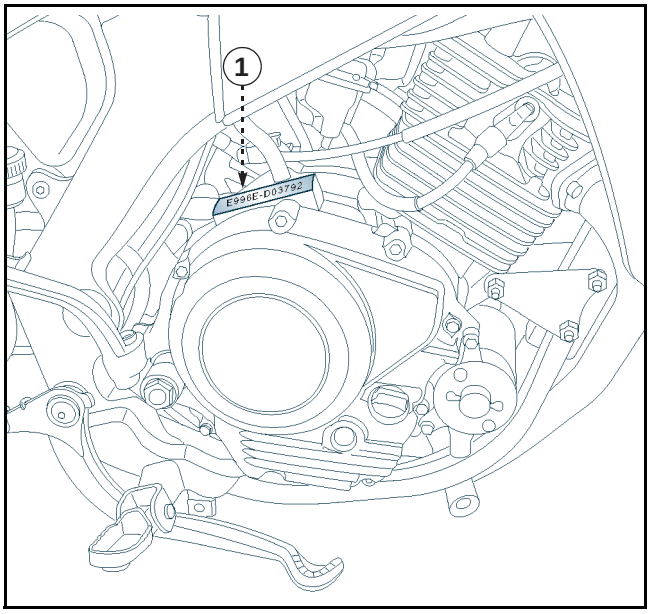


GENERAL INFORMATION

MOTORCYCLE IDENTIFICATION

VEHICLE SERIAL NUMBER

The vehicle serial number (1) is stamped on the right side of the steering sleeve tube.



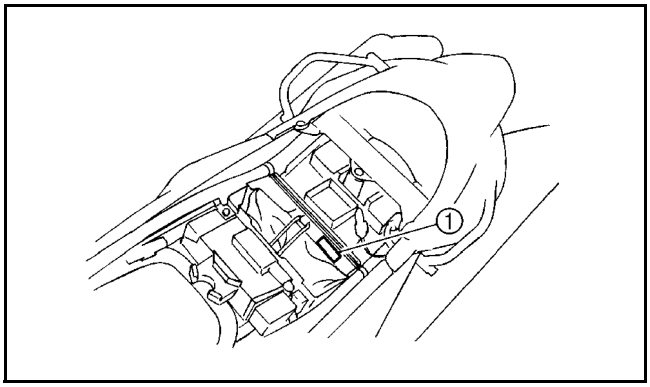
The engine serial number (1) is stamped on the left side of the crankcase.

NOTE:

The first five figures of the number identify the engine Code; the other figures show the number of production of the unit.

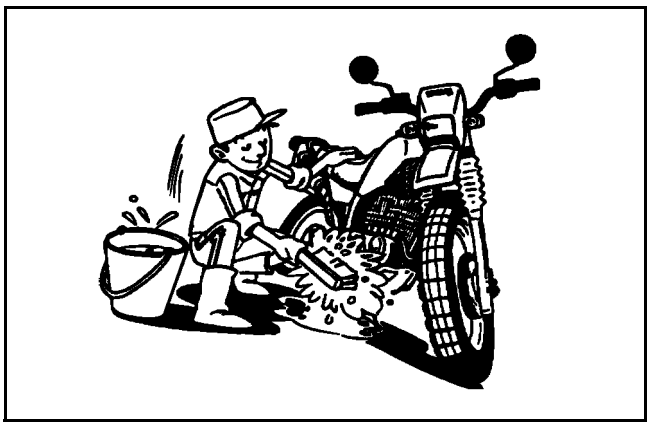
NOTE:

Designs and specifications are subject to change without notice.



MODEL LABEL

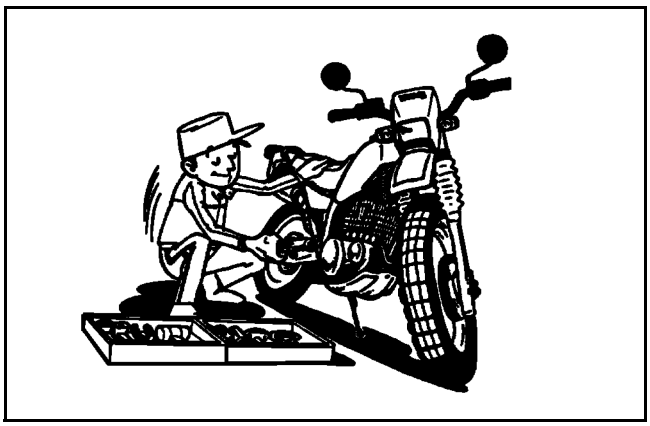
The model label (1) is applied to the rear mudguard. This information is necessary for ordering the spare parts.



IMPORTANT INFORMATION

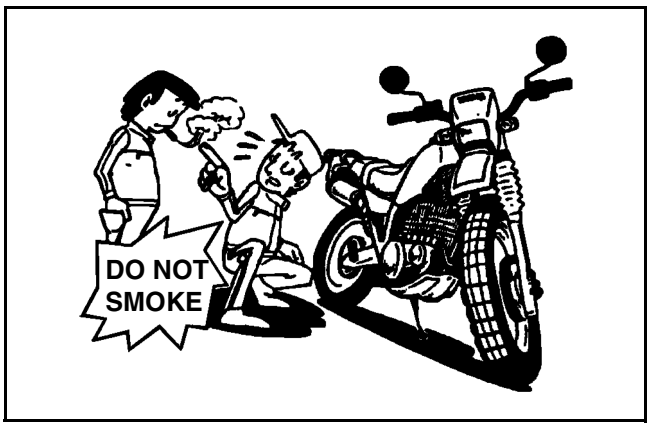
PREPARATION FOR REMOVAL AND DISASSEMBLY

1. Remove all dirt, mud, dust, and foreign material before removing and disassembling.

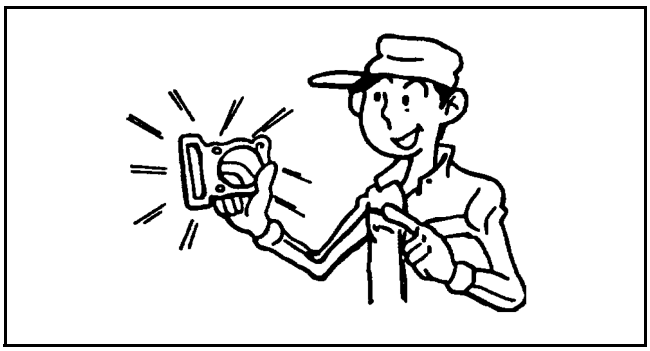


2. Use proper tools and cleaning equipment. See “SPECIAL TOOLS”.

3. When disassembling the motorcycle, keep mated parts together. This includes gears, cylinders, pistons and other mated parts that wear out with each other. Mated parts must be reused as an assembly or replaced.
4. During motorcycle disassembly, clean all parts and place them in trays the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.



5. Keep all components away from fire.

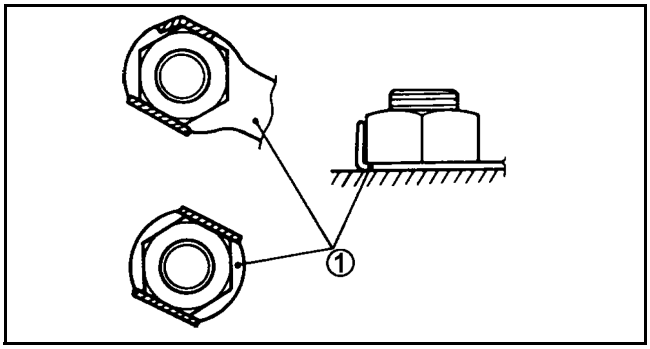


SPARE PARTS

1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.

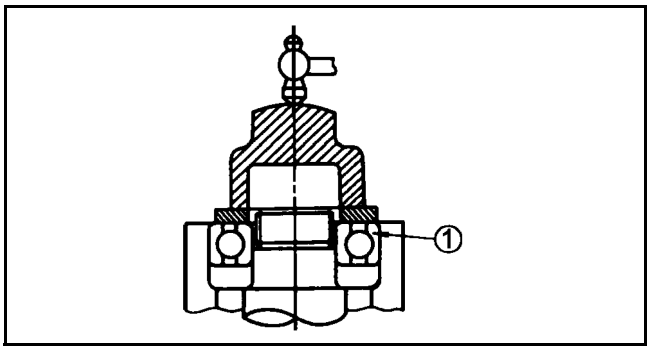
GASKETS, SEALS AND O-RINGS

1. All gaskets, seals and O-rings should be replaced when an engine is overhauled. All surfaces in contact with gaskets, oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



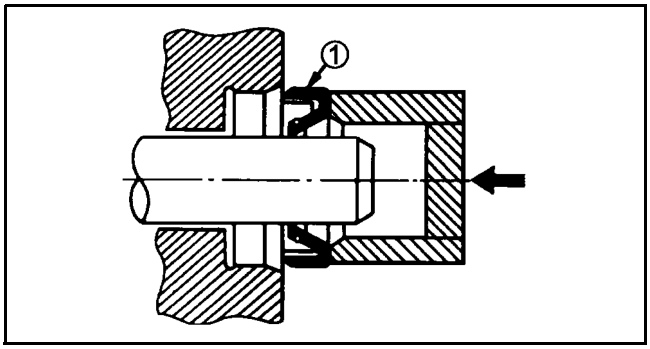
LOCK WASHERS, PLATES AND COTTER PINS

1. All lock washers, plates (1) and cotter pins must be replaced when they are removed. After proper tightening, lock tabs should be bent along the bolt or nut.



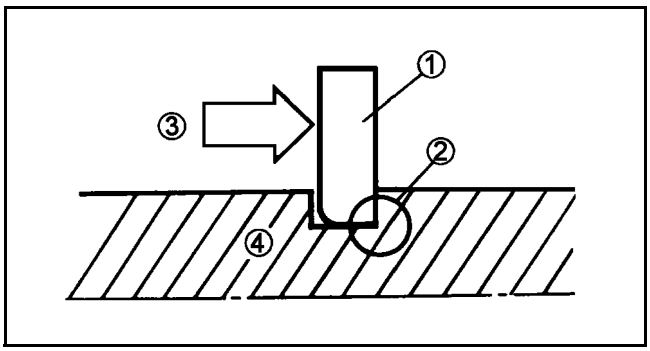
BEARINGS AND OIL SEALS

1. Install the bearings and oil seals with their manufacturer's marks or numbers facing outward. When installing oil seals, lubricate a light coating of lithium base grease to the seal lips. If necessary, lubricate the bearings.



CAUTION:

Do not use compressed air to dry the bearings. This may damage the bearing surfaces.

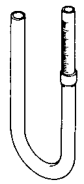
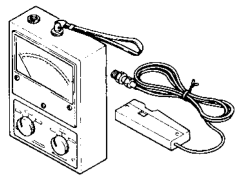
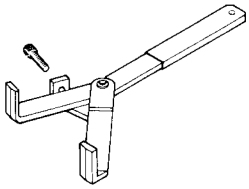
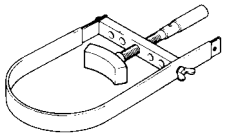
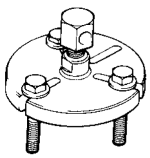
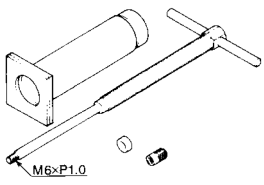
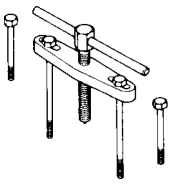


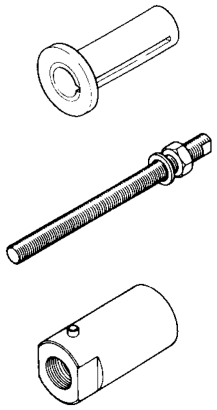
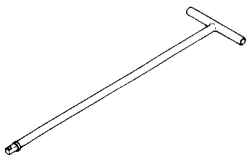
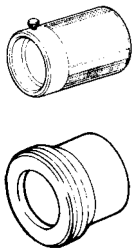
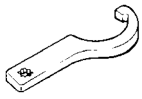
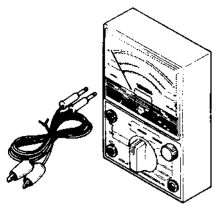
CIRCLIPS

1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip (1), make sure that the sharp-edged corner (2) is positioned opposite to the thrust (3) it receives. See figure on the side.

SPECIAL TOOLS

The following special tools are necessary for complete and careful setting and assembly.
Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.
Refer to the following list to avoid errors when placing an order.

Tool no.	Tool/function name	Figure
90890-01312	Fuel level gauge This gauge is used to measure the fuel level in the float chamber.	
90890-03113	Engine speed counter This tool is used to measure the engine speed.	
90890-04086	Universal clutch holder This tool is used to hold the clutch when removing or installing the clutch boss locknut.	
90890-01701	Pulley holder This tool is used to hold the secondary pulley.	
90890-01362	Flywheel puller To remove the flywheel.	
90890-01304	Piston pin puller This tool is used to remove the piston pins.	
90890-01135	Crankcase separating tool This tool is necessary to remove the engine shaft or to separate the crankcase.	

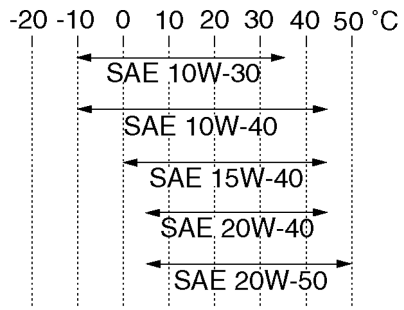
Tool no.	Tool/function name	Figure
90890-01274 (1) 90890-01275 (2) 90890-01278 (3)	Engine shaft adapter guide Adapter bolt Adapter (M12)	
90890-01326	"T" handle This tool is used to lock the fork holder during removal or installation.	
90890-01367 90890-01370	Counter-weight to install the fork gasket Coupling to install the fork gasket This tool is used when installing the fork gasket.	
90890-01403	Ring nut wrench This tool is used to loosen and to tighten the steering ring nut.	
90890-03112	Pocket tester This instrument is available for checking the electrical system.	

CHAPTER 2
SPECIFICATIONS

SPECIFICATIONS

MAIN SPECIFICATIONS

Element	Standard	Limit
Model code	3D61 (XT125R) 3D62 (XT125X)	---- ----
Dimensions		
Overall length	2110 mm (XT125R) 2040 mm (XT125X)	---- ----
Overall width	860 mm	----
Overall height	1130 mm (XT125R) 1090 mm (XT125X)	---- ----
Seat height	860 mm (XT125R) 830 mm (XT125X)	---- ----
Wheelbase	1340 mm	----
Minimum ground clearance	300 mm (XT125R) 271 mm (XT125X)	---- ----
Minimum turning radius	2100 mm (XT125R) 2016 mm (XT125X)	---- ----
Vehicle weight		
With oil and full fuel tank	120 kg	----
Engine		
Engine type	4-stroke, air-cooled engine SOHC	----
CCs	123.7 cm^3	----
Cylinder arrangement	Forward-inclined single cylinder	----
Bore and stroke	54 × 54 mm	----
Compression ratio	10 : 1	----
Engine idling speed	1650 ~ 1850 rpm	----
Standard compression pressure	1200 kPa (12 kg/cm^2, 171 psi)	----
Maximum power	7.3 kW / 8500 rpm	----
Maximum torque	9.5 N·m / 5500 rpm	----
Fuel		
Recommended fuel	Regular unleaded fuel	----
Fuel tank capacity	10.0 L	----
Fuel reserve amount	2.0 L	----

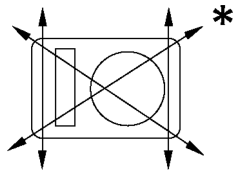
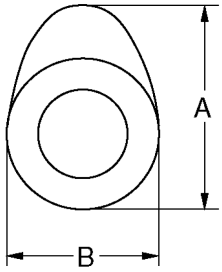
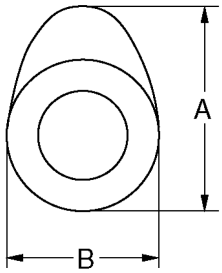
Element	Standard	Limit
Engine oil		
Lubrication system	Wet-type crankcase	----
Recommended oil	Oil SAE 10W30/ SH or equivalent	----
		
Quantity		
Total amount	1.20 L	----
Periodic oil replacement	1.00 L	----
Starting system type	Electric and kick starting	----
Carburetor		
Type	VM2059	----
Manufacturer	MIKUNI	----
Spark plug		
Type	CR7HSA	----
Manufacturer	NGK	----
Electrode distance	0.7 mm	----
Clutch type	Wet-type, multiple-disc	----
Transmission		
Transmission type	Constant mesh, with 5 gears	----
Primary reduction system	Helical gear	----
Primary reduction ratio	68/20 (3.400)	----
Secondary reduction system	Chain drive	----
Secondary reduction ratio	50/14(3.5715) XT125R	----
	48/14(3.4286) XT125X	----
Gearbox control	Left foot operation	----
Transmission ratios		
1st gear	37/14 (2.642)	----
2nd gear	32/18 (1.777)	----
3rd gear	25/19 (1.315)	----
4th gear	23/22 (1.045)	----
5th gear	21/24 (0.875)	----
Frame		
Chassis type	Double half-cradle	----
Caster angle	28° (XT125R)	----
	26.7° (XT125X)	----
Trail	114.4 mm (XT125R)	----
	78.33 mm (XT125X)	----

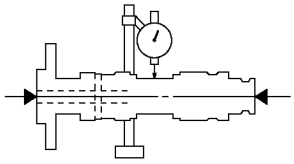
Element	Standard	Limit
Tire		
Type	With inner tube	----
Dimensions		
Front	90/90 - 21 54S (XT125R)	----
	100/80 - 17 52S (XT125X)	----
Rear	120/80 - 18 62S (XT125R)	----
	130/70 - 17 62S (XT125X)	----
Minimum tire tread depth	0.8 mm	----
Pressione pneumatico (a freddo)		
0 ~ 90 kg		
Front	180 kPa (1.8 kgf/cm^2, 26.1 psi)	----
Rear	190 kPa (1.9 kgf/cm^2, 27.6 psi)	----
90 ~ Loading condition		
Front	200 kPa (2.0 kgf/cm^2, 29.0 psi)	----
Rear	210 kPa (2.1 kgf/cm^2, 30.5 psi)	----

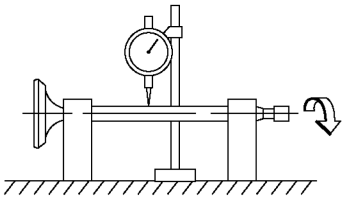
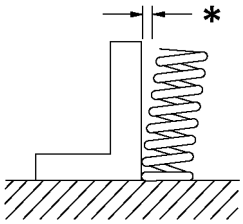
* Load is total weight of cargo, rider, passenger and accessories.

MAINTENANCE INFORMATION

ENGINE SPECIFICATIONS

Element	Standard	Limit
Head		
Volume	54.10 ~ 54.020 cm^3	----
Warp limit *	----	0.03 mm
		
Camshaft		
Transmission system	Chain drive (left side)	----
Dimensions of the intake camshaft lobes		
		
Measurement (A)	25.881 ~ 25.981 mm	25.851 mm
Measurement (B)	21.195 ~ 21.295 mm	21.165 mm
Dimensions of the exhaust camshaft lobes		
		
Measurement (A)	25.841 ~ 25.941 mm	25.811 mm
Measurement (B)	21.05 ~ 21.15 mm	21.02 mm
Valve phasing reference		
Intake - opened (BTDC)	29°	----
Intake - closed (ABDC)	59°	----
Exhaust - opened (BBDC)	61°	----
Exhaust - opened (ATDC)	29°	----
Overlap angle “A”	58°	----

Element	Standard	Limit
Maximum camshaft run out 	----	0.03 mm
Timing chain		
Mesh model/number	Bush chain/P 88x	----
Tension system	Automatic system	----
Rocker arm/rocker arm shaft		
Rocker arm inside diameter	10.000 ~ 10.015 mm	10.03 mm
Shaft outside diameter	9.981 ~ 9.991 mm	9.95 mm
Valves, valve seats, valve guides		
Valve clearance (cold)		
Intake	0.08 ~ 0.12 mm	----
Exhaust	0.10 ~ 0.14 mm	----
Valve dimensions  Valve head diameter; Face width; Seat width; Margin thickness		
Valve head diameter (A)		
Intake	25.9 ~ 26.1 mm	----
Exhaust	21.9 ~ 22.1 mm	----
Valve face width (B)		
Intake	1.1 ~ 3.0 mm	----
Exhaust	1.7 ~ 2.8 mm	----
Valve seat width (C)		
Intake	0.9 ~ 1.1 mm	1.6 mm
Exhaust	0.9 ~ 1.1 mm	1.6 mm
Valve margin thickness		
Intake	0.4 ~ 0.8 mm	----
Exhaust	0.8 ~ 1.2 mm	----
Valve stem diameter		
Intake	4.975 ~ 4.990 mm	4.950 mm
Exhaust	4.960 ~ 4.975 mm	4.935 mm
Valve guide inside diameter		
Intake	5.000 ~ 5.012 mm	5.042 mm
Exhaust	5.000 ~ 5.012 mm	5.042 mm

Element	Standard	Limit
Valve stem – valve guide clearance		
Intake	0.010 ~ 0.037 mm	0.08 mm
Exhaust	0.025 ~ 0.052 mm	0.10 mm
Valve stem run out	----	0.010 mm
		
Valve seat width		
Intake	0.9 ~ 1.1 mm	1.6 mm
Exhaust	0.9 ~ 1.1 mm	1.6 mm
Valve springs		
Free length		
Intake	38.78 mm	37 mm
Exhaust	38.78 mm	37 mm
Set length (valve closed)		
Intake	25.6 mm	----
Exhaust	25.6 mm	----
Compression spring strength (installed)		
Intake	132 ~ 155 N	----
Exhaust	132 ~ 155 N	----
Spring inclination ∗		
		
Intake	----	2.5°/1.7 mm
Exhaust	----	2.5°/1.7 mm
Winding direction (top view)		
Intake	Clockwise direction	----
Exhaust	Clockwise direction	----
Cylinder		
Cylinder arrangement	Forward-inclined single cylinder	----
Bore and stroke	54.000 × 54.018 mm	----
Compression ratio	10 : 1	----