YAMAHA

Marine

Outboards

WORLD WIDE

40V, 50H

USA/CANADA

40W, 50W

SERVICE MANUAL

LIT-18616-01-81

290320

A20000-0

NOTICE

This manual has been prepared by the Yamaha Motor Company primarily for use by Yamaha dealers and their trained mechanics when performing maintenance procedures and repairs to Yamaha equipment. It has been written to suit the needs of persons who have a basic understanding of the mechanical and electrical concepts and procedures inherent in the work, for without such knowledge attempted repairs or service to the equipment could render it unsafe or unfit for use.

Because the Yamaha Motor Company Ltd. has a policy of continuously improving its products, models may differ in detail from the descriptions and illustrations given in this publication. Use only the latest edition of this manual. Authorized Yamaha dealers are notified periodically of modifications and significant changes in specifications and procedures, and these are incorporated in successive editions of this manual.

A10001-0*

40V/50H
SERVICE MANUAL
©1997 Yamaha Motor Corporation, USA
1st Edition, August 1997
All rights reserved.
No part of this publication may be reproduced or transmitted in any form or by any means including photocopying and recording without the written permission of the copyright holder.
Such written permission must also be obtained before any part of this publication is stored in a retrieval system of any nature.
Printed in U.S.A.
LIT-18616-01-81

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 complied to provide the mechanic with an easy to read, handy reference that contains comprehensive explanations of all disassembly, repair, assembly, and inspection 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/Damage → Replace.

To assist you to find your way about this manual, the Section Title and Major Heading is given at the head of every page.

An Index to contents is provided on the first page of each Section.

MODEL INDICATION

Multiple models are shown in this manual. These indications are noted as follows.

Model name	40VMH	40VMHD	40VMHO	40VMO	40VWH	40VE	40VEO	40VEHTO	40VET
USA and CANADA name	C40MH		40MH			C40ER	40ER	P40TH	C40TR
Indication	40VMH	40VMHD	40VMHO	40VMO	40VWH	40VE	40VEO	40VEHTO	40VET
Model name	40VETO	50HMHO	50HMHD	50HMO	50HMDO	50HWHD	50HEDO	50HET	50HETO
USA and CANADA name	40TR						50ER	C50TR	50TR
Indication	40VETO	50HMHO	50HMHD	50HMO	50HMDO	50HWHD	50HEDO	50HET	50HETO

THE ILLUSTRATIONS

Some illustrations in this manual may differ from the model you have. This is because a procedure described may relate to several models, though only one may be illustrated. (The name of model described will be mentioned in the description).

REFERENCES

These have been kept to a minimum; however, when you are referred to another section of the manual, you are told the page number to go to.

WARNINGS, CAUTIONS AND NOTES

Attention is drawn to the various Warnings, Cautions and Notes which distinguish important information in this manual 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.

SPECIFICATIONS

These are given in bold type at each procedure. It is not necessary to leave the section dealing with the procedure in order to look up the specifications.
It is important to note the differences in specifications of models. When a procedure relates to more than one model, the main differences in specifications will be shown in a following table.

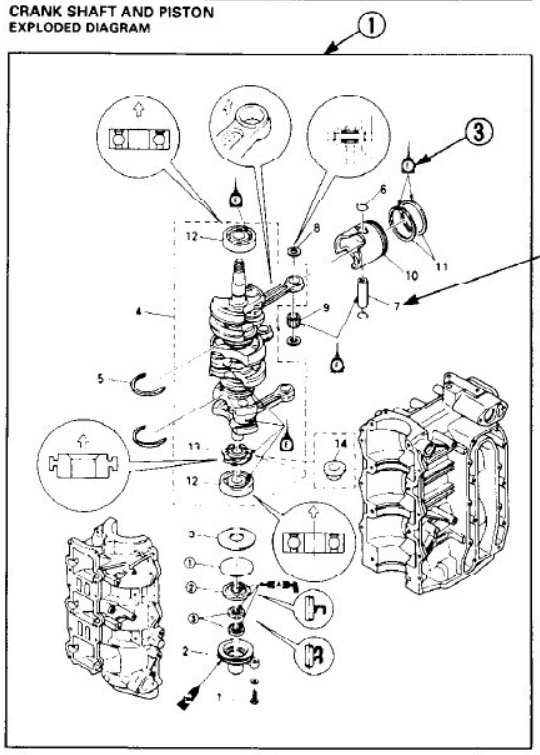
Model name	40VMH	40VMHD	40VMHO	40VMO	40VWH	40VE	40VEO	40VEHTO	40VET
Starting system	Manual	Manual	Manual	Manual	Manual & Electric	Electric	Electric	Electric	Electric
Control system	Tiller	Tiller	Tiller	Remote	Tiller	Remote	Remote	Tiller	Remote
Trim/Tilt system	Manual tilt	Hydro tilt	Manual tilt	Manual tilt	Hydro tilt	Manual tilt	Manual tilt	PTT	PTT
Lubrication system	Pre-Mixed	Pre-Mixed	Oil injection	Oil injection	Pre-Mixed	Pre-Mixed	Oil injection	Oil injection	Pre-Mixed
Warning indicator lamp	1	1	1	1	1	1	3	—	—
Enrichment system	Choke	Choke	Choke	Choke	Prime Start	Prime Start	Prime Start	Prime Start	Prime Start
Model name	40VETO	50HMHO	50HMHD	50HMO	50HMDO	50HWHD	50HEDO	50HET	50HETO
Starting system	Electric	Manual	Manual	Manual	Manual	Manual & Electric	Electric	Electric	Electric
Control system	Remote	Tiller	Tiller	Remote	Remote	Tiller	Remote	Remote	Remote
Trim/Tilt system	PTT	Manual tilt	Hydro tilt	Manual tilt	Hydro tilt	Hydro tilt	Hydro tilt	PTT	PTT
Lubrication system	Oil injection	Oil injection	Pre-Mixed	Oil injection	Oil injection	Pre-Mixed	Oil injection	Oil injection	Oil injection
Warning indicator lamp	3	1	1	1	1	1	3	—	—
Enrichment system	Prime Start	Choke	Choke	Choke	Choke	Prime Start	Prime Start	Prime Start	Prime Start

HOW TO READ DESCRIPTIONS

1. A disassembly installation job mainly consists of the exploded diagram ①.
2. The numerical figures represented by the number ② indicates the order of the job steps.
3. The symbols represented by the number ③ indicates the contents and notes of the job. For the meanings of the symbols, refer to the next page(s).
4. The REMOVAL AND INSTALLATION CHART ④ is attached to the exploded diagram and explains the job steps, part names, notes for the jobs, etc.
5. The SERVICE POINTS, other than the exploded diagram, explains in detail the items difficult to explain in the exploded diagram or REMOVAL AND INSTALLATION CHART, the Service points requiring the detailed description ⑤, etc.

POWR CRANK SHAFT AND PISTON

CRANK SHAFT AND PISTON
EXPLODED DIAGRAM



5-31

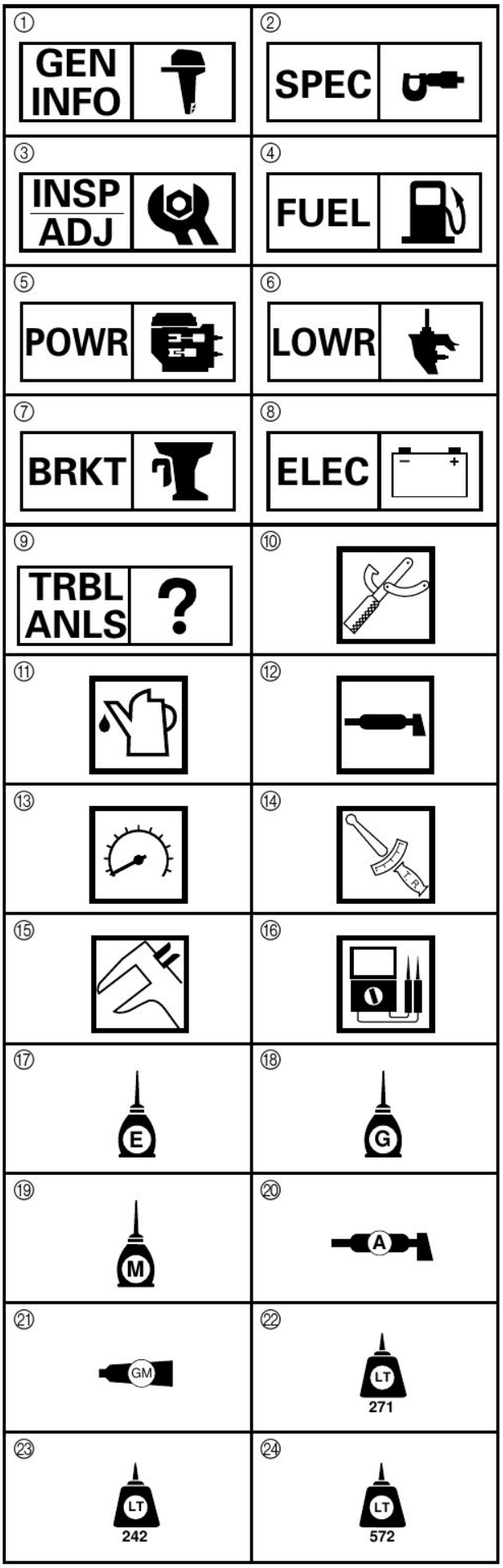
④ ⑤

POWR CRANK SHAFT AND PISTON

REMOVAL AND INSTALLATION CHART

Step	Procedure/Part name	Q'ty	Service points
	CRANK SHAFT AND PISTON REMOVAL		Follow the left "Step" for removal.
	Crank case		Refer to "CRANK CASE AND CYLINDER BODY" section in chapter 5.
1	Bolt (with washer)	1	6 x 20 mm
2	Oil seal housing	1	
3	Plane washer	1	
4	Crankshaft ass'y	1	NOTE: Remove the crankshaft by lightly tapping it with a plastic hammer.
5	Circlip	2	
6	Piston pin clip	6	[redacted] Always use the new clip.
7	Piston pin	3	
8	Piston pin washer	6	[redacted] The washer should be placed with their convex sides facing the piston.
9	Small end bearing needle	93	[redacted] Do not a mixture of new and used bearing needles in the same small end.
10	Piston	3	
11	Piston ring	6	
12	Bearing	2	[redacted] When installing the bearing, the seal-cap side should be installed towards the flywheel side.
13	Oil pump drive gear	1	Oil injection model [redacted] When installing the gear, the chamfered bore edge side should be installed towards the flywheel side.
14	Spacer	1	Pre-mixed model
	OIL SEAL HOUSING DISASSEMBLY		
①	O-ring	1	
②	Oil seal	1	
③	Oil seal	2	Reverse the removal steps for installation.

5-32



A50001-1-4

SYMBOLS

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

① General Information
② Specifications
③ Periodic Inspection and Adjustment
④ Fuel System
⑤ Power Unit
⑥ Lower Unit
⑦ Bracket Unit
⑧ Electrical System
⑨ Trouble-analysis

Symbols ⑩ to ⑯ indicate specific data:

⑩ Special tool
⑪ Specified liquid
⑫ Specified grease
⑬ Specified engine speed
⑭ Specified torque
⑮ Specified measurement
⑯ Specified electrical value
[Resistance (Ω), Voltage (V), Electric current (A)]

Symbol ⑰ to ⑳ in an exploded diagram indicate grade of lubricant and location of lubrication point:

⑰ Apply Yamaha 2-stroke outboard motor oil
⑱ Apply Yamaha gear-case lubricant
⑲ Apply molybdenum disulfide oil
⑳ Apply water resistant grease (Yamaha grease A, Yamaha marine grease)

Symbols ㉑ to ㉔ in an exploded diagram indicate grade of sealing or locking agent, and location of application point:

㉑ Apply Gasket maker®
㉒ Apply LOCTITE® No. 271 (Red LOCTITE)
㉓ Apply LOCTITE® No. 242 (Blue LOCTITE)
㉔ Apply LOCTITE® No. 572

NOTE:
In this manual, the above symbols may not be used in every case.

A30000-0

INDEX

GENERAL INFORMATION — GEN INFO — 1

SPECIFICATIONS — SPEC — 2

PERIODIC INSPECTION AND ADJUSTMENT — INSP ADJ — 3

FUEL SYSTEM — FUEL — 4

POWER UNIT — POWR — 5

LOWER UNIT — LOWER — 6

BRACKET UNIT — BRKT — 7

ELECTRICAL SYSTEM — ELEC — 8

TROUBLE-ANALYSIS — TRBL ANLS — 9

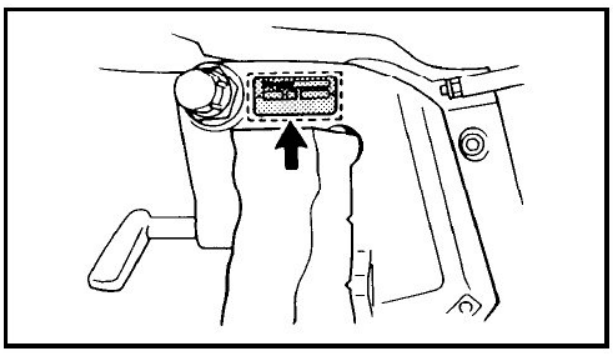
CHAPTER 1
GENERAL INFORMATION

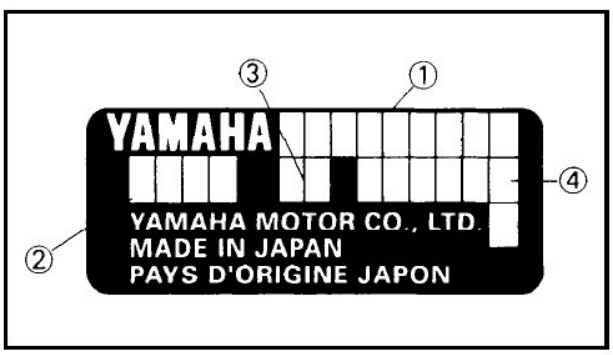
1

IDENTIFICATION 1-1
SERIAL NUMBER 1-1
STARTING SERIAL NUMBERS 1-1

SAFETY WHILE WORKING 1-2
FIRE PREVENTION 1-2
VENTILATION 1-2
SELF-PROTECTION 1-2
OILS, GREASES AND SEALING FLUIDS 1-2
GOOD WORKING PRACTICES 1-3
DISASSEMBLY AND ASSEMBLY 1-4

SPECIAL TOOLS 1-5
MEASURING 1-6
REMOVAL AND INSTALLATION 1-8





A60000-1*

IDENTIFICATION

SERIAL NUMBER

The serial number of the outboard motor is stamped on a plate attached to the port side of the clamp bracket.

NOTE:

As an antitheft measure, a special label on which the outboard motor serial number is stamped is bonded to the portside of the clamp bracket. The label is specially treated so that peeling it off causes cracks across the serial number.

① Model name
② Approved model No.
③ Transom height
④ Serial number

STARTING SERIAL NUMBERS

The starting serial number blocks are as follows:

Model		Approved model code	Starting serial No.	Model		Approved model code	Starting serial No.
World-wide	USA, CANADA			World-wide	USA, CANADA		
40VMH	C40MH	6H4	S: 010262 ~ L: 310801 ~	50HMHO	—	6H5	S: 190662 ~
				50HMHD	—		L: 310380 ~
40VMHD	—		L: 560290 ~	50HMO	—		S: 260189 ~
40VMHO	40MH		S: 191877 ~ L: 491566 ~	50HMDO	—		L: 560258 ~
				50HWHD	—		L: 850194 ~
40VMO	—		S: 290284 ~ L: 860312 ~	50HEDO	50ER		S: 090431 ~ L: 521079 ~
40VWH	—		L: 510116 ~	50HET	C50TR		L: 900101 ~
40VE	C40ER		S: 060285 ~ L: 360173 ~	50HETO	50TR		S: 210142 ~ L: 444058 ~
40VEO	40ER		S: 110760 ~ L: 842362 ~ X: 740146 ~				X: 750216 ~
40VEHTO	P40TH		L: 430386 ~				
40VET	C40TR		L: 921505 ~				
40VETO	40TR		S: 880367 ~ L: 544974 ~ X: 900196 ~				

APERÇU — Engine Manual — fichier complet disponible après achat