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YAMAHA

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SERVICE MANUAL

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TTR250L(C)

SERVICE MANUAL

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1st edition, January 1999

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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 motorcycles has a basic understanding of the mechanical ideas and the procedures of motorcycle repair. Repairs attempted by anyone without this knowledge are likely to render the motorcycle unsafe and 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.

IMPORTANT INFORMATION

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



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

MANUAL ORGANIZATION

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

PAGE FEATURES

The circled numbers below refer to the features indicated in the sample page.

① : An abbreviation and symbol in the upper right corner of each page indicates the current chapter.

② : The current section title is shown at the top of each page.†

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

④ : Lines of asterisks (*) mark the beginning and end of a particularly important procedure. The steps of such procedures are marked with bullets (•).

⑤ : Important information such as fluids, special tools and torques are framed and marked with a corresponding symbol.

⑥ : A circled number refers to an illustrated part.

⑦ : A circled lower case letter refers to an illustrated dimension or alignment mark.

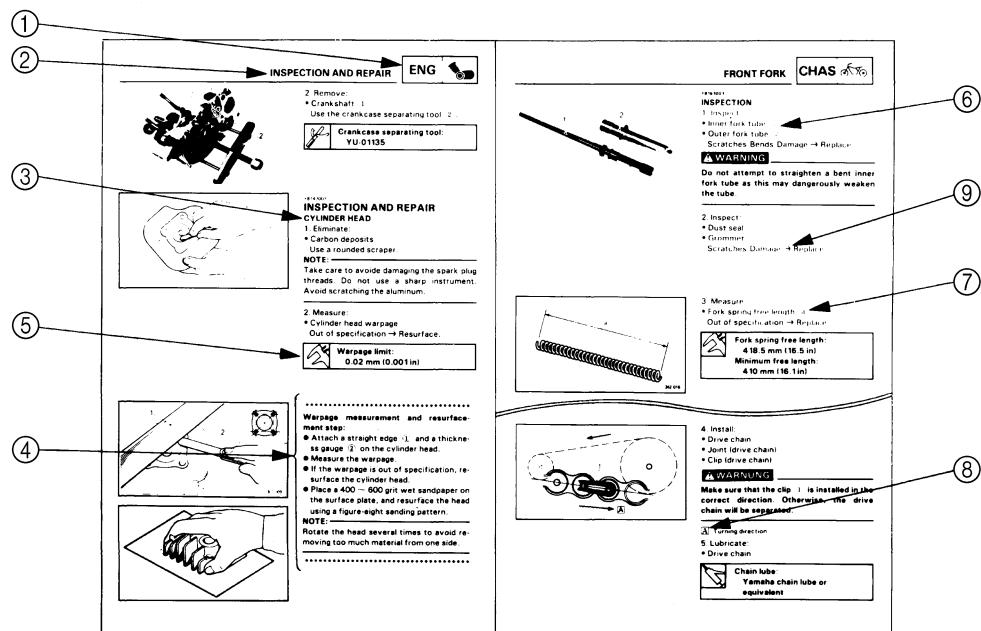
⑧ : An upper case letter in a box refers to other illustrated details.

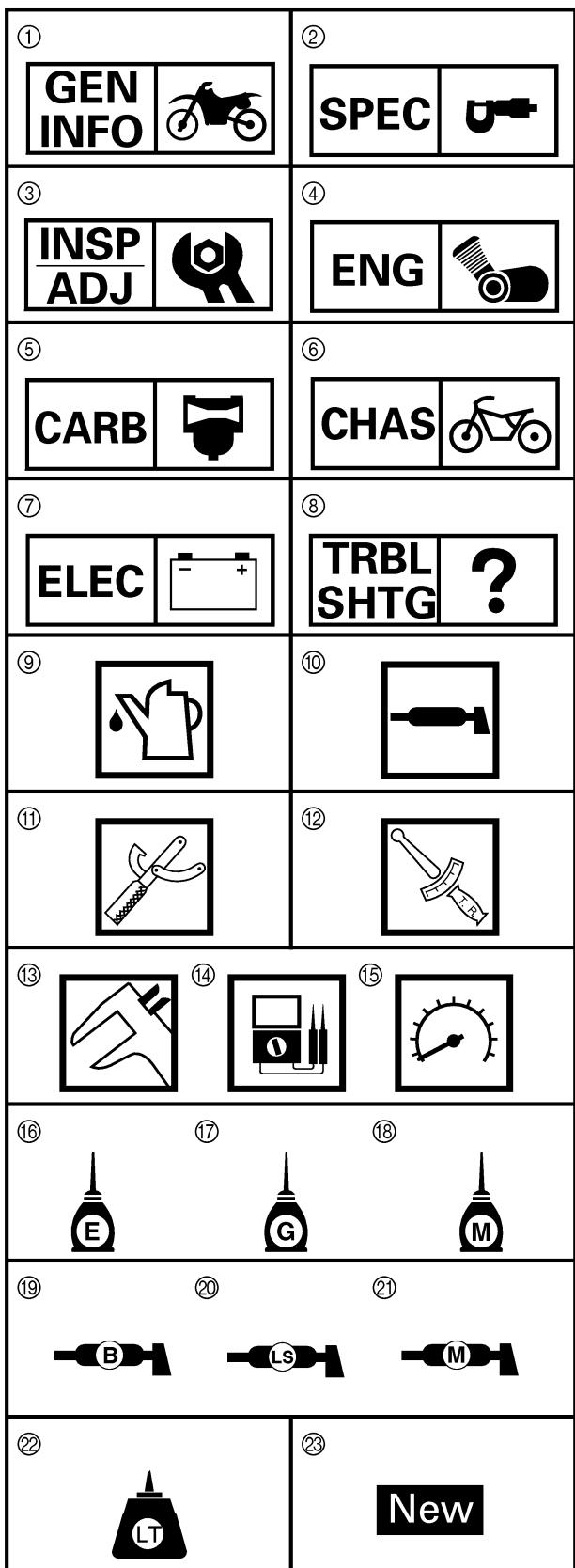
⑨ : An arrow mark after a given defect suggests the recommended course of action.

† : In Chapter 3, "Periodic Inspection and Adjustment", it is usually the current sub-section title that appears at the top of each page, instead of the current section title.

EXPLODED DIAGRAMS

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





EB003000

ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑧ are printed on the top right of each page and indicate the subject of each chapter.

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

Illustrated symbols ⑨ to ⑯ are used to identify the specifications appearing in the text.

- ⑨ Filling fluid
- ⑩ Lubricant
- ⑪ Special tool
- ⑫ Torque
- ⑬ Wear limit, clearance
- ⑭ Engine speed
- ⑮ Ω , V, A

Illustrated symbols ⑯ to ㉑ in the exploded diagrams indicate the types of lubricants and lubrication points.

- ⑯ Apply engine oil
- ⑰ Apply gear oil
- ⑱ Apply molybdenum disulfide oil
- ⑲ Apply wheel bearing grease
- ㉑ Apply lightweight lithium-soap base grease
- ㉒ Apply molybdenum disulfide grease

Illustrated symbols ㉒ to ㉓ in the exploded diagrams indicate where to apply a locking agent ㉒ and when to install a new part ㉓.

- ㉒ Apply the locking agent (LOCTITE®)
- ㉓ Replace

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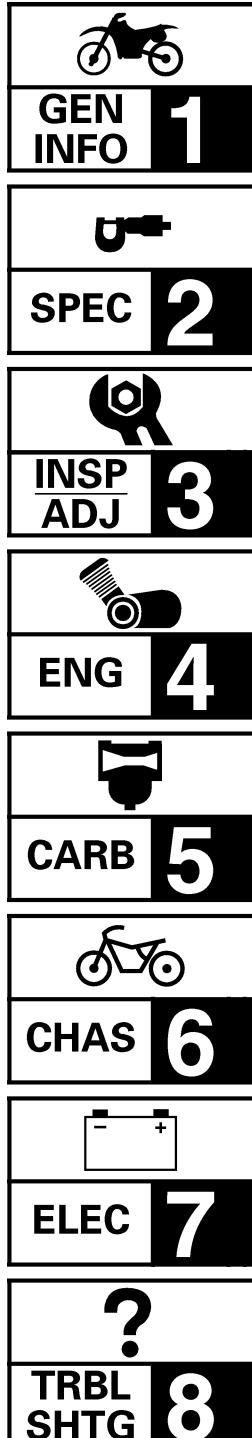
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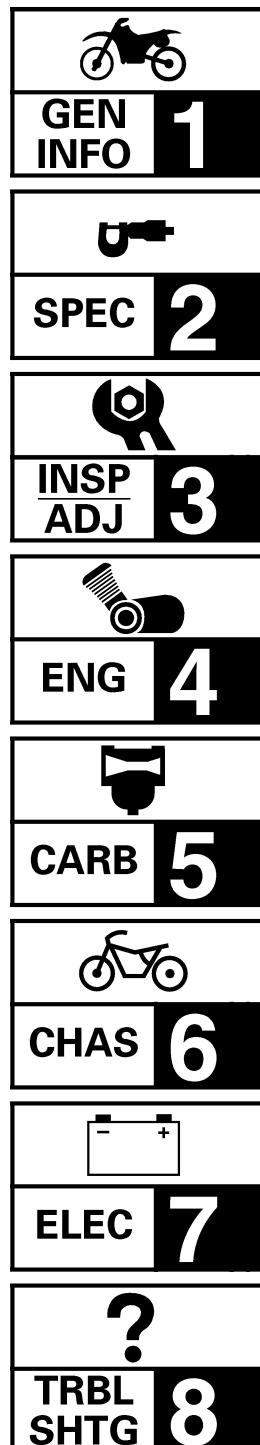


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**INSP
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**TRBL
SHTG** **8**

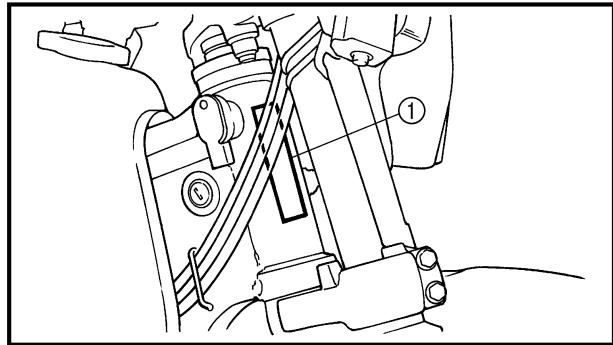
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TTR250L(C) WIRING DIAGRAM



GENERAL INFORMATION MOTORCYCLE IDENTIFICATION

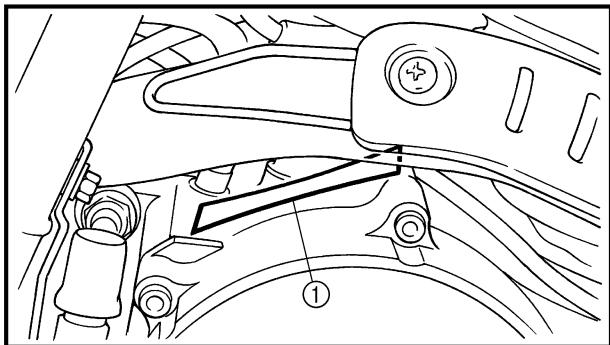
VEHICLE IDENTIFICATION NUMBER

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

1

NOTE: _____

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



ENGINE SERIAL NUMBER

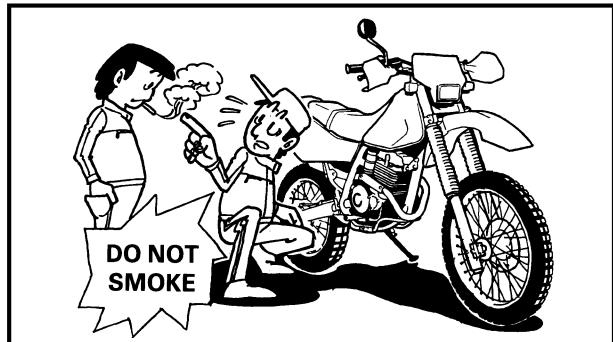
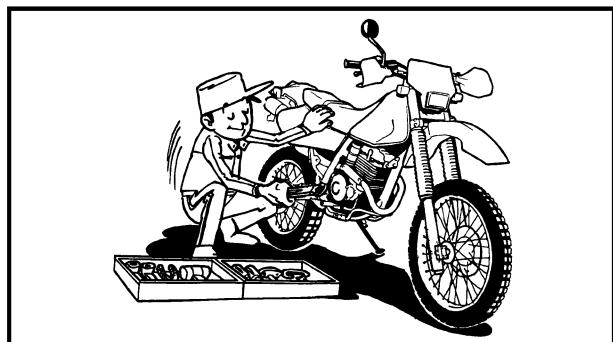
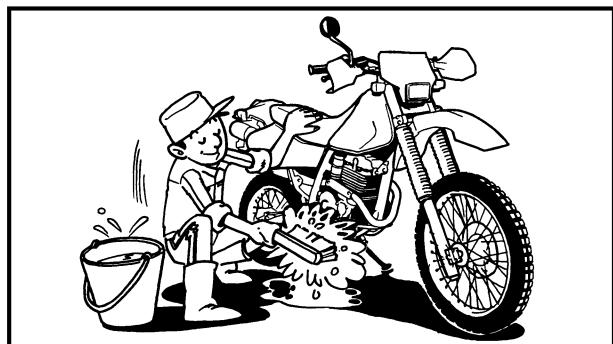
The engine serial number ① is stamped into the elevated part of the right rear section of the engine.

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.



1

**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. Refer to "SPECIAL TOOLS".

3. When disassembling the motorcycle keep mated parts together. This includes gears, cylinder, piston and other mated parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.

4. During the motorcycle disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.

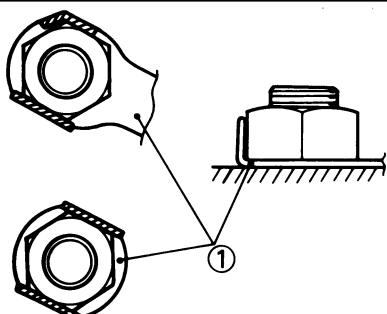
5. Keep away from fire.



300-016

ALL REPLACEMENT PARTS

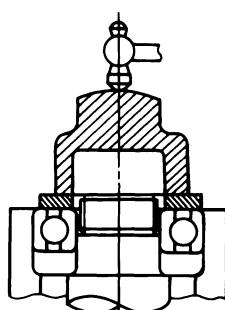
1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.



300-000

GASKETS, OIL SEALS, AND O-RINGS

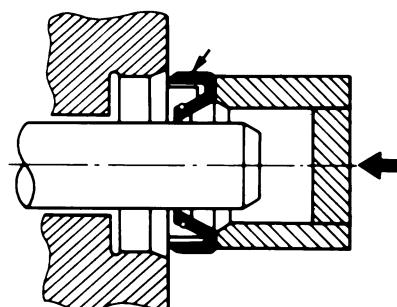
1. All gaskets, seals and O-rings should be replaced when an engine is overhauled. All gasket surfaces oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



300-002

LOCK WASHERS/PLATES AND COTTER PINS

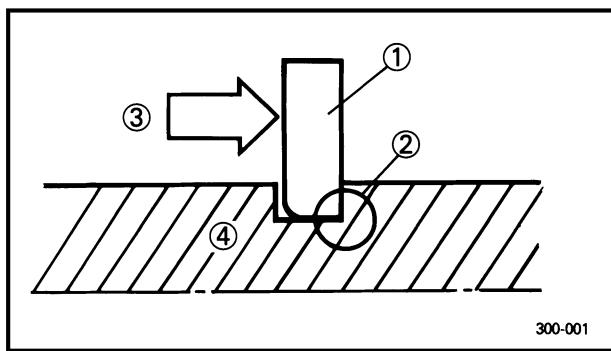
1. All lock washers/plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



300-003

CAUTION

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

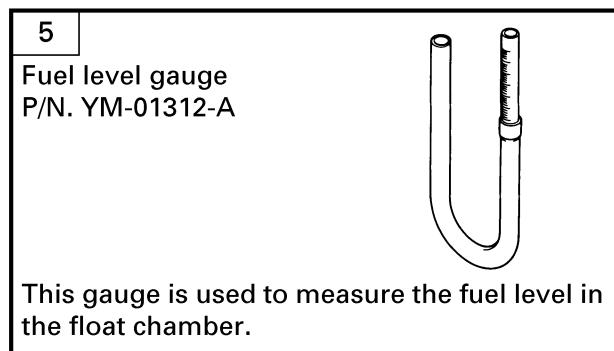
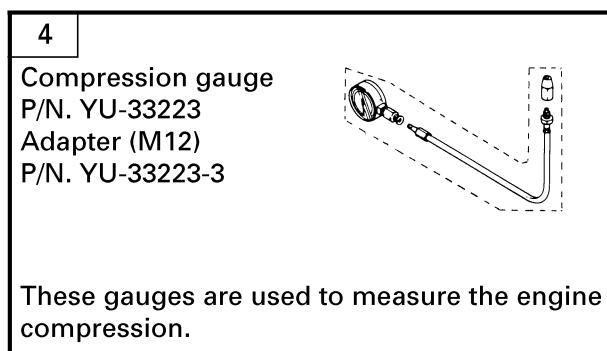
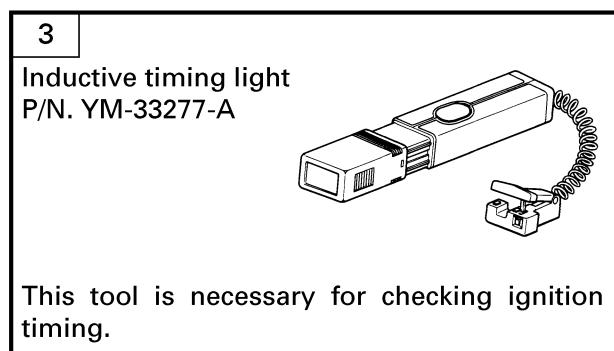
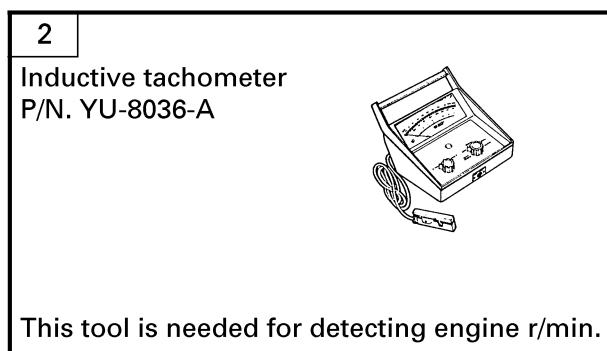
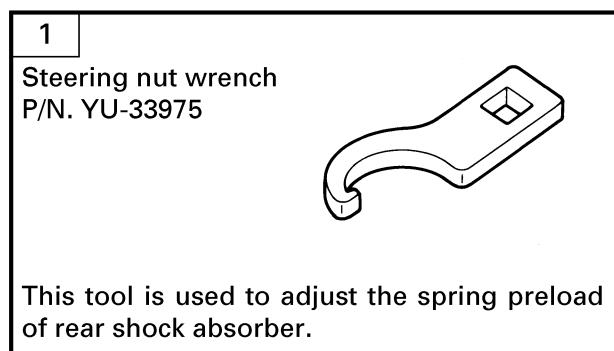
**CIRCLIPS**

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 the sectional view.

(4) Shaft

SPECIAL TOOLS

The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.

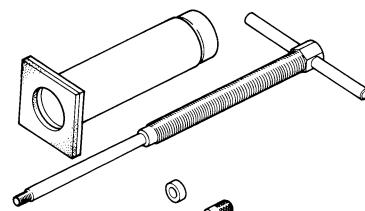
FOR TUNE UP



FOR ENGINE SERVICE

1

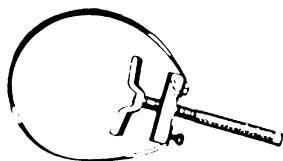
Piston pin puller
P/N. YU-01304



This tool is used to remove the piston pin.

2

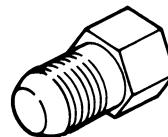
Sheave holder
P/N. YS-01880



This tool is used to hold the rotor when removing or installing the rotor securing nut.

3

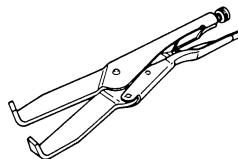
Rotor puller
P/N. 2K7-85555-00



This tool is used to remove the rotor.

4

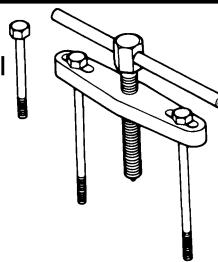
Universal clutch holder
P/N. YM-91042



This tool is used to hold the clutch when removing or installing the clutch boss locknut.

5

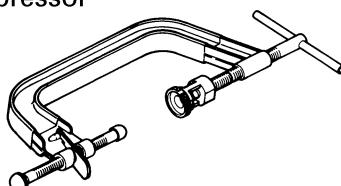
Crankcase separating tool
P/N. YU-01135-A



This tool is necessary to remove the crank-shaft.

6

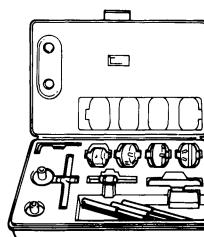
Valve spring compressor
P/N. YM-04019



This tool is needed to remove and install the valve assemblies.

7

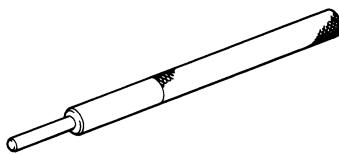
Valve seat cutter set
P/N. YM-91043



This tool is needed to resurface the valve seat.

8

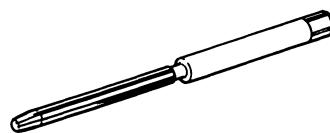
Valve guide remover 5 mm (0.20 in)
P/N. YM-04097



This tool is used to remove the valve guides.

9

Valve guide reamer 5 mm (0.20 in)
P/N. YM-04099

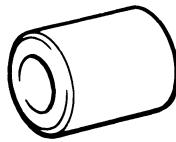


This tool is used to re bore the new valve guide.



10

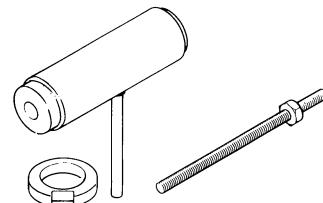
Valve guide installer 5 mm (0.20 in)
P/N. YM-04098



This tool is needed to install the valve guides properly.

11

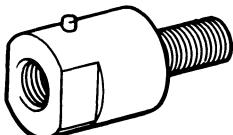
Crankshaft installing set
P/N. YU-90050



These tools are used to install the crankshaft.

12

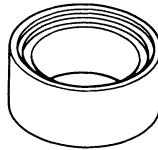
Adapter (M10)
P/N. YU-90062



This tool is used to install the crankshaft.

13

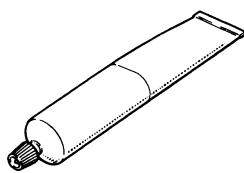
Crank pot spacer
P/N. YU-01202



This tool is used to install the crankshaft.

14

Quick Gasket®
P/N. ACC-11001-05-01

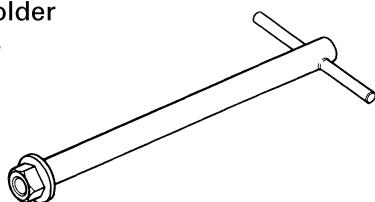


This sealant (bond) is used for crankcase mating surfaces, etc.

FOR CHASSIS SERVICE

1

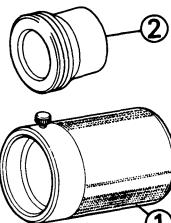
Damper rod holder
P/N. YM-01418



This tool is used to loosen and tighten the damper rod holding bolt.

2

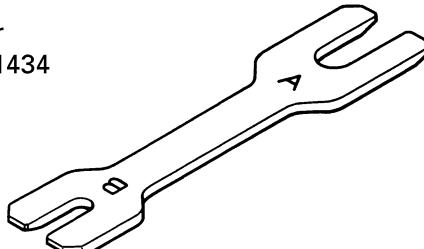
Front fork seal drive weight
P/N. YM-33963-①
Adapter 43 mm (1.69 in)
P/N. YM-8020-②



These tools are used when installing the fork oil seal.

3

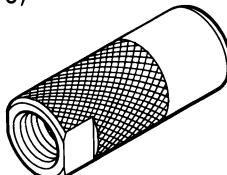
Rod holder
P/N. YM-01434



This tool is used to hold the fork spring.

4

Rod puller attachment (M10)
P/N. 90890-01436

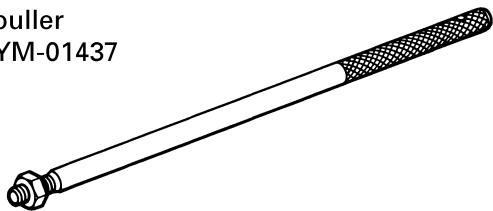


This tool is used to pull up the fork damper rod.



5

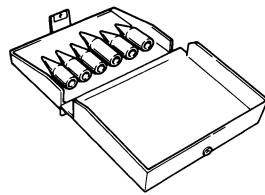
Rod puller
P/N. YM-01437



This tool is used to pull up the fork damper

6

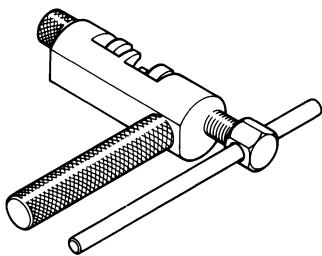
Cylinder cup installer
P/N. 90890-01996



This tool is used to install the master cylinder kit.

7

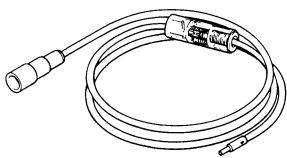
Drive chain cutter
P/N. YM-33858



This tool is used to cut and join the drive chain.

1

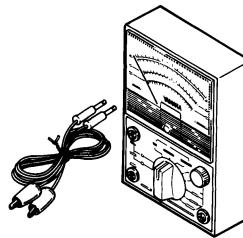
Dynamic spark tester
P/N. YM-34487



This instrument is necessary for checking the ignition system components.

2

Pocket tester
P/N. YU-03112



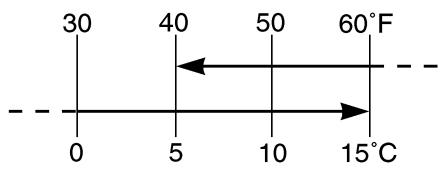
This instrument is used for checking the electrical system.

FOR ELECTRICAL COMPONENTS



SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	TTR250L(C)
Model code:	5GF1 5GF2
Dimensions:	
Overall length	2,095 mm (82.5 in)
Overall width	835 mm (32.9 in)
Overall height	1,260 mm (49.6 in)
Seat height	915 mm (36.0 in)
Wheelbase	1,405 mm (55.3 in)
Minimum ground clearance	305 mm (12.0 in)
Minimum turning radius	2,200 mm (86.6 in)
Basic weight:	
With oil and full fuel tank	124 kg (273 lb)
Engine:	
Engine type	Air-cooled 4-stroke, DOHC
Cylinder arrangement	Forward-inclined single cylinder
Displacement	249 cm ³
Bore × stroke	73.0 × 59.6 mm (2.87 × 2.35 in)
Compression ratio	10.2 : 1
Compression pressure (STD)	1,200 kPa (12 kg/cm ² , 174 psi) at 300 r/min
Starting system	Electric starter
Lubrication system	Wet sump
Oil type or grade:	
Engine oil	
	SAE 20W40 type SE motor oil SAE 10W30 type SE motor oil
Oil capacity:	
Engine oil	
Periodic oil change	1.10 L (0.97 Imp qt, 1.16 US qt)
With oil filter replacement	1.20 L (1.06 Imp qt, 1.27 US qt)
Total amount	1.45 L (1.28 Imp qt, 1.53 US qt)
Air filter:	Wet type element
Fuel:	
Type	Unleaded fuel only
Fuel tank capacity	10 L (2.20 Imp gal, 2.64 US gal)
Fuel reserve amount	2 L (0.44 Imp gal, 0.53 US gal)



Model	TTR250L(C)	
Carburetor:		
Type / quantity	Y30P/1	
Manufacturer	TEIKEI	
Spark plug:		
Type	CR9E/U27ESR-N	
Manufacturer	NGK/DENSO	
Spark plug gap	0.7 ~ 0.8 mm (0.028 ~ 0.031 in)	
Clutch type:	Wet, multiple-disc	
Transmission:		
Primary reduction system	Spur gear	
Primary reduction ratio	74/24 (3.083)	
Secondary reduction system	Chain drive	
Secondary reduction ratio	52/13 (4.000)	
Transmission type	Constant mesh 6-speed	
Operation	Left foot operation	
Gear ratio	1st	37/15 (2.466)
	2nd	29/16 (1.812)
	3rd	30/22 (1.363)
	4th	27/25 (1.080)
	5th	24/27 (0.888)
	6th	22/29 (0.758)
Chassis:		
Frame type	Semi double cradle	
Caster angle	26°	
Trail	108 mm (4.25 in)	
Tire:		
Type	With tube	
Size	front	80/100-21 51M
	rear	100/100-18 59M
Manufacturer	front	DUNLOP
	rear	DUNLOP
Type	front	D739F
	rear	D739
Tire pressure (cold tire):		
Maximum load-except motorcycle*	90 kg (198 lb)	
Off-road riding*	front	100 kPa (1 kg/cm ² , 14.5 psi)
	rear	100 kPa (1 kg/cm ² , 14.5 psi)

*Load is total weight of rider, and accessories.

GENERAL SPECIFICATIONS

SPEC

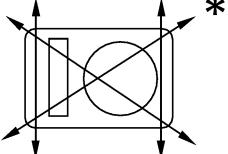
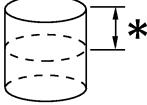
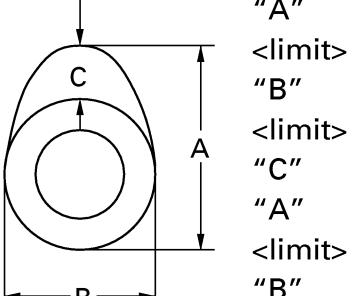
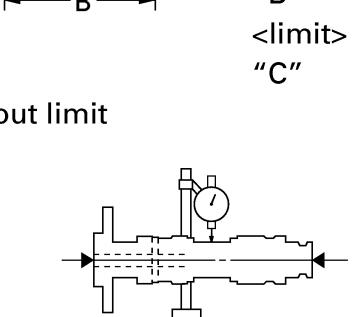
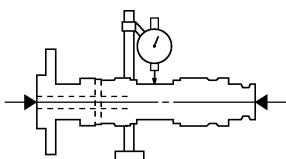


Model	TTR250L(C)	
Brake:		
Front brake	type operation	Single disc brake Right hand operation
Rear brake	type operation	Single disc brake Right foot operation
Suspension:		
Front suspension	Telescopic fork	
Rear suspension	Swingarm (link suspension)	
Shock absorber:		
Front shock absorber	Coil-air spring / oil damper	
Rear shock absorber	Coil spring / gas-oil damper	
Wheel travel:		
Front wheel travel	280 mm (11.0 in)	
Rear wheel travel	280 mm (11.0 in)	
Electrical:		
Ignition system	C.D.I.	
Generator system	A.C. magneto generator	
Battery type	GT7B-4	
Battery capacity	12 V 6.5 AH	
Headlight type:	Quartz bulb (Halogen)	
Bulb wattage × quantity:		
Headlight	12 V 35 W/36.5 W	
Tail light	12 V 5 W/21 W	



MAINTENANCE SPECIFICATIONS

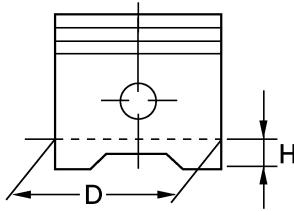
ENGINE

Model	TTR250L(C)
Cylinder head: Volume <Warp limit>	 $21.6 \sim 22.2 \text{ cm}^3$ $<0.03 \text{ mm (0.0012 in)}>$ *Lines indicate straightedge measurement.
Cylinder: Material Sleeve type Bore size *Measuring point <Wear limit> <Warp limit>	 Aluminum alloy Sleeveless, surface honing $72.97 \sim 73.02 \text{ mm (2.8728 ~ 2.8748 in)}$ 40 mm (1.57 in) $<73.1 \text{ mm (2.8779 in)}>$ $<0.03 \text{ mm (0.0012 in)}>$
Camshaft: Drive method Cam cap inside diameter Camshaft outside diameter Shaft-to-cap clearance Cam dimensions Intake  Exhaust  Camshaft runout limit  Camshaft oil clearance <Limit>	Chain drive (right) $24.500 \sim 24.521 \text{ mm (0.9646 ~ 0.9654 in)}$ $24.467 \sim 24.480 \text{ mm (0.9633 ~ 0.9638 in)}$ 0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in) " A " <limit> " B " <limit> " C " " A " <limit> " B " <limit> " C " 32.75 ~ 32.85 mm (1.2894 ~ 1.2933 in) $<32.7 \text{ mm (1.287 in)}>$ 25.0 ~ 25.1 mm (0.9843 ~ 0.9882 in) $<24.96 \text{ mm (0.983 in)}>$ 7.8 mm (0.3071 in) 32.75 ~ 32.85 mm (1.2894 ~ 1.2933 in) $<32.7 \text{ mm (1.287 in)}>$ 25.0 ~ 25.1 mm (0.9843 ~ 0.9882 in) $<24.96 \text{ mm (0.983 in)}>$ 7.8 mm (0.3071 in) 0.03 mm (0.0012 in) 0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in) $<0.08 \text{ mm (0.0031 in)}>$
Cam chain: Cam chain type / No. of links Cam chain adjustment method	82RH2010-122M/122 Automatic

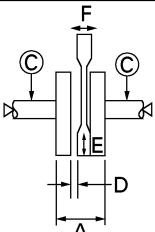


Model	TTR250L(C)		
Valve, valve seat, valve guide:			
Valve clearance (cold)	IN	0.09 ~ 0.19 mm (0.004 ~ 0.007 in)	
	EX	0.19 ~ 0.27 mm (0.007 ~ 0.011 in)	
Valve dimensions:			
Head Diameter		Face Width	Seat Width
" A " head diameter	IN	28.4 ~ 28.6 mm (1.118 ~ 1.126 in)	
	EX	23.9 ~ 24.1 mm (0.941 ~ 0.949 in)	
" B " face width	IN	2.26 mm (0.089 in)	
	EX	2.26 mm (0.089 in)	
" C " seat width	IN	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)	
	EX	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)	
" D " margin thickness	IN	0.6 ~ 1.0 mm (0.024 ~ 0.039 in)	
	EX	0.8 ~ 1.2 mm (0.031 ~ 0.047 in)	
Stem outside diameter	IN	4.975 ~ 4.990 mm (0.1959 ~ 0.1965 in)	
	EX	4.960 ~ 4.975 mm (0.1953 ~ 0.1959 in)	
<Limit>	IN	<4.95 mm (0.195 in)>	
	EX	<4.94 mm (0.194 in)>	
Guide inside diameter	IN	5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in)	
	EX	5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in)	
<Limit>	IN	<5.03 mm (0.198 in)>	
	EX	<5.03 mm (0.198 in)>	
Stem-to-guide clearance	IN	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)	
	EX	0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)	
<Limit>	IN	<0.08 mm (0.003 in)>	
	EX	<0.1 mm (0.004 in)>	
<Stem runout limit>		<0.01 mm (0.0004 in)>	
Valve face material	Stellite		
Valve seat width	IN	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)	
	EX	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)	
<Limit>	IN	<1.6 mm (0.06 in)>	
	EX	<1.6 mm (0.06 in)>	



Model	TTR250L(C)	
Valve spring:		
Free length	IN	35.59 mm (1.40 in)
	EX	35.59 mm (1.40 in)
<Limit>	IN	<33.81 mm (1.33 in)>
	EX	<33.81 mm (1.33 in)>
Spring rate	IN-K1	18.9 N/mm (1.93 kg/mm, 107.92 lb/in)
	IN-K2	24.5 N/mm (2.50 kg/mm, 139.9 lb/in)
	EX-K1	18.9 N/mm (1.93 kg/mm, 107.92 lb/in)
	EX-K2	24.5 N/mm (2.50 kg/mm, 139.9 lb/in)
Set length (valve closed)	IN	30.39 mm (1.2 in)
	EX	30.39 mm (1.2 in)
Compressed pressure (installed)	IN	9.3 ~ 10.7 kg (20.50 ~ 23.58 lb)
	EX	9.3 ~ 10.7 kg (20.50 ~ 23.58 lb)
<Tilt limit>	IN	<2.5° / 1.6 mm (2.5° / 0.063 in)>
	EX	<2.5° / 1.6 mm (2.5° / 0.063 in)>
Direction of winding (top view)	IN	Clockwise
	EX	Clockwise
		
Valve lifter outside diameter	IN	22.476 ~ 22.500 mm (0.88 ~ 0.89 in)
<Limit>	IN	<22.451 mm (0.88 in)>
Piston:		
Piston part number	4GY-11631-00	
Piston to cylinder clearance	0.04 ~ 0.06 mm (0.0016 ~ 0.0024 in)	
<Limit>	<0.15 mm (0.0059 in)>	
Piston size "D"	72.92 ~ 72.97 mm (2.8709 ~ 2.8728 in)	
		
Measuring point "H"	1 mm (0.039 in)	
Piston off-set	0.5 mm (0.020 in)	
Piston off-set direction	In side	
Piston pin bore inside diameter	18.004 ~ 18.015 mm (0.7088 ~ 0.7093 in)	
<Limit>	<18.045 mm (0.71 in)>	
Piston pin outside diameter	17.991 ~ 18.000 mm (0.7083 ~ 0.7087 in)	
<Limit>	<17.976 mm (0.71 in)>	



Model	TTR250L(C)
Piston rings:	
Top ring	
Type	
Dimensions (B × T)	
End gap (installed)	
<Limit>	
Side clearance (installed)	
<Limit>	
Plating/coating	Chrome plated/parkerizing
2nd ring:	
Type	
Dimensions (B × T)	
End gap (installed)	
<Limit>	
Side clearance	
<Limit>	
Plating/coating	Parkerizing
Oil ring:	
Dimensions (B × T)	
End gap (installed)	
Side clearance	
Plating/coating	Chrome plated/parkerizing
Connecting rod:	
Connecting rod length	102.4 ~ 102.6 mm (4.03 ~ 4.04 in)
Crankshaft:	
Crank width "A"	
<Runout limit "C">	
Big end side clearance "D"	
Big end radial clearance "E"	
Small end free play "F"	
Balancer:	
Balancer drive method	Gear
Clutch:	
Friction plate thickness	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
Quantity	7 pcs
<Friction plate wear limit>	<2.7 mm (0.11 in)>
Clutch plate thickness	1.5 ~ 1.7 mm (0.059 ~ 0.067 in)
Quantity	6 pcs
<Warp limit>	<0.05 mm (0.002 in)>
Clutch spring free length	42.8 mm (1.69 in)
Quantity	5 pcs
Minimum length	40.8 mm (1.61 in)
Clutch housing thrust clearance	0.08 ~ 0.33 mm (0.003 ~ 0.013 in)
Clutch housing radial clearance	0.010 ~ 0.044 mm (0.0004 ~ 0.0017 in)



Model	TTR250L(C)
Clutch release method <Push rod bending limit>	Inner push, cam push <0.5 mm (0.020 in)>
Transmission: <Main axle deflection limit> <Drive axle deflection limit>	<0.08 mm (0.003 in)> <0.08 mm (0.003 in)>
Shifter: Shifter type Shift fork thickness	Cam drum and guide bar 4.76 ~ 4.89 mm (0.1874 ~ 0.1925 in)
Air filter oil grade:	Foam-air-filter oil or SAE 10W30 type SE motor oil
Carburetor: I.D. mark Main jet (M.J) Main air jet (M.A.J) Jet needle (J.N) Needle jet (N.J) Cutaway (C.A) Pilot air jet (P.A.J.1) Pilot outlet (P.O) Pilot jet (P.J) Bypass 1 (B.P.1) Pilot screw (P.S) Valve seat size (V.S) Starter jet (G.S.1) Starter jet (G.S.2) Float height (F.H) Fuel level (F.L) Engine idle speed Intake vacuum Oil temperature	5GF1 00 #137 1.0 5C9C-3/5 2.595 (V95) 4.0 1.2 0.8 #52 1.0 × 2 1-1/2 2.0 #66 2.0 26.5 ~ 27.5 mm (1.04 ~ 1.08 in) 7.5 ~ 9.5 mm (0.30 ~ 0.37 in) 1,250 ~ 1,350 r/min 24.0 ~ 29.3 kPa (180 ~ 220 mmHg, 7.087 ~ 8.652 inHg) 55 ~ 65 °C (131 ~ 149 °F)
Lubrication system: Oil filter type Oil pump type Tip clearance "A" or "B" <Limit> Side clearance <Limit> Housing and rotor clearance <Limit> Oil pressure (hot) Pressure check location	Wire mesh type Trochoid type 0.15 mm (0.006 in) <0.2 mm (0.008 in)> 0.10 ~ 0.15 mm (0.004 ~ 0.006 in) <0.2 mm (0.008 in)> 0.04 ~ 0.09 mm (0.002 ~ 0.004 in) <0.15 mm (0.006 in)> 100 kPa (1 kg/cm ² , 14.22 psi) at 1,300 r/min Crankcase cover 3



TIGHTENING TORQUES

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Cylinder head (camshaft cap)	Flange bolt	M6	8	10	1.0	7.2	
Spark plug	–	M10S	1	13	1.3	9.4	
Cylinder head (exhaust pipe)	Stud bolt	M10	2	20	2.0	14	
Cylinder head	Flange bolt	M10	4	40	4.0	29	
Cylinder head	Flange bolt	M6	2	10	1.0	7.2	
Cylinder head	Nut	M8	2	20	2.0	14	
Cylinder head cover	Bolt	M6	3	10	1.0	7.2	
Flywheel magneto	Flange bolt	M10	1	60	6.0	43	
Camshaft sprocket	Flange bolt	M7	4	24	2.4	17	
Camshaft cap	Flange bolt	M6	8	8	0.8	5.8	
Timing chain damper 2	Bolt	M6	2	8	0.8	5.8	
Stopper guide	Panhead screw	M6	1	7	0.7	5.1	
Oil pump assembly	Panhead screw	M6	3	6	0.6	4.3	
Drain bolt (oil filter)	Bolt	M6	1	10	1.0	7.2	
Oil check bolt	Bolt	M6	1	7	0.7	5.1	
Plug (oil cooler)	Plug	M12	3	32	3.2	23	
Oil delivery pipe	Union bolt	M10	2	20	2.0	14	
Oil delivery pipe	Union bolt	M8	1	18	1.8	13	
Relief valve stay	Flange bolt	M6	1	10	1.0	7.2	
Carburetor joint (front)	Hose clamp	M4	1	2	0.2	1.4	
Carburetor joint (air filter assembly)	Hose clamp	M5	1	5	0.5	3.6	
Air filter case assembly	Bolt with washer	M6	3	5	0.5	3.6	
Exhaust pipe (cylinder head)	Nut	M8	2	7	0.7	5.1	
Exhaust pipe (muffler)	Flange bolt	M8	1	20	2.0	14	
Muffler	Bolt	M8	2	40	4.0	29	
Spark arrester	Bolt	M6	3	7	0.7	5.1	
Muffler purging bolt	Bolt	M8	1	20	2.0	14	
Muffler protector	Screw	M6	2	7	0.7	5.1	
Crankcase assembly	Bolt	M6	11	10	1.0	7.2	
Crankcase cover 1	Bolt	M6	8	10	1.0	7.2	
Crankcase cover 2 (starter motor cover)	Bolt	M6	5	10	1.0	7.2	
Crankcase cover 3	Bolt	M6	10	10	1.0	7.2	
One-way clutch	Bolt	M6	6	10	1.0	7.2	
Primary drive gear	Nut	M16	1	80	8.0	58	
Clutch boss	Nut	M16	1	75	7.5	54	
Pressure plate	Screw with washer	M6	5	8	0.8	5.8	



Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Push rod 2	Nut	M6	1	8	0.8	5.8	
Push lever	Screw	M8	1	12	1.2	8.7	
Clutch cable holder	Flange bolt	M6	2	10	1.0	7.2	
Drive sprocket	Nut	M18	1	110	11.0	80	
Lever stopper	Bolt	M6	1	10	1.0	7.2	
Shift pedal	Bolt	M6	1	10	1.0	7.2	
Starter motor	Flange bolt	M6	2	10	1.0	7.2	
Drain plug	Straight screw plug	M12	1	20	2.0	14	
Stator coil	Bolt	M5	3	7	0.7	5.1	