



**YAMAHA**

**2021**

**SERVICE MANUAL**

**XSR125**

**MTM125**

**BFG-F8197-E0**



## IMPORTANT

This manual was produced by MBK Industrie 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. Therefore, anyone who uses this book to perform maintenance and repairs on Yamaha vehicles should have a basic understanding of mechanics and the techniques to repair these types of vehicles. Please refer to "BASIC INFORMATION" (separate volume, Y0A-28197-E0\*) for basic instructions that must be observed during servicing. Repair and maintenance work attempted by anyone without this knowledge is likely to render the vehicle unsafe and unfit for use.



Yamaha Motor Company, Ltd. and MBK Industrie are continually striving to improve all of 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.

### TIP

- \*If the contents of the manual are revised, the last digit of the manual number will be increased by one.
- This Service Manual contains information regarding periodic maintenance to the emission control system. Please read this material carefully.
- Designs and specifications are subject to change without notice.

## IMPORTANT MANUAL INFORMATION

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

	<b>This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.</b>
 <b>WARNING</b>	<b>A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.</b>
<b>NOTICE</b>	<b>A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.</b>
<b>TIP</b>	<b>A TIP provides key information to make procedures easier or clearer.</b>

**MTM125**  
**SERVICE MANUAL**  
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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 check procedures are laid out with the individual steps in sequential order.

- The manual is divided into chapters and each chapter is divided into sections. The current section title "1" is shown at the top of each page.
- Sub-section titles "2" appear in smaller print than the section title.
- To help identify parts and clarify procedure steps, there are exploded diagrams "3" at the start of each removal and disassembly section.
- Numbers "4" are given in the order of the jobs in the exploded diagram. A number indicates a disassembly step.
- Symbols "5" indicate parts to be lubricated or replaced. Refer to "SYMBOLS".
- A job instruction chart "6" accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc. This step explains removal and disassembly procedure only. For installation and assembly procedure, reverse the steps.
- Jobs "7" requiring more information (such as special tools and technical data) are described sequentially.

1  
CLUTCH

**CLUTCH**

Removing the clutch cover

5-46

**CLUTCH**

**REMOVING THE CLUTCH**

1. Remove:

- Oil strainer  
Refer to "OIL PUMP" on page 5-59.
- Water pump  
Refer to "WATER PUMP" on page 6-12.
- Friction plates
- Clutch plates

**TIP**  
Be sure to mark the friction plates and clutch plates or note the position of each part so that they are installed in their original positions.

2. Straighten the clutch boss nut rib "a".

3. Loosen:

- Clutch boss nut "1"

**TIP**  
While holding the clutch boss "2" with the universal clutch holder "3", loosen the clutch boss nut.

Universal clutch holder  
9089-04085  
Universal clutch holder  
YM-91042

4. Remove:

- Spacer "1"
- Bearing
- Clutch housing "2"
- Oil pump drive chain

**TIP**  
Remove the spacer and bearing from the main axle, then remove the oil pump drive chain from the oil pump driven sprocket, and then remove the clutch housing and oil pump drive chain from the main axle.

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

1. Check:

- Friction plate  
Damage/wear → Replace the friction plates as a set.

2. Measure:

- Friction plate thickness  
Out of specification → Replace the friction plates as a set.

**TIP**  
Measure the friction plate at four places.

Friction plate thickness  
2.92-3.08 mm (0.115-0.121 in)  
Wear limit  
2.80 mm (0.110 in)



















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

## SYMBOLS

The following symbols are used in this manual for easier understanding.

### TIP

The following symbols are not relevant to every vehicle.

SYMBOL	DEFINITION	SYMBOL	DEFINITION
	Serviceable with engine mounted		Gear oil
	Filling fluid		Molybdenum disulfide oil
	Lubricant		Brake fluid
	Special tool		Wheel bearing grease
	Tightening torque		Lithium-soap-based grease
	Wear limit, clearance		Molybdenum disulfide grease
	Engine speed		Silicone grease
	Electrical data		Apply locking agent (LOCTITE®).
	Engine oil		Replace the part with a new one.

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## GENERAL INFORMATION

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# IDENTIFICATION

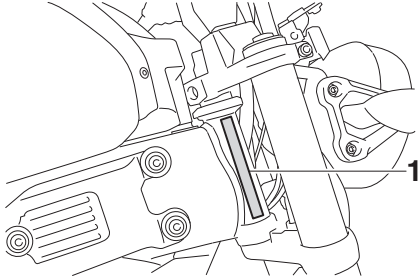
EAS20007

## IDENTIFICATION

EAS30002

### VEHICLE IDENTIFICATION NUMBER

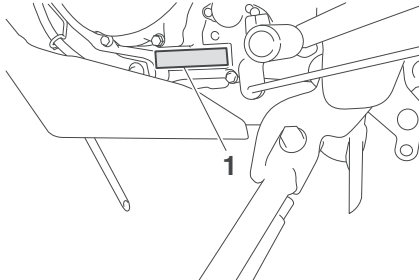
The vehicle identification number “1” is stamped into the steering head pipe.



EAS30004

### ENGINE SERIAL NUMBER

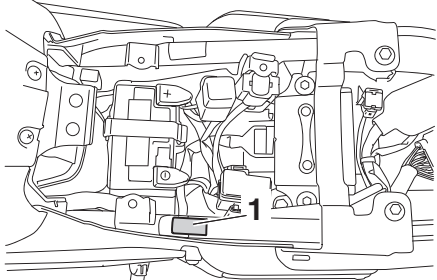
The engine serial number “1” is stamped into the crankcase.



EAS30003

### MODEL LABEL

The model label “1” is affixed to the frame under the seat. This information will be needed to order spare parts.

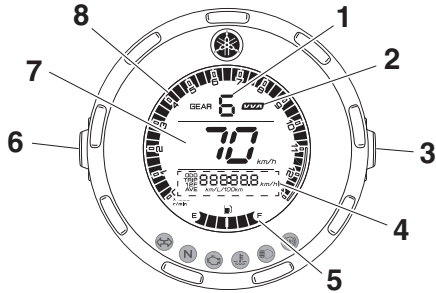


EAS20008

## FEATURES

EAS30982

### MULTI-FUNCTION METER UNIT



1. Transmission gear display
2. VVA (variable valve actuation) indicator
3. "RESET" button
4. Multi-function display
5. Fuel meter
6. "SELECT" button
7. Speedometer
8. Tachometer

The multi-function meter unit is also equipped with a backlight setting mode.

EWA12423

### **WARNING**

**Be sure to stop the vehicle before making any setting changes to the multi-function meter unit. Changing settings while riding can distract the operator and increase the risk of an accident.**

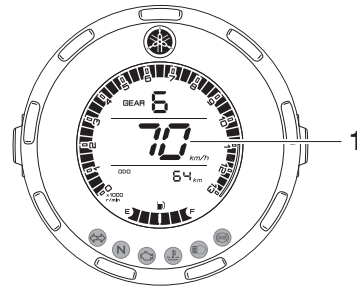
### Switching the display units

The display units can be switched between kilometers and miles.

#### To switch the display units

1. Turn the vehicle off.
2. While pushing the "SELECT" button, turn the vehicle on.
3. Continue to push the "SELECT" button for at least 5 seconds.

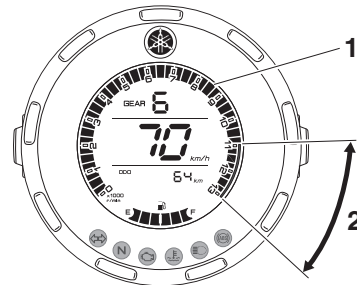
### Speedometer



1. Speedometer

The speedometer shows the vehicle's traveling speed.

### Tachometer



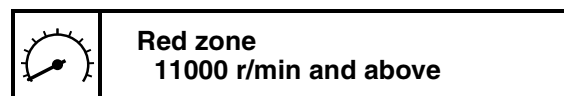
1. Tachometer
2. Red zone

The tachometer allows the rider to monitor the engine speed and keep it within the ideal power range.

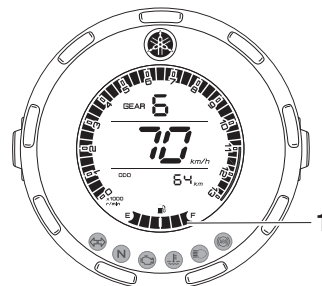
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### **NOTICE**

**Do not operate the engine in the tachometer red zone.**



### Fuel meter



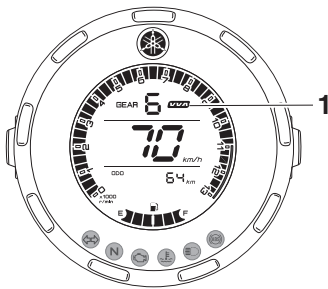
1. Fuel meter

The fuel meter indicates the amount of fuel in the fuel tank. The display segments of the fuel meter disappear from “F” (full) towards “E” (empty) as the fuel level decreases. When approximately 3.0 L (0.79 US gal, 0.66 Imp. gal) of fuel remains, the last segment starts flashing. Refuel as soon as possible.

**TIP**

The fuel meter is equipped with a self-diagnosis function. If a problem is detected in the fuel meter electrical circuit, the fuel meter will flash repeatedly. If this occurs, check the electrical circuit. Refer to “SIGNALING SYSTEM” on page 8-19.

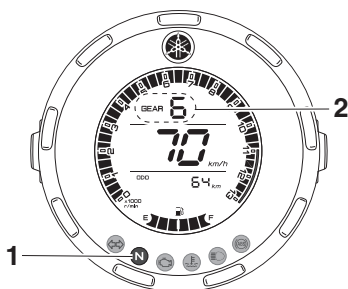
**VVA indicator**



1. VVA (variable valve actuation) indicator

This model is equipped with variable valve actuation (VVA) for good fuel economy and acceleration in both the low-speed and high-speed ranges. The VVA indicator comes on when the variable valve actuation system has switched to the high-speed range.

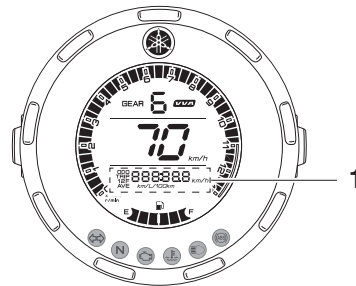
**Transmission gear display**



1. Neutral indicator light “N”  
2. Transmission gear display

This display shows the selected gear. The neutral position is indicated by “-” and by the neutral indicator light.

**Multi-function display**



1. Multi-function display

The multi-function display is equipped with the following:

- an odometer (ODO)
- two tripmeters (TRIP 1 and TRIP 2)
- a fuel reserve tripmeter (TRIP F)
- a clock
- an instantaneous fuel consumption display (km/L or L/100 km)
- an average fuel consumption display (AVE\_ \_ \_ km/L or AVE\_ \_ \_ L/100 km)
- an average speed display (AVE\_ \_ \_ km/h)
- a backlight display (bL-01, bL-02 or bL-03)

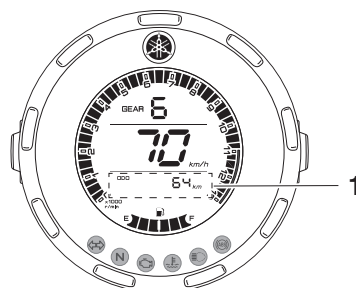
Push the “SELECT” button to change the display in the following order:

ODO → TRIP 1 → TRIP 2 → TRIP F → clock → km/L or L/100 km → AVE\_ \_ \_ km/L or AVE\_ \_ \_ L/100 km → AVE\_ \_ \_ km/h → backlight (bL-01, bL-02 or bL-03) → ODO

**TIP**

- The fuel reserve tripmeter appears only when you are low on fuel.
- Push the “RESET” button to change the display in the reverse order.

**Odometer**



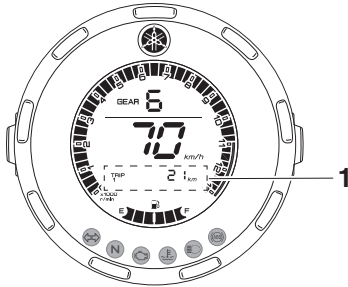
1. Odometer

The odometer shows the total distance traveled by the vehicle.

**TIP**

The odometer will lock at 999999 and cannot be reset.

## Tripmeters



1. Tripmeter

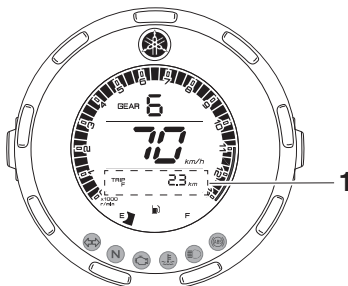
The tripmeters show the distance traveled since they were last reset.

To reset a tripmeter, change the display to the tripmeter you want to reset, and then push the “RESET” button until it is reset.

**TIP**

The tripmeters will reset and continue counting after 9999.9 is reached.

## Fuel reserve tripmeter



1. Fuel reserve tripmeter

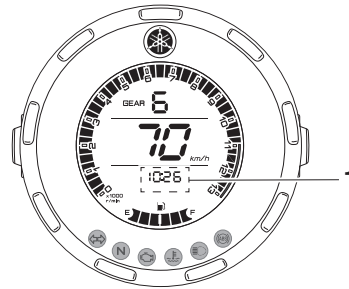
If the last segment of the fuel meter starts flashing, the display automatically changes to the fuel reserve tripmeter “TRIP F” and starts counting the distance traveled from that point.

To reset the fuel reserve tripmeter, push the “RESET” button until it is reset.

**TIP**

If you do not reset the fuel reserve tripmeter manually, it will reset automatically and disappear from the display after refueling and traveling 5 km (3 mi).

## Clock



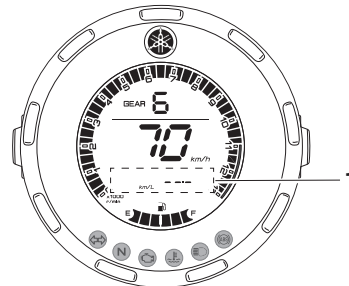
1. Clock

The clock uses a 12-hour time system.

### To set the clock

1. Push the “SELECT” button to change the display to the clock.
2. Push the “SELECT” button until the hour digits start flashing.
3. Use the “RESET” button to set the hours.
4. Push the “SELECT” button and the minute digits start flashing.
5. Use the “RESET” button to set the minutes.
6. Push the “SELECT” button to confirm the settings.

## Instantaneous fuel consumption display



1. Instantaneous fuel consumption display

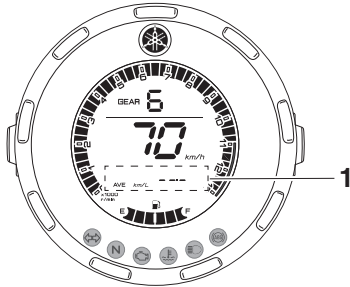
This display shows the fuel consumption under the current riding conditions. It can be set to either “km/L” or “L/100 km”, or “MPG” when using miles. To switch the fuel consumption measurement units, push the “SELECT” button until the measurement units change.

- “km/L”: the distance that can be traveled on 1.0 L of fuel.
- “L/100 km”: the amount of fuel necessary to travel 100 km.
- “MPG”: the distance that can be traveled on 1.0 Imp.gal of fuel.

**TIP**

When traveling under 10 km/h (6 mi/h), “\_ \_ . \_” is displayed.

**Average fuel consumption display**



1. Average fuel consumption display

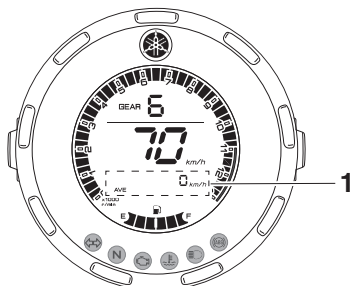
This display shows the average fuel consumption since it was last reset. The average fuel consumption display can be set to either “AVE\_ \_ . \_ km/L” or “AVE\_ \_ . \_ L/100 km”, or “AVE\_ \_ . \_ MPG” when using miles. To switch the fuel consumption measurement units, push the “SELECT” button until the measurement units change.

- “AVE\_ \_ . \_ km/L”: the average distance that can be traveled on 1.0 L of fuel.
- “AVE\_ \_ . \_ L/100 km”: the average amount of fuel necessary to travel 100 km.
- “AVE\_ \_ . \_ MPG”: the average distance that can be traveled on 1.0 Imp.gal of fuel.

**TIP**

- To reset the display, push the “RESET” button until it resets.
- After resetting, “\_ \_ . \_” is shown until the vehicle has traveled some distance.

**Average speed display**

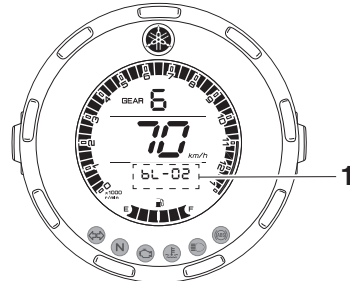


1. Average speed display

This display shows the vehicle’s average traveling speed since it was last reset.

To reset the average speed display, push the “RESET” button until it is reset.

**Backlight setting mode**



1. Backlight setting mode

This mode allows you to change the backlight setting.

To enter the backlight setting mode

1. Stop the vehicle.
2. Push the “SELECT” button to change the multi-function display to show the current backlight setting “bL-01”, “bL-02”, or “bL-03”.
3. Push the “SELECT” button until the multi-function display enters the backlight setting mode.
4. Push the “RESET” button to select the desired backlight setting.
5. Push the “SELECT” button until the multi-function display exits the backlight setting mode.

# SPECIAL TOOLS



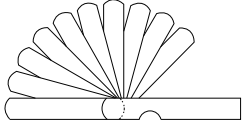
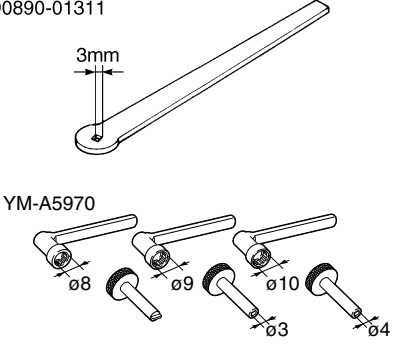
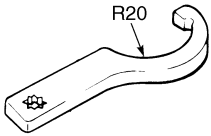
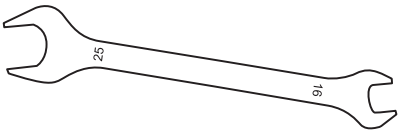
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## SPECIAL TOOLS

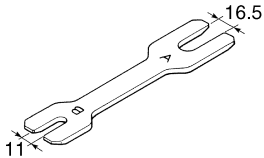
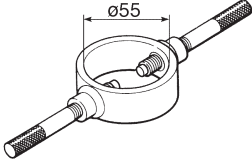
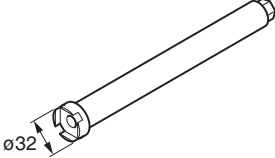
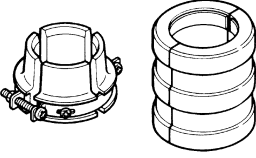
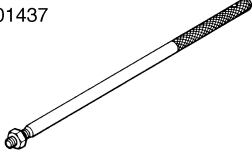
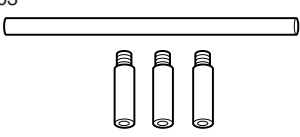
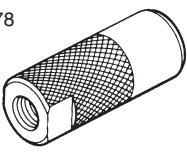
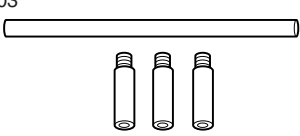
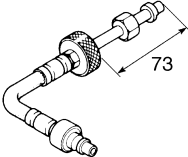
The following special tools are necessary for complete and accurate tune-up and assembly. Use only the appropriate special tools as this will help prevent damage caused by the use of inappropriate tools or improvised techniques. Special tools, part numbers or both may differ depending on the country.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

### TIP

- For U.S.A. and Canada, use part number starting with "YM-", "YU-", or "ACC-".
- For others, use part number starting with "90890-".

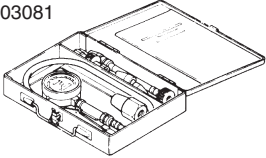
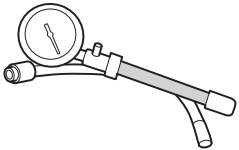
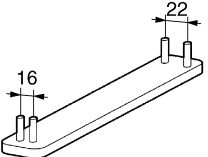
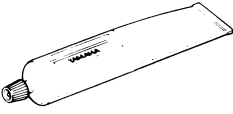
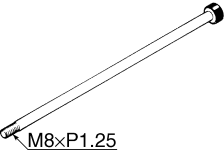
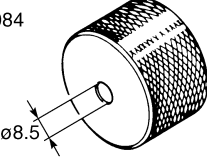
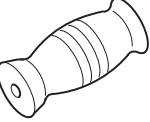
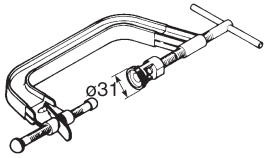
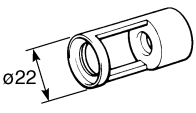
Tool name/Tool No.	Illustration	Reference pages
Yamaha diagnostic tool USB 90890-03267		3-4, 4-45, 4-46, 7-10, 8-34, 9-2, 9-20, 9-21
Yamaha diagnostic tool (A/I) 90890-03264		3-4, 4-45, 4-46, 7-10, 8-34, 9-2, 9-20, 9-21
Thickness gauge 90890-03268 Feeler gauge set YU-26900-9		3-6, 3-7, 4-13, 4-19, 5-51
Tappet adjusting tool 90890-01311 Six piece tappet set YM-A5970		3-7
Steering nut wrench 90890-01403 Exhaust flange nut wrench YU-A9472		3-15, 4-67
Double open-end wrench (25mm-16mm) 90890-01593 Double open-end wrench (25mm-16mm) YM-01593		4-56, 4-57, 4-60, 4-64

## SPECIAL TOOLS

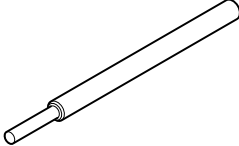
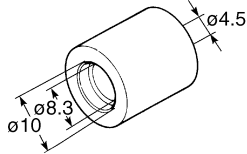
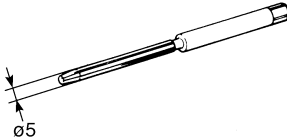
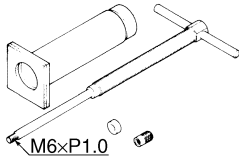
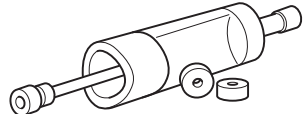

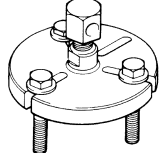

Tool name/Tool No.	Illustration	Reference pages
Rod holder 90890-01434 Damper rod holder double ended YM-01434		4-57, 4-63
Fork spring compressor 90890-01441 Fork spring compressor YM-01441		4-57, 4-63
Damper rod holder (32mm) 90890-01591 Damper rod holder (32mm) YM-01591		4-57, 4-62
Fork seal driver 90890-01442 Adjustable fork seal driver (36–46 mm) YM-01442		4-59, 4-59, 4-60, 4-61, 4-61, 4-62
Rod puller 90890-01437 Universal damping rod bleeding tool set YM-A8703	90890-01437  YM-A8703 	4-63
Rod puller attachment (M10 long) 90890-01578 Universal damping rod bleeding tool set YM-A8703	90890-01578  YM-A8703 	4-63
Compression gauge extension 73mm 90890-04082 Compression gauge extension 73mm YM-04082		5-5



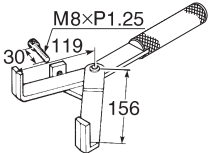
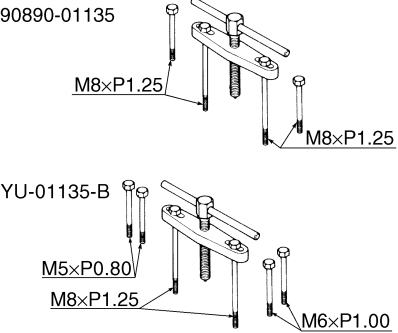
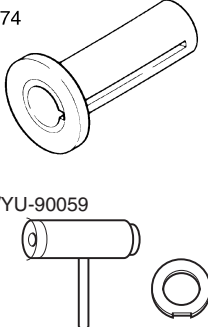
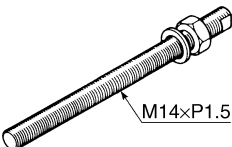
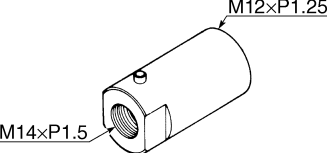
## SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Compression gauge 90890-03081 Engine compression tester YU-33223	90890-03081  YU-33223 	5-5
Camshaft wrench 90890-04162 Camshaft wrench YM-04162		5-16, 5-20
Yamaha bond No. 1215 90890-85505 Three bond No. 1215®		5-19, 5-43, 5-69
Slide hammer bolt (M8) 90890-01085 Slide hammer bolt 8 mm YU-01083-2		5-23
Weight 90890-01084 Weight YU-01083-3	90890-01084  YU-01083-3 	5-23
Valve spring compressor 90890-04200 Valve spring compressor YM-04019		5-27, 5-31
Valve spring compressor attachment 90890-04108 Valve spring compressor adapter 22 mm YM-04108		5-27, 5-31

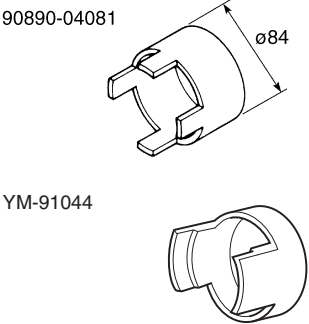
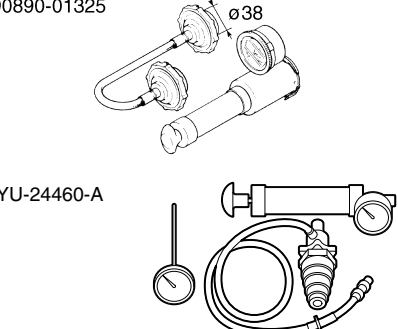
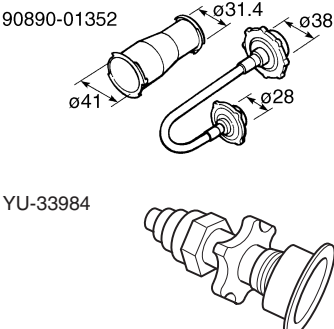
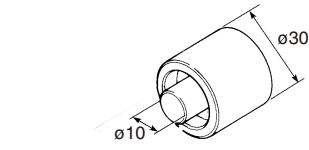
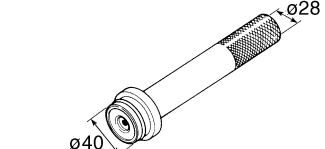
## SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Valve guide remover ( $\phi 4.5$ ) 90890-04116 Valve guide remover (4.5 mm) YM-04116		5-28
Valve guide installer ( $\phi 4.5$ ) 90890-04117 Valve guide installer (4.5 mm) YM-04117		5-28
Valve guide reamer ( $\phi 5$ ) 90890-04099 Valve guide reamer (5.0 mm) YM-04099		5-28
Piston pin puller set 90890-01304 Piston pin puller YU-01304	<p data-bbox="743 920 863 943">90890-01304</p>  <p data-bbox="887 1055 983 1077">M6xP1.0</p> <p data-bbox="759 1111 847 1133">YU-01304</p> 	5-34
Rotor holding tool 90890-04166 Rotor holding tool YM-04166		5-41, 5-41, 5-42, 5-42
Flywheel puller 90890-01362 Heavy duty puller YU-33270-B		5-41
Digital circuit tester (CD732) 90890-03243 Model 88 Multimeter with tachometer YU-A1927		5-46, 8-34, 8-35, 8-36, 8-36, 8-36, 8-37, 8-37, 8-37, 8-38, 8-39, 8-39, 8-40, 8-40, 8-41, 8-41, 8-42, 8-42, 8-43

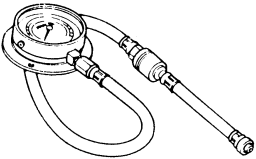

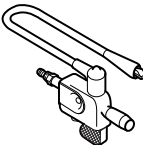
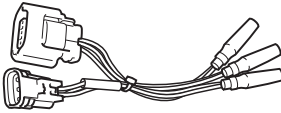
## SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Clutch holder 90890-04199 Universal clutch holder YM-91042		5-51, 5-53
Crankcase separating tool 90890-01135 Crankcase separator YU-01135-B		5-72
Crankshaft installer pot 90890-01274 Installing pot YU-90058		5-73
Crankshaft installer bolt 90890-01275 Bolt YU-90060		5-73
Adapter (M12) 90890-01278 Adapter #3 YU-90063		5-73

## SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Spacer (crankshaft installer) 90890-04081 Pot spacer YM-91044	 <p>90890-04081</p> <p>YM-91044</p>	5-73
Radiator cap tester 90890-01325 Mityvac cooling system tester kit YU-24460-A	 <p>90890-01325</p> <p>YU-24460-A</p>	6-4
Radiator cap tester adapter 90890-01352 Pressure tester adapter YU-33984	 <p>90890-01352</p> <p>YU-33984</p>	6-4
Mechanical seal installer 90890-04145	 <p>90890-04145</p>	6-8
Middle driven shaft bearing driver 90890-04058 Middle drive bearing installer 40 & 50 mm YM-04058	 <p>90890-04058</p>	6-8

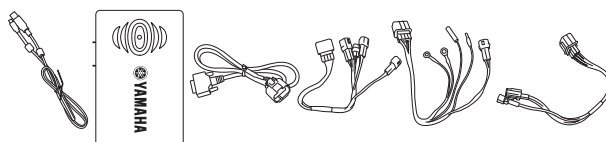
## SPECIAL TOOLS

Tool name/Tool No.	Illustration	Reference pages
Pressure gauge 90890-03153 Pressure gauge YU-03153		7-6
Fuel pressure adapter 6.3mm 90890-03227		7-6
Ignition checker 90890-06754 Oppama pet-4000 spark checker YM-34487		8-38
Test harness – lean angle sensor 1PA (3P) 90890-03237 Test harness – lean angle sensor 1PA (3P) YU-03237		8-39

**TIP**

**Yamaha diagnostic tool (A/I) 90890-03264**

This special tool includes the YDT sub harness (6P) (90890-03266).



## SPECIAL TOOLS

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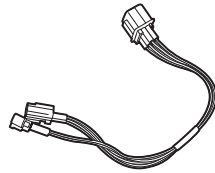
### TIP

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#### **YDT sub harness (6P) 90890-03266**

If you already have Yamaha diagnostic tool (A/I) (90890-03262), YDT sub harness (6P) (90890-03266) is separately required.

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## SPECIFICATIONS

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