

TW125 5EK1-AE2

SUPPLEMENTARY SERVICE MANUAL

FOREWORD

This Supplementary Service Manual has been prepared to introduce new service and data for the TW125 2002. For complete service information procedures it is necessary to use this Supplementary Service Manual together with the following manual.

TW125 SERVICE MANUAL: 5EK1-AE1

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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 motorcycle 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!
A 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.

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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").

 \bigcirc 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.





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 checks and adjustments
- (4) Engine
- (5) Carburetor(-s)
- 6 Chassis
- ⑦ Electrical system
- (8) Troubleshooting

Symbols (9) to (16) indicate the following.

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

Symbols (17) to (22) in the exploded diagrams indicate the types of lubricants and lubrication points.

- 17 Engine oil
- 18 Gear oil
- (19) Molybdenum disulfide oil
- 20 Wheel bearing grease
- 21) Lithium soap base grease
- 22 Molybdenum disulfide grease

Symbols 23 to 24 in the exploded diagrams indicate the following:

- 23 Apply locking agent (LOCTITE®)
- 24 Replace the part

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SPECIFICATIONS

GENERAL SPECIFICATIONS

Model	TW125
Model code:	5RS1, 5RS2
Dimensions: Overall length Overall width Overall height Seat height Wheelbase Minimum ground clearance Minimum turning radius	2,135 mm 820 mm 1,120 mm 820 mm 1,350 mm 255 mm 2,100 mm
Carburetor: Type/quantity Manufacturer	MV28/1 TEIKEI
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 74/20 (3.700) Chain drive 51/14 (3.643) Constant mesh 5 speed Left foot operation 36/16 (2.250) 31/21 (1.476) 27/24 (1.125) 25/27 (0.926) 23/29 (0.793)
Chassis: Frame type Caster angle Trail	Diamond 25°50' 93 mm
Tire: Type Size front rear	Tube type 130/80-18 66P 130/80-18 M/C 66P 180/80-14 M/C 78P BRIDGESTONE
Type front rear	BRIDGESTONE TW203 TW204

GENERAL SPECIFICATIONS



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Model	TW125
Wheel travel:	
Front wheel travel	150 mm
Rear wheel travel	150 mm
Electrical:	
Ignition system	C.D.I.
Generator system	A.C. magneto
Battery type	GT6B-3
Battery capacity	12 V 6 AH
Bulb wattage \times quantity:	
Headlight	12 V 60 W/55 W × 1
Auxiliary light	12 V 4 W × 1
Tail/brake light	12 V 5 W/21 W × 1
Turn signal light	12 V 21 W × 4
Meter light	12 V 3.4 W × 1
High beam indicator light	12 V 3.4 W × 1
Neutral indicator light	12 V 3.4 W × 1
Turn signal indicator light	12 V 3.4 W × 1



MAINTENANCE SPECIFICATIONS ENGINE

Item		Standard	Limit
Clutch:			
Friction plate thickness		2.9 ~ 3.1 mm	2.7 mm
Quantity		5 pcs.	•••
Clutch plate thickness		1.6 mm	0.05 mm
Quantity		4 pcs.	•••
Clutch spring free length		34.9 mm	33.9 mm
Quantity		4 pcs.	•••
Push rod bending limit		•••	0.2 mm
Carburetor:			
Туре		MV28	
I.D. mark		5RS1 00	•••
Main jet	(M.J)	#134	•••
Main air jet	(M.A.J)	ø1.2	•••
Jet needle	(J.N)	5A50-3/5	•••
Needle jet	(N.J)	B1/60	•••
Pilot air jet 1	(P.A.J.1)	#90	•••
Pilot air jet 2	(P.A.J.2)	#120	•••
Pilot outlet	(P.O)	0.8	•••
Pilot jet	(P.J)	#34	•••
Bypass 1	(B.P.1)	0.7	•••
Bypass 2	(B.P.2)	0.7	•••
Bypass 3	(B.P.3)	0.7	•••
Bypass 4	(B.P.4)	0.7	•••
Pilot screw	(P.S)	1-1/2	•••
Valve seat size	(V.S)	1.6	•••
Starter jet 1	(G.S.1)	0.6	•••
Starter jet 2	(G.S.2)	0.8	•••
Fuel level	(F.L)	0 ~ 2.0 mm	•••
Engine idle speed		1,450 ~ 1,650 r/min	•••
Intake vacuum		190 ~ 230 mmHg	•••

TIGHTENING TORQUES

ENGINE

Part to be tightened	Part name	Thread	Q'ty	Tight tore	ening que	Remarks	
		5120		Nm	m•kg		
Cam sprocket cover	Screw	M6	2	10	1.0		
Oil filter cover	Screw	M6	2	10	1.0		
Crankcase (left and right)	Screw	M6	12	10	1.0		
Generator cover	Screw	M6	10	10	1.0		
Clutch cover	Screw	M6	10	10	1.0	-0	
Clutch boss	Nut	M14	1	50	5.0		
Drive sprocket	Bolt	M5	2	4	0.4		
Pick up coil	Screw	M6	2	10	1.0		
Stator coil	Screw	M6	3	10	1.0	-0	

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MAINTENANCE SPECIFICATIONS



CHASSIS

Item	Standard	Limit
Front suspension: Front fork travel Fork spring free length Fitting length Spring rate (K1) Stroke (K1) Oil capacity Oil level Oil grade Inner tube vend limit	150 mm 330 mm 325 mm 4.9 N/mm (0.49 kg/mm) 0 ~ 150 mm 0.259 L (259 cm ³) 122 mm Fork oil 10 WT or equivalent	 323 mm 0.2 mm
Rear suspension: Shock absorber stroke Spring free length Fitting length Spring rate (K1) Stroke (K1)	48 mm 190 mm 185 mm 127 N/mm (12.7 kg/mm) 0 ~ 48 mm	•••• 171 mm ••••
Drive chain: Type/manufacturer No. of links Chain free play Maximum ten-link section	428HD/DAIDO 125 35 ~ 60 mm 129.5 mm	•••
Rear brake: Type Drum inside diameter Shoe thickness Shoe spring free length	Leading, trailing 130mm 4mm Cam side 52mm Pin side 48mm	•••• 131 mm 2 mm •••
Brake lever: Brake lever free play (at lever end)	5 ~ 8 mm	•••



TIGHTENING TORQUES CHASSIS

Part to be tightened	Thread size	Tighte tore	ening que	Remarks	
		Nm	m∙kg		
Headlight and headlight stay	M8	16	1.6		
Handle crown and steering shaft	M22	110	11.0		
Steering ring nut	M25	4	0.4	Refer to NOTE	
Brake hose union bolt (front brake)	se union bolt (front brake) M10 30 3.0				
Swingarm pivot shaft	M12	83	8.3		
Footrest (left)	M12	88	8.8		
(right)	M10	48	4.8		
Rear footrest	M8	16	1.6		
Brake caliper and front fork	M10	40	4.0		
Rear wheel sprocket and hub	M8	43	4.3		

NOTE: ----

1. When tighten the ring nut, should be steady the ball bearings and the steering shaft moving smoothly.

2. First, tighten the ring nut approximately 38 Nm (3.8 m•kg) by using the torque wrench, then loosen the ring nut one turn and retighten the ring nut to specification.

Item	Standard	Limit
Charging system: Type Model/manufacturer Standard output Stator coil resistance/color	C.D.I. magneto F5BT/YAMAHA 14 V 170 W/5,000 r/min 0.48 ~ 0.72 Ω at 20°C/ White – White	••••
Battery: Specific gravity	1.320	•••
Electric starter system: Type Starter motor:	Constant mesh type	•••
Model/manufacturer	5RS/YAMAHA	•••
Output	0.4 kW	•••
Armature coil resistance Brush overall length Brush spring pressure	0.0126 ~ 0.0154 Ω at 20°C 10 mm 5.52 ~ 8.28 N (552 ~ 828 g)	••• 3.5 mm •••
Commutator diameter Mica undercut (depth)	22 mm 1.5 mm	21 mm

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ELECTRICAL



CABLE ROUTING

- 1 Brake hose
- (2) Throttle cables
- 3 Front brake light switch lead
- (4) Right handlebar switch lead
- (5) Main switch lead
- 6 Clutch cable
- $\overline{7}$ Clutch switch lead
- (8) Speedometer cable
- (9) Left handlebar switch lead
- (1) Front turn signal light lead (left)
- (11) Meter lead

- (12) Wire harness
- (13) Front turn signal light lead (right)
- (14) Indicator lead
- A Clamp the grommet of brake hose with the band. After completion of clamping, cut the surplus part and point it to the backward.
- B No positioning for the headlight body is specified.
- C To the headlight



- (1) Battery positive lead
- (2) Starter relay
- 3 Starter motor lead
- (4) Clamp
- 5 Ignition coil
- 6 Throttle cable (pull side)
- (7) Throttle cable (return side)
- (8) Throttle cable holder
- (9) Horn lead
- (1) Spark plug lead
- (1) Relay (White)
- (12) C.D.I. unit

- 13 Diode
 - (14) Resister lead
 - (15) Turn signal relay



- A fter clamping the wire harness, point the surplus part to the downward. Clamp the part immediately before the junction to the C.D.I. unit and relay.
- B Cut it to be 10 mm or less.
- C Handlebar switch lead (right) and front brake light switch lead should not be twined around.





- D Clamp the wire harness, handle bar switch lead (right), front brake light switch lead, clutch switch lead and main switch lead. After clamping, point the surplus part to the downward resonator hose and starter cable.
- E Clamp the wire harness, handlebar switch lead (right), front H Do not bend the lead sharply just brake light switch lead, clutch

switch lead, main switch lead, I Pass the throttle cables through resonator hose and starter cable.

- F Clamp the ignition coil lead and lead.
- and then cut it. Do not clamp the G Route the wire harness, handlebar switch lead (right) and front brake light switch lead through the guide.
 - after the terminal connection.
- the engine bracket hole. Point the surplus part to the downward and cut the end.
- the ignition coil grand lead horn J Pass the carburetor heater lead in front of the seat pillar tube so that it is not caught between the side cover flange and seat pillar tube frame.
 - K Point the rear brake switch lead wire to the rear side of frame.





- connector and turn signal relay lead with the band and point the surplus part to the inner side, then cut it. Secure the connector at the front part of frame.
- L Clamp the rear brake switch lead O Clamp the wire harness and diode. Point the surplus part to the downward.
- M Push the wire harness in between frame and box.
- N Place the C.D.I. unit on the mounting port for the left side relay.



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- 1 Resonator hose
- 2 Fuel hose
- ③ Rectifier/regulator lead
- (4) Thermo switch lead
- 5 Sidestand switch lead
- 6 Air filter case
- 7 Breather hose
- 8 Battery negative lead
- (9) C.D.I. magneto leads
- (10) Over flow hose
- (11) Air vent hose
- (12) Clutch cable

- (13) Clutch cable guide
- 14 Brake hose
- $(\tilde{15})$ Speedometer cable
- (16) Handlebar switch lead (left)
- (17) Clamp
- (18) Flange bolt
- (19) Brake hose holder
- A Clamp between the positioning belts of resonator hose. Do not pinch the resonator hose.
- B Starter cable, clutch switch lead and main switch lead should not be twined around.
- C Clamp at the point ahead of the part where resonator hose protector is torn. Do not pinch the resonator hose.
- D Place the coupler below the resonator hose.





- E Clamp the rectifier/regulator lead and resonator hose. Point H Clamp the sidestand switch M Route the neutral switch lead bethe surplus part toward the inner side. Clamp within a range where the resonator hose protector is torn. Do not pinch the resonator hose.
- F Place the air vent hose in the inner side of the main pipe.
- G Clamp the C.D.I. magneto lead at the frame pipe bend and point the surplus part to the inner L Route the starter motor lead be-

side, then cut it.

- lead.
- I Clamp the air vent hose, over flow hose, starter motor lead and neutral switch lead.
- J Hold down the side stand switch O To the fuel cock. lead using the special washer.
- K Route the air vent hose and over flow hose between engine and swingarm.

tween engine and swingarm.

- tween engine and swingarm.
- N Route the air vent hose and over flow hose through the engine guide.
- P Route the horn lead through inside the clutch cable.
- Q Insert the starter cable to the clamp.





- R Clamp the brake hose and speedometer cable. Align the clamping position with the center of white paint mark on the brake hose.
- \square Clamp the brake hose and \square Place the speedometer cable in speedometer cable. Align the the inner side.
 - clamping position with the center W After tightening screws, insert of white paint mark on the brake the hose in the screw section.
 - X Distortion should be within this range toward the traveling direction of vehicle.
 - \boxed{Y} Place the brake hose in the outer side.
- hose. S Clamp the brake hose and speedometer cable with a holder.
- T Point the speedometer cable cap to the backward.
- U Make sure to push in the boot fully.





- (1) Handlebar switch lead (right)
- (2) Front brake light switch lead
- ③ Brake hose
- (4) Throttle cable (return side)
- (5) Throttle cable (pull side)
- 6 Starter motor lead
- 7 Battery positive lead
- (8) Wire harness
- (9) Clamp (wire harness)
- 10 Thermo switch lead
- (1) Sidestand switch lead
- 12 Negative lead

- (13) Battery negative lead
- (14) Grommet
- (15) Rectifier/regulator
- 16 Clamp (rectifier/regulator lead)
- (17) Handlebar switch lead (left)
- 18 Clutch switch lead
- (19) Clutch cable
- 20 Master cylinder
- (21) Starter cable
- 22 Rear turn signal light lead
- 23 Turn signal light stay

24 C.D.I. magneto leads, neutral switch lead





- and front brake light switch lead with a band.
- B Clamp the throttle cables.
- C Clamp the C.D.I. magneto lead (2 leads), starter motor lead, neutral switch lead, battery negative lead and pass them through the frame gusset hole, then point the surplus part to the inner side.
- A Clamp the handlebar switch lead D Clamp the wire harness and rear H Pass the rear turn signal light turn signal light lead (right). Point the surplus part to the inner side.
 - E Cover the naked part of rear turn signal light lead (right) with the hose.
 - F Cover the naked part of rear turn signal light lead (left) with the hose.
 - G Clamp the wire harness and rear turn signal lead (right).
- lead (right) between the rear frame and license bracket, avoiding to be caught.
- I Pass the rear turn signal light lead (left) between the rear frame and license bracket, avoiding to be caught.
- J Clamp the rear turn signal light lead (left). After clamping, point the surplus part to the inner side.





visible either from the top or the

rear.

- coupler. After clamping, point the surplus part to the inner side.
- L Pass the C.D.I. magneto lead (2) leads) through the grommet side.
- M Place the cover to the corner of rectifier/regulator.
- No special order is set for the C.D.I. magneto lead (2 leads), neutral switch lead, starter motor lead and battery negative lead.





INTRODUCTION PERIODIC MAINTENANCE/LUBRICATION INTERVALS



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PERIODIC CHECKS AND ADJUSTMENTS

INTRODUCTION

This chapter includes all information necessary to perform recommended checks and adjustments. If followed, these preventive maintenance procedures will ensure more reliable vehicle operation, a longer service life and reduce the need for costly overhaul work. This information applies to vehicles already in service as well as to new vehicles that are being prepared for sale. All service technicians should be familiar with this entire chapter.

PERIODIC MAINTENANCE/LUBRICATION INTERVALS

NOTE: -

- The annual checks must be performed every year, except if a kilometer-based maintenance is performed instead.
- From 30,000 km, repeat the maintenance intervals starting from 6,000 km.
- Items marked with an asterisk should be performed by a Yamaha dealer as they require special tools, data and technical skills.

1 '	*		ITEM CHECK OR MAINTENANCE JOB		ANNUAL CHECK				
1 '	*				6	12	18	24	ONLOR
	_	Fuel line	Check fuel hoses for cracks or damage.		\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
2		Spark plug	Check condition. Clean and regap.		V		V		
			• Replace.			\checkmark		\checkmark	
3 '	*	Valves	Check valve clearance.Adjust.		V	\checkmark	\checkmark	\checkmark	
		Air filtor alamant	• Clean.		\checkmark		\checkmark		
		Air inter element	• Replace.			V		\checkmark	
5		Clutch	Check operation.Adjust.	\checkmark	V	\checkmark	V	V	
	*	Front brako	Check operation, fluid level and vehicle for fluid leakage.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
		FIGHT DIAKE	Replace brake pads.		Wł	nenever	worn to	the limit	
- ,	*	Poor broko	Check operation and adjust brake pedal free play.	\checkmark	\checkmark	V	\checkmark	\checkmark	\checkmark
'		near brake	Replace brake shoes.	Whenever worn to the limit					
	*	Proko hooo	Check for cracks or damage.		\checkmark	V	\checkmark	\checkmark	\checkmark
°		brake nose	Replace.			Eve	ry 4 yeai	'S	
9,	*	Wheels	Check runout, spoke tightness and for damage. Tighten spokes if necessary.		\checkmark	\checkmark	\checkmark	V	
10	*	Tires	 Check tread depth and for damage. Replace if necessary. Check air pressure. Correct if necessary. 		V	V	\checkmark	V	V
11 '	*	Wheel bearings	Check bearing for looseness or damage.		\checkmark	V	\checkmark	\checkmark	
10	*	Swingorm	Check operation and for excessive play.		\checkmark	V	\checkmark	V	
		Swingarin	Lubricate with lithium-soap-based grease.			Every	24,000	km	
13		Drive chain	 Check chain slack. Make sure that the rear wheel is properly aligned. Clean and lubricate. 	Every 500 km and after washing the motorcycle or riding in the rain				ng rain	
14	*	Steering bearings	Check bearing play and steering for roughness.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	
14		Steering bearings	Lubricate with lithium-soap-based grease.	Every 24,000 km					
15 '	*	Chassis fasteners	Make sure that all nuts, bolts and screws are properly tightened.		V	\checkmark	\checkmark	\checkmark	\checkmark
16		Sidestand	Check operation. Lubricate.		\checkmark	\checkmark	\checkmark	V	\checkmark
17	*	Sidestand switch	Check operation.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	1
18 '	*	Front fork	Check operation and for oil leakage.		\checkmark	\checkmark	\checkmark	\checkmark	
19 [,]	*	Shock absorber assembly	Check operation and shock absorber for oil leakage.		\checkmark	\checkmark	\checkmark	\checkmark	

PERIODIC MAINTENANCE/LUBRICATION INTERVALS



NO.		ITEM	CHECK OR MAINTENANCE JOB						
				1	6	12	18	24	CHECK
20	*	Rear suspension relay	Check operation.		\checkmark	\checkmark	\checkmark	\checkmark	
20		arm pivoting points	Lubricate with lithium-soap-based grease.			\checkmark		\checkmark	
21	*	Carburetor	Check starter (choke) operation.Adjust engine idling speed.	V	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
22		Engine oil	Change. Check oil level and vehicle for oil leakage.	V	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
23		Engine oil filter element	• Clean.	\checkmark		\checkmark		\checkmark	
24	*	Engine oil strainer	• Clean.	\checkmark					
25	*	Front and rear brake switches	Check operation.	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
26		Moving parts and cables	Lubricate.		V	V	V		
27	*	Lights, signals and switches	Check operation.Adjust headlight beam.	\checkmark					

NOTE: _

• The air filter needs more frequent service if you are riding in unusually wet or dusty areas.

- Hydraulic brake service
 - Regularly check and, if necessary, correct the brake fluid level.
 - Every two years replace the internal components of the brake master cylinder and caliper, and change the brake fluid.
 - Replace the brake hoses every four years and if cracked or damaged.



ENGINE EAS00054

ADJUSTING THE ENGINE IDLING SPEED

NOTE: -

Prior to adjusting the engine idling speed, the air filter should be clean, and the engine should have adequate compression.

- 1. Start the engine and let it warm up for several minutes.
- 2. Install:
 - engine tachometer (to the spark plug lead)



- 3. Measure:
 - engine idling speed
 Out of specification → Adjust.

- 4. Adjust:
 - engine idling speed
- ****
- a. Turn the pilot screw ① in or out until it is lightly seated.
- b. Turn the pilot screw out the specified number of turns.



c. Turn the throttle stop screw (2) in direction (a) or (b) until the specified engine idling speed is obtained.

$\begin{array}{l} \mbox{Direction} \begin{tabular}{l} \widehat{a} \end{tabular} \rightarrow \mbox{Engine idling speed is} \\ \end{tabular} \end{tabular} increased. \end{array}$	
$\begin{array}{l} \mbox{Direction} \begin{tabular}{l} b \end{tabular} \rightarrow \mbox{ Engine idling speed is} \\ \mbox{ decreased.} \end{array}$	

- 5. Adjust:
 - throttle cable free play Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY".







ADJUSTING THE THROTTLE CABLE FREE PLAY





ADJUSTING THE THROTTLE CABLE FREE PLAY

NOTE: ·

Prior to adjusting the throttle cable free play, the engine idling speed should be adjusted.

- 1. Check:
 - throttle cable free play ⓐ
 Out of specification → Adjust.



- 2. Adjust:
 - throttle cable free play

NOTE:

When the motorcycle is accelerating, the accelerator cable 1 is pulled.

Carburetor side

- a. Loosen the locknut ② on the decelerator cable.
- b. Turn the adjusting nut ③ in direction ⓐ or ⓑ to take up any slack on the decelerator cable.
- c. Loosen the locknut 4 on the accelerator cable 1.
- d. Turn the adjusting nut (5) in direction (a) or (b) until the specified throttle cable free play is obtained.

Direction (a)	Throttle cable free play is increased.
Direction (b)	Throttle cable free play is decreased.

e. Tighten the locknuts.

NOTE: -

If the specified throttle cable free play cannot be obtained on the carburetor side of the cable, use the adjusting nut on the handlebar side.

Handlebar side

- a. Slide back the rubber cover (1).
- b. Loosen the locknut 2.
- c. Turn the adjusting nut ③ in direction ⓐ or ⓑ until the specified throttle cable free play is obtained.





ADJUSTING THE THROTTLE CABLE FREE PLAY



Direction (a)	Throttle cable free play is increased.
Direction (b)	Throttle cable free play is decreased.

d. Tighten the locknut.

A WARNING

After adjusting the throttle cable free play, turn the handlebars to the right and to the left to ensure that this does not cause the engine idling speed to change.







ELECTRICAL SYSTEM CHECKING AND CHARGING THE BATTERY

A WARNING

Batteries generate explosive hydrogen gas and contain electrolyte which is made of poisonous and highly caustic sulfuric acid.

Therefore, always follow these preventive measures:

- Wear protective eye gear when handling or working near batteries.
- Charge batteries in a well-ventilated area.
- Keep batteries away from fire, sparks or open flames (e.g., welding equipment, lighted cigarettes).
- DO NOT SMOKE when charging or handling batteries.
- •KEEP BATTERIES AND ELECTROLYTE OUT OF REACH OF CHILDREN.
- Avoid bodily contact with electrolyte as it can cause severe burns or permanent eye injury.

First aid in case of bodily contact:

External

- SKIN Wash with water.
- EYES Flush with water for 15 minutes and get immediate medical attention.

Internal

• Drink large quantities of water or milk followed with milk of magnesia, beaten egg or vegetable oil. Get immediate medical attention.

CAUTION:

- This is a sealed battery. Never remove the sealing caps because the balance between cells will not be maintained and battery performance will deteriorate.
- Charging time, charging amperage and charging voltage for a MF battery are different from those of conventional batteries. The MF battery should be charged as explained in the charging method illustrations. If the battery is overcharged, the electrolyte level will drop considerably. Therefore, take special care when charging the battery.



NOTE: -

Since MF batteries are sealed, it is not possible to check the charge state of the battery by measuring the specific gravity of the electrolyte. Therefore, the charge of the battery has to be checked by measuring the voltage at the battery terminals.

- 1. Remove:
- seat
- 2. Disconnect:
 battery leads (from the battery terminals)

CAUTION:

First, disconnect the negative lead (1), then the positive lead (2).

- 3. Remove:
- battery
- 4. Check:
 - battery charge
- ****
- Connect a pocket tester to the battery terminals.

Tester positive lead → battery positive terminal Tester negative lead → battery negative terminal

NOTE: -

- The charge state of a MF battery can be checked by measuring its open-circuit voltage (i.e., the voltage when the positive terminal is disconnected).
- No charging is necessary when the open-circuit voltage equals or exceeds 12.8 V.
- b. Check the charge of the battery, as shown in the charts and the following example.

Example

- c. Open-circuit voltage = 12.0 V
- d. Charging time = 6.5 hours
- e. Charge of the battery = $20 \sim 30\%$
- *******















5. Charge:
battery (refer to the appropriate charging method illustration)

A WARNING

Do not quick charge a battery.

CAUTION:

- Make sure that the battery vent is free of obstructions.
- Never remove the MF battery sealing caps.
- Do not use a high-rate battery charger. They force a high-amperage current into the battery quickly and can cause battery overheating and battery plate damage.
- If it is impossible to regulate the charging current on the battery charger, be careful not to overcharge the battery.
- When charging a battery, be sure to remove it from the motorcycle. (If charging has to be done with the battery mounted on the motorcycle, disconnect the negative lead from the battery terminal.)
- To reduce the chance of sparks, do not plug in the battery charger until the battery charger leads are connected to the battery.
- Before removing the battery charger lead clips from the battery terminals, be sure to turn off the battery charger.
- Make sure that the battery charger lead clips are in full contact with the battery terminal and that they are not shorted. A corroded battery charger lead clip may generate heat in the contact area and a weak clip spring may cause sparks.
- If the battery becomes hot to the touch at any time during the charging process, disconnect the battery charger and let the battery cool before reconnecting it. Hot batteries can explode!
- As shown in the following illustration, the open-circuit voltage of a MF battery stabilizes about 30 minutes after charging has been completed. Therefore, wait 30 minutes after charging is completed before measuring the open-circuit voltage.



Charging method using a variable voltage charger





CHECKING AND CHARGING THE BATTERY

Charging method using a constant voltage charger



CHECKING AND CHARGING THE BATTERY



- 6. Check:
 battery vent
 Obstruction → Clean.
 Damage → Replace.
- 7. Install:
- battery



8. Connect:battery leads (to the battery terminals)

CAUTION:

First, connect the positive lead (1), then the negative lead (2).

- 9. Check:
 - battery terminals
 Dirt → Clean with a wire brush.
 Loose connection → Connect properly.
- 10. Lubricate:
 - battery terminals



- 11. Install:
- seat

REPLACING THE HEADLIGHT BULB

EAS00182









REPLACING THE HEADLIGHT BULB

- 1. Remove:
 - bolts 1
 - headlight unit
- 2. Disconnect:
 - headlight coupler ①
 - headlight bulb cover (2)

- 3. Remove:
- headlight bulb holder (1)
- headlight bulb ②

A WARNING

Since the headlight bulb gets extremely hot, keep flammable products and your hands away from the bulb until it has cooled down.

- 4. Install:
 - headlight bulb New

Secure the new headlight bulb with the headlight bulb holder.

CAUTION:

Avoid touching the glass part of the headlight bulb to keep it free from oil, otherwise the transparency of the glass, the life of the bulb and the luminous flux will be adversely affected. If the headlight bulb gets soiled, thoroughly clean it with a cloth moistened with alcohol or lacquer thinner.

- 5. Install:
 - headlight bulb holder
- 6. Connect:
 - headlight bulb holder
 - headlight coupler
- 7. Install:
- headlight unit

ADJUSTING THE HEADLIGHT BEAM





ADJUSTING THE HEADLIGHT BEAM

1. Adjust:

EAS00184

• headlight beam (vertically)

• • •

a. Turn the adjusting screw (1) in direction (a) or (b).

Direction (a) \rightarrow	Headlight beam is raised.
Direction $(b) \rightarrow$	Headlight beam is lowered.

2. Adjust:

- headlight beam (horizontally)
- ******** • a. Turn the adjusting knob (2) in direction (a) or (b).

Direction (a) \rightarrow	Headlight beammoves to the right.
Direction $(b) \rightarrow$	Headlight beammoves to the left.



Order	Job/Part	Q'ty	Remarks
1 2 3 4 5 6 7 8 9 10 11	Removing the clutch Clutch springs Pressure plate Friction plates Clutch plates Nut/Lock washer Clutch boss Thrust washer Clutch housing Ball Long clutch push rod Push lever screw/Gasket	4 - 1 5 4 1/1 1 1 1 1 1/1	Remove the parts in the order listed. Refer to "REMOVING/INSTALLING THE CLUTCH" section in chapter 4. (Manual No.: 5EK1-AE1)

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CLUTCH





Order	Job/Part	Q'ty	Remarks
12	Push lever axle	1	Refer to "INSTALLING THE CLUTCH" section in chapter 4. (Manual No.: 5EK1-AE1)
13	Torsion spring	1	
14	Circlip	1	
15	Oil seal	1	
16	Nut/Washer	1/1	Refer to "INSTALLING THE CLUTCH" section in chapter 4. (Manual No.: 5EK1-AE1)
17	Short clutch push rod/O-ring	1/1	
18	Push plate	1	
			For installation, reverse the removal procedure.







CARBURETOR

Order	Job/Part	Q'ty	Remarks
	Removing the carburetor Side cover Seat Fuel tank	-	Remove the parts in order listed. Refer to "SEAT, FUEL TANK AND SIDE COVER" section in chapter 3. (Manual No.: 5EK1-AE1)
	Heater unit lead Starter cable		 NOTE:
1 2 3 4	Carburetor joint clamp screw Air filter joint clamp screw Carburetor assembly Throttle cables	1 - 1 - 1 2	Loosen. For installation, reverse the removal procedure.





EAS00483

Order	Job/Part	Q'ty	Remarks
12345678991	Disassembly the carburetor Vacuum chamber cover Piston valve spring Jet needle holder Jet needle spring Jet needle Piston valve Carburetor heater Adjusting screw Drain screw Float chamber Gasket	1 1 1 1 1 1 1 1 1 -	Disassemble the parts in the order listed.





Order	Job/Part	Q'ty	Remarks
23496C8222	Float pin Float Needle valve Needle valve seat Main jet Main jet holder Needle jet Pilot jet Pilot screw Rubber diaphragm spring Rubber diaphragm Starter plunger	1 - 1 1 1 1 1 1 1 1	Refer to "ASSEMBLING THE CARBURETOR". For assembly, reverse the disassembly procedure.













CHECKING THE CARBURETOR

CARBURETOR

- 1. Check:
 - carburetor body
 - float chamber
 - jet housing
 - $Cracks/damage \rightarrow Replace.$
- 2. Check:
 - fuel passages
 Obstruction → Clean.
- a. Wash the carburetor in a petroleum-based solvent. Do not use any caustic carburetor cleaning solution.
- b. Blow out all of the passages and jets with compressed air.
- 3. Check:
 - float chamber body Dirt → Clean.
- 4. Check:
 - float chamber rubber gasket Cracks/damage/wear → Replace.
- 5. Check:
 - float
 Damage → Replace.

- 6. Check:
 - needle valve 1
 - needle valve seat ②
 Damage/obstruction/wear → Replace the needle valve, needle valve seat and O-ring as a set.
- 7. Check:
 - O-ring ③

Damage/wear \rightarrow Replace the needle valve, needle valve seat and O-ring as a set.

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- 8. Check:
 piston valve ①
 Damage/scratches/wear → Replace.
 - rubber diaphragm (2) Cracks/tears \rightarrow Replace.
- 9. Check:
 - \bullet vacuum chamber cover (1)
 - piston valve spring 2
 - jet needle holder ③
 - jet needle spring (4) Cracks/damage \rightarrow Replace.
- 10. Check:
 - jet needle kit ①
 - needle jet 2
 - main jet ③
 - main jet holder ④
 - pilot jet 5
 - pilot screw 6 Bends/damage/wear → Replace.
 Obstruction → Clean.
 Blow out the jets with compressed air.
- 11. Check:
- •piston valve movement Insert the piston valve into the carburetor body and move it up and down. Tightness → Replace the piston valve.
- 12 Check:
 - starter plunger ①
 - starter plunger spring (2) Bends/cracks/damage \rightarrow Replace.



13. Check:

fuel hoses
 Cracks/damage/wear → Replace.
 Obstruction → Clean.
 Blow out the hoses with compressed air.

EAS00487

ASSEMBLING THE CARBURETOR

CAUTION:

- Befor assembling the carburetor, wash all of the parts in a petroleum-based solvent.
- Always use a new gasket.





- 1. Install:
 - needle jet
 - main jet 1
 - main jet holder 2
 - pilot jet ③
- 2. Install:needle valve seat (1)

- 3. Install:
 - float 1
 - needle valve
 - float pin 2

NOTE: _

Install the float pin from the side opposite the arrow.

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- 4. Install:
 - float chamber 1
- pilot screw 2

- 5. Install:
 - starter plunger kit ①

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INSTALLING THE CARBURETOR

- 1. Adjust:
 - engine idling speed

Engine idling speed 1,450 ~ 1,650 r/min

0 "AD JUSTING THE ENGINE ID

- Refer to "ADJUSTING THE ENGINE IDLING SPEED"
- 2. Adjust:
 - throttle cable free play



Throttle cable free play (at the flange of the throttle grip) $3 \sim 5 \text{ mm}$

Refer to "ADJUSTING THE THROTTLE CABLE FREE PLAY".



EAS00498

MEASURING AND ADJUSTING THE FUEL LEVEL

- 1. Measure:
 - fuel level ⓐ
 Out of specification → Adjust.

Fuel level (below the float chamber mating surface) $0 \sim 2.0 \text{ mm}$



- a. Stand the motorcycle on a level surface.
- b. Place the motorcycle on a suitable stand to ensure that the motorcycle is standing straight up.
- c. Install the fuel level gauge ① to the fuel drain pipe ②.

Fuel level gauge 90890-01312

- d. Loosen the fuel drain screw ③.
- e. Hold the fuel level gauge vertically next to the float chamber.
- f. Measure the fuel level (a).



- 2. Adjust:
- fuel level
- a. Remove the carburetor.
- b. Check the needle valve seat and needle valve.
- c. If either is worn, replace them as a set.
- d. If both are fine, adjust the float level by slightly bending the float tang ①.
- e. Install the carburetor.
- f. Measure the fuel level again.
- g. Repeat steps (a) to (f) until the fuel level is within specification.

FRONT WHEEL AND BRAKE DISC





Order	Job/Part	Q'ty	Remarks
	Removing the front wheel and brake disc		Remove the parts in the order listed.
			Place the motorcycle on a suitable stand so that the front wheel is elevated.
1 2 3 4 5 6 7	Caps Speedometer cable Wheel axle Front wheel assembly Collar Meter gear unit assembly Brake disc	2 1 - 1 1 1 1 - 1	Refer to "REMOVING/INSTALLING THE FRONT WHEEL" section in chapter 6. (Manual No.: 5EK1-AE1) For installation, reverse the removal procedure.

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REAR WHEEL AND REAR BRAKE REAR WHEEL



Order	Job/Part	Q'ty	Remarks
	Removing the rear wheel		Remove the parts in the order listed.
			Place the motorcycle on a suitable stand so that the rear wheel is elevated.
1	Adjuster	1	
2	Brake rod	1	
3	Pin	1	
4	Compression spring	1	
5	Chain case	1	
6	Axle nut/washer	1/1	
7	Chain pullers	2	
8	Wheel axle	1	Refer to "REMOVING/INSTALLING THE REAR WHEEL" section in chapter 6. (Manual No.: 5EK1-AE1)

REAR WHEEL AND REAR BRAKE





Order	Job/Part	Q'ty	Remarks
9	Rear wheel assembly		Refer to "REMOVING /INSTALLING THE REAR WHEEL" section in chapter 6. (Manual No.: 5EK1-AE1)
10	Collar	2	For installation, reverse the removal procedure.



REAR WHEEL AND REAR BRAKE

REAR BRAKE AND REAR WHEEL SPROCKET



Order	Job/Part	Q'ty	Remarks
1 2 3	Removing the rear brake and rear wheel sprocket Shoe plate Nuts Driven sprocket	1 - 6 1 -	Remove the parts in the order listed. Refer to "ASSEMBLYNG THE REAR WHEEL" section in chapter 6. (Manual No.: 5EK1-AE1) For installation, reverse the removal procedure.

REAR WHEEL AND REAR BRAKE





Order	Job/Part	Q'ty	Remarks		
(1) (2) (3) (4)	Disassembling the rear wheel Bearing Spacer Oil seal Bearing	1 1 1	Disassemble the parts in the order listed. For assembly, reverse the disassembly procedure.		

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FRONT FORK



FRONT FORK



Order	Job/Part	Q'ty	Remarks		
	Removing the front fork Front wheel		Remove the parts in the order listed. Refer to "FRONT WHEEL AND BRAKE DISC".		
1	Brake hose holder	1			
2	Caliper	1			
3	Front fender	1	Potor to "PEMOVING/INSTALLING		
4	Cap bolt/O-ring	1/1 -	THE EDONIT EODK" aportion in		
5	Bolt (upper bracket)	1	THE FRONT FORK Section III		
6	Bolts (under bracket)	2			
7	Front fork assembly (left)	1			
8	Front fork assembly (right)	1	Loosen the bolt.		
			For installation, reverse the removal procedure.		

HANDLEBAR



HANDLEBAR



Order	Job/Part	Q'ty	Remarks
1 2 3 4 5 6 7	Removing the handlebar Master cylinder bracket Master cylinder Housing (throttle grip) Throttle grip assembly Handlebar switch (right) Clutch switch Clutch cable	1 - 1 1 1 1 1 1 -	Remove the parts in the order listed. Refer to "INSTALLING THE HANDLEBAR" section in chapter 6. (Manual No.: 5EK1-AE1)

HANDLEBAR





Order	Job/Part	Q'ty	Remarks
8	Handlebar switch (left)	1	
9	Grip (left)	1	Refer to "REMOVING THE HANDLEBAR"
			section in chapter 6.
			(Manual No.: 5EK1-AE1)
10	Clutch lever	1	
11	Starter cable holder	1 -	Refer to "INSTALLING THE
12	Upper holders	2 -	HANDLEBAR" section in chapter 6.
			(Manual No.: 5EK1-AE1)
13	Handlebar	1	
			For installation, reverse the removal
			procedure.





STEERING HEAD LOWER BRACKET



Order	Job/Part	Q'ty	Remarks				
1 2 3 4	Removing the lower bracket Front fork Handlebar Headlight unit Headlight body Turn signal light assembly (left) Turn signal light assembly (right)	1 1 1	Remove the parts in the order listed. Refer to "FRONT FORK". Refer to "HANDLEBAR"				
5	Meter cable/Meter lead	1/1	NOTE:				
6	Meter assembly	1	Disconnect the connector.				
7	Headlight stay	2					
8	Steering stem nut	1					
9	Handlebar crown	1					
10	Lock washer	1					
11	Upper ring nut	1					
12	Rubber washer	1					
13	Lower ring nut	1	Refer to "INSTALLING THE STEERING HEAD" section chapter 6. (Manual No.: 5EK1-AE1)				

STEERING HEAD





Order	Job/Part	Q'ty	Remarks
14 15 16 17 18 19 20	Ball race ccver Lower bracket Ball race (upper) Ball Ball Ball race (center) Ball race (lower)	1 1 - 22 19 1 1 -	Refer to "INSTALLING THE STEERING" section in chapter 6. (Manual No.: 5EK1-AE1) For installation, reverse the removal procedure.

IGNITION SYSTEM



EAS00734

ELECTRLCAL SYSTEM

IGNITION SYSTEM CIRCUIT DIAGRAM





CHECKING THE IGNITION SYSTEM.

1. The speedometer fail to come on.

- 1. Reed switch
- Remove the meter assembly.
- Connect the pocket tester ($\Omega~\times~$ 1) to the reed switch coupler as shown.

Tester positive probe \rightarrow white/black (1) Tester negative probe \rightarrow red/blue (2)



- Make the speedometer indicate
- Check the continuity or open circuit status.If it counts 4 cycles of continuity and open
- actions per speedometer rotation, the result is acceptable.
- Is the reed switch OK?



TW125 2002 WIRING DIAGRAM



B Bl	lack	Sb	Sky blue	Br/L	Brown/Blue	L/W	Blue/White
Br Br	rown	Ρ	Pink	Br/W	Brown/White	L/Y	Blue/Yellow
Ch Cł	hocolate	R	Red	G/R	Green/Red	R/L	Red/Blue
Dg Da	ark green	Υ	Yellow	G/W	Green/White	R/W	Red/White
G Gi	reen	W	White	G/Y	Green/Yellow	W/B	White/Black
L Bl	lue	B/R	Black/Red	L/B	Blue/Black	W/L	White/Blue
0 0	range	B/W	Black/White	L/R	Blue/Red	W/R	White/Red

(1) C.D.I. magneto 2 Neutral switch (3) Rectifier/Regulator (4) Battery (5) Starter relay $(\overline{7})$ Starter motor (8) Right handlebar switch (9) Start switch 10 Engine stop switch (11) Main switch (12) Clutch switch (14) C.D.I. unit (15) Ignition coil (16) Špark plug (17) Thermo switch (18) Carbuletor heater 20 Turn signal relay (21) Sidestand switch 22 Neutral relay 23 Speedometer 24 Reed switch 25 Meter light © Neutral indicator light 27 Turn signal indicator light 28 Hi-beam indicator light 29 Left handlebar switch 30 Horn switch (31) Turn signal switch 32 Light switch 33 Dimmer switch 34 Front brake light switch 35 Rear brake light switch 36 Rear turn signal light (right) 37 Front turn signal light (right) 38 Front turn signal light (left) (39) Rear turn signal light (left) 40 Headlight (41) Auxiliary light (42) Tail/Brake light