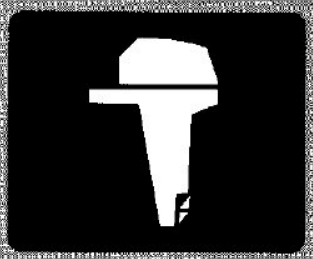
YAMAHA



WORLDWIDE

Z150P, LZ150P, Z150Q, Z175G, Z175H, Z200N, LZ200N

USA, CANADA

Z150Z, LZ150Z, VZ150Z, Z175Z, VZ175Z, Z200Z, LZ200Z

SUPPLEMENTARY SERVICE MANUAL

292067

68L-28197-ZA-AX

PREFACE

This Supplementary Service Manual has been prepared to introduce the modification and additional information for the Z200N and LZ200N. Also, new information for Z150P, LZ150P, Z150Q, Z175G and Z175H based on Z200N and LZ200N is included. For complete service information and procedures, it is necessary to add the following manual with the corresponding sections in this Supplementary Service Manual.

Z200N, LZ200N SERVICE MANUAL: 68F-28197-Z9-A1

CAUTION

USE UNLEADED STRAIGHT GASOLINE ONLY

- Gasoline containing lead can cause performance lose and engine damage.
- Do not use gasoline mixed with oil (premix).
- Use YAMALUBE 2 stroke outboard oil or another 2-stroke engine oil with a BIA-certified TC-W3 rate.

Z150P, LZ150P, Z150Q,
Z175G, Z175H, Z200N, LZ200N
SUPPLEMENTARY SERVICE MANUAL
©2000 by Yamaha Motor Co., Ltd.
1st Edition, May 2000
All rights reserved. Any reprinting or unauthorized use without the written permission of Yamaha Motor Co., Ltd. is expressly prohibited.
Printed in Japan

HOW TO USE THIS MANUAL

MANUAL FORMAT

All of the procedures in this manual are organized in a sequential, step-by-step format. The information has been compiled to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and check operations.

In this revised format, the condition of a faulty component will precede an arrow symbol and the course of action required will follow the symbol, e.g.,

- Bearings

  Pitting/scratches → Replace.

To assist you in finding your way through this manual, the section title and major heading is given at the top of every page.

MODEL INDICATION

Multiple models are mentioned in this manual and their model indications are noted as follows.

Model name	Z150PETO	LZ150PETO	Z150QETO	Z175GETO	Z175HETO	Z200NETO	LZ200NETO
USA and Canada name	Z150TR	LZ150TR	VZ150TR	Z175TR	VZ175TR	Z200TR	LZ200TR
Indication	Z150PETO	LZ150PETO	Z150QETO	Z175GETO	Z175HETO	Z200NETO	LZ200NETO

ILLUSTRATIONS

The illustrations within this service manual represent all of the designated models.

CROSS REFERENCES

The cross references have been kept to a minimum. Cross references will direct you to the appropriate section or chapter.

IMPORTANT INFORMATION

In this Service Manual particularly important information is distinguished in the following ways.

⚠ 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 machine operator, a bystander, or a person inspecting or repairing the outboard motor.

CAUTION:

A CAUTION indicates special precautions that must be taken to avoid damage to the outboard motor.

NOTE:

A NOTE provides key information to make procedures easier or clearer.

HOW TO USE THIS MANUAL

① The main points regarding removing/installing and disassembling/assembling procedures are shown in the exploded views.

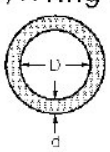
② The numbers in the exploded views indicate the required sequence of the procedure and should be observed accordingly.

③ Symbols are used in the exploded views to indicate important aspects of the procedure. A list of meanings for these symbols is provided on the following page.

④ It is important to refer to the job instruction charts at the same time as the exploded views. These charts list the sequence that the procedures should be carried out in, as well as providing explanations on part names, quantities, dimensions and important points relating to each relevant task.

Example:

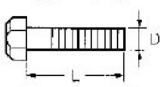
O-ring size 39.5 × 2.5 mm: inside diameter (D) × ring diameter (d)



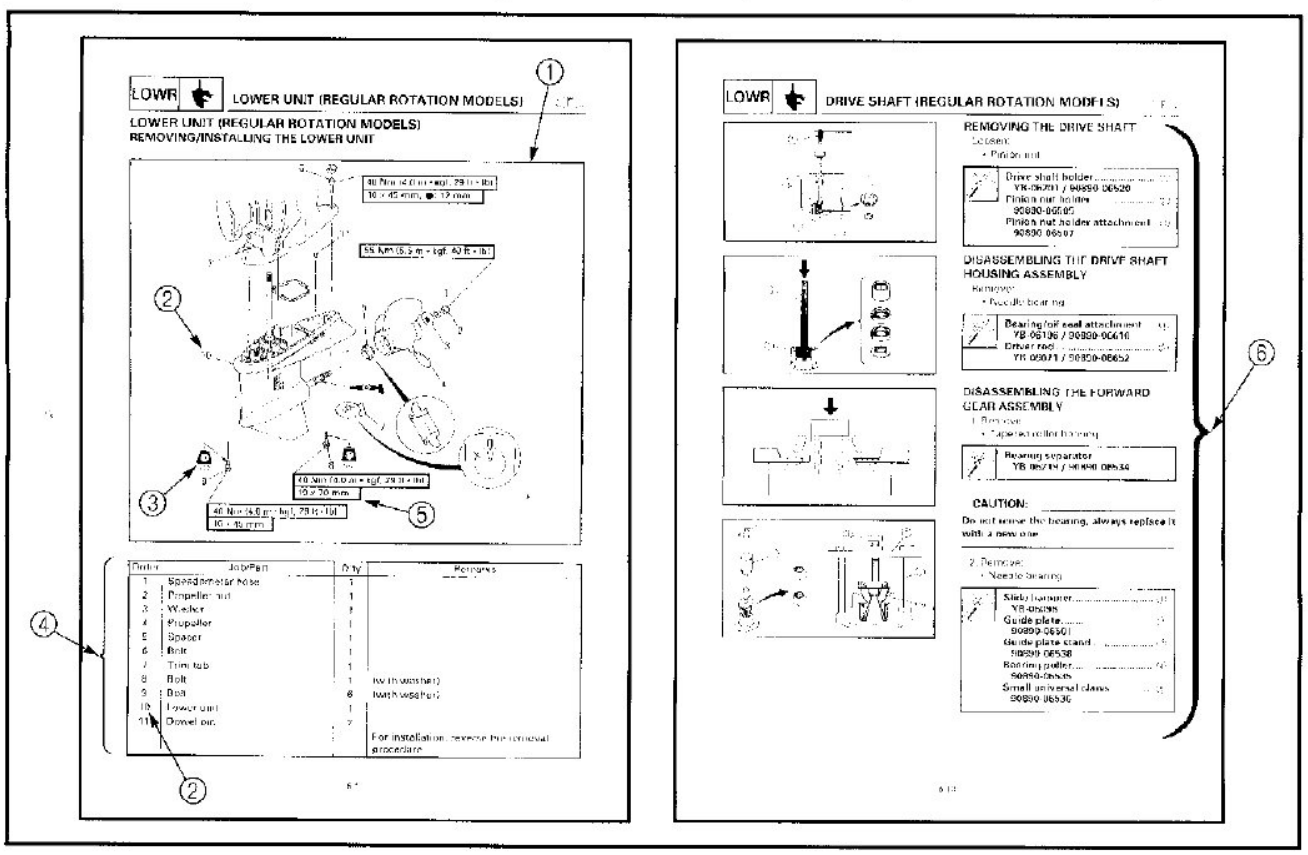
⑤ In addition to tightening torques, the dimensions of the bolts or screws are also mentioned.

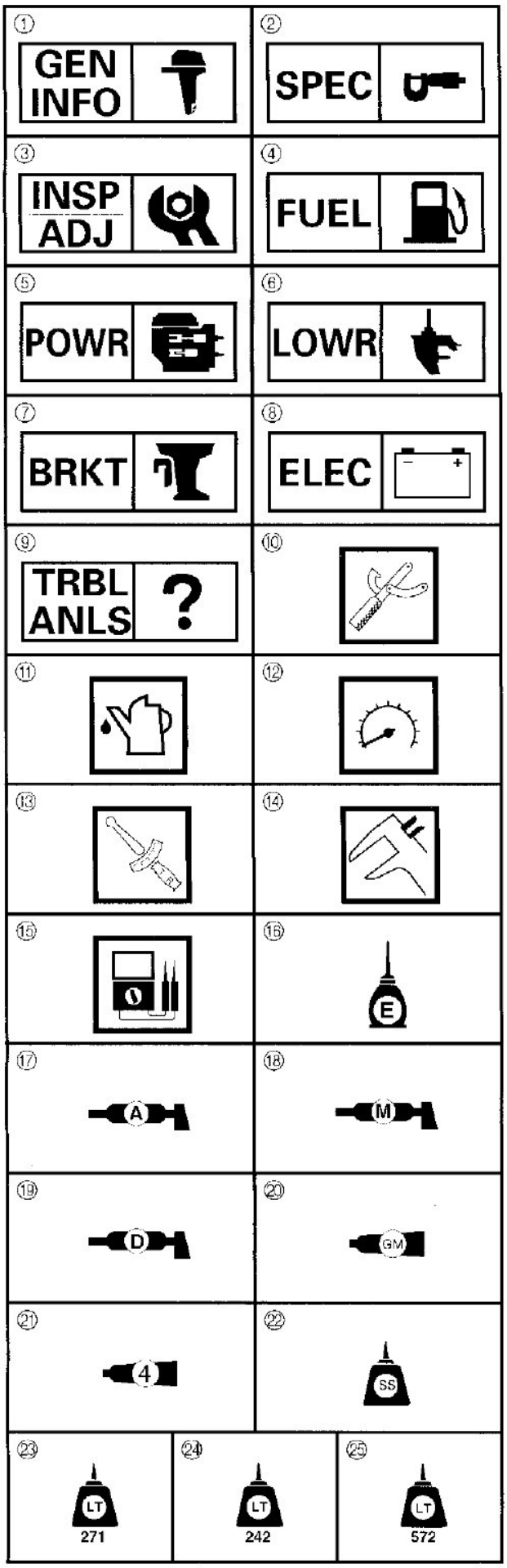
Example:

Bolt or screw size 10 × 25 mm : diameter (D) × length (L)



⑥ In addition to the exploded views and job instruction charts, this manual provides individual illustrations when further explanations are required to explain the relevant procedure.





SYMBOLS

Symbols ① to ⑨ are designed as thumb-tabs to indicate the content of a chapter.

① General information
② Specifications
③ Periodic inspections and adjustments
④ Fuel system
⑤ Power unit
⑥ Lower unit
⑦ Bracket unit
⑧ Electrical systems
⑨ Trouble analysis

Symbols ⑩ to ⑮ indicate specific data.

⑩ Special tool
⑪ Specified liquid
⑫ Specified engine speed
⑬ Specified torque
⑭ Specified measurement
⑮ Specified electrical value
[Resistance (Ω), Voltage (V), Electric current (A)]

Symbol ⑯ to ⑲ in an exploded diagram indicate the grade of lubricant and the location of the lubrication point.

⑯ Apply Yamaha 2-stroke outboard motor oil
⑰ Apply water resistant grease
(Yamaha grease A, Yamaha marine grease)
⑱ Apply molybdenum disulfide grease
⑲ Apply corrosion resistant grease
(Yamaha grease D)

Symbols ⑳ to ㉕ in an exploded diagram indicate the grade of the sealing or locking agent and the location of the application point.

⑳ Apply Gasket Maker®
㉑ Apply Yamabond #4
(Yamaha bond number 4)
㉒ Apply silicon sealant
㉓ Apply LOCTITE® No. 271 (Red LOCTITE)
㉔ Apply LOCTITE® No. 242 (Blue LOCTITE)
㉕ Apply LOCTITE® No. 572

GENERAL INFORMATION

IDENTIFICATION 1
SERIAL NUMBER 1
STARTING SERIAL NUMBERS 1

SPECIAL TOOLS 2
MEASURING 2
REMOVING AND INSTALLING 5

SPECIFICATIONS

GENERAL SPECIFICATIONS 8

MAINTENANCE SPECIFICATIONS 14
POWER UNIT 14
LOWER UNIT 16
ELECTRICAL 16
POWER UNIT 20
LOWER UNIT 22
ELECTRICAL 22
DIMENSIONS 26

TIGHTENING TORQUES 31
SPECIFIED TORQUES 31
GENERAL TORQUES 33

PERIODIC INSPECTION AND ADJUSTMENT

MAINTENANCE INTERVAL CHART 34

FUEL SYSTEM 36
MEASURING THE FUEL PRESSURE (MEDIUM-PRESSURE FUEL LINE) 36
CHECKING THE FUEL PRESSURE (MECHANICAL FUEL PUMP) 37
CHECKING THE MECHANICAL FUEL PUMP OIL LEVEL 38
CHANGING THE MECHANICAL FUEL PUMP OIL 38

CONTROL SYSTEM 39
ADJUSTING THE THROTTLE POSITION SENSOR 39
ADJUSTING THE REMOTE CONTROL SHIFT CABLE (EXCEPT FOR Z150Q, Z175H/VZ150, VZ175) 41
ADJUSTING THE REMOTE CONTROL SHIFT CABLE (FOR Z150Q, Z175H/VZ150, VZ175) 42
ADJUSTING THE CRANK POSITION SENSOR 42

OIL INJECTION SYSTEM 43
AIR BLEEDING THE OIL INJECTION SYSTEM 43
CHECKING THE ELECTRIC OIL PUMP 44

POWER TRIM AND TILT SYSTEM 44
CHECKING THE POWER TRIM AND TILT FLUID LEVEL 44
ADJUSTING THE TRIM SENSOR CAM 45

LOWER UNIT 46
CHECKING THE GEAR OIL LEVEL 46
CHANGING AND CHECKING THE GEAR OIL 46
CHECKING THE LOWER UNIT (FOR AIR LEAKS) 47

GENERAL 48
CHECKING THE SPARK PLUGS 48
CHECKING THE IGNITION TIMING 49
MEASURING THE COMPRESSION PRESSURE 51
LUBRICATION POINTS 52

FUEL SYSTEM

MEDIUM-PRESSURE FUEL LINE 53
REDUCING THE FUEL PRESSURE (MEDIUM-PRESSURE FUEL LINE) 53
CHECKING THE PRESSURE REGULATOR 53

VAPOR SEPARATOR 56
REMOVING/INSTALLING THE VAPOR SEPARATOR 56

ELECTRIC FUEL PUMP 58
DISASSEMBLING/ASSEMBLING THE ELECTRIC FUEL PUMP 58

DRIVE BELT 61
REMOVING/INSTALLING THE DRIVE BELT 61

HIGH-PRESSURE FUEL LINE ASSEMBLY 63
DISASSEMBLING/ASSEMBLING THE HIGH-PRESSURE FUEL LINE ASSEMBLY 63

MECHANICAL FUEL PUMP 66
DISASSEMBLING/ASSEMBLING THE MECHANICAL FUEL PUMP BODY 66

POWER UNIT

POWER UNIT 69
REMOVING/INSTALLING THE EXHAUST EXPANSION CHAMBER 69
INSTALLING THE APRON 71

REED VALVES 72
CHECKING THE REED VALVE ASSEMBLY 72

CRANKCASE 72
ASSEMBLING THE OIL SEAL HOUSING 72

CYLINDER BODY ASSEMBLY 73
DISASSEMBLING THE UPPER BEARING HOUSING 73
ASSEMBLING THE UPPER BEARING HOUSING 73

LOWER UNIT

LOWER UNIT (REGULAR ROTATION MODELS) 74
REMOVING/INSTALLING THE LOWER UNIT 74

PROPELLER SHAFT HOUSING ASSEMBLY (REGULAR ROTATION MODELS) 76
DISASSEMBLING THE PROPELLER SHAFT HOUSING 76
ASSEMBLING THE PROPELLER SHAFT HOUSING 77

DRIVE SHAFT (REGULAR ROTATION MODELS) 78
REMOVING/INSTALLING THE DRIVE SHAFT 78
REMOVING THE PINION 80
DISASSEMBLING THE DRIVE SHAFT HOUSING ASSEMBLY 80
DISASSEMBLING THE FORWARD GEAR ASSEMBLY 80
ASSEMBLING THE FORWARD GEAR ASSEMBLY 81
ASSEMBLING THE DRIVE SHAFT HOUSING ASSEMBLY 81
INSTALLING THE PINION 82

LOWER CASE ASSEMBLY (REGULAR ROTATION MODELS) 83
DISASSEMBLING/ASSEMBLING THE LOWER CASE ASSEMBLY 83
DISASSEMBLING THE LOWER CASE ASSEMBLY 84
ASSEMBLING THE LOWER CASE ASSEMBLY 84

LOWER UNIT (COUNTER ROTATION MODELS) 85
REMOVING/INSTALLING THE LOWER UNIT 85

PROPELLER SHAFT HOUSING ASSEMBLY (COUNTER ROTATION MODELS) 87
ASSEMBLING THE PROPELLER SHAFT HOUSING 87

DRIVE SHAFT (COUNTER ROTATION MODELS) 88
REMOVING/INSTALLING THE DRIVE SHAFT 88
REMOVING THE PINION 90
REMOVING THE REVERSE GEAR 90
DISASSEMBLING THE DRIVE SHAFT HOUSING ASSEMBLY 90
DISASSEMBLING THE REVERSE GEAR ASSEMBLY 90
ASSEMBLING THE REVERSE GEAR ASSEMBLY 91
ASSEMBLING THE DRIVE SHAFT HOUSING ASSEMBLY 92
INSTALLING THE REVERSE GEAR 92
INSTALLING THE PINION 93

LOWER CASE ASSEMBLY (COUNTER ROTATION MODELS) 93
ASSEMBLING THE LOWER CASE ASSEMBLY 93

SHIMMING (REGULAR ROTATION MODELS) (FOR USA AND CANADA) 94
SELECTING THE REVERSE GEAR SHIMS 95

SHIMMING (REGULAR ROTATION MODELS) (FOR WORLDWIDE) 97
SELECTING THE REVERSE GEAR SHIMS 98

BACKLASH (REGULAR ROTATION MODELS) 100
MEASURING THE FORWARD GEAR BACKLASH 100
MEASURING THE REVERSE GEAR BACKLASH 102

SHIMMING (COUNTER ROTATION MODELS) (FOR USA AND CANADA) 105
SELECTING THE FORWARD GEAR SHIMS 106

SHIMMING (COUNTER ROTATION MODELS) (FOR WORLDWIDE) 108

BACKLASH (COUNTER ROTATION MODELS) 109
MEASURING THE FORWARD GEAR BACKLASH 109
MEASURING THE REVERSE GEAR BACKLASH 110