YAMAHA

GENUINE

PARTS CATALOGUE

OUTBOARD

A1

FOREWORD

-INTRODUCTION-
To The Yamaha Parts Fiche

This parts fiche lists parts and sub-assemblies for the 150/175/200/L150/L200TRU. When preparing a parts order, please refer to the most recently updated microfiche for this model.

THE YAMAHA PARTS FICHE

SYMBOLS

[ ]	Inactive, no longer available
UR	Use size (thickness) and/or number as required
U.N.	Use as many as you need
T	Number of teeth in a gear
V	Voltage for light bulbs
S	"S" type oil seal or "S" type circlip
SD,SO,SW	"SD", "SO", or "SW" type oil seal
E,R	"E" or "R" type circlip
F/No.	Frame No. (Applicable Machine No.)
L.M.	Locally made
O.L.	Obtain locally
AP	Alternate Part

SUPERSEDED PART NUMBERS

If part 'A' has been superseded by part 'B', the superseding part number "B" will appear in the part number listing with the superseded part number "A" appearing in parentheses immediately following the description.

EXAMPLE:

Ref. No.	Part No.	Description	Qty.
	(Part 'B')	(Part 'A')	
8	6E5-45611-01-00	SHAFT, PROPELLER (6G8-45611-00)	1

A part that has been supersede to a kit may be identified by a 99999-00000-00 part number appearing in the part number column. The old superseded part number will appear in parentheses immediately following the description. Listed directly below the 99999 part number will be those parts making up the kit. The description of the parts making up the kit will be preceded by a small black dot (.) and the description will be indented one letter space.

EXAMPLE:

Ref. No.	Part No.	Description	Qty.
8	99999-12345-00	CYLINDER (6E5-W0090-10-00)	1
	6E5-11111-00-94	• HEAD, CYLINDER	1

SIZES

Except for steel balls (ball sizes are indicated in inches), all parts sizes are indicated in millimeters as in the following examples:

Hose (Rubber or Vinyl) ..... Inside Diameter - Length

O-Ring ..... Section Area - Inside Diameter

Washer, Shim, Collar ..... Inside Diameter - Outside Diameter
Thickness (Length)

ASSEMBLIES AND COMPONENT PARTS

Assemblies and their component parts, are identified by an indention of one letter space, and the description is preceded by a dot (.). If two main assemblies are listed, and have the same basic description (i.e.: left and right sides of the same assembly), one will immediately follow the other. If each of these main assemblies is made up of almost the same components, these component parts will be listed immediately under the second main assembly line and will be indicated, as noted above.

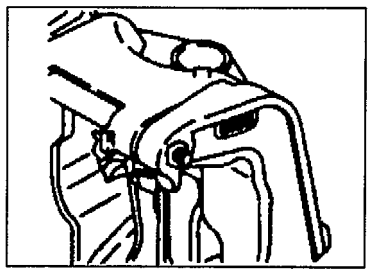
If the component is the same for both main assemblies, the quantity indicated will be the total required. If the component is not the same for both main assemblies, the quantity for each separate item will be listed separately.

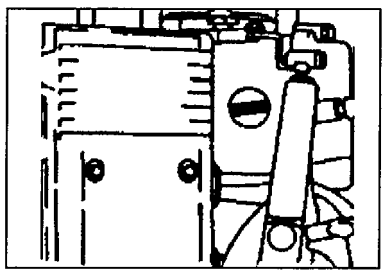
EXAMPLE:

Description	Qty
CARBURETOR ASSY, LEFT	1
CARBURETOR ASSY, RIGHT	1
. JET, PILOT	2
. NOZZLE, MAIN	2
. LEVER, STARTER, LEFT	1
. LEVER, STARTER, RIGHT	1

APPLICABLE SERIAL NO.

(1) Engine Serial No.



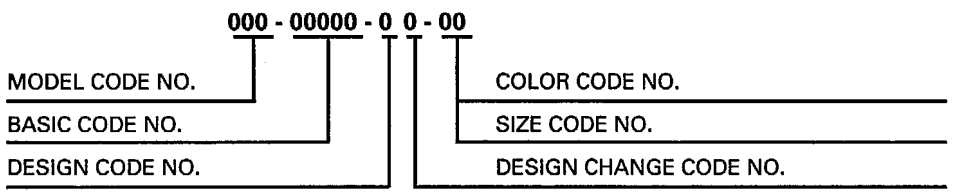


FOREWORD

THE YAMAHA PART NUMBER

The Yamaha part number consists of 12 digits. Each number represents a specific piece of information relating to a replacement part. The following is a guide for reading and interpreting the Yamaha part number.

BASIC PART NUMBER CONFIGURATION:



MODEL CODE NUMBER

FIRST THREE DIGITS . . . **000**-00000-00-00

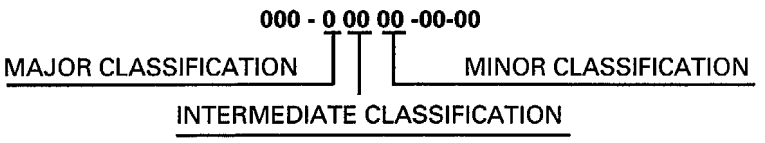
Every model in each Yamaha product line is assigned a model number to identify that particular model. All component parts are given the model code number relating to the model on which they were first used.

Example: 6E5-00000-00-00 identifies the 115ETLN.
6G1-00000-00-00 identifies the 8SN.

BASIC CODE NUMBER

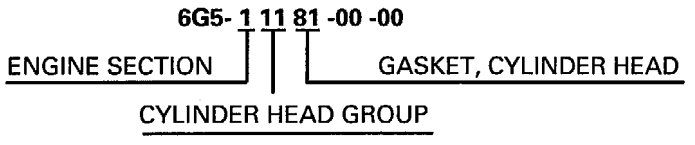
MIDDLE FIVE DIGITS . . . 000-**00000**-00-00

These "MIddle Five Digits" indicate the type of part i.e., piston, rings, lower units, etc. The five digits are broken down as follows:



The "Major Classification" indicates the section to which the parts belong, i.e., engine, electrical etc. The "Intermediate" and "Minor Classifications" indicate more specific details.

Example:



DESIGN CODE NUMBER: 000-00000-00-00

The design code distinguishes like component parts from one another when specification differences are involved. For example, distinguishing a standard size piston ring from an oversized piston ring.

Example:

6E5-11610- **0** **0-00** Standard Piston Ring Set for 115ETLN
6E5-11610- **2** **0-00** Oversize Piston Ring Set for 115ETLN

DESIGN CHANGE CODE NUMBER: 000-00000-00-00

This code number is used to identify a difference between a new component part and old one when a new part is created by changing the old one.

Example: 115ETLN

6E5-11610-0 **0** **-00** PISTON RING SET, STD. - ORIGINAL
6E5-11610-0 **1** **-00** PISTON RING SET, STD. - FIRST DESIGN CHANGE

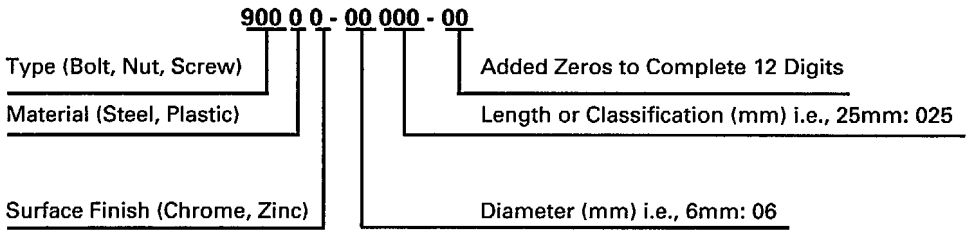
Only major changes to performance, durability, quality, appearance, cost or interchangeability will affect a part number change.

COLOR CODE & SIZE CODE NUMBER: 000-00000-00-00

When applicable, the last two digits of the part number identify:

1. Color Code: The painted color or type of plating or surface treatment used on certain parts.
2. Size Code: The last two digits are also used to show the size of parts (mm). Such as the thickness of shims or the size of pistons.

HARDWARE (Fastener) PART NUMBER CONFIGURATION:



TYPE:

A fastener part number always begins with the number "9" followed by either a 0, 1, 2, 3, 4, 5, 6, 7 or 8 designating one of eight major divisions within this group.

FOREWORD

Example:

9 0 000-00000-00 "0" designates various types.
9 1 000-00000-00 "1" designates bolts, cotter pins, etc.
9 2 000-00000-00 "2" designates screw, nuts, etc.
9 3 000-00000-00 "3" designates oil seals, o-rings, bearings, etc.
9 4 000-00000-00 "4" designates spark plugs.
9 5 000-00000-00 "5" designates bolts and nuts.
9 7 000-00000-00 "7" designates ISO bolts.
9 8 000-00000-00 "8" designates ISO screws and nuts.

The only major divisions which the mechanic should become familiar with are those related to the general hardware (nuts, bolts, and washers), since these are the most commonly used and most often replaced items. By knowing how to interpret the part number, the dimensions of a piece of hardware can be determined. This can be very helpful during major engine repair, and general parts replacement.

BOLT EXAMPLE:

91311 - 06 018 - 00

6mm outside diameter — 18mm in length

EXCEPTION:

It is NOT possible to identify the LENGTH of bolts having a 901 prefix. Only the bolt diameter can be identified with this number.

NUT AND WASHER EXAMPLE:

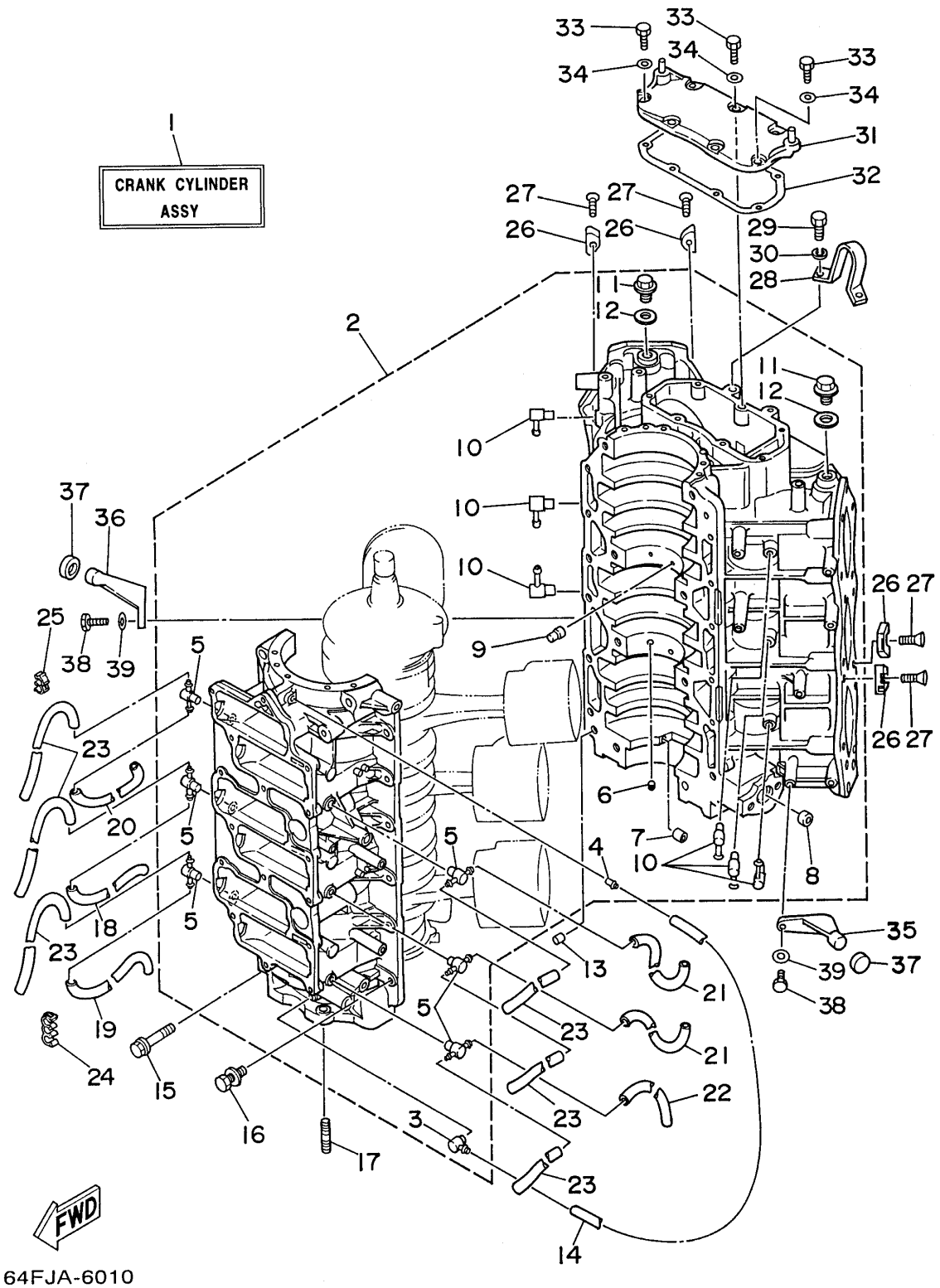
95301 - 08600 -00 NUT

8mm inside diameter

90201 - 25290 -00 Washer

25mm inside diameter

CYLINDER - CRANKCASE 1-1

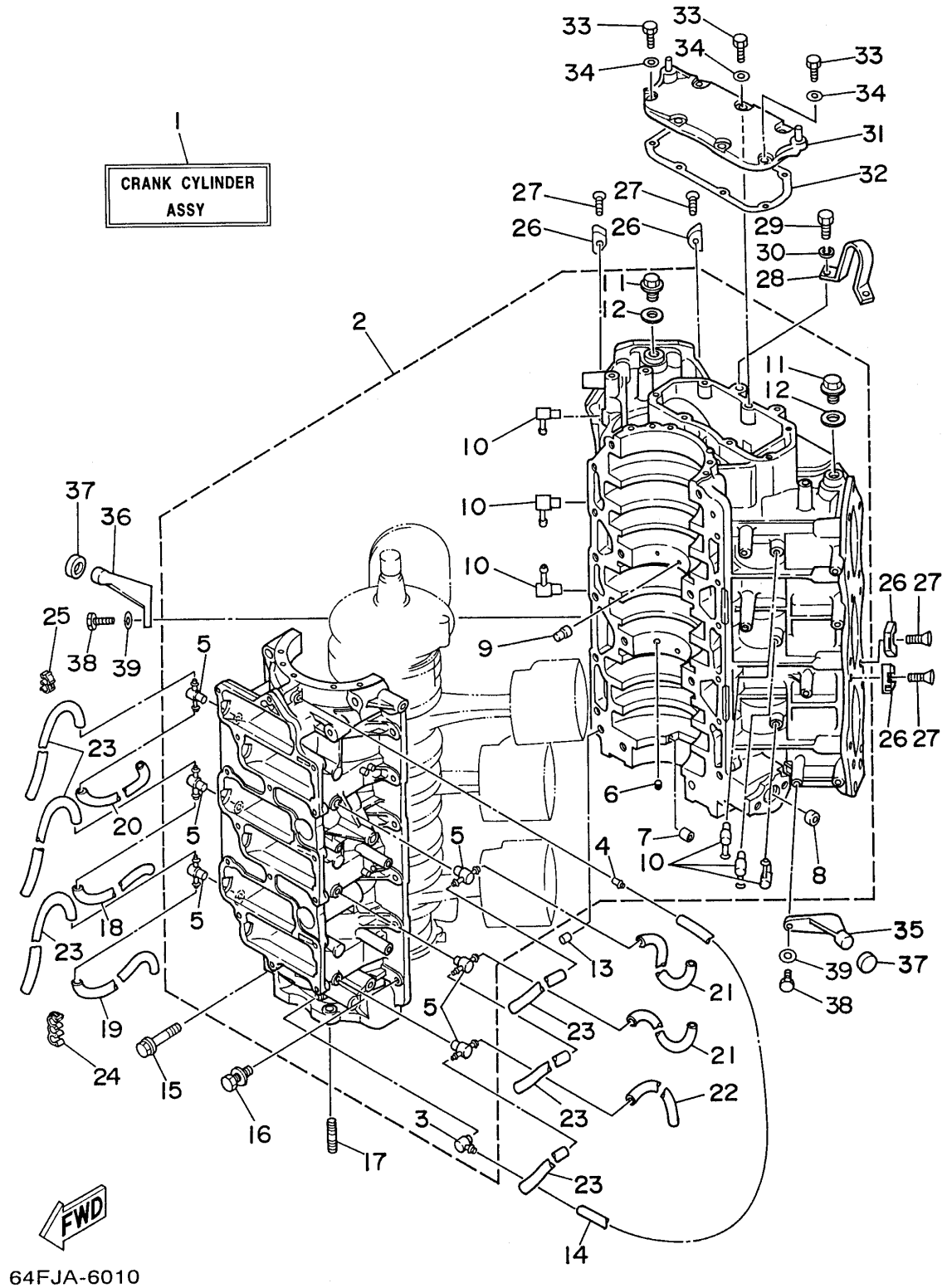


64FJA-6010

Ref. No.	Part Number	Description	Qty	Remarks
1	64C-W0090-10-4D	CRANK CYLINDER ASSEMBLY (REF. #2~27, CYLINDER- CRANKCA)	1	UR 150/L150
	64D-W0090-10-4D	CRANK CYLINDER ASSEMBLY (REF. #2~27, CYLINDER- CRANKCA)	1	UR 175
	64E-W0090-10-4D	CRANK CYLINDER ASSEMBLY (REF. #2~27, CYLINDER- CRANKCA)	1	UR 200 NOT S/W
2	64C-15100-00-94	CRANKCASE ASSEMBLY	1	UR 150/L150
	64D-15100-00-94	CRANKCASE ASSEMBLY	1	UR 175
	64E-15100-00-94	CRANKCASE ASSEMBLY	1	UR 200 NOT S/W
3	624-11379-00-00	. VALVE, CHECK	2	
4	90384-06M07-00	. BUSH, BIMETAL FORMED ...	1	
5	90384-14M09-00	. BUSH, BIMETAL FORMED ...	1	
6	663-11518-01-00	. LOCK, BEARING	2	
7	646-11370-00-00	. CHECK VALVE ASSEMBLY ..	6	
8	90340-14M00-00	. PLUG, STRAIGHT SCREW ...	2	
9	90430-14115-00	. GASKET	2	
10	93608-12063-00	PIN, DOWEL	2	
11	90105-10M20-00	BOLT, WASHER BASED	8	
12	90119-08M23-00	BOLT, WITH WASHER	12	
13	90116-08M45-00	BOLT, STUD	2	
14	6E5-11325-00-00	ANODE	8	
15	98780-04015-00	SCREW, FLAT HEAD	8	
16	6E9-11119-00-00	HANGER, ENGINE	1	
17	97013-08020-00	BOLT	2	
18	92990-08100-00	WASHER	2	
19	6K7-11371-01-9M	COVER	1	
20	6E5-11381-A2-00	GASKET 1	1	
21	97013-06020-00	BOLT	7	
22	92990-06600-00	WASHER, PLATE	7	
23	6E5-42761-00-94	STOPPER	1	

CONTINUED ON NEXT FRAME ➤

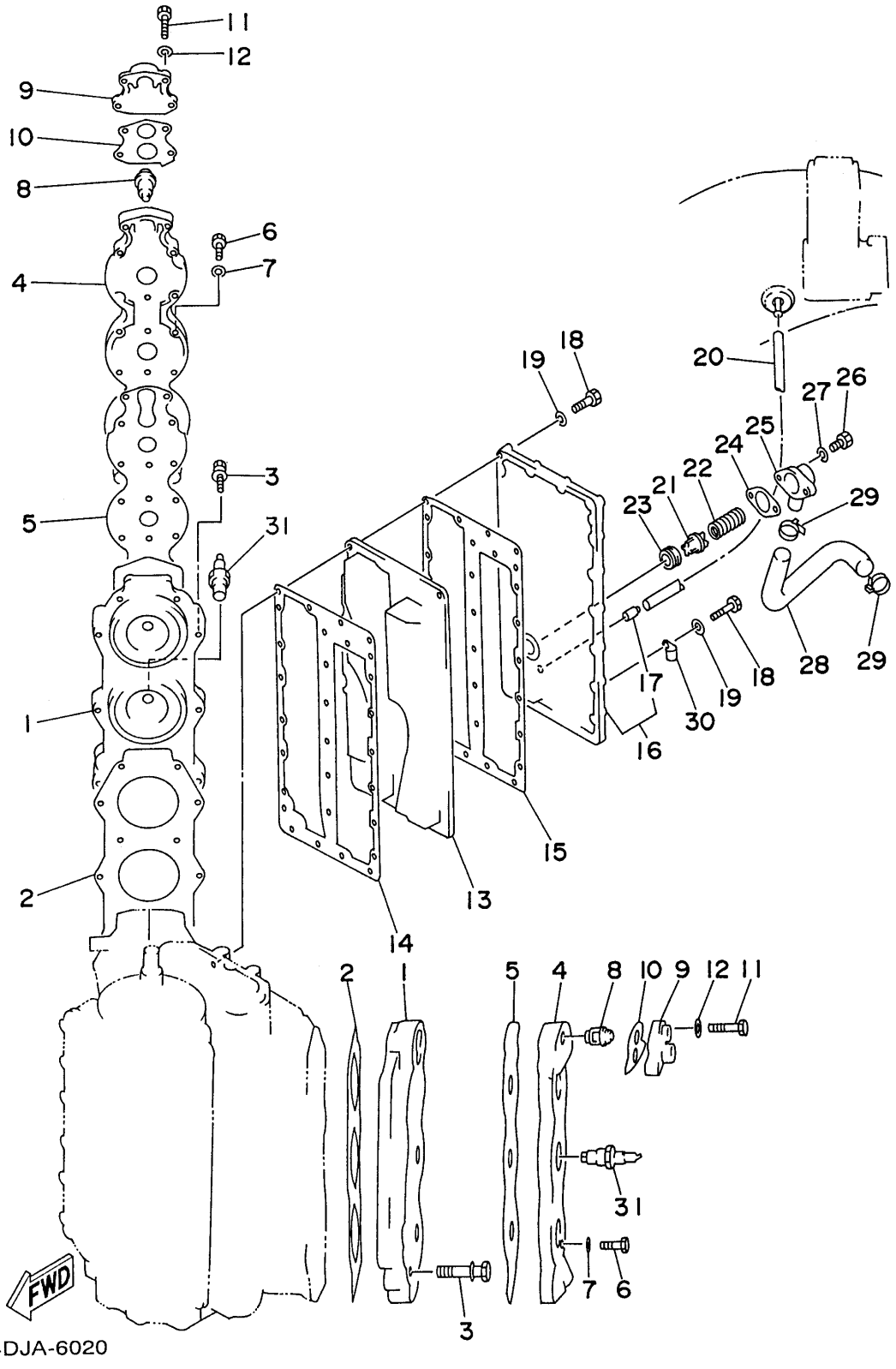
CYLINDER - CRANKCASE 1-1



64FJA-6010

Ref. No.	Part Number	Description	Qty	Remarks
24	6E5-42762-00-94	STOPPER	1	
25	663-44533-00-00	DAMPER, UPPER MOUNT RUBBER	2	
26	97013-06020-00	BOLT	4	
27	92990-06600-00	WASHER, PLATE	4	

CYLINDER - CRANKCASE 1-2 (200 - L200 S



Ref. No.	Part Number	Description	Qty	Remarks
1	64E-W0090-S0-4D	CRANK CYLINDER ASSEMBLY (REF. #2~39, CYLINDER- CRANKCA)	1	
2	64E-15100-S0-94	CRANKCASE ASSEMBLY	1	
3	6E5-11372-00-00	. NIPPLE, HOSE	1	
4	624-14485-00-00	. PIPE, JOINT	1	
5	6F6-11372-00-00	. NIPPLE, HOSE	6	
6	624-11379-00-00	. VALVE, CHECK	2	
7	90384-06M07-00	. BUSH, BIMETAL FORMED ...	1	
8	90384-14M09-00	. BUSH, BIMETAL FORMED ...	1	
9	663-11518-01-00	. LOCK, BEARING	2	
10	646-11370-00-00	. CHECK VALVE ASSEMBLY ..	6	
11	90340-14M00-00	. PLUG, STRAIGHT SCREW ...	2	
12	90430-14115-00	. GASKET	2	
13	93608-12063-00	PIN, DOWEL	2	
14	90445-07M10-00	HOSE	1	
15	90105-10M20-00	BOLT, WASHER BASED	8	
16	90119-08M23-00	BOLT, WITH WASHER	12	
17	90116-08M45-00	BOLT, STUD	2	
18	90445-07M11-00	HOSE	1	
19	90445-07M09-00	HOSE	1	
20	90445-07240-00	HOSE	1	
21	90445-07M08-00	HOSE	2	
22	90445-07M90-00	HOSE	1	
23	90445-07M34-00	HOSE	6	
24	90464-07M05-00	CLAMP	1	
25	90464-07M20-00	CLAMP	1	
26	6E5-11325-00-00	ANODE	8	
27	98780-04015-00	SCREW, FLAT HEAD	8	
28	6E9-11119-00-00	HANGER, ENGINE	1	

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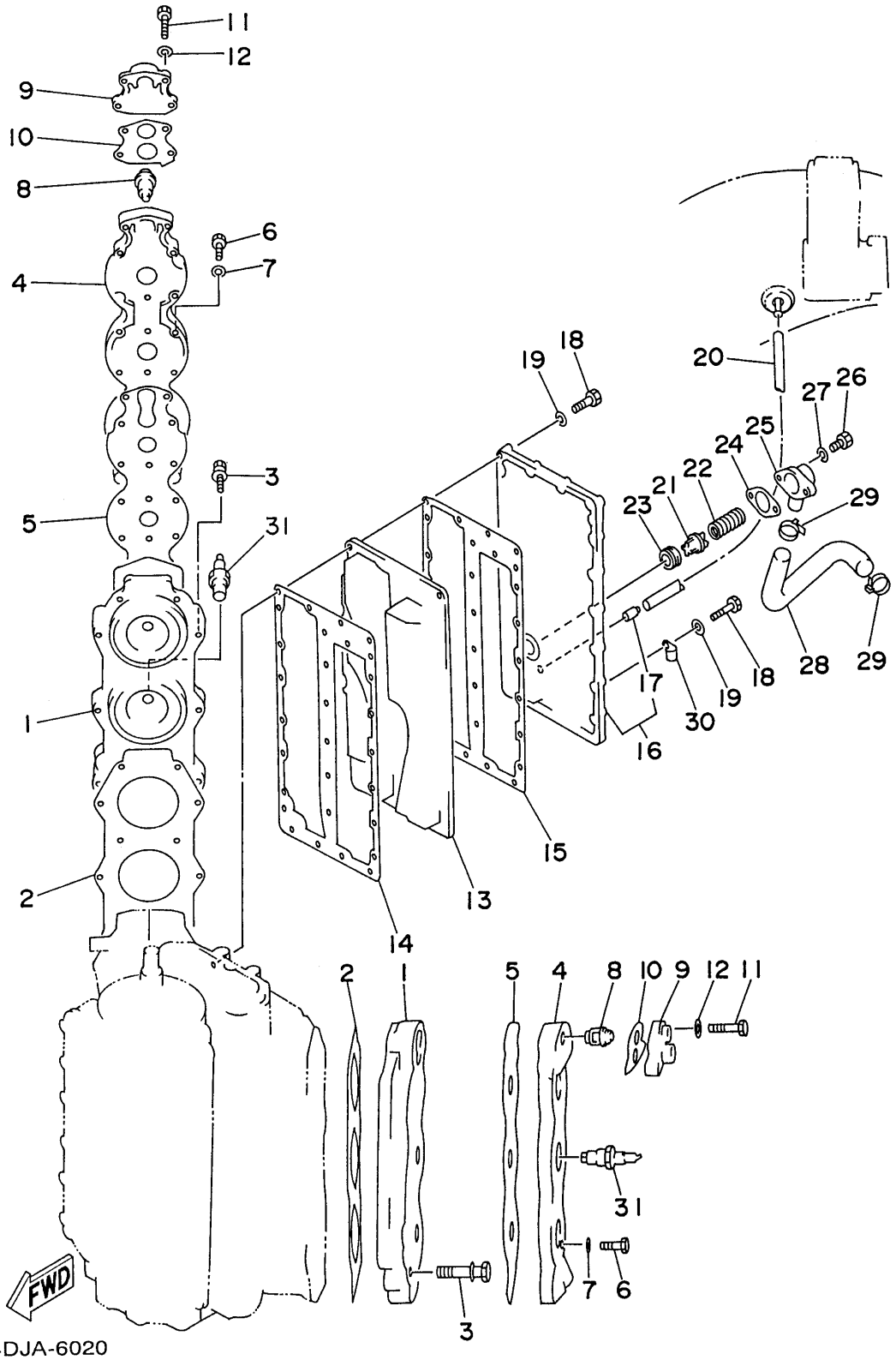
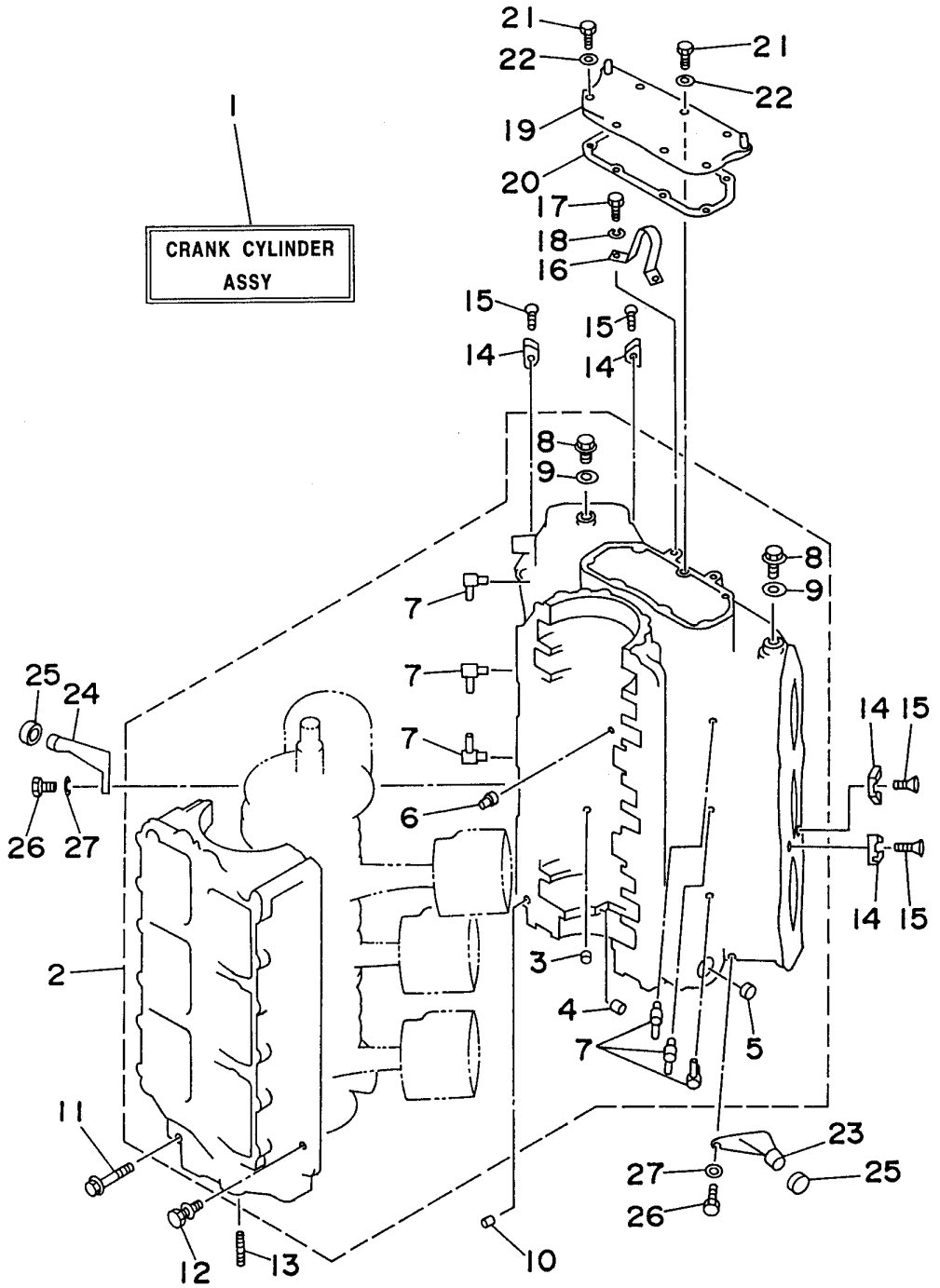
CYLINDER - CRANKCASE 1-2 (200 - L200 S



Ref. No.	Part Number	Description	Qty	Remarks
29	97013-08020-00	BOLT	2	
30	92990-08100-00	WASHER	2	
31	6K7-11371-01-9M	COVER	1	
32	6E5-11381-A2-00	GASKET 1	1	
33	97013-06020-00	BOLT	7	
34	92990-06600-00	WASHER, PLATE	7	
35	6E5-42761-00-94	STOPPER	1	
36	6E5-42762-00-94	STOPPER	1	
37	663-44533-00-00	DAMPER, UPPER MOUNT RUBBER	2	
38	97013-06020-00	BOLT	4	
39	92990-06600-00	WASHER, PLATE	4	

CYLINDER - CRANKCASE 2

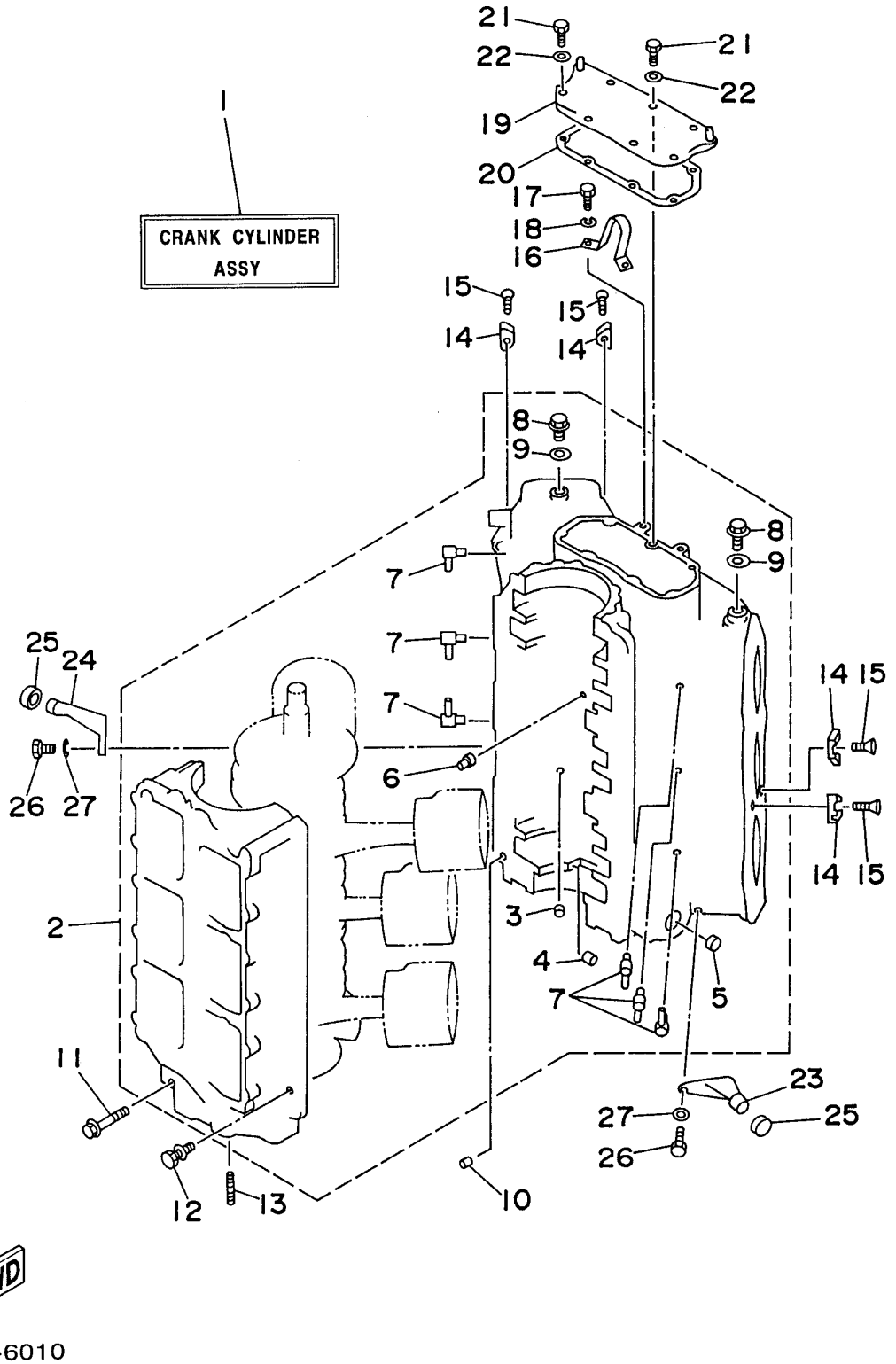


64DJA-6010

Ref. No.	Part Number	Description	Qty	Remarks
1	64E-11111-00-94	HEAD, CYLINDER 1	1	UR 200/L200
	6G5-11111-04-94	HEAD, CYLINDER 1	2	UR 150/ 175/L150
2	6G5-11181-A0-00	GASKET, CYLINDER HEAD 1	2	
3	90119-08M21-00	BOLT, WITH WASHER	28	
4	6G5-11191-00-9M	COVER, CYLINDER HEAD 1	2	
5	6G5-11193-A0-00	GASKET, HEAD COVER 1	2	
6	97095-06030-00	BOLT	36	
7	92990-06600-00	WASHER, PLATE	36	
8	6E5-12411-20-00	THERMOSTAT	2	
9	688-12413-00-9M	COVER, THERMOSTAT	2	
10	688-12414-A1-00	GASKET, COVER	2	
11	97013-06045-00	BOLT	8	
12	92990-06600-00	WASHER, PLATE	8	
13	64D-41111-00-9M	INNER COVER, EXHAUST	1	
14	6G5-41112-A1-00	GASKET, EXHAUST INNER COVER	1	
15	6G5-41112-A1-00	GASKET, EXHAUST INNER COVER	1	
16	6R3-41113-00-9M	OUTER COVER, EXHAUST	1	
17	652-24461-00-00	. PIPE, JOINT	1	
18	97014-06035-00	BOLT	29	
19	92990-06600-00	WASHER, PLATE	29	
20	90445-09226-00	HOSE	1	
21	6G5-12416-00-00	VALVE, PRESSURE CONTROL	1	
22	90501-16M11-00	SPRING, COMPRESSION	1	
23	90480-20M05-00	GROMMET	1	
24	6G5-11382-A1-00	GASKET 2	1	
25	6G5-11372-00-5B	COVER, BYPASS 2	1	
26	97013-06020-00	BOLT	2	

CONTINUED ON NEXT FRAME ➤

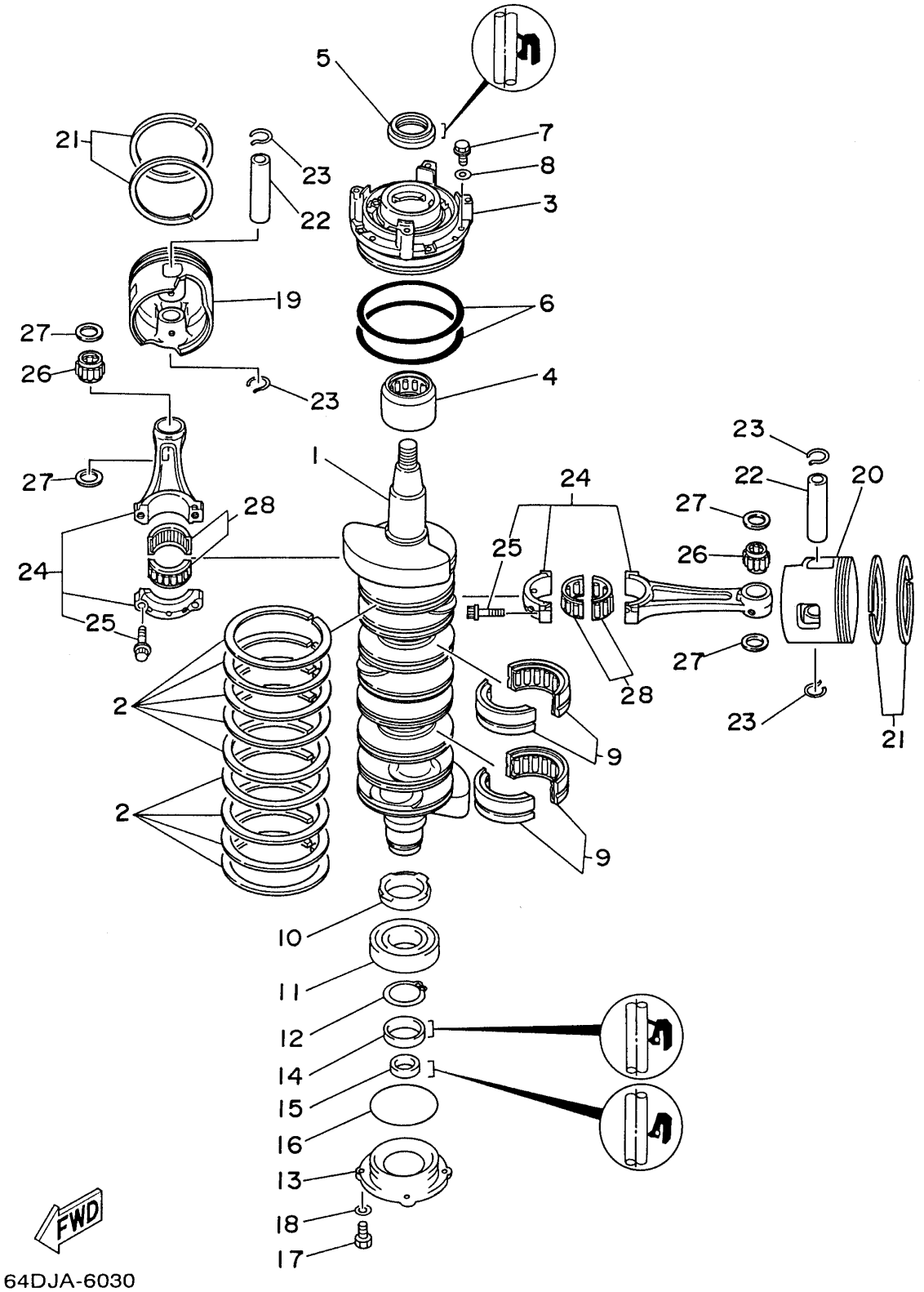
CYLINDER - CRANKCASE 2



64DJA-6010

Ref. No.	Part Number	Description	Qty	Remarks
27	92990-06600-00	WASHER, PLATE	2	
28	6G5-12576-00-00	HOSE 1	1	
29	90465-13M36-00	CLAMP	2	
30	90465-08028-00	CLAMP	2	
31	NGK-BR7HS-00-00	PLUG, SPARK (NGK BR7HS) (94701-00110-00)	6	UR 150/L150
	NGK-BR8HS-10-00	PLUG, SPARK	6	UR 175/200

CRANKSHAFT - PISTON



64DJA-6030

Ref. No.	Part Number	Description	Qty	Remarks
1	6G5-11411-01-00	CRANKSHAFT	1	
2	6E5-11447-00-00	SEAL, CRANK	9	
3	6R3-15163-00-94	HOUSING, BEARING 1	1	
4	93311-940U3-00	BEARING	1	
5	93102-40M38-00	OIL SEAL	1	
6	93211-04384-00	O-RING	2	
7	97013-06020-00	BOLT	3	
8	92990-06600-00	WASHER, PLATE	3	
9	93310-954U1-00	BEARING	2	
10	6R3-11536-00-00	GEAR, DRIVE	1	
11	93306-208U0-00	BEARING	1	
12	93410-40M03-00	CIRCLIP	1	
13	6G5-15359-00-94	HOUSING, OIL SEAL	1	
14	93102-35M13-00	OIL SEAL	1	
15	93101-22M15-00	OIL SEAL	1	
16	93210-74M35-00	O-RING	1	
17	97095-06020-00	BOLT	4	
18	92990-06600-00	WASHER, PLATE	4	
19	64D-11631-00-90	PISTON (STD)	3	
	64D-11635-00-00	PISTON (0.25MM O/S)	3	AP
	64D-11636-00-00	PISTON (0.50MM O/S)	3	AP
20	64D-11642-00-90	PISTON 2 (STD)	3	
	64D-11645-00-00	PISTON 2 (0.25MM O/S)	3	AP
	64D-11646-00-00	PISTON 2 (0.50MM O/S)	3	AP
21	64D-11603-00-00	PISTON RING SET (STD)	6	
	64D-11604-00-00	PISTON RING SET (0.25MM O/S)	6	AP
	64D-11605-00-00	PISTON RING SET (0.50MM O/S)	6	AP

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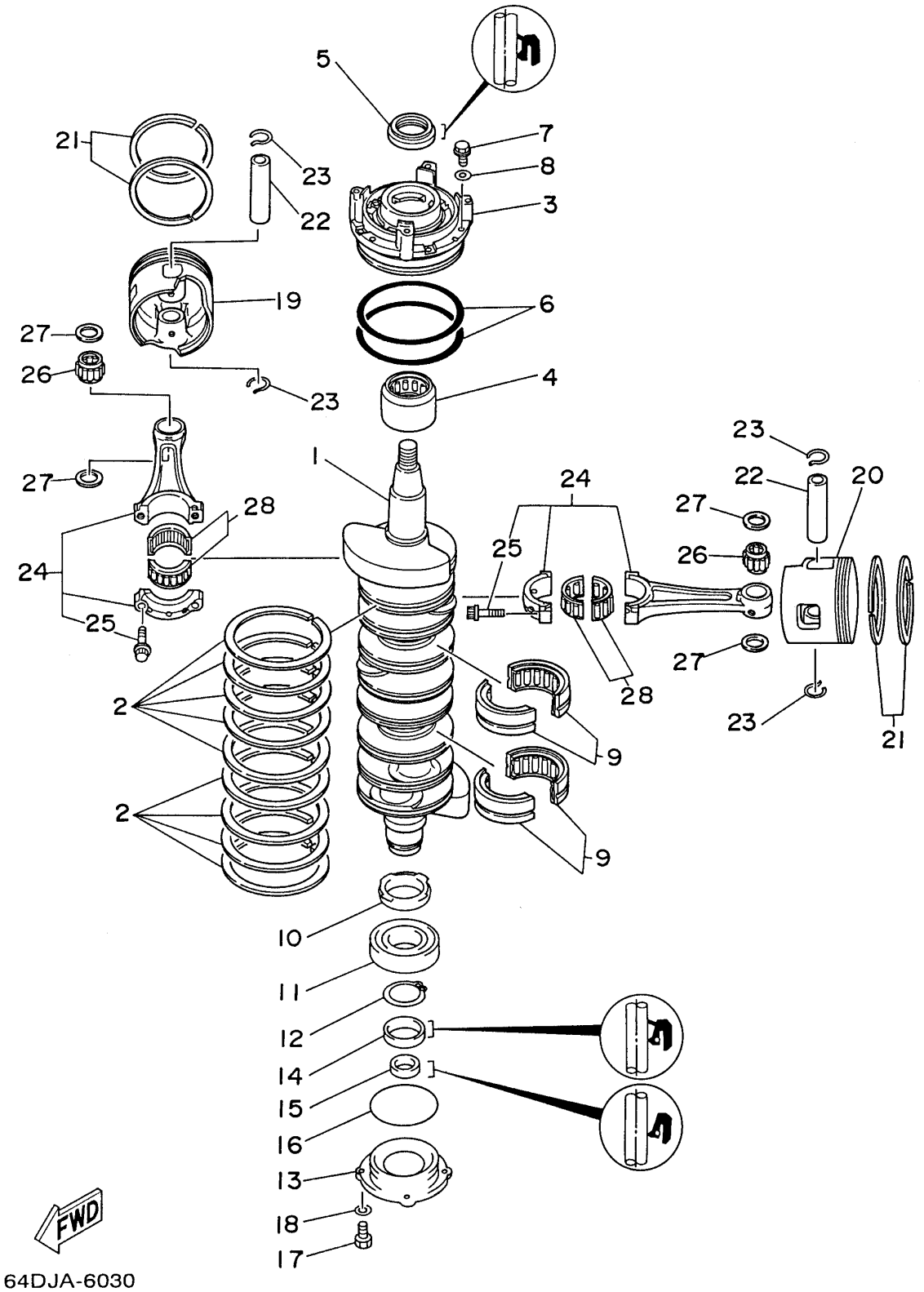
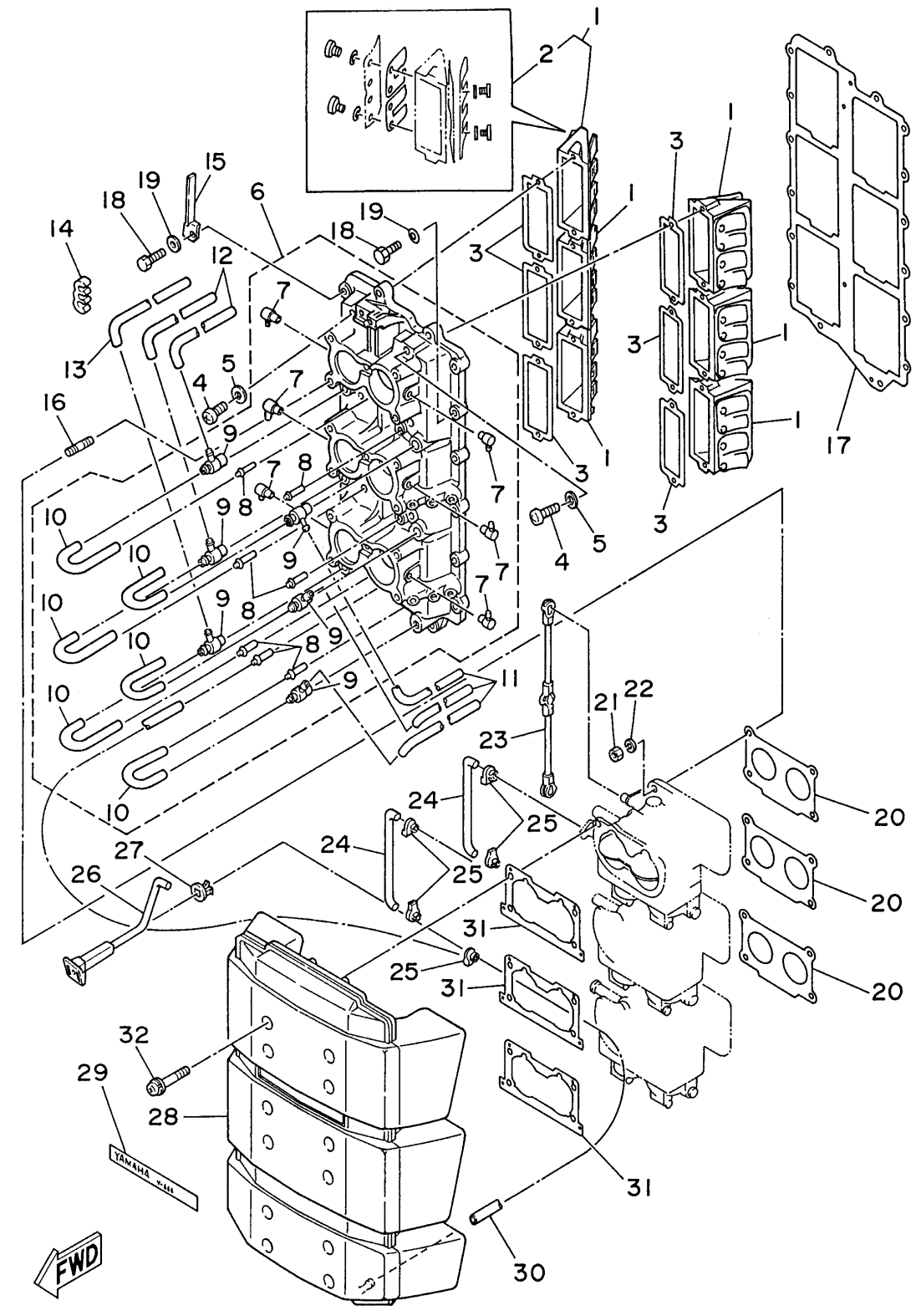
CRANKSHAFT - PISTON



64DJA-6030

Ref. No.	Part Number	Description	Qty	Remarks
22	6R5-11633-10-00	PIN, PISTON	6	
23	6R5-11634-10-00	CLIP, PISTON PIN	12	
24	6R5-11650-10-00	CONNECTING ROD ASSEMBLY	6	
25	90109-08M61-00	. BOLT	2	
26	93310-323V6-00	BEARING	6	
27	90201-23M01-00	WASHER, PLATE	12	
28	93310-836V2-00	BEARING	6	

INTAKE 1

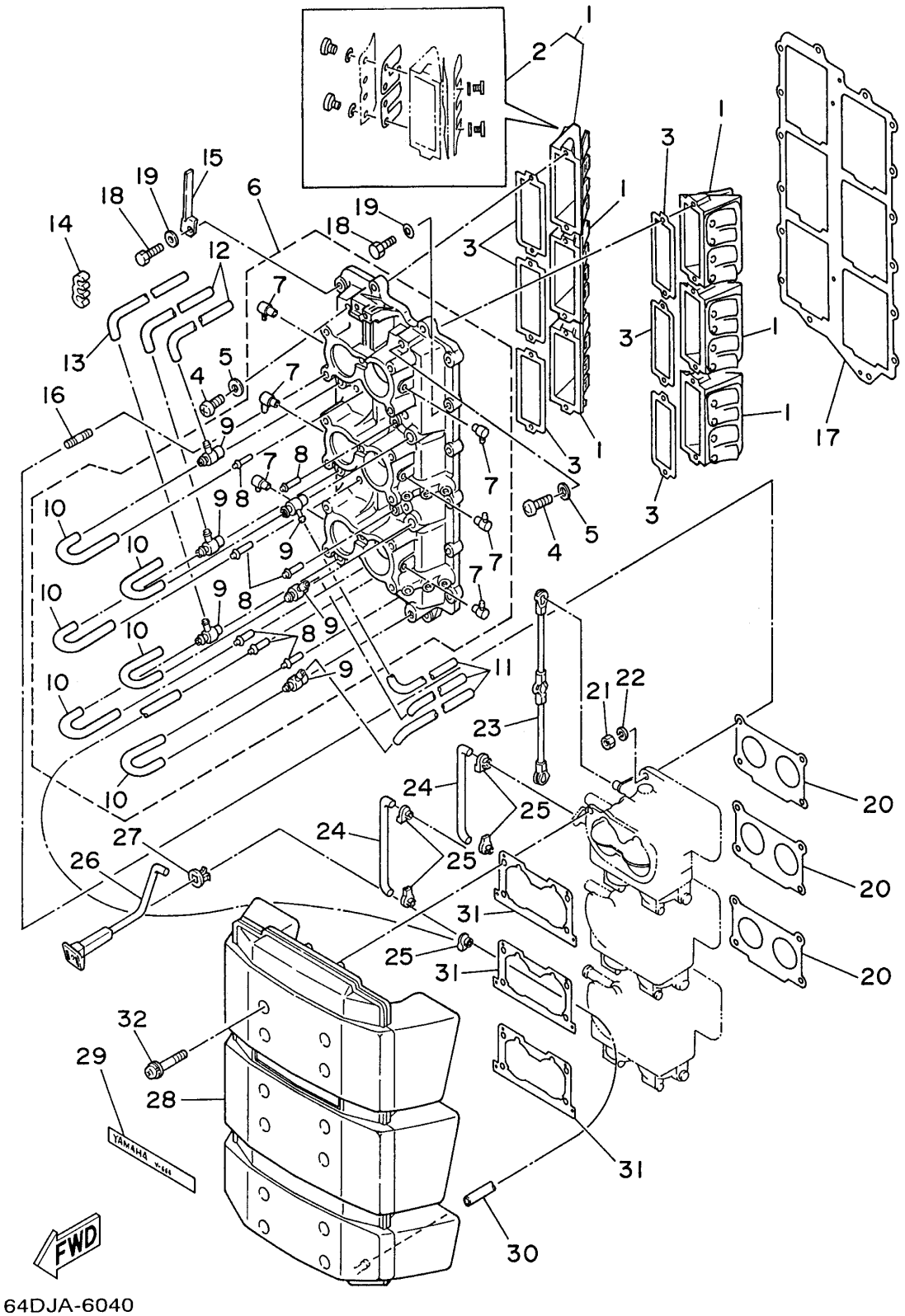


64DJA-6040

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-13610-00-00	REED VALVE ASSEMBLY	6	
2	6E5-W0004-00-00	. REED SET	1	
3	6E5-13621-A1-00	GASKET, VALVE SEAT	6	
4	98580-05016-00	SCREW, PAN HEAD	12	
5	92990-05600-00	WASHER, PLATE	12	
6	6G5-13641-11-94	MANIFOLD 1	1	
7	6E5-13552-00-00	. NOZZLE	6	
8	624-14485-00-00	. PIPE, JOINT	7	
9	6E5-11370-00-00	. CHECK VALVE ASSEMBLY ..	6	
10	90445-07M28-00	. HOSE	6	
11	90445-07M45-00	HOSE	3	
12	90445-07M46-00	HOSE	2	
13	90445-07M59-00	HOSE	1	
14	90464-07M05-00	CLAMP	2	
15	90465-07M20-00	CLAMP	2	
16	90116-06M30-00	BOLT, STUD	12	
17	6G5-13645-A1-00	GASKET, MANIFOLD 1	1	
18	97013-06025-00	BOLT	16	
19	92990-06600-00	WASHER, PLATE	16	
20	6E5-14198-A2-00	GASKET	3	
21	95380-06600-00	NUT	12	
22	92995-06100-00	WASHER, SPRING	12	
23	6G5-41217-01-00	ROD, ACCEL. LEVER	1	
24	6E5-41256-01-00	ROD, CHOKE 1	2	
25	661-41262-02-00	JOINT, CHOKE LEVER	5	
26	6R3-41271-00-00	KNOB, CHOKE	1	
27	689-41273-00-00	GROMMET	1	
28	64D-14440-00-00	SILENCER ASSEMBLY, INTAKE	1	UR 150/175
	6R3-14440-01-00	SILENCER ASSEMBLY, INTAKE	1	UR NOT S/W

CONTINUED ON NEXT FRAME ➤

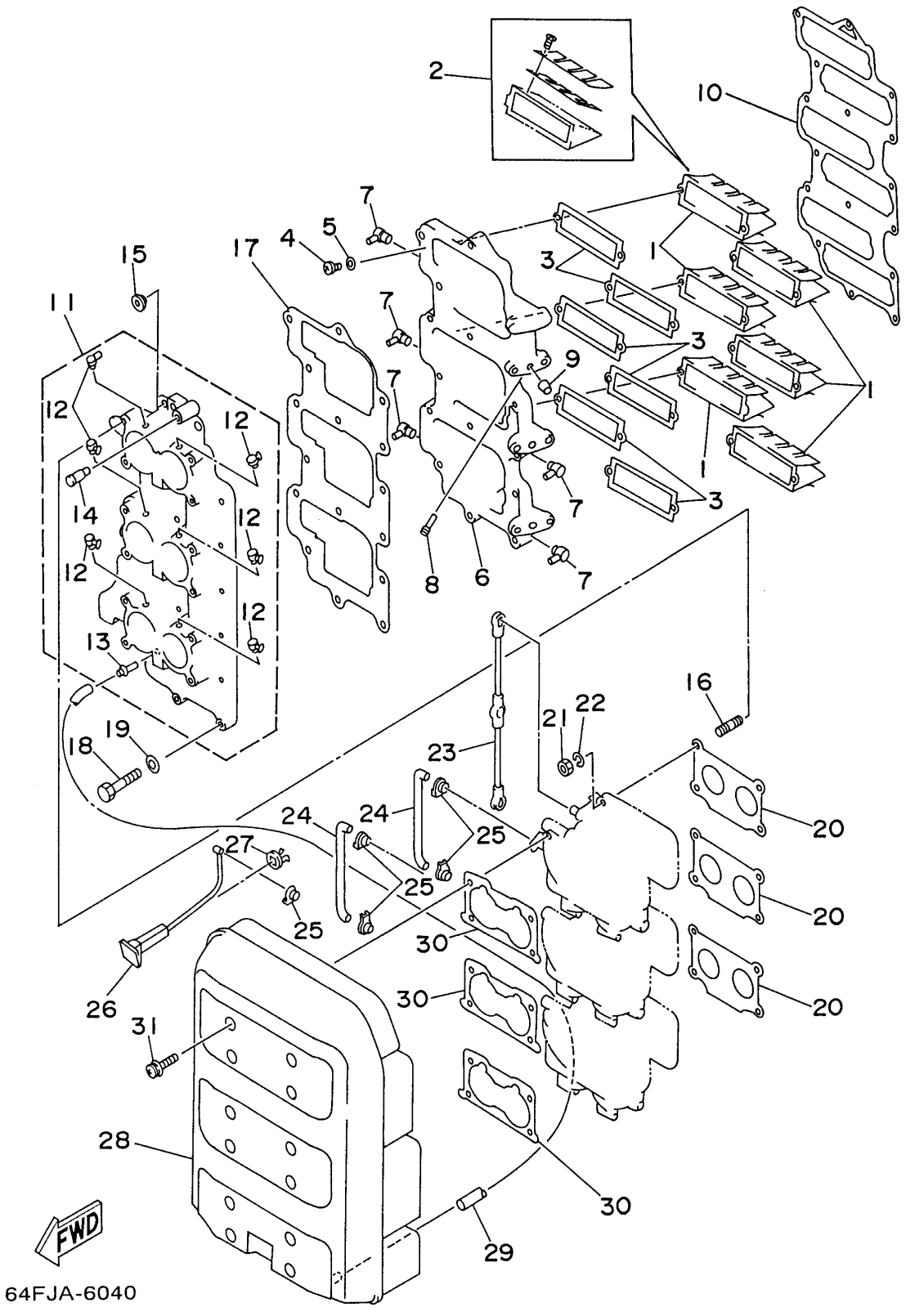
INTAKE 1



64DJA-6040

Ref. No.	Part Number	Description	Qty	Remarks
29	6G5-1441K-00-00	EMBLEM	1	UR NOT S/W
30	90445-07MA3-00	HOSE	1	
31	6K7-14483-00-00	GASKET	3	
32	90159-06M08-00	SCREW, WITH WASHER	12	UR 150/175
	90159-06M14-00	SCREW, WITH WASHER	12	UR NOT S/W

INTAKE 2 (200 - L200:SALTWATER SER

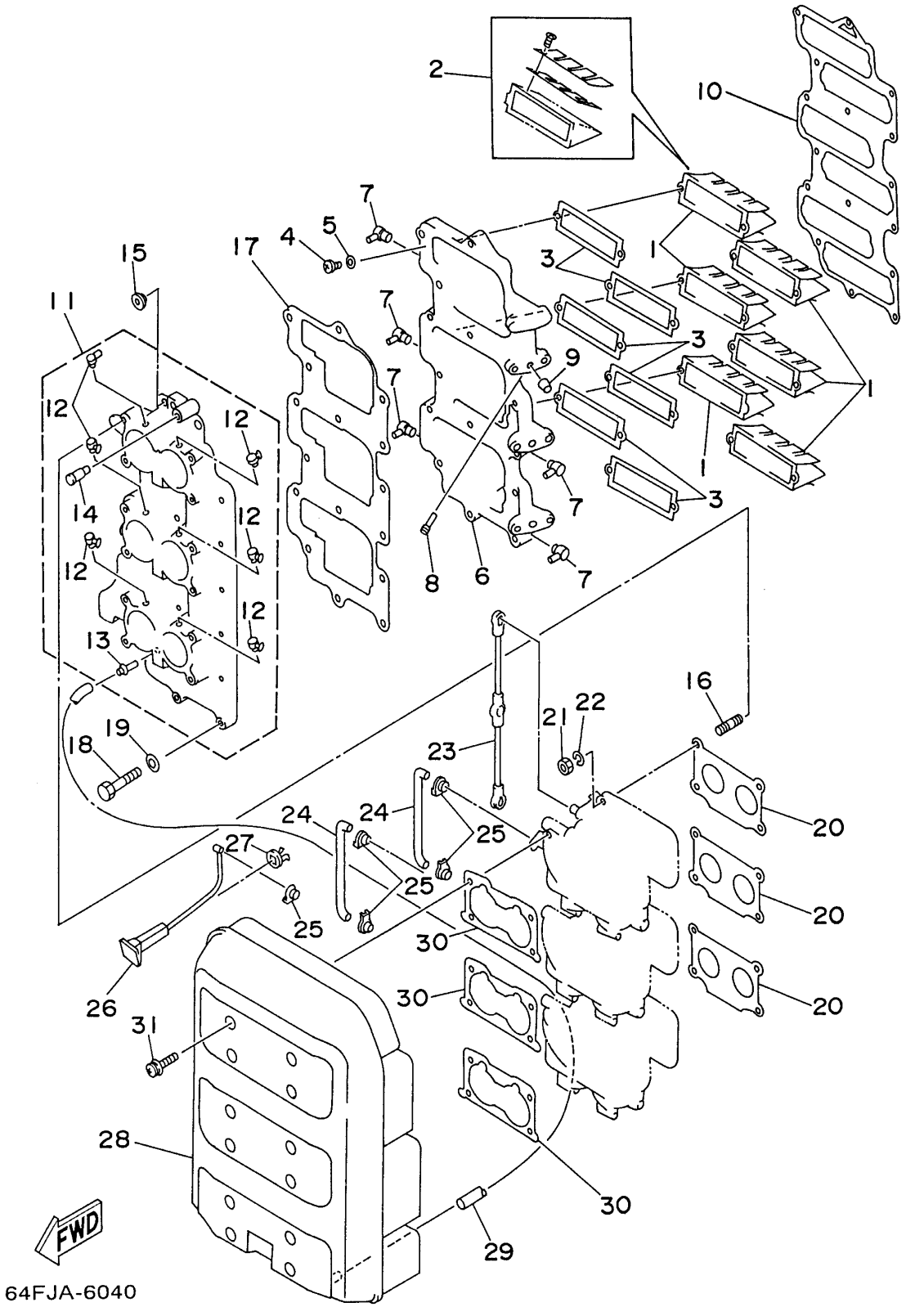


64FJA-6040

Ref. No.	Part Number	Description	Qty	Remarks
1	6K7-13610-00-00	REED VALVE ASSEMBLY	6	
2	6E5-W0004-00-00	. REED SET	1	
3	6K7-13621-A1-00	GASKET, VALVE SEAT	6	
4	98580-05016-00	SCREW, PAN HEAD	12	
5	92990-05600-00	WASHER, PLATE	12	
6	64E-13624-00-94	PLATE, REED VALVE	1	
7	6H4-11372-00-00	NIPPLE HOSE	5	
8	6R5-14485-00-00	PIPE, JOINT	1	
9	90336-08M06-00	PLUG, TAPER	1	
10	6K7-13646-A2-00	GASKET, MANIFOLD 2	1	
11	64E-13641-00-94	MANIFOLD 1	1	
12	6E5-13552-00-00	. NOZZLE	6	
13	624-14485-00-00	. PIPE, JOINT	1	
14	6K7-81338-01-00	. CLAMP, LEAD	1	
15	90480-10M28-00	GROMMET	6	
16	90116-06M30-00	BOLT, STUD	12	
17	64E-13645-A0-00	GASKET, MANIFOLD 1	1	
18	97013-06050-00	BOLT	16	
19	92990-06600-00	WASHER, PLATE	16	
20	6E5-14198-A2-00	GASKET	3	
21	95380-06600-00	NUT	12	
22	92995-06100-00	WASHER, SPRING	12	
23	6G5-41217-01-00	ROD, ACCEL. LEVER	1	
24	6E5-41256-01-00	ROD, CHOKE 1	2	
25	661-41262-02-00	JOINT, CHOKE LEVER	5	
26	61H-41271-10-00	KNOB, CHOKE	1	
27	689-41273-00-00	GROMMET	1	
28	64D-14440-00-00	SILENCER ASSEMBLY, INTAKE	1	
29	90445-07MA3-00	HOSE	1	

CONTINUED ON NEXT FRAME ➤

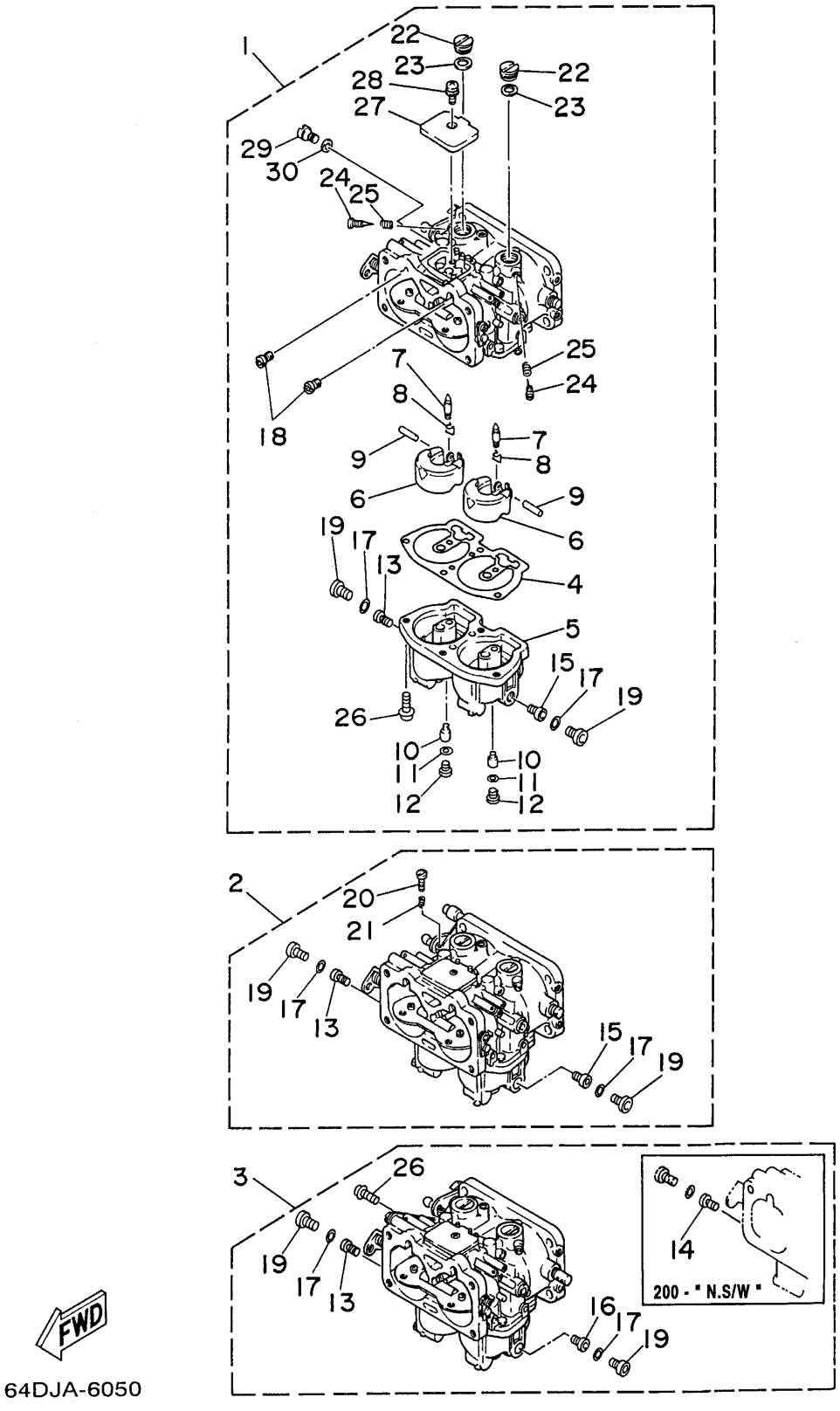
INTAKE 2 (200 - L200:SALTWATER SER



64FJA-6040

Ref. No.	Part Number	Description	Qty	Remarks
30	6K7-14483-00-00	GASKET	3	
31	90159-06M08-00	SCREW, WITH WASHER	12	

CARBURETOR

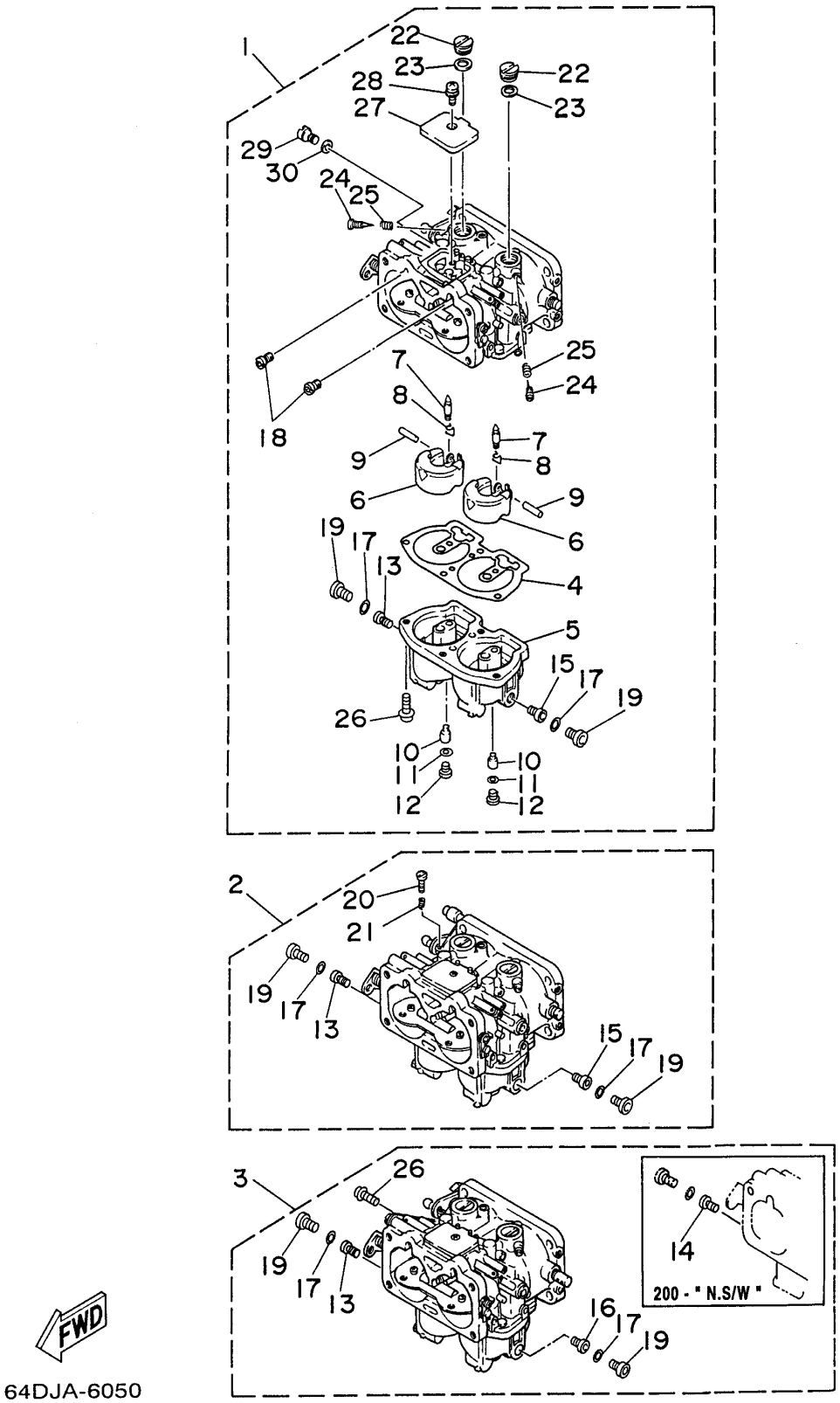


64DJA-6050

Ref. No.	Part Number	Description	Qty	Remarks
1	64C-14301-00-00	CARBURETOR ASSEMBLY 1 .	1	UR 150 NOT S/W
	64C-14301-S0-00	CARBURETOR ASSEMBLY 1 .	1	UR 150/L150
	64D-14301-00-00	CARBURETOR ASSEMBLY 1 .	1	UR 175 NOT S/W
	64D-14301-S0-00	CARBURETOR ASSEMBLY 1 .	1	UR 175-S/W
	64E-14301-00-00	CARBURETOR ASSEMBLY 1 .	1	UR 200 NOT S/W
	64E-14301-S0-00	CARBURETOR ASSEMBLY 1 .	1	UR 200/L200
2	64C-14302-00-00	CARBURETOR ASSEMBLY 2 .	1	UR 150 NOT S/W
	64C-14302-S0-00	CARBURETOR ASSEMBLY 2 .	1	UR 150/L150
	64D-14302-00-00	CARBURETOR ASSEMBLY 2 .	1	UR 175 NOT S/W
	64D-14302-S0-00	CARBURETOR ASSEMBLY 2 .	1	UR 175-S/W
	64E-14302-00-00	CARBURETOR ASSEMBLY 2 .	1	UR 200 NOT S/W
	64E-14302-S0-00	CARBURETOR ASSEMBLY 2 .	1	UR 200/L200
3	64C-14303-00-00	CARBURETOR ASSEMBLY 3 .	1	UR 150 NOT S/W
	64C-14303-S0-00	CARBURETOR ASSEMBLY 3 .	1	UR 150/L150
	64D-14303-00-00	CARBURETOR ASSEMBLY 3 .	1	UR 175 NOT S/W
	64D-14303-S0-00	CARBURETOR ASSEMBLY 3 .	1	UR 175-S/W
	64E-14303-00-00	CARBURETOR ASSEMBLY 3 .	1	UR 200 NOT S/W
	64E-14303-S0-00	CARBURETOR ASSEMBLY 3 .	1	UR 200/L200
4	64D-14384-00-00	. GASKET, FLOAT CHAMBER .	3	
5	64D-14381-00-00	. BODY, FLOAT CHAMBER ...	3	UR NOT S/W
	64D-14381-10-00	. BODY, FLOAT CHAMBER ...	3	UR S/W
6	6E5-14385-02-00	. FLOAT	6	
7	6E5-14546-00-00	. VALVE, NEEDLE	6	
8	6E5-14159-00-00	. CLIP	6	
9	6E5-14386-02-00	. PIN, FLOAT	6	
10	64D-1492F-42-00	. JET, AIR SLOW (#84)	6	
11	61U-14959-00-00	. GASKET	6	
12	64D-14394-00-00	. VALVE, DRAIN	6	
13	64D-1492E-71-00	. JET, MAIN (#142) 0 1	3	UR 150/175

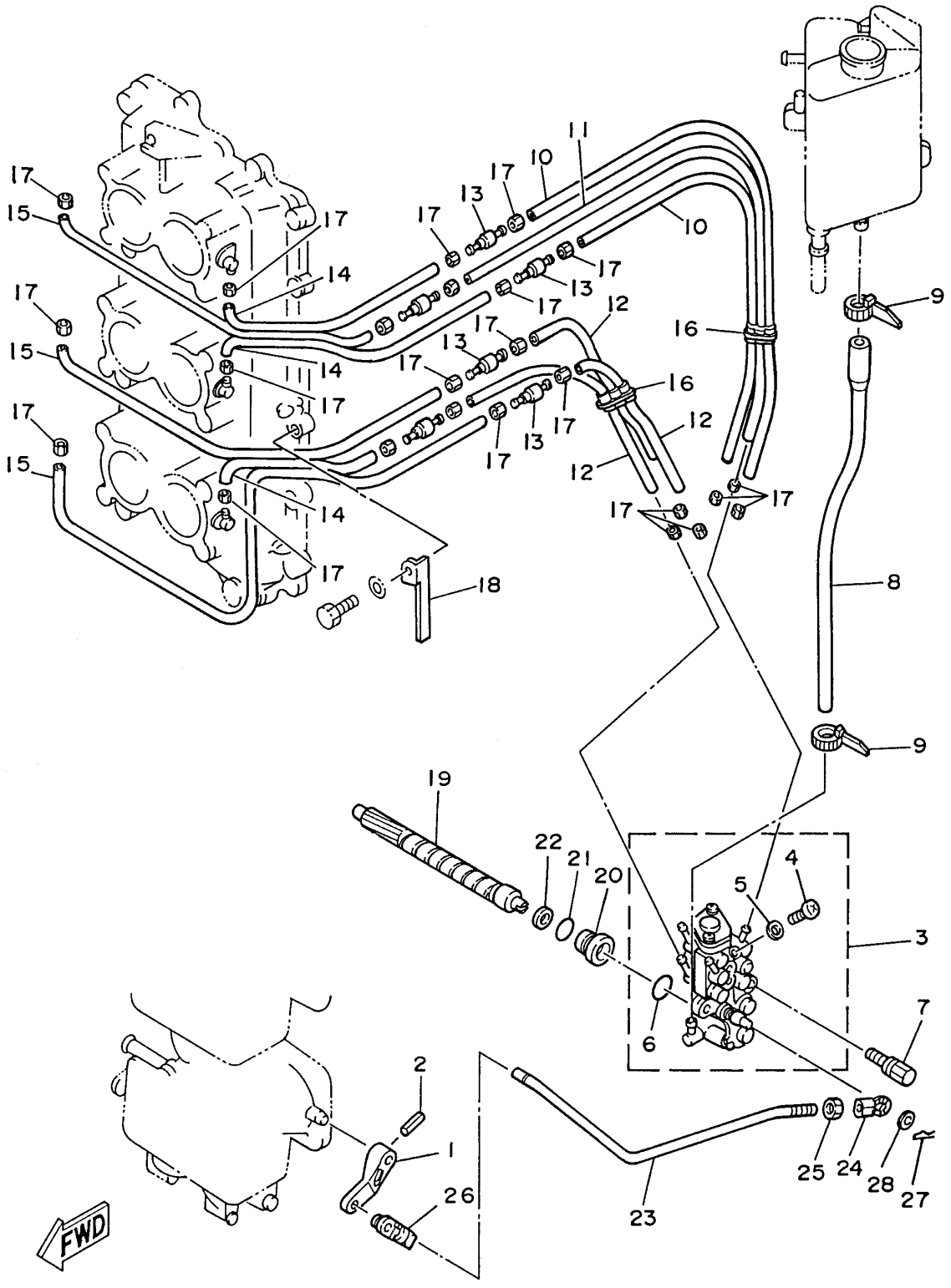
CONTINUED ON NEXT FRAME ➤

CARBURETOR



Ref. No.	Part Number	Description	Qty	Remarks
13	64D-1492E-73-00	. JET, MAIN (#146)	3	UR 200/L200
	64D-1492E-75-00	. JET, MAIN (#150)	2	UR 200 NOT S/W
	64D-1492E-75-00	. JET, MAIN (#150)	3	UR 150/175 NOT S/W
14	64D-1492E-76-00	. JET, MAIN (#152)	1	UR 200 NOT S/W
15	64D-1492E-71-00	. JET, MAIN (#142) 0 1	2	UR 150/175
	64D-1492E-73-00	. JET, MAIN (#146)	2	UR 200/L200
	64D-1492E-77-00	. JET, MAIN (#154)	2	UR NOT S/W
16	64D-1492E-71-00	. JET, MAIN (#142) 0 1	1	UR 150/175
	64D-1492E-73-00	. JET, MAIN (#146)	1	UR 200/L200
	64D-1492E-79-00	. JET, MAIN (#158)	1	UR NOT S/W
17	6E5-14398-01-00	. GASKET	6	
18	61A-1492H-12-00	. JET, SLOW AIR BLEED (#60)	6	
19	61A-14383-01-00	. SCREW, DRAIN	6	
20	6E5-14321-00-00	. SCREW, THROTTLE	1	CENTER
21	6J8-14334-00-00	. SPRING, THROTTLE	1	CENTER
22	6E5-14328-01-00	. PLUG	6	
23	6E5-14979-00-00	. GASKET	6	
24	6E5-14323-03-00	. SCREW, AIR ADJUSTING . . .	6	
25	6E5-14223-00-00	. SPRING, AIR ADJUSTING . . .	6	
26	97980-05116-00	. SCREW, WITH WASHER	12	
	97980-05116-00	. SCREW, WITH WASHER	13	UR 150/175 NOT S/W
27	6E5-14527-01-00	. PLATE	3	
28	97980-05108-00	. SCREW, WITH WASHER	3	
29	6E5-14324-00-00	. SCREW, FLAT HEAD	3	
30	6J8-14995-00-00	. GASKET	3	

OIL PUMP 1

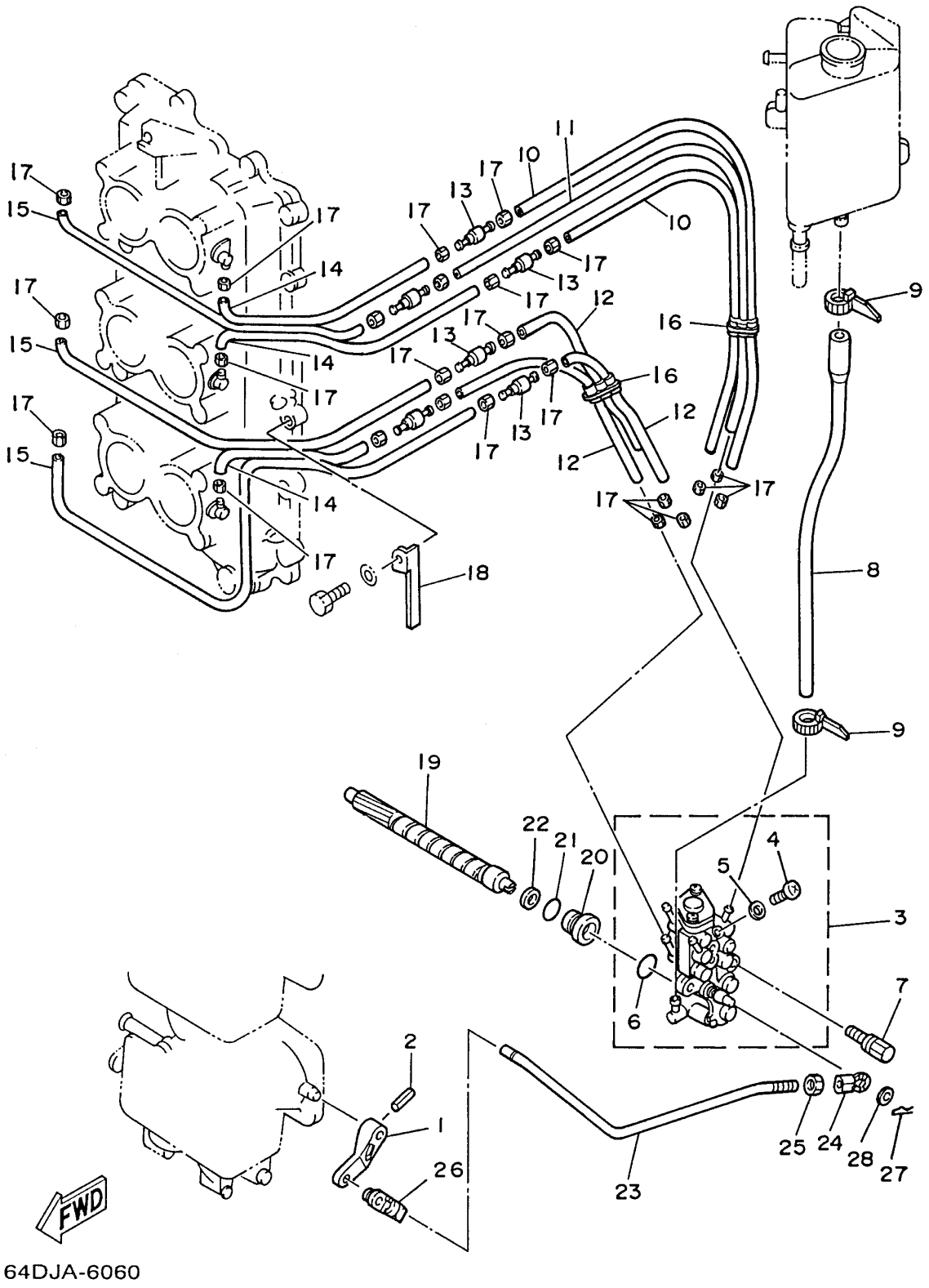


64DJA-6060

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-14276-01-00	LEVER	1	
2	91690-30016-00	PIN, SPRING	1	
3	6R4-13200-00-00	OIL INJECTION PUMP ASSEMBLY	1	UR 150/ 175/L150
	6R5-13200-10-00	OIL INJECTION PUMP ASSEMBLY	1	UR 200 NOT S/W
4	716-24444-00-00	. SCREW	1	
5	1YU-13187-00-00	. GASKET, BREATHER BOLT	1	
6	93210-19MA7-00	. O-RING	1	
7	90109-06M40-00	BOLT	2	
8	6R3-13416-00-00	PIPE, OIL 1	1	
9	90465-11M10-00	CLAMP	2	
10	90445-07M72-00	HOSE	2	
11	90445-07M89-00	HOSE	1	
12	90445-07M83-00	HOSE	3	
13	6R3-13183-10-00	VALVE, CHECK	6	
14	90445-07M87-00	HOSE	3	
15	90446-07M36-00	HOSE	3	
16	90464-07M05-00	CLAMP	2	
17	90468-07M02-00	CLIP	24	
18	90465-07M20-00	CLAMP	2	
19	6R3-11537-00-00	GEAR, DRIVEN	1	
20	6R3-13117-00-00	COLLAR, DISTANCE	1	
21	93210-13595-00	O-RING	1	
22	90202-08M44-00	WASHER, PLATE	1	
23	6R3-41241-00-00	ROD, LINK	1	
24	6H1-41237-00-00	JOINT, LINK	1	
25	95380-05600-00	NUT	1	
26	6R5-41237-00-00	JOINT, LINK	1	

CONTINUED ON NEXT FRAME ➤

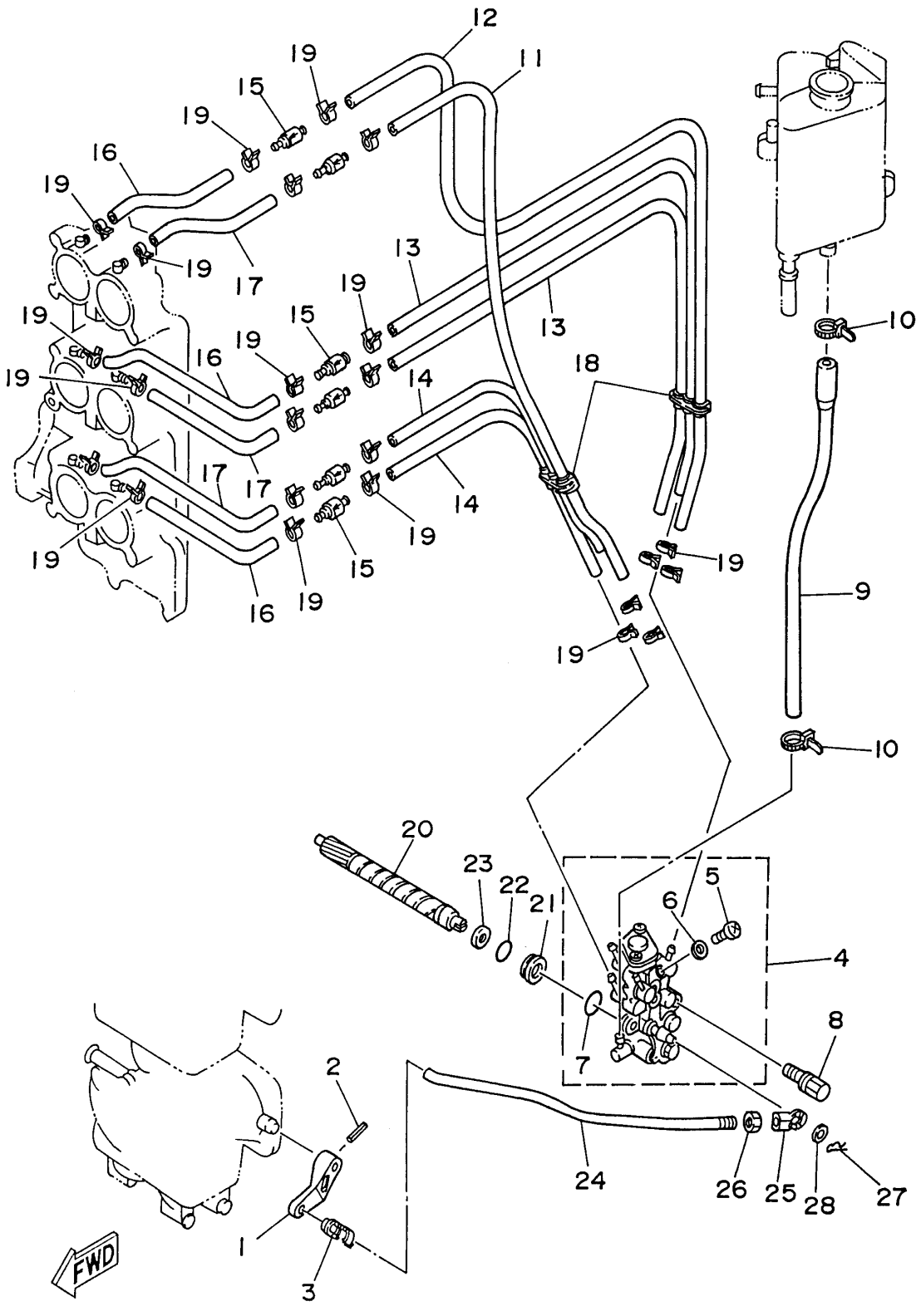
OIL PUMP 1



64DJA-6060

Ref. No.	Part Number	Description	Qty	Remarks
27	90468-05M03-00	CLIP	1	
28	90202-05088-00	WASHER, PLATE	1	

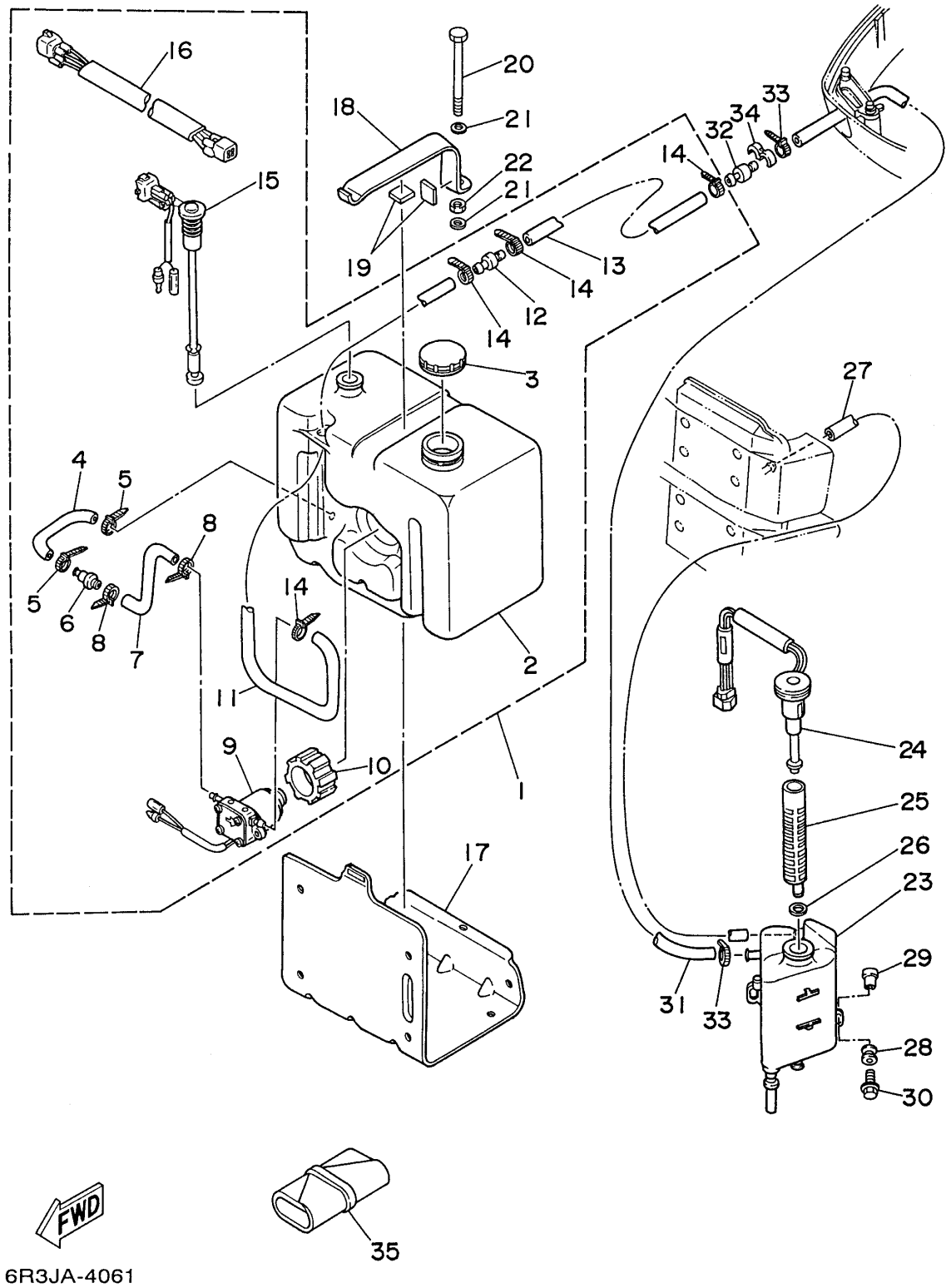
OIL PUMP 2 (200 - L200:SALTWATER SP



64FJA-6060

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-14276-01-00	LEVER	1	
2	91690-30016-00	PIN, SPRING	1	
3	6R5-41237-00-00	JOINT, LINK	1	
4	6R5-13200-10-00	OIL INJECTION PUMP ASSEMBLY	1	
5	716-24444-00-00	. SCREW	1	
6	1YU-13187-00-00	. GASKET, BREATHER BOLT	1	
7	93210-19MA7-00	. O-RING	1	
8	90109-06M40-00	BOLT	2	
9	6R3-13416-00-00	PIPE, OIL 1	1	
10	90465-11M10-00	CLAMP	2	
11	90445-07M77-00	HOSE	1	
12	90445-07M85-00	HOSE	1	
13	90445-07M72-00	HOSE	2	
14	90445-07M02-00	HOSE	2	
15	6R3-13183-10-00	VALVE, CHECK	6	
16	90445-07M87-00	HOSE	3	
17	90445-07M07-00	HOSE	3	
18	90464-07M05-00	CLAMP	2	
19	90468-07M02-00	CLIP	24	
20	6R3-11537-00-00	GEAR, DRIVEN	1	
21	6R3-13117-00-00	COLLAR, DISTANCE	1	
22	93210-13595-00	O-RING	1	
23	90202-08M44-00	WASHER, PLATE	1	
24	6R5-41241-00-00	ROD, LINK	1	
25	6H1-41237-00-00	JOINT, LINK	1	
26	95380-05600-00	NUT	1	
27	90468-05M03-00	CLIP	1	
28	90202-05088-00	WASHER, PLATE	1	

OIL TANK

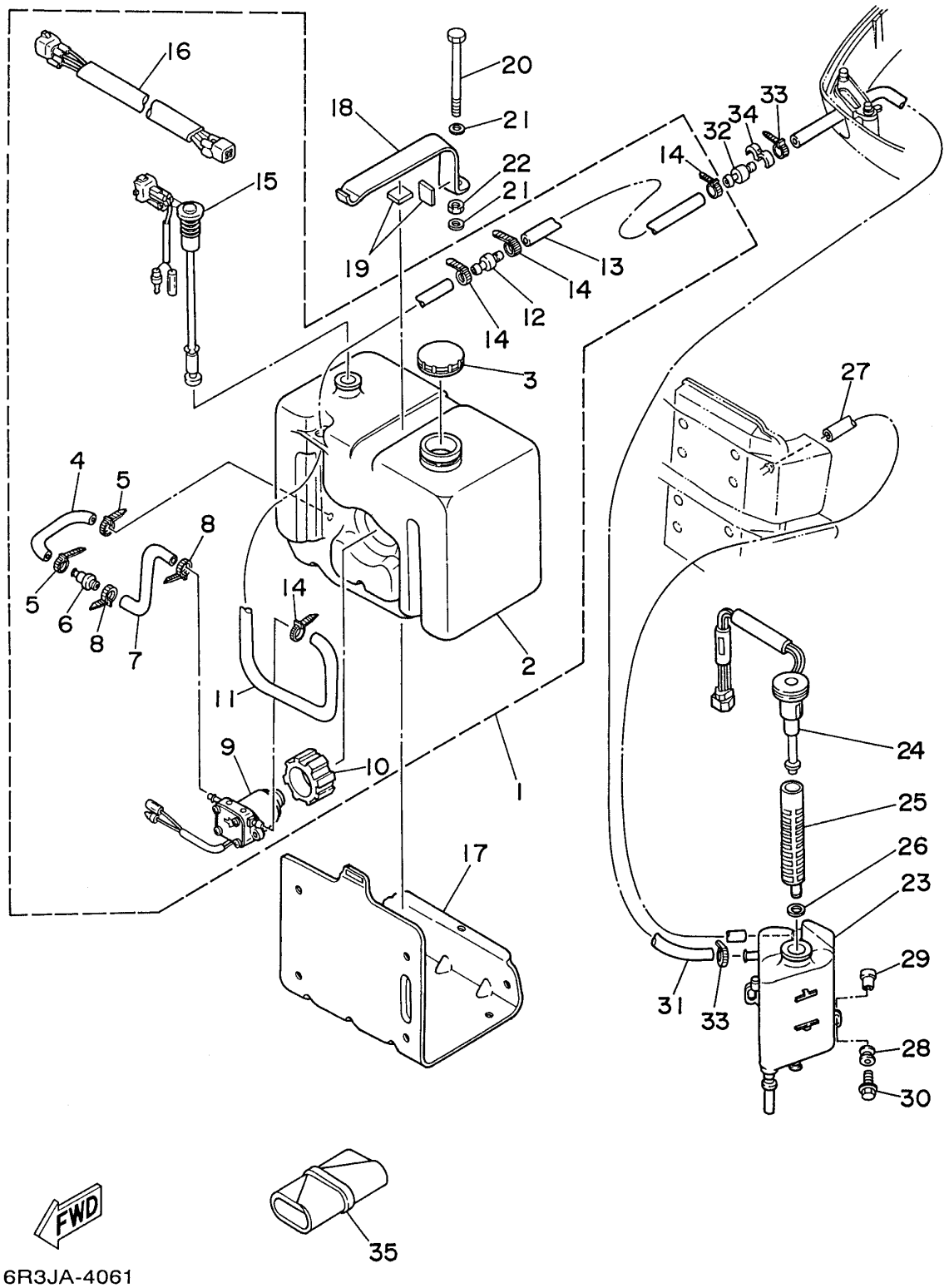


6R3JA-4061

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-21708-08-00	OIL TANK SUB-ASSEMBLY . . .	1	UR 150/ 175/200
	6K1-21708-04-00	OIL TANK SUB ASSEMBLY . . .	1	UR L150/ L200
2	6E5-21733-02-00	. SUB TANK, OIL (10.5L)	1	
3	6E5-21770-03-00	. OIL TANK CAP ASSEMBLY . .	1	
4	6E5-24322-00-00	. PIPE 1	1	
5	90465-11M10-00	. CLAMP	2	
6	646-24251-02-00	. STRAINER 1	1	
7	6E5-24319-01-00	. PIPE, OIL	1	
8	90465-11M10-00	. CLAMP	2	
9	6E5-81900-01-00	. OIL FEED PUMP ASSEMBLY .	1	
10	6E5-81922-00-00	. GROMMET	1	
11	6E5-24321-01-00	. PIPE 0	1	
12	6E5-24379-00-00	. PIPE, JOINT 4	1	
13	90445-11M00-00	. HOSE (L:8000)	1	UR L150/ L200
	90445-11M81-00	. HOSE (L:3000)	1	UR 150/ 175/200
14	90465-11M10-00	. CLAMP	4	
15	6E5-85720-04-00	. OIL LEVEL GAUGE ASSEMBLY	1	
16	6R3-85721-30-00	. WIRE, LEAD (3M)	1	UR 150/ 175/200
	6R3-85721-80-00	. WIRE, LEAD	1	UR L150/ L200
17	6E5-21734-01-33	HOLDER, OIL SUB TANK	1	
18	6E5-21798-01-33	BRACKET, DAMPER	1	
19	6E5-21746-00-00	DAMPER	2	
20	97080-06100-00	BOLT	1	
21	92990-06600-00	WASHER, PLATE	2	
22	95380-06600-00	NUT	1	
23	6E5-21750-05-00	OIL TANK ASSEMBLY	1	
24	6R3-85730-02-00	OIL LEVEL GAUGE ASSEMBLY	1	
25	6E5-13411-00-00	STRAINER, OIL	1	

CONTINUED ON NEXT FRAME ➤

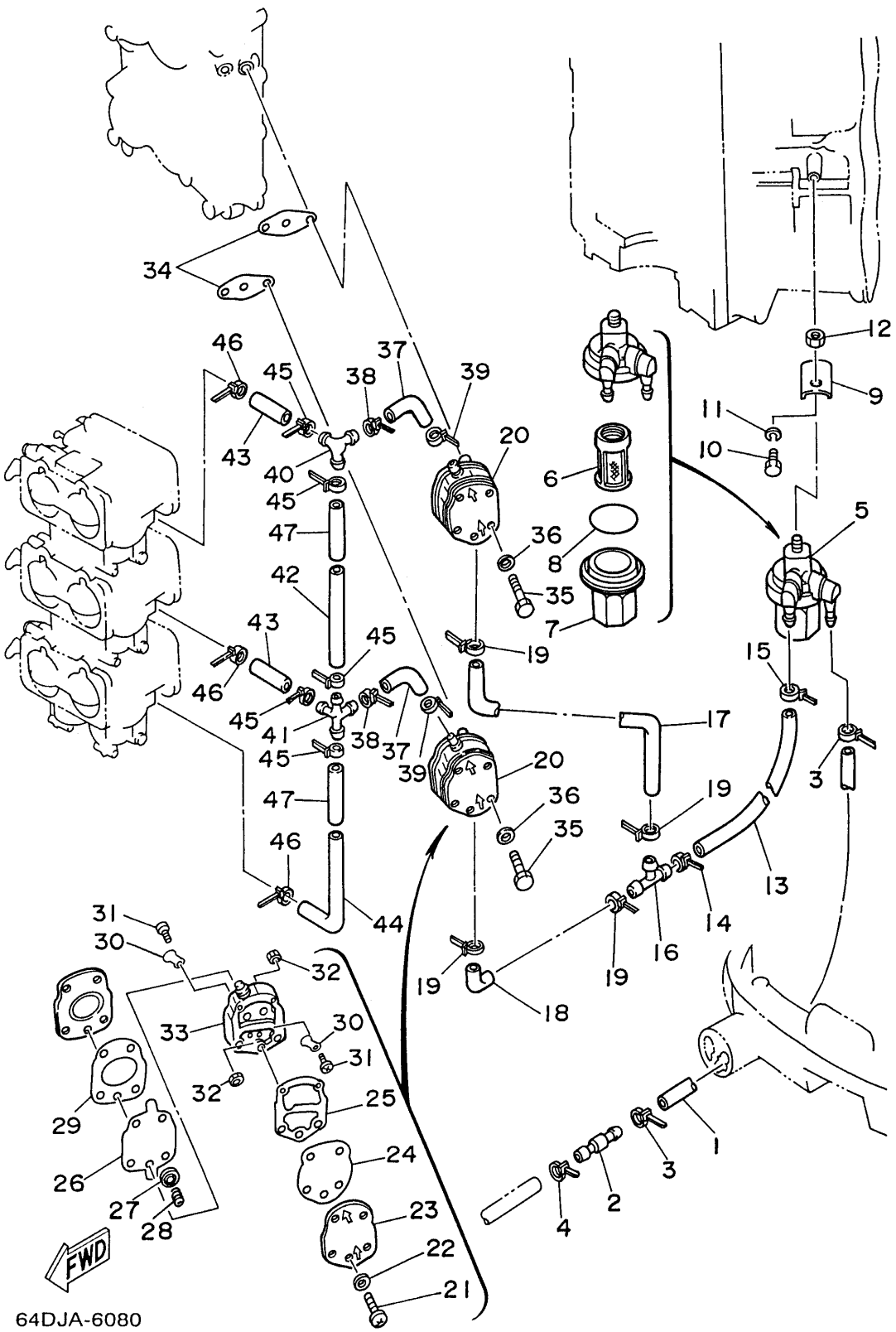
OIL TANK



6R3JA-4061

Ref. No.	Part Number	Description	Qty	Remarks
26	6E5-13414-00-00	GASKET, STRAINER COVER	1	
27	90445-05M02-00	HOSE	1	
28	6A0-82317-00-00	DAMPER, IGNITION COIL	3	
29	624-42542-00-00	PIPE	3	
30	90119-06M65-00	BOLT, WITH WASHER	3	
31	6R3-24323-01-00	PIPE 2	1	
32	6E5-24379-00-00	PIPE, JOINT 4	1	
33	90465-11M10-00	CLAMP	2	
34	90464-13M34-00	CLAMP	1	
35	656-W2810-02-00	TOOL KIT	1	

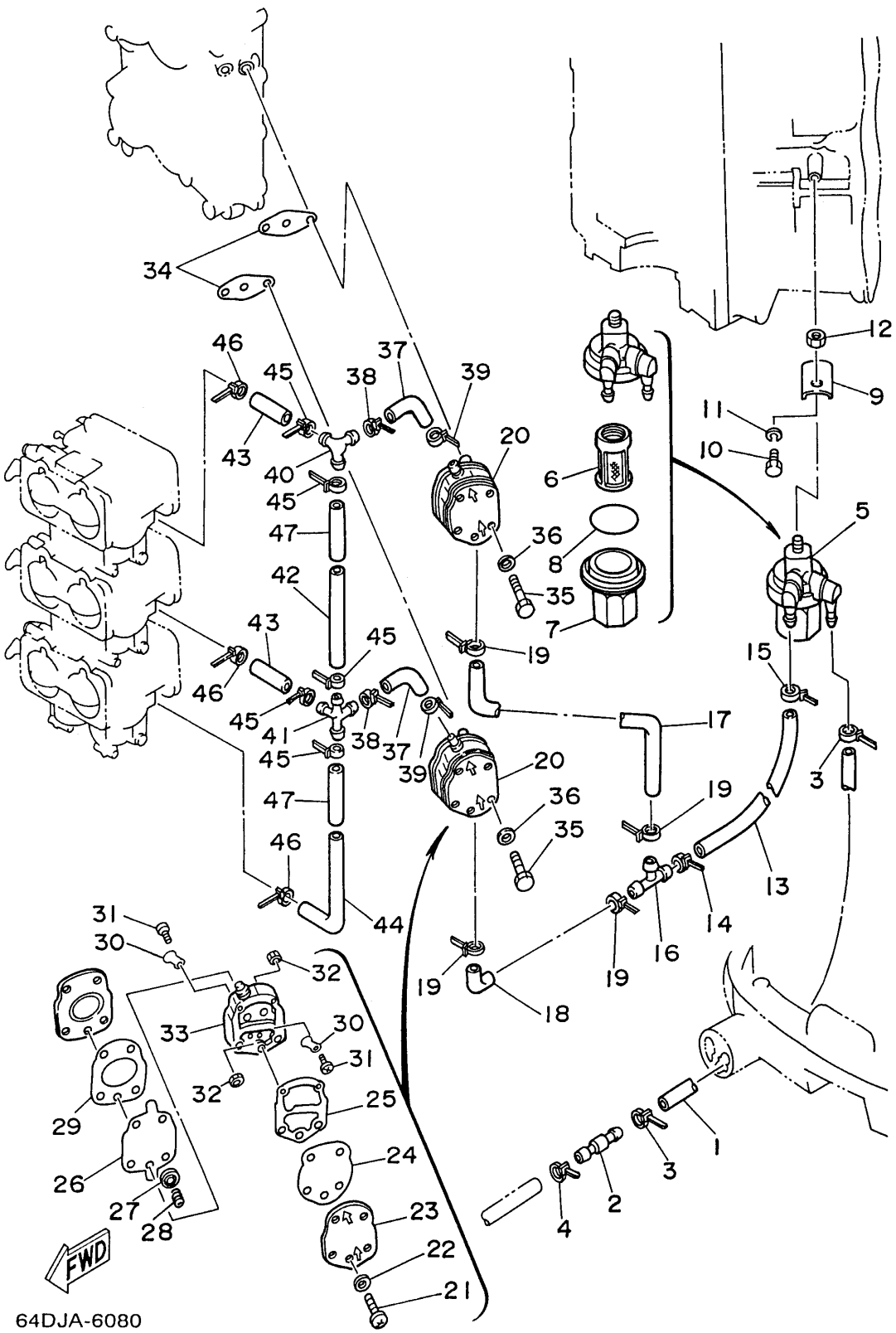
FUEL 1



Ref. No.	Part Number	Description	Qty	Remarks
1	6R3-24313-01-00	PIPE 3	1	
2	6R3-24377-00-00	PIPE, JOINT 3	1	
3	90465-11M10-00	CLAMP	2	
4	90465-11M10-00	CLAMP	1	
5	6R3-24560-00-00	FILTER ASSEMBLY	1	
6	61N-24563-00-00	. ELEMENT, FILTER	1	
7	61N-24521-00-00	. CUP, FILTER	1	
8	93210-32738-00	. O-RING	1	
9	648-24566-01-00	BRACKET, FILTER	1	
10	97313-06014-00	BOLT, HEXAGON	1	
11	92995-06100-00	WASHER, SPRING	1	
12	95380-08600-00	NUT	1	
13	6G5-24314-00-00	PIPE 4	1	
14	90465-11M10-00	CLAMP	1	
15	90465-11M10-00	CLAMP	1	
16	6E5-24378-00-00	PIPE, JOINT 4	1	
17	6G5-24315-00-00	PIPE 5	1	
18	6E5-24315-00-00	PIPE 5	1	
19	90465-11M10-00	CLAMP	4	
20	6E5-24410-03-00	FUEL PUMP ASSEMBLY	2	
21	98580-05035-00	. SCREW, PAN HEAD	3	
22	92990-05600-00	. WASHER, PLATE	3	
23	6E5-24413-00-00	. BODY 2	1	
24	6E5-24471-00-00	. DIAPHRAGM	1	
25	6E5-24435-00-00	. GASKET, BODY 2	1	
26	6E5-24411-00-00	. DIAPHRAGM	1	
27	648-24424-00-00	. SEAT, SPRING	1	
28	6E5-24423-00-00	. SPRING, DIAPHRAGM	1	
29	6E5-24434-02-00	. GASKET, BODY	1	

CONTINUED ON NEXT FRAME ➤

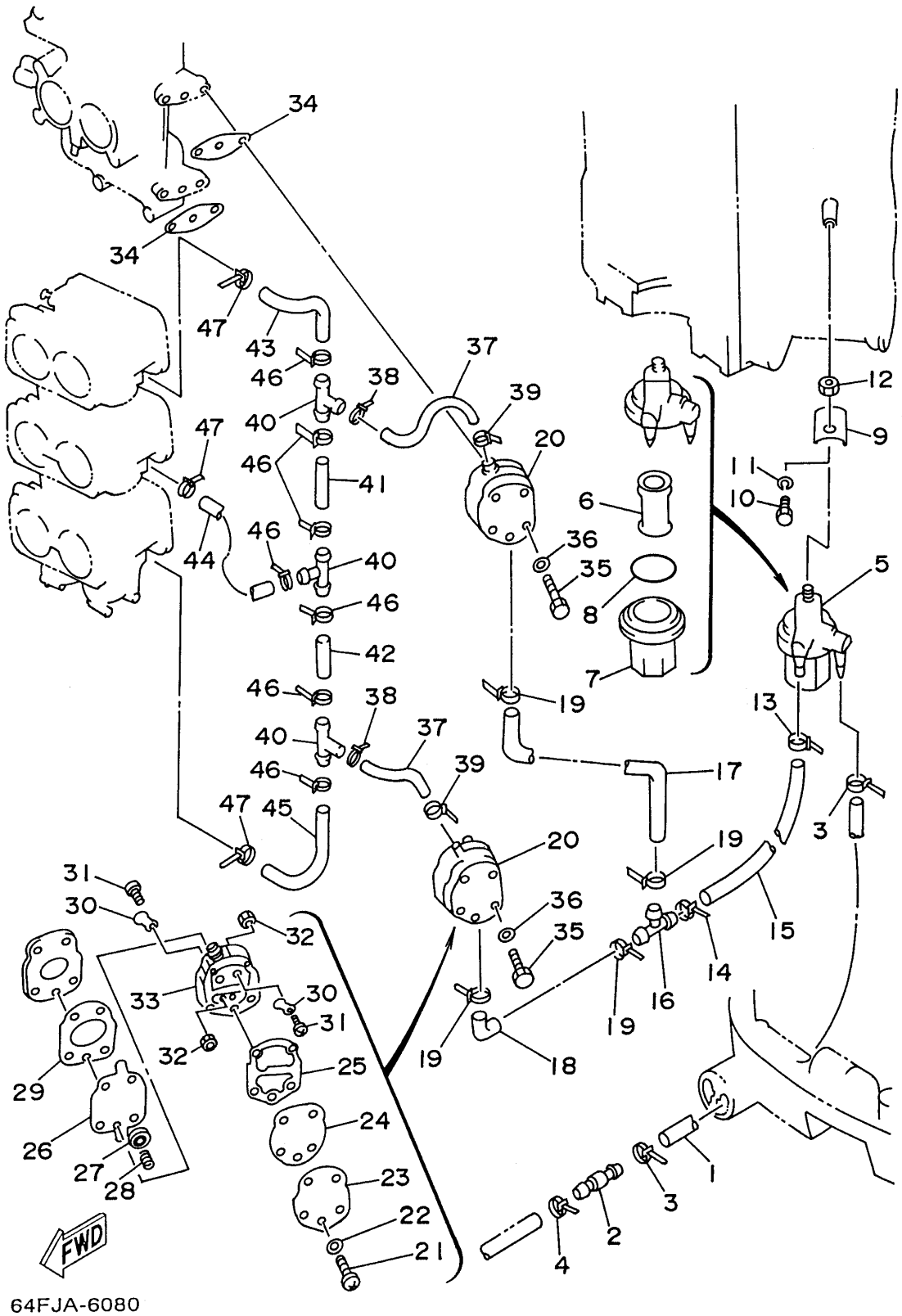
FUEL 1



64DJA-6080

Ref. No.	Part Number	Description	Qty	Remarks
30	6A0-24421-01-00	. VALVE, CHECK	4	
31	6A0-14325-00-00	. SCREW, PAN HEAD	4	
32	95380-03600-00	. NUT	4	
33	6E5-24412-02-00	. BODY 1	1	
34	650-24431-A0-00	GASKET, FUEL PUMP 1	2	
35	97595-06550-00	BOLT (97095-06050-00)	4	
36	92990-06600-00	WASHER, PLATE	4	
37	6G5-24316-10-00	PIPE 6	2	
38	90465-11M10-00	CLAMP	2	
39	90465-11M10-00	CLAMP	2	
40	6G5-24376-00-00	PIPE, JOINT 1	1	
41	6G5-24377-00-00	PIPE, JOINT 3	1	
42	6G5-24317-01-00	PIPE 7	1	
43	6G5-24318-10-00	PIPE, OVERFLOW	2	
44	6G5-24319-10-00	PIPE, OIL	1	
45	90465-11M10-00	CLAMP	5	
46	90465-11M10-00	CLAMP	3	
47	90446-15M07-00	HOSE	2	

FUEL 2 (200 - L200:SALTWATER SERIES

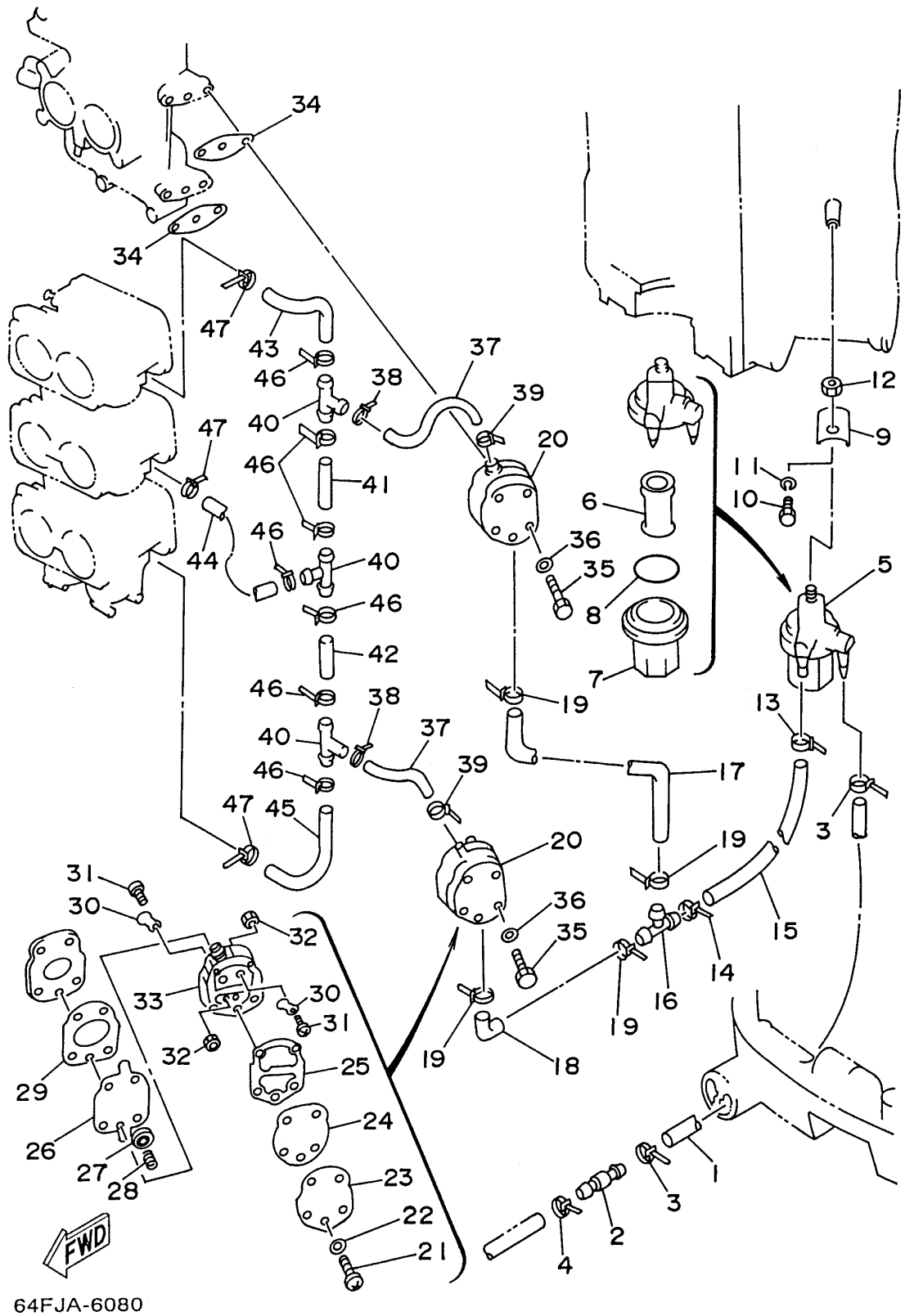


64FJA-6080

Ref. No.	Part Number	Description	Qty	Remarks
1	6R3-24313-01-00	PIPE 3	1	
2	6R3-24377-00-00	PIPE, JOINT 3	1	
3	90465-11M10-00	CLAMP	2	
4	90465-11M10-00	CLAMP	1	
5	6R3-24560-00-00	FILTER ASSEMBLY	1	
6	61N-24563-00-00	. ELEMENT, FILTER	1	
7	61N-24521-00-00	. CUP, FILTER	1	
8	93210-32738-00	. O-RING	1	
9	648-24566-01-00	BRACKET, FILTER	1	
10	97313-06014-00	BOLT, HEXAGON	1	
11	92995-06100-00	WASHER, SPRING	1	
12	95380-08600-00	NUT	1	
13	90465-11M10-00	CLAMP	1	
14	90465-11M10-00	CLAMP	1	
15	6G5-24314-00-00	PIPE 4	1	
16	6E5-24378-00-00	PIPE, JOINT 4	1	
17	6K7-24315-00-00	PIPE 5	1	
18	6E5-24315-00-00	PIPE 5	1	
19	90465-11M10-00	CLAMP	4	
20	6E5-24410-03-00	FUEL PUMP ASSEMBLY	2	
21	98580-05035-00	. SCREW, PAN HEAD	3	
22	92990-05600-00	. WASHER, PLATE	3	
23	6E5-24413-00-00	. BODY 2	1	
24	6E5-24471-00-00	. DIAPHRAGM	1	
25	6E5-24435-00-00	. GASKET, BODY 2	1	
26	6E5-24411-00-00	. DIAPHRAGM	1	
27	648-24424-00-00	. SEAT, SPRING	1	
28	6E5-24423-00-00	. SPRING, DIAPHRAGM	1	
29	6E5-24434-02-00	. GASKET, BODY	1	

CONTINUED ON NEXT FRAME ➤

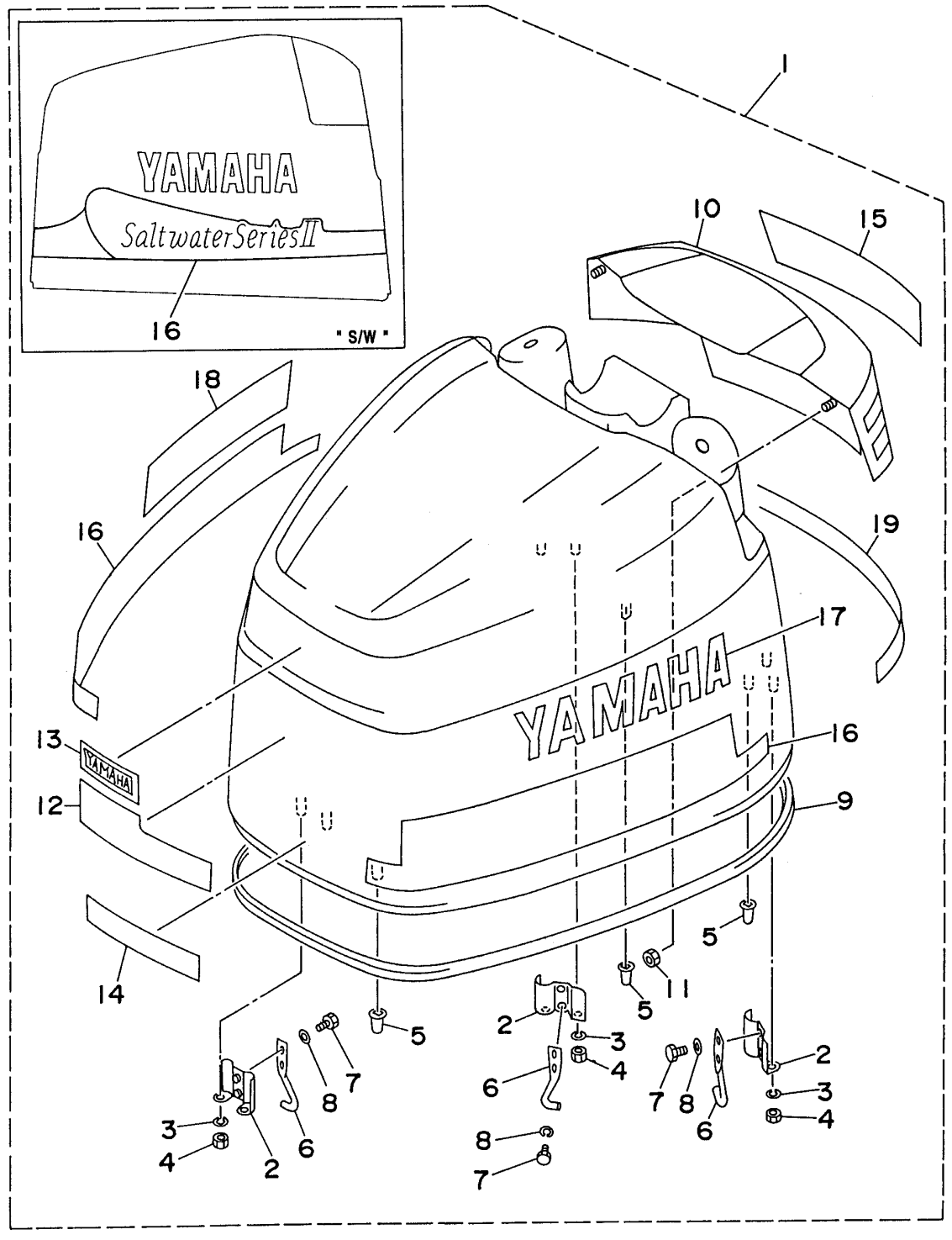
FUEL 2 (200 - L200:SALTWATER SERIES



64FJA-6080

Ref. No.	Part Number	Description	Qty	Remarks
30	6A0-24421-01-00	. VALVE, CHECK	4	
31	6A0-14325-00-00	. SCREW, PAN HEAD	4	
32	95380-03600-00	. NUT	4	
33	6E5-24412-02-00	. BODY 1	1	
34	650-24431-A0-00	GASKET, FUEL PUMP 1	2	
35	97595-06550-00	BOLT (97095-06050-00)	4	
36	92990-06600-00	WASHER, PLATE	4	
37	6G5-24316-10-00	PIPE 6	2	
38	90465-11M10-00	CLAMP	2	
39	90465-11M10-00	CLAMP	2	
40	6E5-24378-00-00	PIPE, JOINT 4	3	
41	90445-13M03-00	HOSE	1	
42	90445-13M02-00	HOSE	1	
43	6K7-24317-00-00	PIPE 7	1	
44	6K7-24318-00-00	PIPE, OVERFLOW	1	
45	6K7-24319-00-00	PIPE, OIL	1	
46	90465-11M10-00	CLAMP	7	
47	90465-11M10-00	CLAMP	3	

TOP COWLING

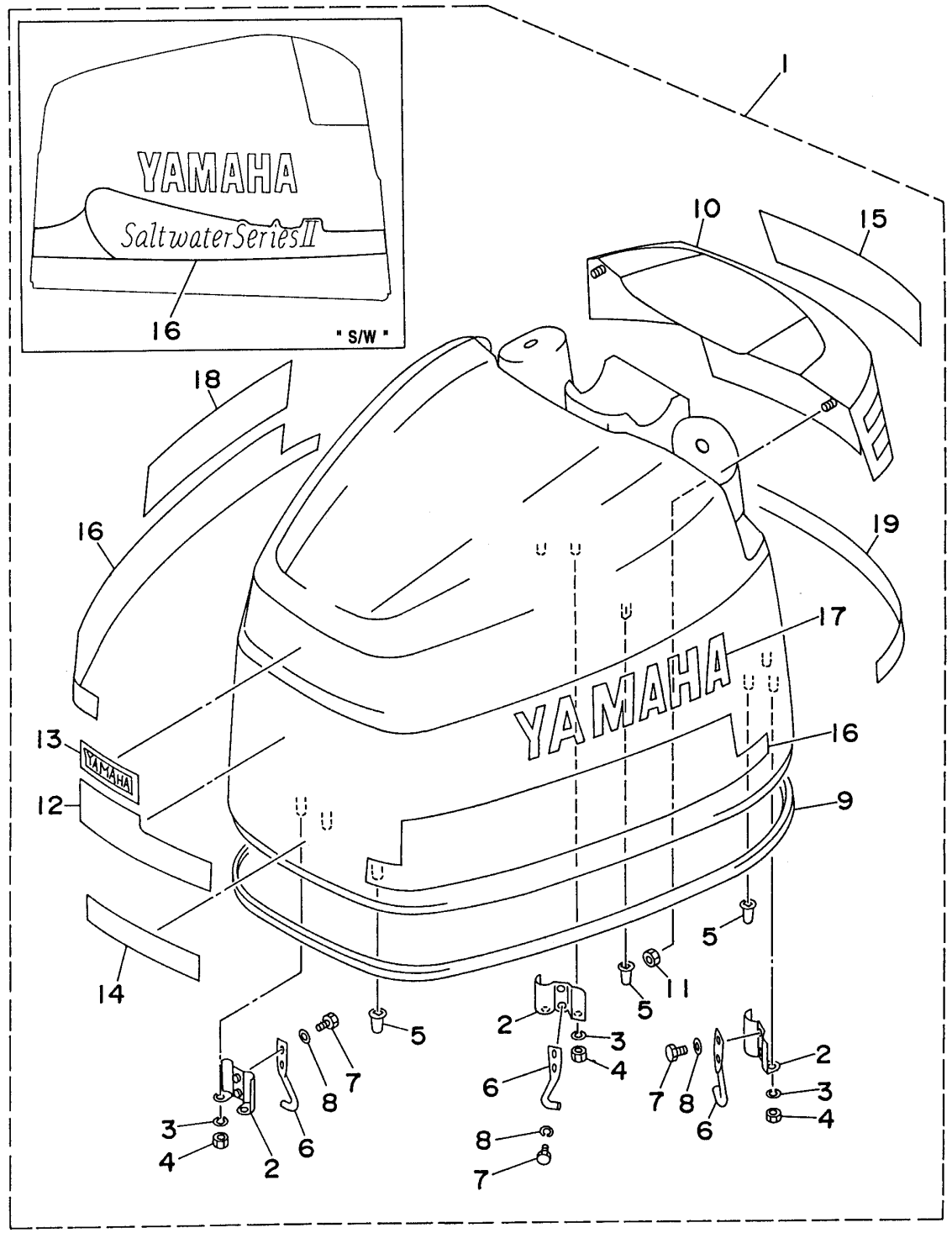


64DUS-6130

Ref. No.	Part Number	Description	Qty	Remarks
1	64C-42610-40-4D	TOP COWLING ASSEMBLY . . .	1	UR 150 NOT S/W
	64C-42610-S0-4D	TOP COWLING ASSEMBLY . . .	1	UR 150/L150
	64D-42610-40-4D	TOP COWLING ASSEMBLY . . .	1	UR 175 NOT S/W
	64D-42610-S0-4D	TOP COWLING ASSEMBLY . . .	1	UR 175 S/W
	64E-42610-40-4D	TOP COWLING ASSEMBLY . . .	1	UR 200 NOT S/W
	64E-42610-R0-4D	TOP COWLING ASSEMBLY . . .	1	UR JET DRIVE
	64E-42610-S0-4D	TOP COWLING ASSEMBLY . . .	1	UR 200/L200
2	6R3-42647-00-00	. HOLDER, CLAMP BAND	3	
3	92995-06100-00	. WASHER, SPRING	6	
4	95380-06600-00	. NUT	6	
5	6R3-42662-00-00	. DAMPER	3	
6	64D-42814-00-00	. HOOK, CLAMP	3	
7	97095-06012-00	. BOLT	6	
8	92990-06600-00	. WASHER, PLATE	6	
9	64D-42615-00-00	. SEAL	1	
10	64D-42613-00-4D	. MOLDING, AIR DUCT	1	
11	90179-06M24-00	. NUT	4	
12	64C-42677-40-00	. GRAPHIC, FRONT	1	UR 150/L150
	64D-42677-40-00	. GRAPHIC, FRONT	1	UR 175
	64E-42677-40-00	. GRAPHIC, FRONT	1	UR 200/L200
	64E-42677-R0-00	. GRAPHIC, FRONT	1	UR JET DRIVE
13	64D-42677-A0-00	. GRAPHIC, FRONT	1	
14	64D-42677-S0-00	. GRAPHIC, FRONT	1	UR S/W
	6R2-42677-41-00	. GRAPHIC, FRONT	1	UR NOT S/W
15	64C-42687-00-00	. EMBLEM, REAR	1	UR 150/L150
	64D-42687-00-00	. EMBLEM, REAR	1	UR 175
	64E-42687-00-00	. EMBLEM, REAR	1	UR 200/L200
	64E-42687-R0-00	. EMBLEM, REAR	1	UR JET DRIVE
16	64D-W0070-S0-00	. GRAPHIC SET	1	UR S/W

CONTINUED ON NEXT FRAME ➤

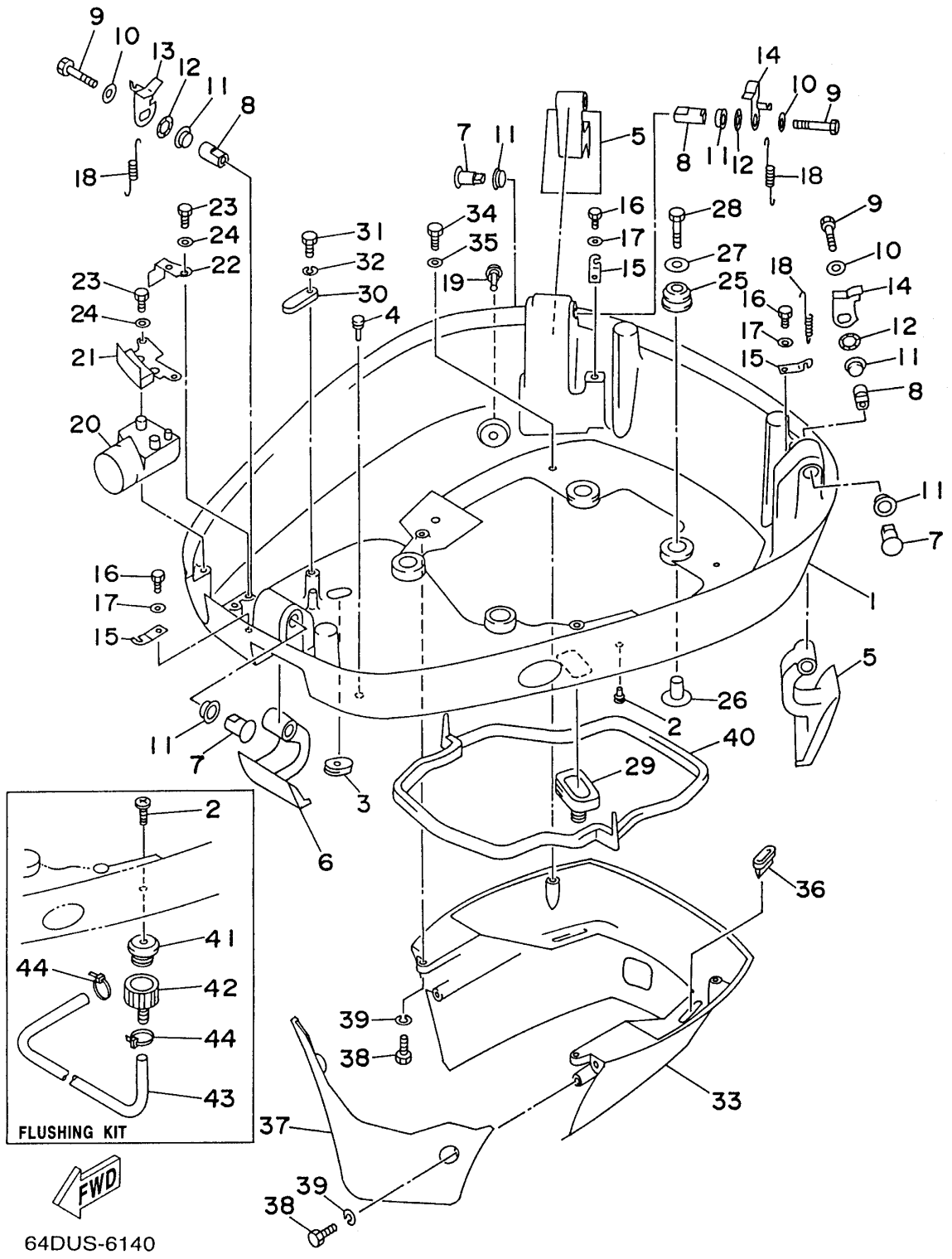
TOP COWLING



64DUS-6130

Ref. No.	Part Number	Description	Qty	Remarks
16	64E-W0070-R0-00	. GRAPHIC SET	1	UR JET DRIVE
	6R2-W0070-41-00	. GRAPHIC SET	1	UR 150 NOT S/W
	6R3-W0070-41-00	. GRAPHIC SET	1	UR 175 NOT S/W
	6R4-W0070-41-00	. GRAPHIC SET	1	UR 200 NOT S/W
17	64D-42681-40-00	. MARK, COWLING	1	
18	64D-42682-40-00	. MARK, COWLING	1	
19	64D-4267A-40-00	. GRAPHIC, REAR 2	1	UR NOT S/W
	64D-4267A-S0-00	. GRAPHIC, REAR 2	1	UR S/W
	64E-4267A-R0-00	. GRAPHIC, REAR 2	1	UR JET DRIVE

BOTTOM COWLING

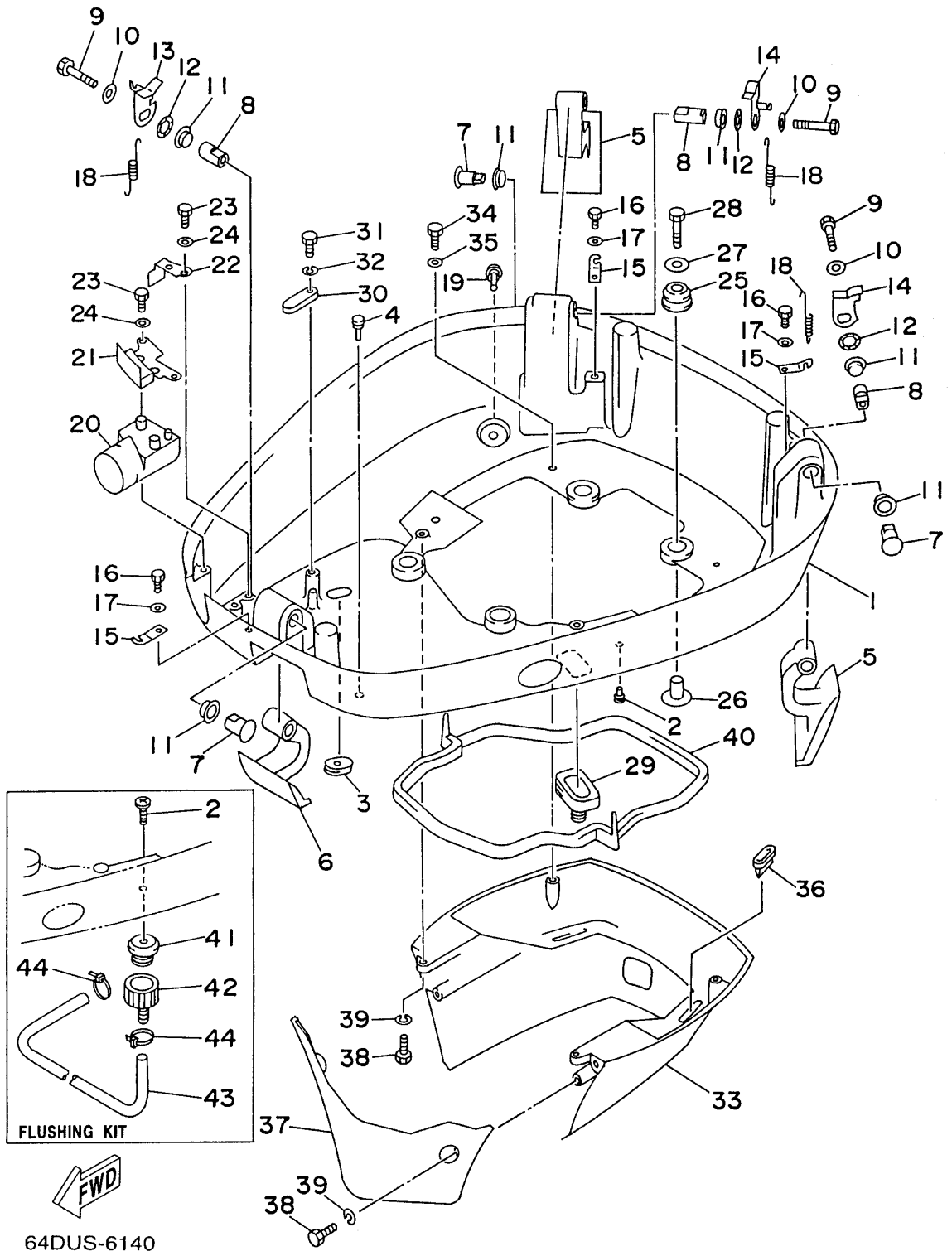


64DUS-6140

Ref. No.	Part Number	Description	Qty	Remarks
1	64D-42711-00-8D	COWLING, BOTTOM	1	
2	90169-05M00-00	SCREW, TRUSS HEAD TAPPING	1	UR FLUSHING
	90480-06M19-00	GROMMET	1	UR
3	61A-42727-00-00	GROMMET	1	
4	6H4-42748-00-00	GROMMET	1	
5	64D-42815-00-4D	LEVER, CLAMP	2	
6	64D-42816-00-4D	LEVER, CLAMP	1	
7	64D-42835-00-00	PIN, SET 1	3	
8	64D-42836-00-00	PIN, SET	3	
9	97095-06040-00	BOLT	3	
10	90201-06M02-00	WASHER, PLATE	3	
11	90386-15M73-00	BUSH	6	
12	90206-15M18-00	WASHER, WAVE	3	
13	64D-42818-00-00	LEVER, CLAMP	1	
14	64D-42818-10-00	LEVER, CLAMP	2	
15	64D-43144-00-00	HOOK, SPRING	3	
16	97090-06012-00	BOLT	3	
17	92990-06600-00	WASHER, PLATE	3	
18	90506-16M34-00	SPRING, TENSION	3	
19	6E5-44391-00-00	NIPPLE, HOSE	1	
20	64D-42725-20-00	GROMMET	1	
21	64D-42738-00-5B	PLATE, FITTING	1	
22	64D-42738-10-5B	PLATE, FITTING	1	
23	97095-06016-00	BOLT	3	
24	92990-06600-00	WASHER, PLATE	3	
25	90480-22M15-00	GROMMET	4	
26	90387-08M37-00	COLLAR	4	
27	90201-08M54-00	WASHER, PLATE	4	

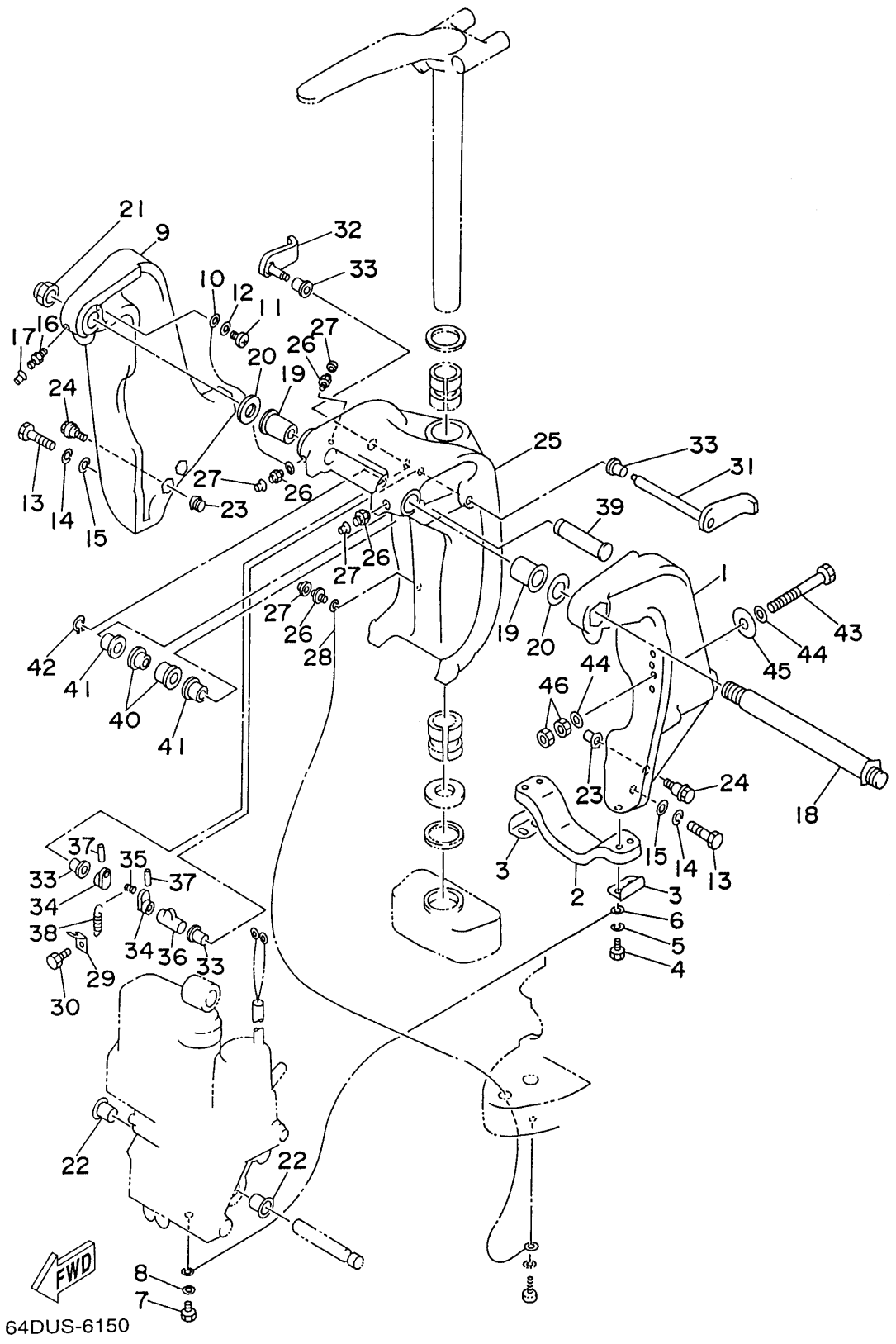
CONTINUED ON NEXT FRAME ➤

BOTTOM COWLING



Ref. No.	Part Number	Description	Qty	Remarks
28	97075-08035-00	BOLT	4	
29	688-42726-10-00	GROMMET	1	
30	6E5-82588-00-00	PLATE	1	
31	97095-06020-00	BOLT	1	
32	92990-06600-00	WASHER, PLATE	1	
33	6R3-42741-02-8D	APRON	1	
34	97095-06020-00	BOLT	2	
35	92990-06600-00	WASHER, PLATE	2	
36	64D-42717-00-00	RUBBER, SEAL 2	2	
37	6R3-42771-01-8D	APRON	1	
38	97095-06020-00	BOLT	4	
39	92990-06600-00	WASHER, PLATE	4	
40	6E5-42716-10-00	RUBBER, SEAL 1	1	
41	6R3-12572-00-00	ADAPTER	1	FLUSHING KIT
42	6R3-12580-00-00	JOINT ASSEMBLY	1	FLUSHING KIT
43	90445-11M35-00	HOSE	1	FLUSHING KIT
44	90465-11M10-00	CLAMP	2	FLUSHING KIT

BRACKET 1

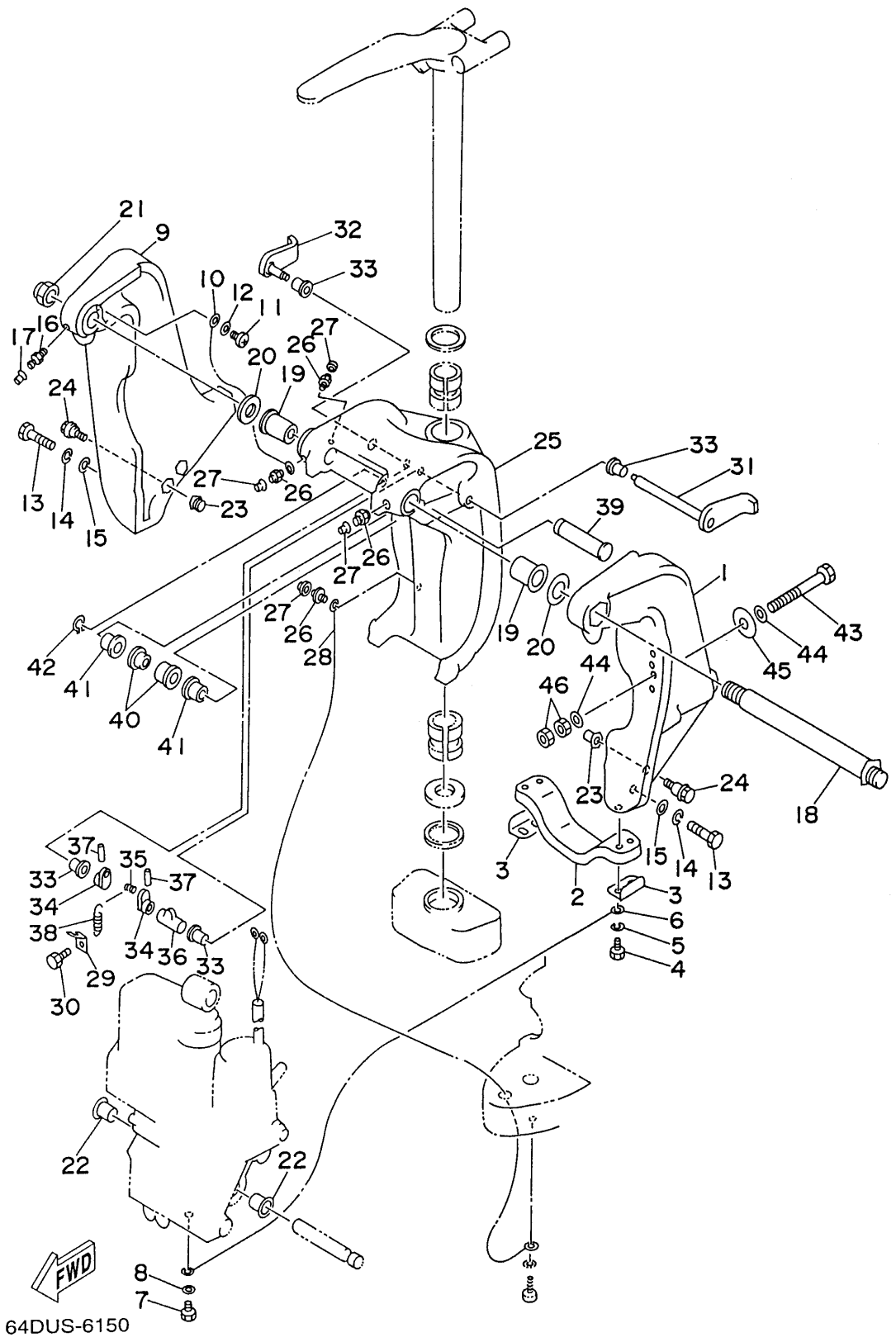


64DUS-6150

Ref. No.	Part Number	Description	Qty	Remarks
1	6G5-43111-02-8D	BRACKET, CLAMP	1	
2	6G5-45251-01-00	ANODE	1	
3	6G5-44526-00-00	PLATE	2	
4	97095-06030-00	BOLT	4	
5	92995-06100-00	WASHER, SPRING	4	
6	6E5-82148-00-00	WIRE, LEAD 4	1	
7	97095-06010-00	BOLT	1	
8	92990-06600-00	WASHER, PLATE	1	
9	6G5-43112-02-8D	BRACKET, CLAMP	1	
10	6E5-82148-00-00	WIRE, LEAD 4	1	
11	98580-06012-00	SCREW, PAN HEAD	1	
12	92990-06600-00	WASHER, PLATE	1	
13	97095-10050-00	BOLT	6	
14	92990-10100-00	WASHER, SPRING	6	
15	92990-10600-00	WASHER, PLATE	6	
16	93700-06M03-00	NIPPLE, GREASE	1	
17	663-45119-00-00	CAP, GREASE NIPPLE	1	
18	6R3-43131-00-00	BOLT, CLAMP BRACKET	1	
19	90386-25M31-00	BUSH	2	
20	90201-26M59-00	WASHER, PLATE	2	
21	90185-22M11-00	NUT, SELF-LOCKING	1	
22	90386-18M14-00	BUSH	2	
23	6G5-43164-00-00	ROD, TILT LOCK	2	
24	90109-12M35-00	BOLT	2	
25	6G5-43311-00-8D	BRACKET, SWIVEL	1	UR LONG
	6G5-43311-20-8D	BRACKET, SWIVEL	1	UR ULTRA LONG
26	93700-06M03-00	NIPPLE, GREASE	5	
27	663-45119-00-00	CAP, GREASE NIPPLE	5	
28	6E5-82147-00-00	WIRE, LEAD 4	1	UR LONG

CONTINUED ON NEXT FRAME ➤

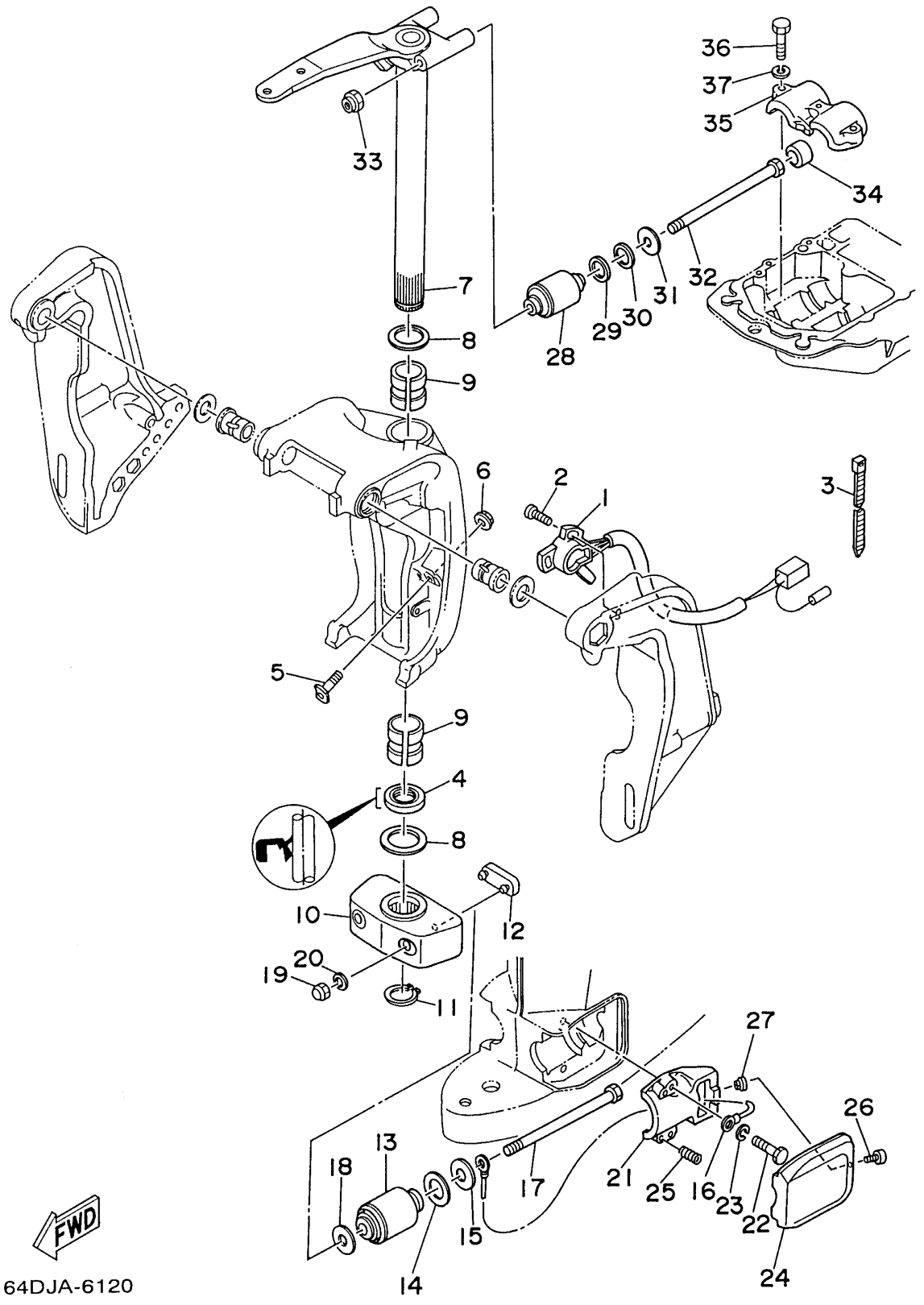
BRACKET 1



64DUS-6150

Ref. No.	Part Number	Description	Qty	Remarks
28	6E5-82147-20-00	WIRE, LEAD 4	1	UR ULTRA LONG
29	6G5-43144-00-00	HOOK, SPRING	1	
30	97095-06010-00	BOLT	1	
31	6G5-43181-02-00	LEVER, TILT STOP	1	
32	6G5-43185-02-00	LEVER, TILT STOP	1	
33	90386-10M16-00	BUSH	4	
34	6G5-43148-00-00	COLLAR, DISTANCE	2	
35	90249-06M19-00	PIN	1	
36	90387-10M02-00	COLLAR	1	
37	91690-30020-00	PIN, SPRING	2	
38	90506-14M24-00	SPRING, TENSION	1	
39	6E5-43126-02-00	PIN, UPPER SHOCK MOUNT	1	
40	90386-18M63-00	BUSH	2	
41	90386-18M14-00	BUSH	2	
42	93410-18M02-00	CIRCLIP	1	
43	90101-12M03-00	BOLT (L:115MM)	4	
44	90201-13M01-00	WASHER, PLATE	8	
45	90201-12M05-00	WASHER, PLATE	4	
46	95380-12600-00	NUT	8	

BRACKET 2

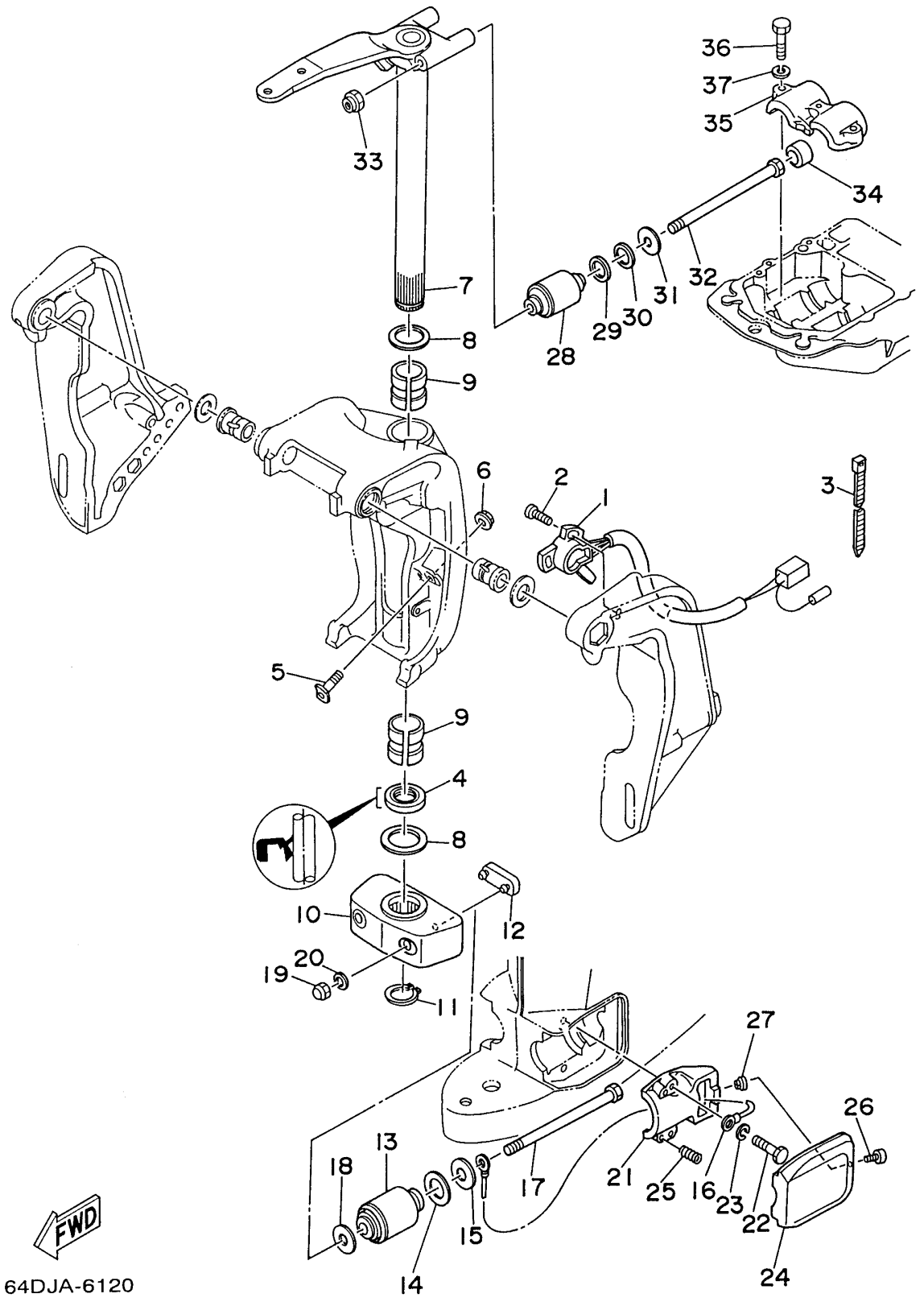


64DJA-6120

Ref. No.	Part Number	Description	Qty	Remarks
1	64D-83672-00-00	TRIM SENDER	1	
2	97885-06016-00	SCREW, PAN HEAD	2	
3	90465-11M10-00	CLAMP	3	
4	93109-38M02-00	OIL SEAL	1	
5	6G5-43376-00-00	BOLT, THRUST RECEIVER	2	
6	95780-10300-00	NUT, FLANGE	2	
7	6E5-42510-A0-8D	STEERING BRACKET ASSEMBLY	1	UR LONG
	6E5-42510-B0-8D	STEERING BRACKET ASSEMBLY	1	UR ULTRA LONG
8	90201-38M60-00	WASHER, PLATE	2	
9	90386-38M32-00	BUSH	2	
10	6G5-44551-01-8D	HOUSING, LOWER MOUNT RUBBER	1	
11	93410-37M04-00	CIRCLIP	1	
12	6E5-44575-00-00	DAMPER, LOWER MOUNT RUBBER	1	
13	6G5-44555-00-94	MOUNT DAMPER, LOWER SIDE	2	
14	90202-32M19-00	WASHER, PLATE	2	
15	90201-16M55-00	WASHER, PLATE	2	
16	6E5-82149-00-00	WIRE, LEAD 3	1	
17	90109-14M34-00	BOLT	2	
18	90201-15M58-00	WASHER, PLATE	2	
19	95380-14800-00	NUT	2	
20	92995-14600-00	WASHER	2	
21	6E5-44552-01-94	HOUSING, LOWER MOUNT RUBBER	2	
22	97095-10045-00	BOLT	4	
23	92990-10100-00	WASHER, SPRING	4	
24	6E5-44553-01-8D	COVER, LOWER MOUNT	2	

CONTINUED ON NEXT FRAME ➤

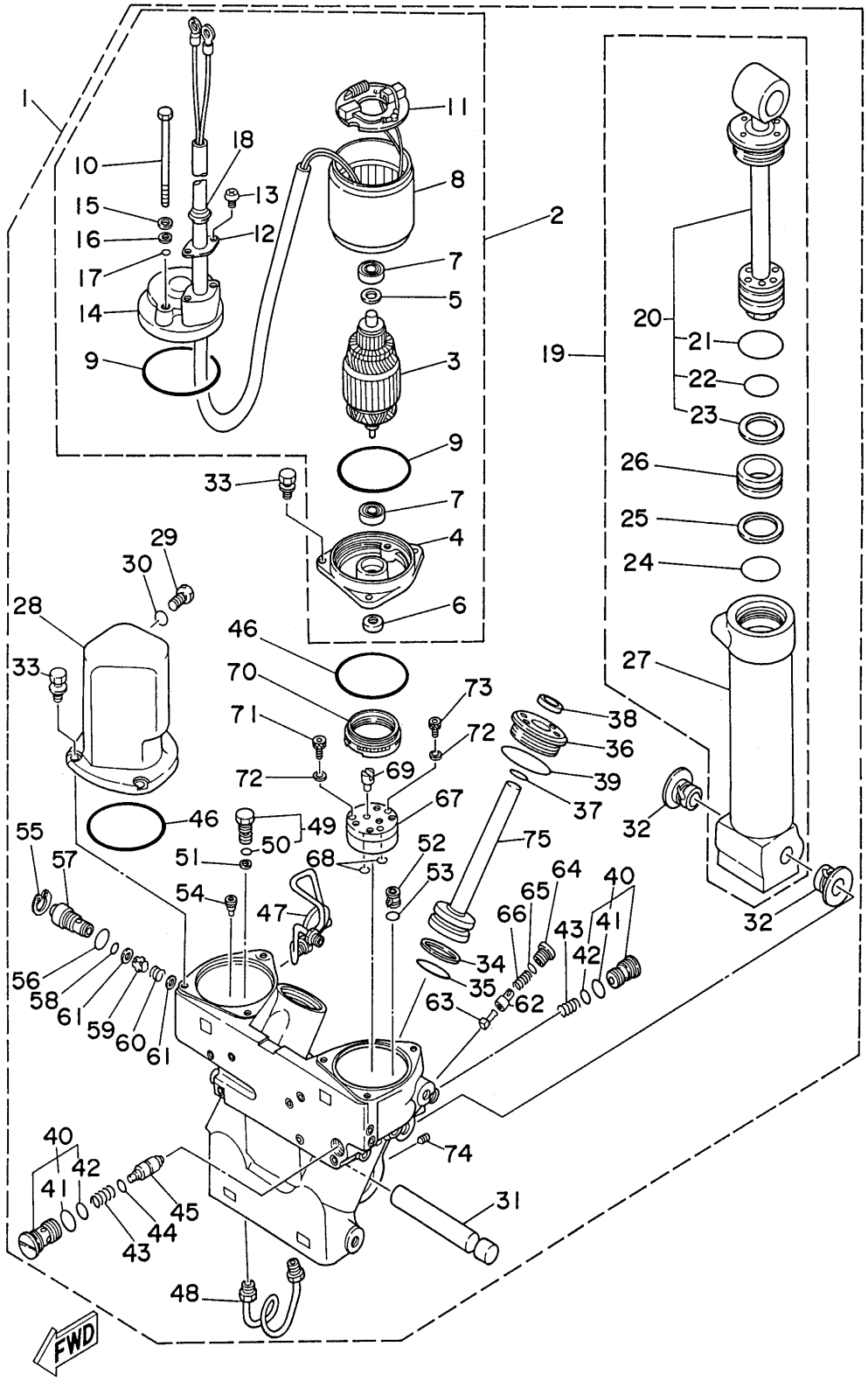
BRACKET 2



64DJA-6120

Ref. No.	Part Number	Description	Qty	Remarks
25	90501-16M28-00	SPRING, COMPRESSION	4	
26	97885-06016-00	SCREW, PAN HEAD	2	
27	90179-06066-00	NUT	2	
28	6G5-44514-00-94	MOUNT DAMPER, UPPER SIDE	2	
29	90201-26M57-00	WASHER, PLATE	2	
30	90202-26M18-00	WASHER, PLATE	2	
31	90201-14M56-00	WASHER, PLATE	2	
32	90109-12M37-00	BOLT	2	
33	90185-12M12-00	NUT, SELF-LOCKING	2	
34	663-44575-00-00	DAMPER, LOWER MOUNT RUBBER	2	
35	6E5-44511-00-5B	COVER, UPPER MOUNT	1	
36	97095-10045-00	BOLT	3	
37	92990-10100-00	WASHER, SPRING	3	

POWER TRIM & TILT ASSEMBLY 1

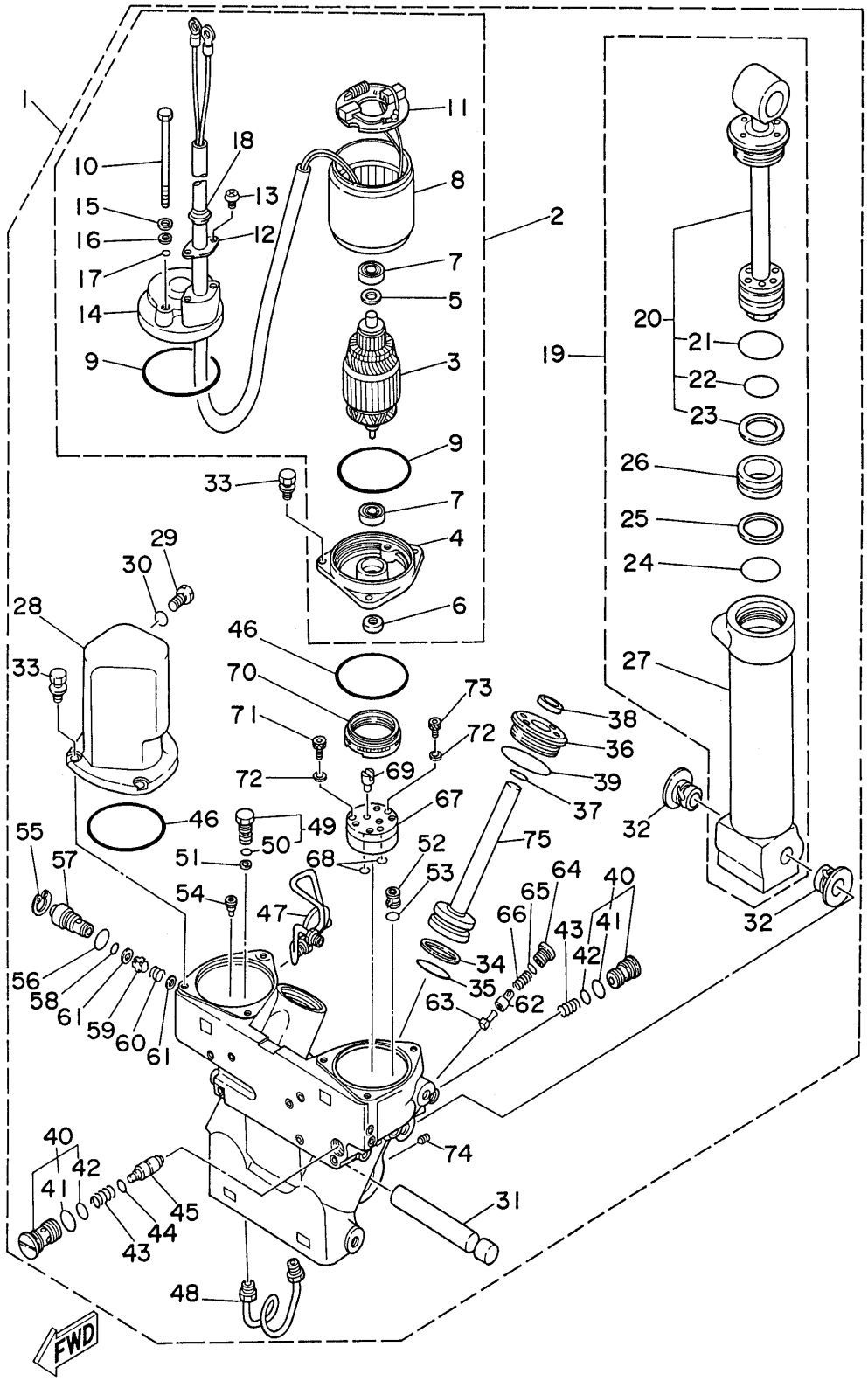


6N6JA-4120

Ref. No.	Part Number	Description	Qty	Remarks
1	6G5-43800-10-4D	POWER TRIM & TILT ASSEMBLY	1	
2	6G5-43880-10-00	. MOTOR ASSEMBLY	1	
3	6G5-43805-10-00	. . ARMATURE ASSEMBLY	1	
4	6G5-43881-10-00	. . FRAME, END	1	
5	6G5-4387G-10-00	. . WASHER	1	
6	93102-08M43-00	. . OIL SEAL	1	
7	93300-608U0-00	. . BEARING	2	
8	6G5-43804-00-00	. . STATOR ASSEMBLY	1	
9	6G5-43865-00-00	. . O-RING	2	
10	6G5-43887-00-00	. . BOLT, THROUGH	2	
11	6G5-43806-10-00	. . BRUSH HOLDER ASSEMBLY	1	
12	6G5-43899-00-00	. . PLATE STOPPER	1	
13	6G5-43886-00-00	. . BOLT	2	
14	6G5-43884-00-00	. . FRAME, COMMUTATOR END	1	
15	6G5-43893-00-00	. . WASHER	2	
16	6G5-43889-10-00	. . PLATE SEAT	2	
17	6G5-43867-00-00	. . O-RING	2	
18	6G5-43885-00-00	. . GROMMET	1	
19	6G5-4380E-01-00	. TILT CYLINDER ASSEMBLY	1	
20	6G5-43810-00-00	. . PISTON SUB ASSEMBLY	1	
21	6E5-43861-00-00	. . O-RING	1	
22	6G5-43862-00-00	. . O-RING	1	
23	6E5-43872-00-00	. . RING, BACK UP	1	
24	6G5-43862-00-00	. . O-RING	1	
25	6E5-43872-00-00	. . RING, BACK UP	1	
26	6E5-43814-02-00	. . PISTON, FREE	1	
27	6G5-43813-00-00	. . CYLINDER, TILT	1	
28	6G5-43828-00-00	. BODY, RESERVOIR	1	

CONTINUED ON NEXT FRAME ➤

POWER TRIM & TILT ASSEMBLY 1

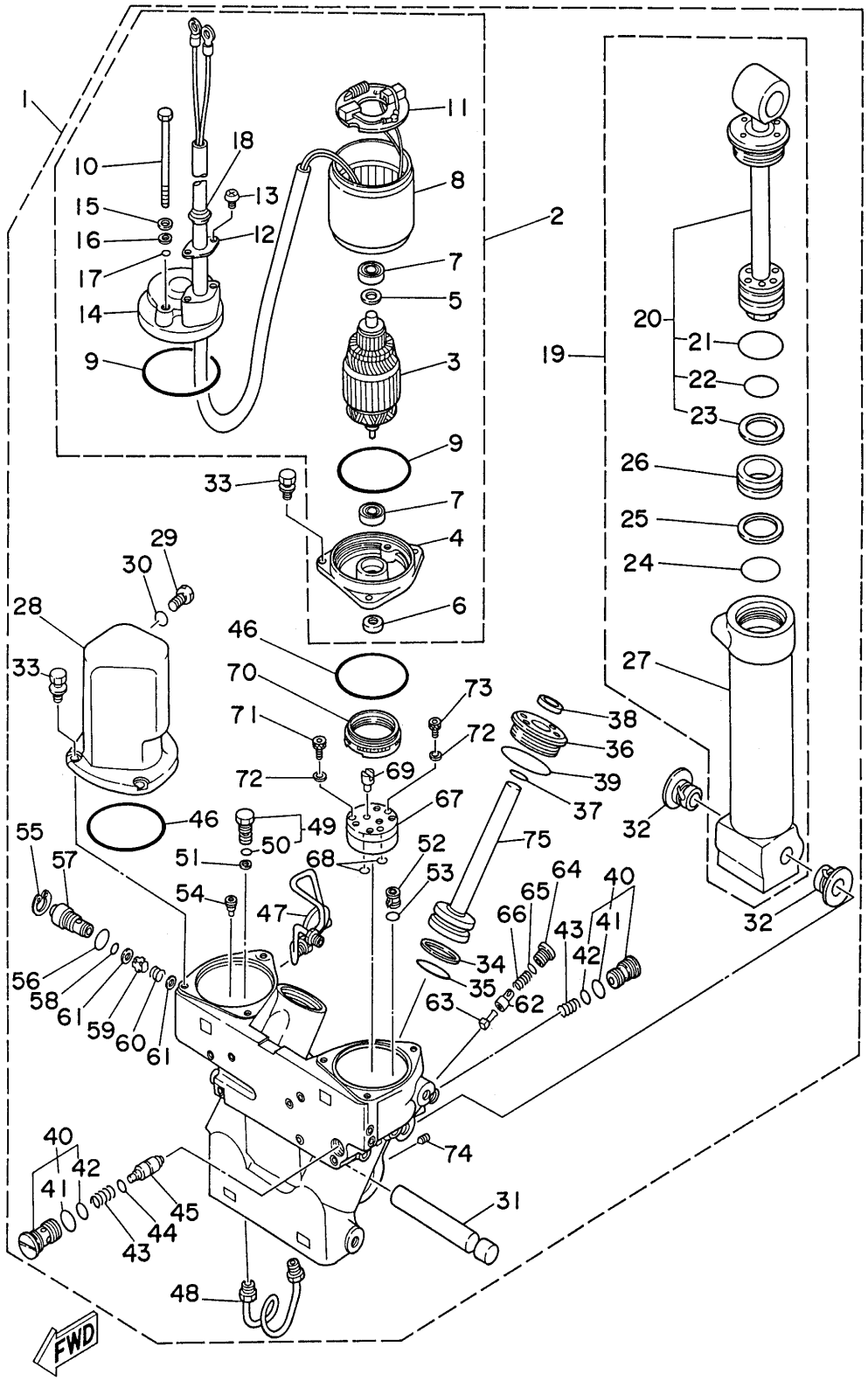


6N6JA-4120

Ref. No.	Part Number	Description	Qty	Remarks
29	6E5-43829-00-00	. PLUG, RESERVOIR	1	
30	6E5-43863-00-00	. O-RING	1	
31	6G5-43818-00-00	. PIN, LOWER SHOCK MOUNT	1	
32	90386-18M14-00	. BUSH	2	
33	90119-06M42-00	. BOLT, WITH WASHER	6	
34	6G5-43874-00-00	. RING, BACK UP	2	
35	6G5-43864-00-00	. O-RING	2	
36	6G5-43821-01-00	. SCREW, TRIM CYLINDER END	2	
37	6E5-43865-00-00	. O-RING	2	
38	6E5-43822-01-00	. SEAL, TRIM DUST	2	
39	6G5-43861-00-00	. O-RING	2	
40	6G5-43802-01-00	. VALVE SUB ASSEMBLY	2	
41	6E5-43866-00-00	. . O-RING	1	
42	6E5-43867-00-00	. . O-RING	1	
43	6G5-43894-00-00	. SPRING, SHUTTLE RETURN	2	
44	6E5-43868-00-00	. O-RING	1	
45	6G5-43841-00-00	. PISTON, SHUTTLE	1	
46	6E5-43869-00-00	. O-RING	2	
47	6G5-43835-00-00	. PIPE	1	
48	6G5-43833-00-00	. PIPE	1	
49	6G5-43809-01-00	. SEAT VALVE COMP. 2	1	
50	6E5-43896-00-00	. . O-RING	1	
51	6G5-43816-00-00	. FILTER 1	1	
52	6G5-43808-02-00	. SEAT VALVE COMP. 1	1	
53	6E5-43883-00-00	. O-RING	1	
54	6G5-43803-00-00	. CASE VALVE COMP	1	
55	6H1-43875-00-00	. RING, SNAP	1	
56	93210-18M75-00	. O-RING	1	
57	6G5-43845-00-00	. SCREW, MANUAL RELEASE	1	

CONTINUED ON NEXT FRAME ➤

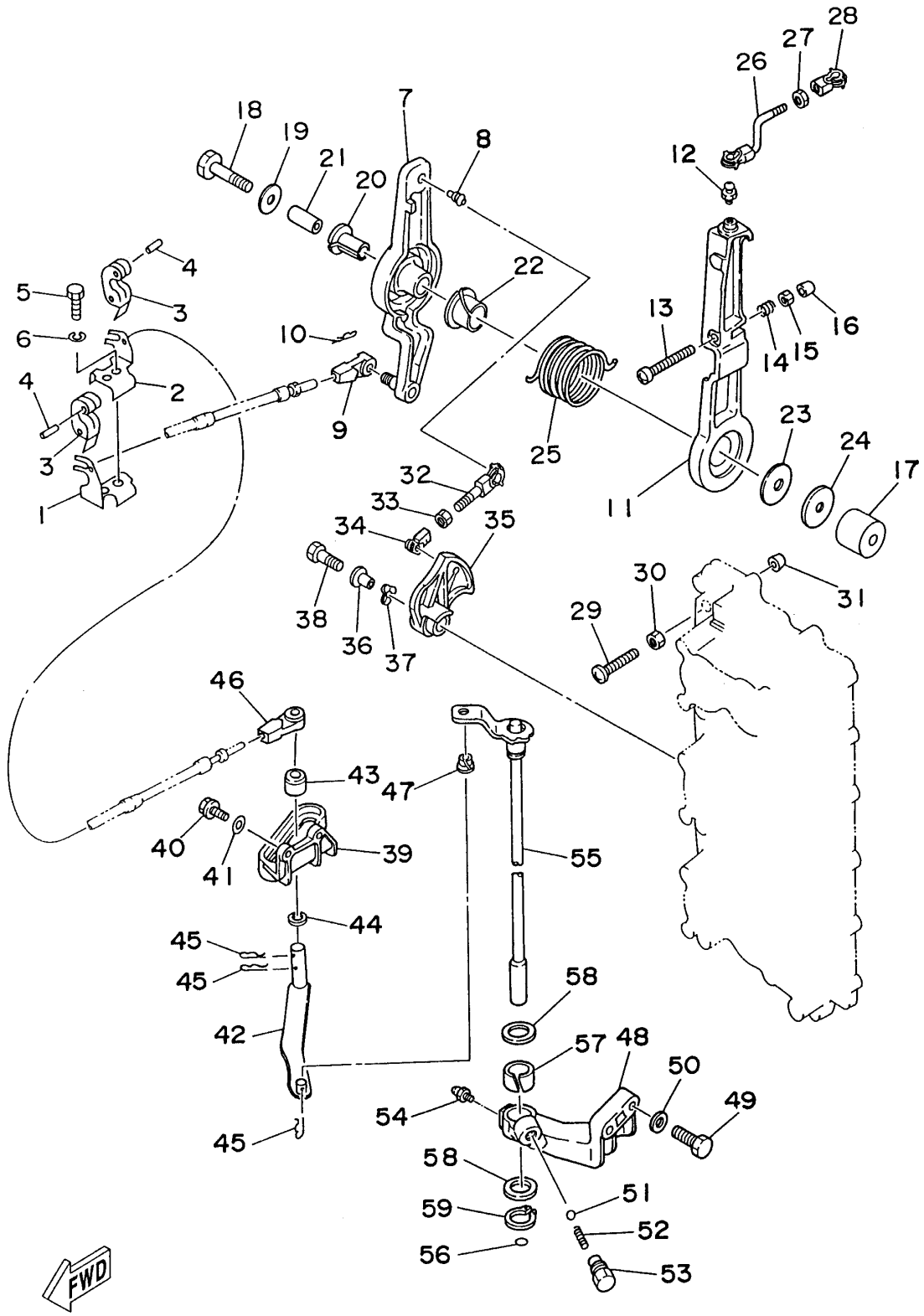
POWER TRIM & TILT ASSEMBLY 1



6N6JA-4120

Ref. No.	Part Number	Description	Qty	Remarks
58	93210-10M74-00	. O-RING	1	
59	6E5-4382A-00-00	. ADAPTOR 1	1	
60	6E5-43854-01-00	. SPRING, MANUAL RELEASE	1	
61	6E5-43847-00-00	. SEAT, MANUAL VALVE	2	
62	6G5-43849-00-00	. PIN, VALVE SUPPORT	1	
63	6G5-4381A-00-00	. SHAFT	1	
64	6G5-43842-00-00	. SCREW, VALVE SEAT	1	
65	6G5-43866-00-00	. O-RING	1	
66	6E5-43824-01-00	. SPRING, COMPRESSION	1	
67	6G5-43830-01-00	. GEAR PUMP ASSEMBLY	1	
68	6G5-43863-00-00	. O-RING	2	
69	6G5-43831-01-00	. CONNECTOR, SHAFT	1	
70	6G5-43817-00-00	. FILTER 2	1	
71	6G5-43878-01-00	. BOLT, SOCKET	2	
72	90201-05M00-00	. WASHER, PLATE	3	
73	6G5-43888-01-00	. BOLT, SOCKET	1	
74	6G5-43878-10-00	. BOLT, SOCKET	1	
75	6G5-43820-01-00	. PISTON SUB ASSEMBLY	2	

CONTROL

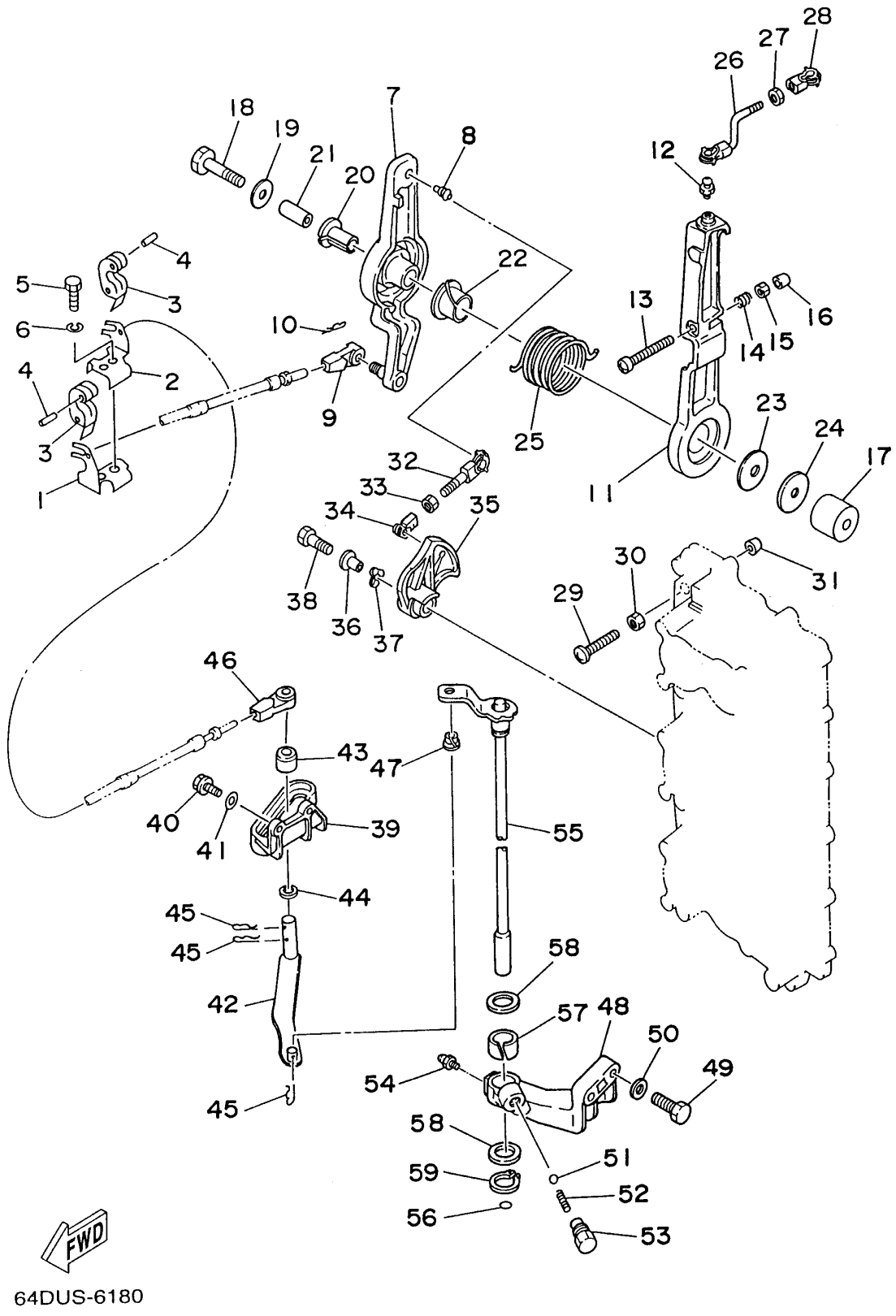


64DUS-6180

Ref. No.	Part Number	Description	Qty	Remarks
1	64D-48531-00-00	BRACKET, REMOTE CONTROL 1	1	
2	64D-48532-00-00	BRACKET, REMOTE CONTROL 2	1	
3	6E5-48538-00-00	CLAMP, CABLE 1	2	
4	91690-30012-00	. PIN, SPRING	2	
5	97395-08020-00	BOLT, HEXAGON	1	
6	92995-08100-00	WASHER	1	
7	61H-41632-02-94	LEVER, MAGNETO CONTROL .	1	
8	662-41214-01-00	JOINT 1	1	
9	6E5-48344-00-00	CABLE END, REMOTE CONTROL	1	
10	90468-18008-00	CLIP	1	
11	6G5-41631-01-94	LEVER, MAGNETO CONTROL .	1	
12	663-85518-00-00	JOINT, BALL	1	
13	90157-06M11-00	SCREW, PAN HEAD	1	
14	90501-16M12-00	SPRING, COMPRESSION	1	
15	95380-06600-00	NUT	1	
16	688-44194-00-00	CAP	1	
17	90387-08M17-00	COLLAR	1	/L200 S/W
18	90101-08M14-00	BOLT	1	UR 200/L200
	97313-08045-00	BOLT	1	UR
19	90201-08M54-00	WASHER, PLATE	1	
20	90386-12089-00	BUSH	1	
21	90387-08M16-00	COLLAR	1	
22	90386-22M13-00	BUSH	1	
23	90202-12092-00	WASHER, PLATE	1	
24	90201-08M13-00	WASHER, PLATE	1	
25	90508-29M12-00	SPRING, TORSION	1	
26	6G5-41636-01-00	ROD, MAGNETO CONTROL ..	1	

CONTINUED ON NEXT FRAME ➤

CONTROL

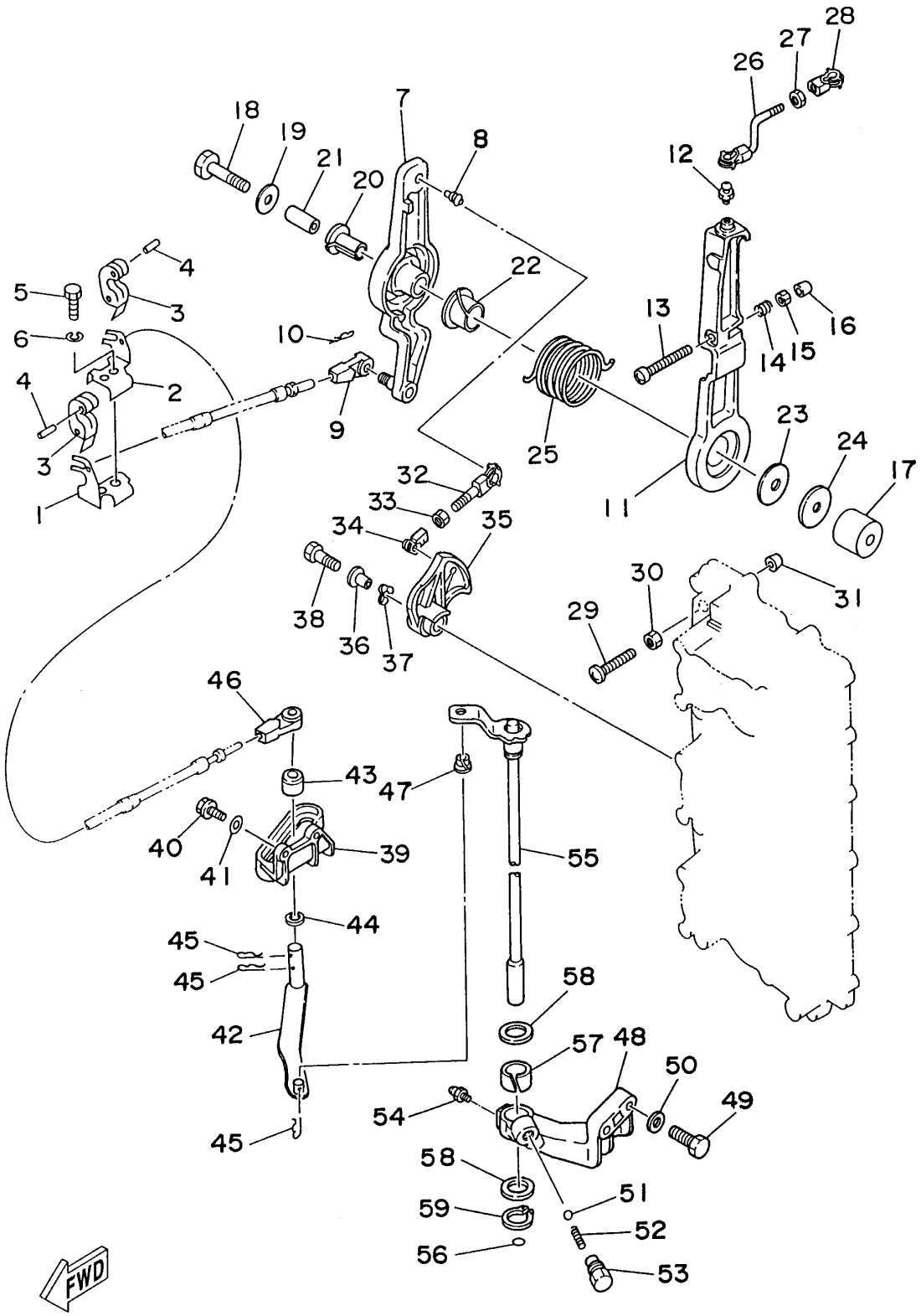


64DUS-6180

Ref. No.	Part Number	Description	Qty	Remarks
27	95380-05600-00	. NUT	1	
28	6H1-41237-00-00	JOINT, LINK	1	
29	90157-06M07-00	SCREW, PAN HEAD	1	UR 200/L200
	90157-06M13-00	SCREW, PAN HEAD	1	UR
30	95380-06600-00	NUT	1	
31	688-44194-00-00	CAP	1	
32	682-41237-50-00	JOINT, LINK	1	UR 200/L200
	6G5-41211-01-00	LINK, ACCEL.	1	UR
33	95380-05600-00	. NUT	1	
34	6H1-41237-00-00	JOINT, LINK	1	
35	61H-41213-00-00	CAN, ACCEL.	1	UR 200/L200
	6G5-41213-00-00	CAM, ACCEL.	1	UR
36	90387-06M29-00	COLLAR	1	
37	90206-10M04-00	WASHER, WAVE	1	
38	97095-06025-00	BOLT	1	
39	6E5-44117-00-94	BRACKET	1	
40	97013-06020-00	BOLT	2	
41	92990-06600-00	. WASHER, PLATE	2	
42	6E5-44121-01-00	LEVER, SHIFT ROD	1	
43	6E5-44122-00-00	BUSHING, SHIFT ROD LEVER	1	
44	90202-08M20-00	WASHER, PLATE	1	
45	90468-18008-00	CLIP	3	
46	6E5-48344-00-00	CABLE END, REMOTE CONTROL	1	
47	90386-06M12-00	BUSH	1	
48	6E5-44118-01-94	BRACKET	1	
49	97013-08030-00	BOLT	2	
50	92990-08600-00	WASHER, PLATE	2	
51	93501-04M02-00	BALL	1	

CONTINUED ON NEXT FRAME ➤

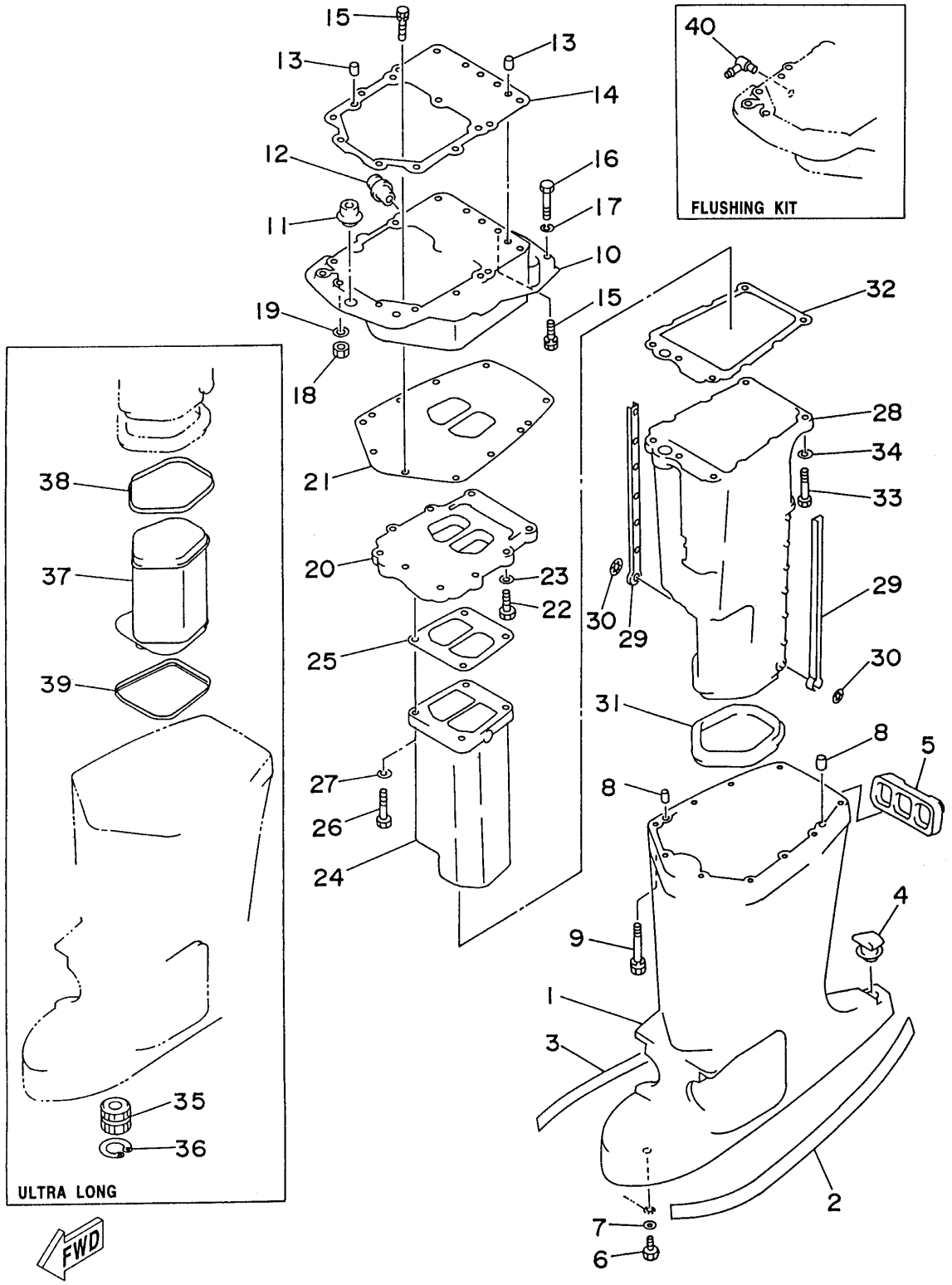
CONTROL



64DUS-6180

Ref. No.	Part Number	Description	Qty	Remarks
52	90501-12082-00	SPRING, COMPRESSION	1	
53	648-42715-00-00	BUSHING	1	
54	93700-06M03-00	NIPPLE, GREASE	1	
55	6E5-44120-03-00	HANDLE GEAR SHIFT ASSEMBLY	1	UR LONG
	6E5-44120-23-00	HANDLE GEAR SHIFT ASSEMBLY	1	UR ULTRA LONG
56	93210-09350-00	O-RING	1	
57	90386-16M66-00	BUSH	1	
58	90202-16061-00	WASHER, PLATE	2	
59	99009-16400-00	. CIRCLIP	1	

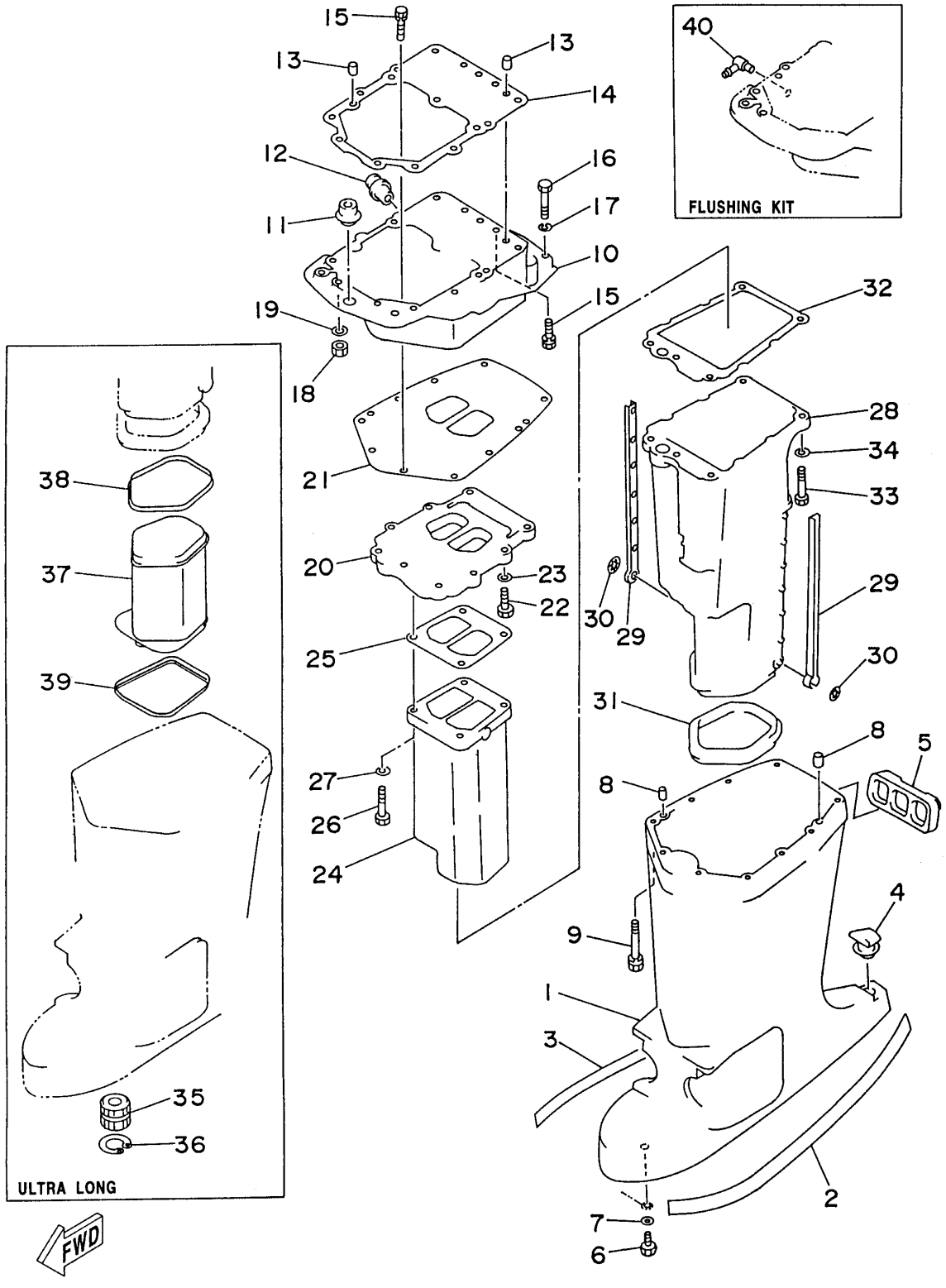
UPPER CASING



64DUS-6190

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-45111-01-8D	CASING, UPPER	1	UR LONG
	6E5-45111-22-8D	CASING, UPPER	1	UR ULTRA LONG
2	6R3-42792-41-00	MARK	1	
3	6R3-42792-41-00	MARK	1	
4	6E5-45155-00-00	CAP	1	
5	6E5-42769-00-00	SEAL, RUBBER	1	
6	97095-06010-00	BOLT	1	
7	92990-06600-00	WASHER, PLATE	1	
8	93608-12M05-00	PIN, DOWEL	2	
9	90119-08M78-00	BOLT, WITH WASHER	6	
10	6G5-41137-02-94	GUIDE, EXHAUST	1	UR
	6G5-41137-11-94	GUIDE, EXHAUST	1	UR FLUSHING
11	6E5-42724-00-00	GROMMET	1	
12	6G5-12581-00-00	JOINT, HOSE 1	1	
13	93608-12M05-00	PIN, DOWEL	2	
14	6G5-45113-A1-00	GASKET, UPPER CASING	1	
15	90119-08M79-00	BOLT, WITH WASHER	6	
16	97095-08045-00	BOLT	2	
17	92995-08100-00	WASHER	2	
18	95380-08700-00	NUT	2	
19	92995-08100-00	WASHER	2	
20	6G5-41131-01-5B	MANIFOLD, EXT. 1	1	
21	6G5-45114-A0-00	GASKET, UPPER CASING	1	
22	97095-08030-00	BOLT	4	
23	92990-08600-00	WASHER, PLATE	4	
24	64D-41132-00-5B	MANIFOLD, EXHAUST	1	
25	6G5-41134-A0-00	GASKET, EXHAUST MANIFOLD	1	
26	97095-08045-00	BOLT	4	
27	92990-08600-00	WASHER, PLATE	4	

CONTINUED ON NEXT FRAME ➤

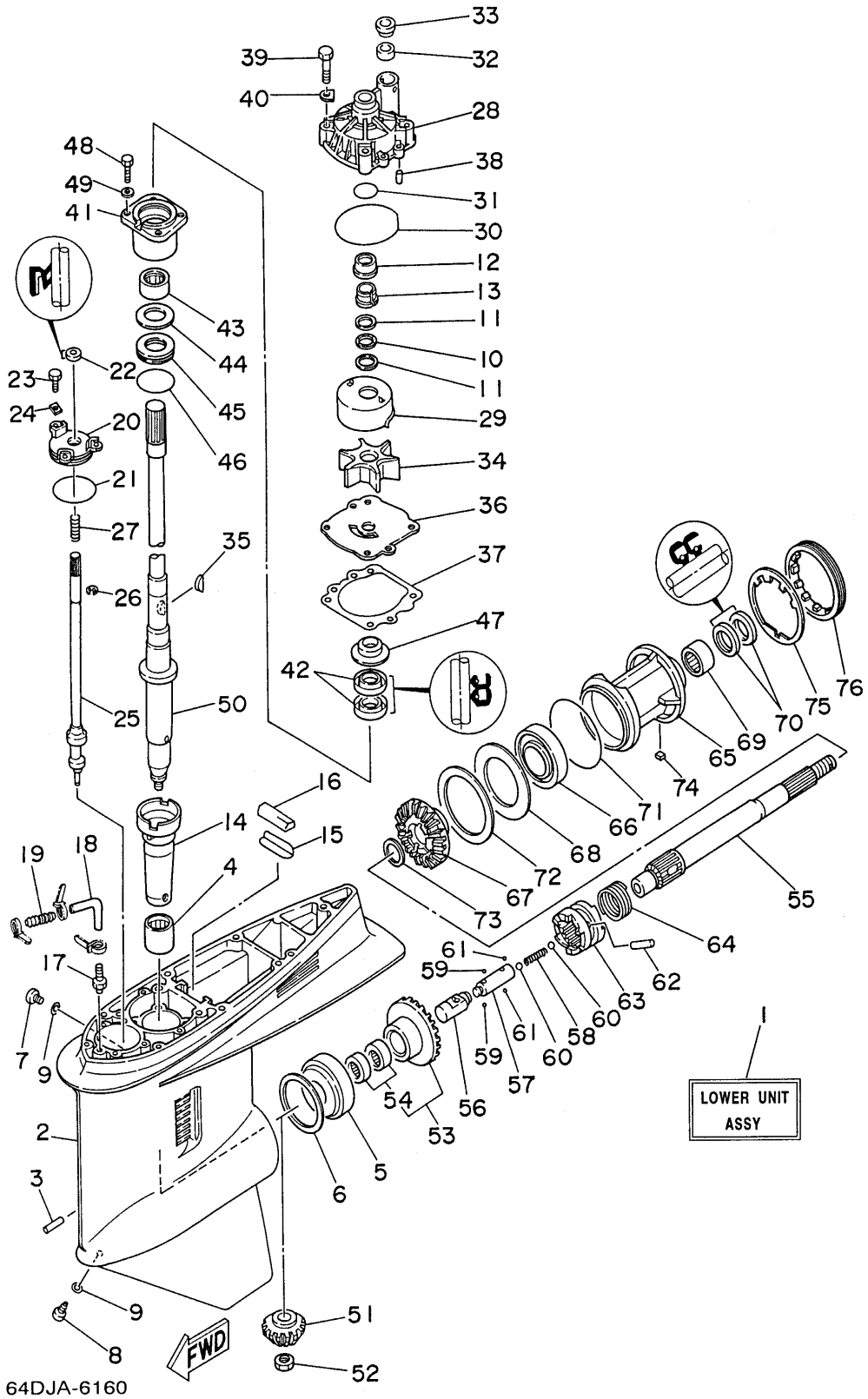


64DUS-6190

UPPER CASING

Ref. No.	Part Number	Description	Qty	Remarks
28	6E5-14711-01-5B	MUFFLER 1	1	
29	6E5-14737-00-00	DAMPER, MUFFLER	2	
30	90183-05M02-00	NUT, SPRING	2	
31	6E5-45123-00-00	GASKET, MUFFLER	1	
32	6E5-41135-A0-00	GASKET, EXHAUST MANIFOLD	1	
33	97095-08045-00	BOLT	5	
34	92990-08600-00	WASHER, PLATE	5	
35	6E5-45318-00-00	BUSHING, DRIVE SHAFT	1	ULTRA LONG
36	93420-36M01-00	CIRCLIP	1	ULTRA LONG
37	64D-14721-20-5B	MUFFLER 2	1	ULTRA LONG
38	64D-45123-00-00	GASKET, MUFFLER	1	ULTRA LONG
39	64D-45375-00-00	DAMPER, SEAL	1	ULTRA LONG
40	6H1-11372-00-00	NIPPLE, HOSE	1	FLUSHING KIT

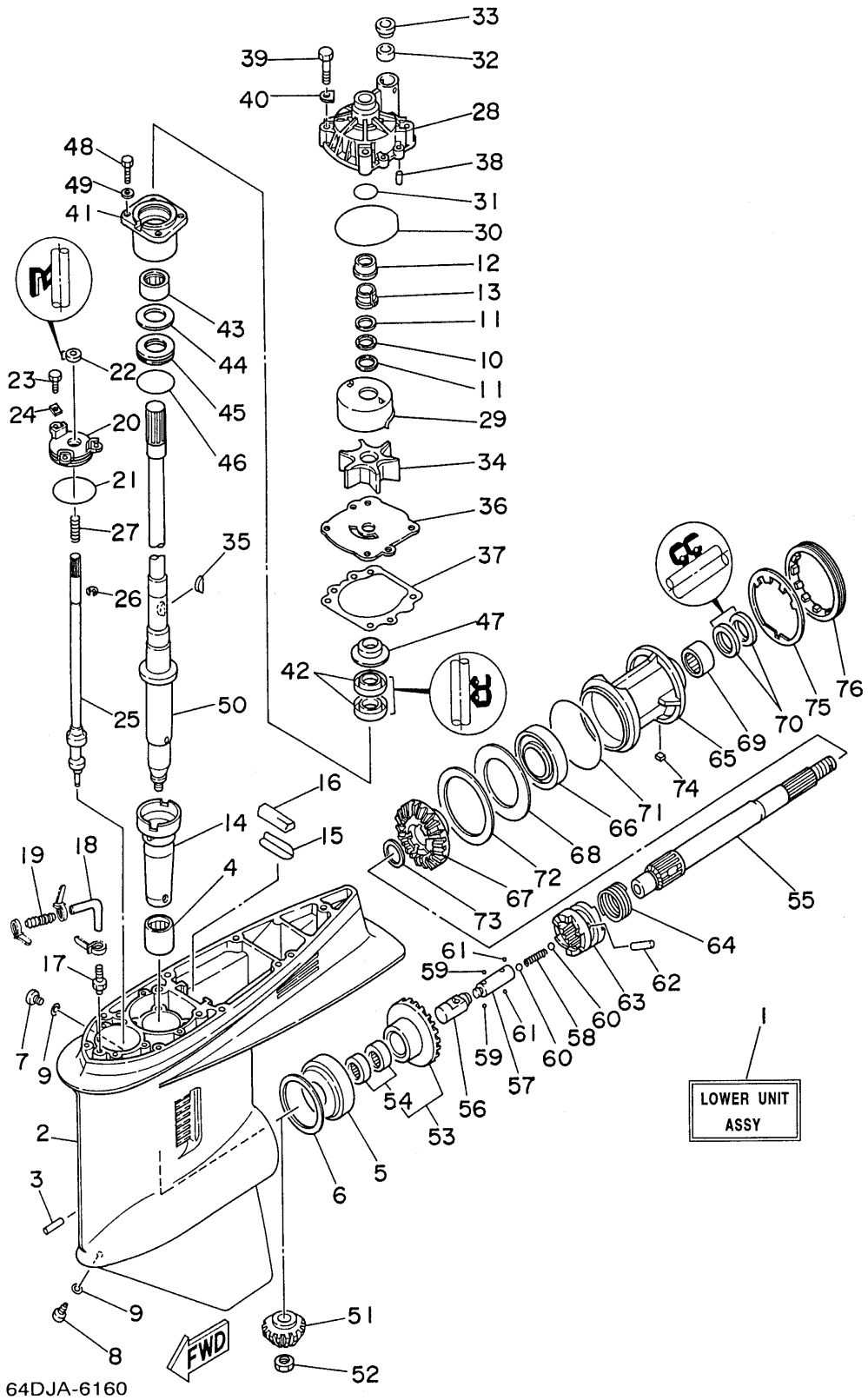
LOWER CASING - DRIVE 1 (150 - 175 - 2



Ref. No.	Part Number	Description	Qty	Remarks
1	64D-45300-00-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR 150/175 LONG
	64D-45300-20-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR 150/175 ULTRA LONG
	64E-45300-00-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR 200 LONG
	64E-45300-20-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR 200 ULTRA LONG
2	6J9-45301-03-8D	CASING, LOWER	1	
3	91690-30016-00	PIN, SPRING	1	
4	93311-928U5-00	BEARING	1	
5	93332-000V3-00	BEARING	1	
6	6G5-45567-01-10	SHIM (T:0.10MM)	1	UR
	6G5-45567-01-12	SHIM (T:0.12MM)	1	UR
	6G5-45567-01-15	SHIM (T:0.15MM)	1	UR
	6G5-45567-01-18	SHIM (T:0.18MM)	1	UR
	6G5-45567-01-30	SHIM (T:0.30MM)	1	UR
	6G5-45567-01-40	SHIM (T:0.40MM)	1	UR
	6G5-45567-01-50	SHIM (T:0.50MM)	1	UR
7	90340-08M04-00	PLUG, STRAIGHT SCREW	1	
8	688-45341-00-00	PLUG, DRAIN	1	
9	90430-08020-00	GASKET	2	
10	90206-22M19-00	WASHER, WAVE	1	
11	90201-22M01-00	WASHER, PLATE	2	
12	61A-45527-00-00	COLLAR, DRIVE SHAFT	1	
13	61A-45538-00-00	SPACER 1	1	
14	6G5-45536-01-00	SLEEVE, DRIVE SHAFT	1	
15	64D-45376-00-94	GUIDE, SEAL DAMPER	1	UR ULTRA LONG
	663-45376-00-94	GUIDE, SEAL DAMPER	1	UR LONG

CONTINUED ON NEXT FRAME ➤

LOWER CASING - DRIVE 1 (150 - 175 - 2

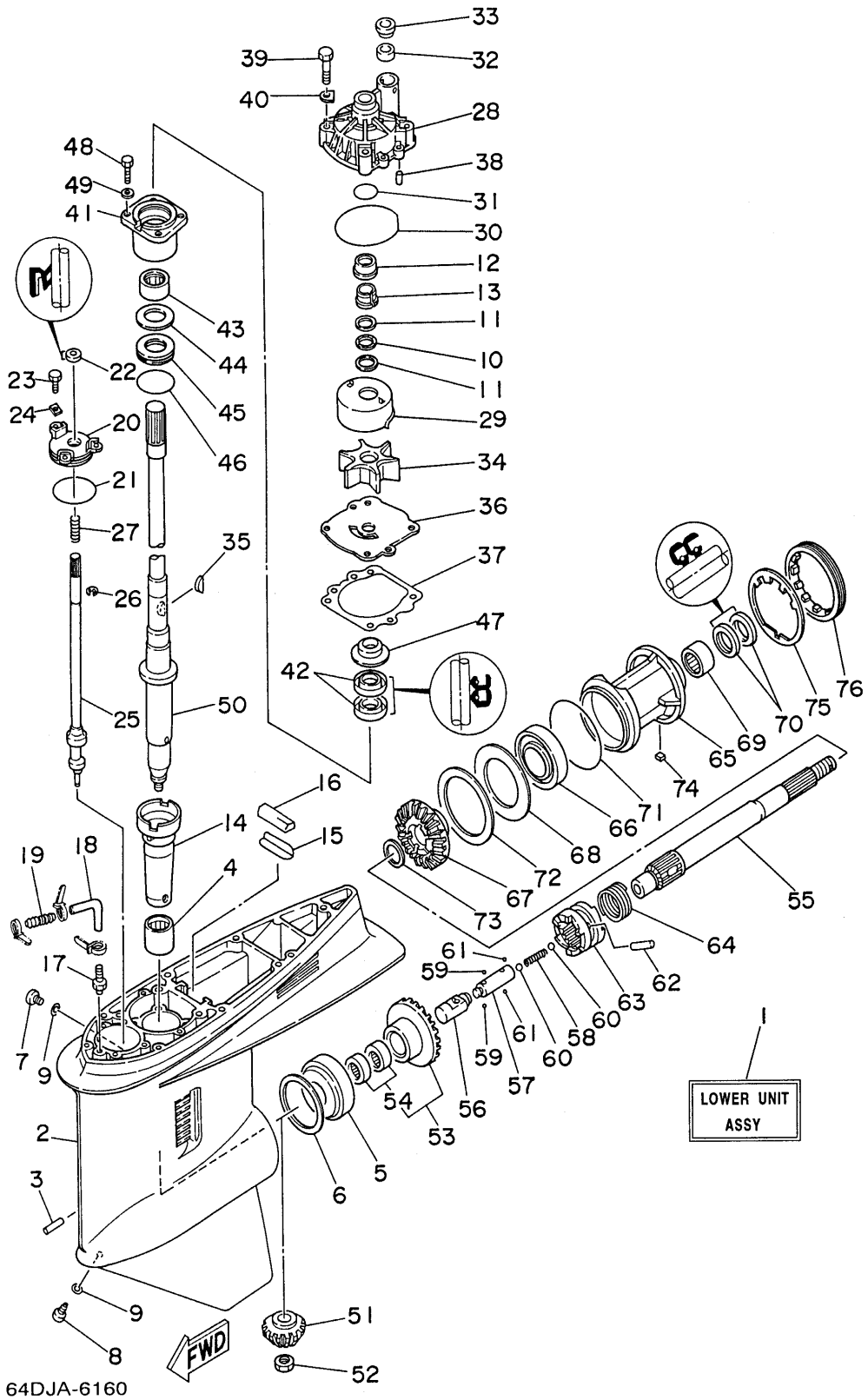


64DJA-6160

Ref. No.	Part Number	Description	Qty	Remarks
16	688-45375-00-00	DAMPER, SEAL	1	
17	6E5-45378-00-00	NIPPLE, HOSE	1	
18	90445-07ME8-00	HOSE	1	UR LONG
	90445-07ME9-00	HOSE	1	UR ULTRA LONG
19	6E5-83558-10-00	END, NIPPLE	1	
20	6E5-45321-00-00	PLATE	1	
21	93210-58677-00	O-RING (93210-58114)	1	
22	93106-09014-00	OIL SEAL	1	
23	97095-06020-00	BOLT	3	
24	90209-06M04-00	WASHER, SPEC''L SHAP	3	
25	6G5-44150-01-00	SHIFT CAM ASSEMBLY	1	
26	99001-08600-00	CIRCLIP	1	
27	90501-11M10-00	SPRING, COMPRESSION	1	
28	61A-44311-00-00	HOUSING, WATER PUMP	1	
29	61A-44322-00-00	INSERT, CARTRIDGE	1	
30	93210-86M38-00	O-RING	1	
31	93210-37M67-00	O-RING	1	
32	6E5-44365-00-00	DAMPER, WATER SEAL	1	
33	6E5-44312-00-00	COVER, WATER PUMP HOUSING	1	
34	6E5-44352-00-00	IMPELLER	1	
35	90280-04M05-00	KEY, WOODRUFF	1	
36	6G5-44323-00-00	OUTER PLATE, CARTRIDGE	1	
37	6E5-44315-A0-00	GASKET, WATER PUMP	1	
38	93606-12019-00	PIN, DOWEL	2	
39	97095-08045-00	BOLT	4	
40	90209-08M02-00	WASHER	4	
41	6E5-45331-00-94	HOUSING, BEARING	1	
42	93101-28M16-00	OIL SEAL	2	

CONTINUED ON NEXT FRAME ➤

LOWER CASING - DRIVE 1 (150 - 175 - 2

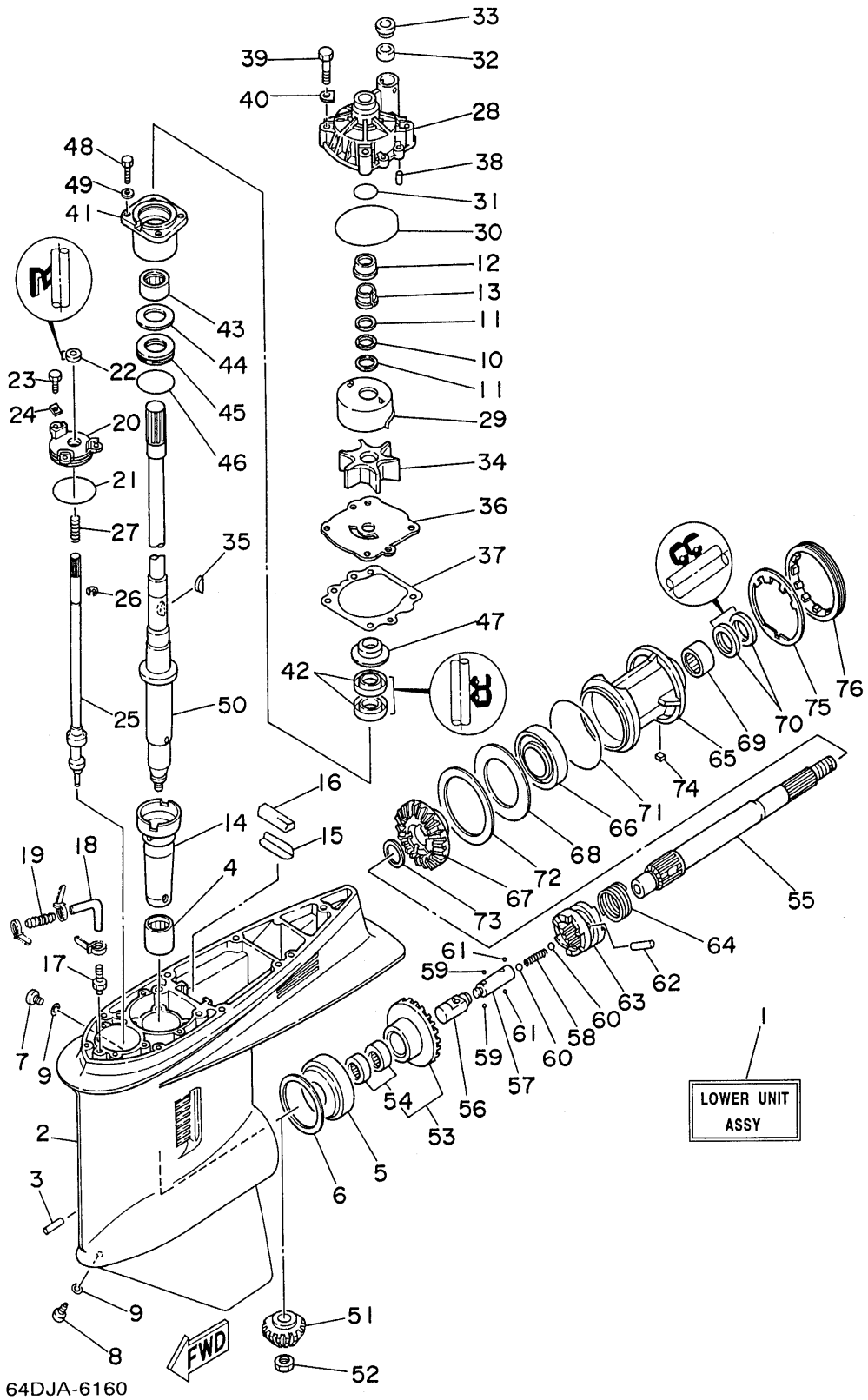


64DJA-6160

Ref. No.	Part Number	Description	Qty	Remarks
43	93315-430V5-00	BEARING, CYLINDRICAL	1	
44	6E5-45587-01-10	SHIM (T:0.10MM)	1	UR
	6E5-45587-01-12	SHIM (T:0.12MM)	1	UR
	6E5-45587-01-15	SHIM (T:0.15MM)	1	UR
	6E5-45587-01-18	SHIM (T:0.18MM)	1	UR
	6E5-45587-01-30	SHIM (T:0.30MM)	1	UR
	6E5-45587-01-40	SHIM (T:0.40MM)	1	UR
	6E5-45587-01-50	SHIM (T:0.50MM)	1	UR
45	93341-930V2-00	BEARING	1	
46	93210-54534-00	O-RING	1	
47	6E5-45344-00-00	COVER, OIL SEAL	1	
48	97095-08025-00	BOLT	4	
49	92990-08600-00	WASHER, PLATE	4	
50	6G5-45501-01-00	DRIVE SHAFT COMP.	1	UR LONG
	6G5-45501-21-00	DRIVE SHAFT COMP.	1	UR ULTRA LONG
51	6G5-45551-01-00	PINION	1	UR 150/175
	6G5-45551-10-00	PINION	1	UR 200
52	90170-16M01-00	NUT	1	
53	6G5-45560-01-00	GEAR	1	UR 150/175
	6G5-45560-10-00	GEAR	1	UR 200
54	93315-425V3-00	. BEARING	2	
55	6J9-45611-01-00	SHAFT, PROPELLER	1	
56	6E5-45641-01-00	SHIFTER	1	
57	6E5-45634-01-00	SLIDE, SHIFT	1	
58	90501-16M37-00	SPRING, COMPRESSION	1	
59	93507-32031-00	BALL	2	
60	93511-32027-00	BALL	2	
61	93503-16010-00	BALL	2	
62	90250-08M07-00	PIN, STRAIGHT	1	

CONTINUED ON NEXT FRAME ➤

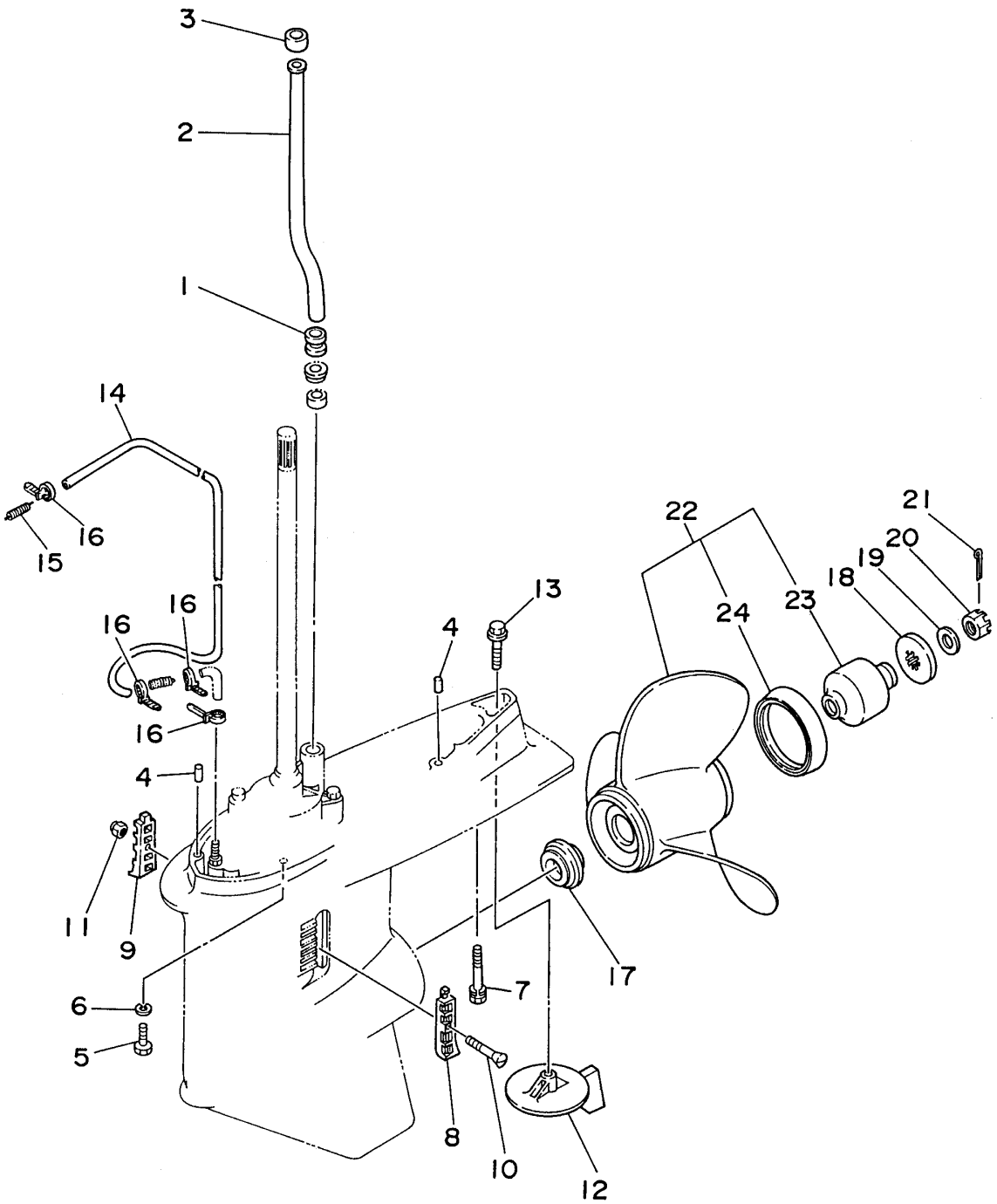
LOWER CASING - DRIVE 1 (150 - 175 - 2



64DJA-6160

Ref. No.	Part Number	Description	Qty	Remarks
63	6G5-45631-00-00	CLUTCH, DOG	1	UR 150/175
	6G5-45631-10-00	CLUTCH, DOG	1	UR 200
64	6E5-45633-01-00	RING, CROSS PIN	1	
65	6J9-45332-00-94	HOUSING, BEARING	1	
66	93306-209U0-00	BEARING	1	
67	6G5-45571-02-00	GEAR	1	
68	6G5-45576-00-00	WASHER, THRUST	1	
69	93315-430U8-00	BEARING	1	
70	93101-30M17-00	OIL SEAL	2	
71	93210-97M55-00	O-RING	1	
72	6G5-45577-02-10	SHIM (T:0.10MM)	1	UR
	6G5-45577-02-12	SHIM (T:0.12MM)	1	UR
	6G5-45577-02-15	SHIM (T:0.15MM)	1	UR
	6G5-45577-02-18	SHIM (T:0.18MM)	1	UR
	6G5-45577-02-30	SHIM (T:0.30MM)	1	UR
	6G5-45577-02-40	SHIM (T:0.40MM)	1	UR
	6G5-45577-02-50	SHIM (T:0.50MM)	1	UR
73	90201-30M92-00	WASHER, PLATE	1	
74	90282-04M00-00	KEY, STRAIGHT	1	
75	6G5-45383-01-00	WASHER, CLAW	1	
76	6G5-45384-00-00	NUT	1	

LOWER CASING - DRIVE 2 (150 - 175 - 2

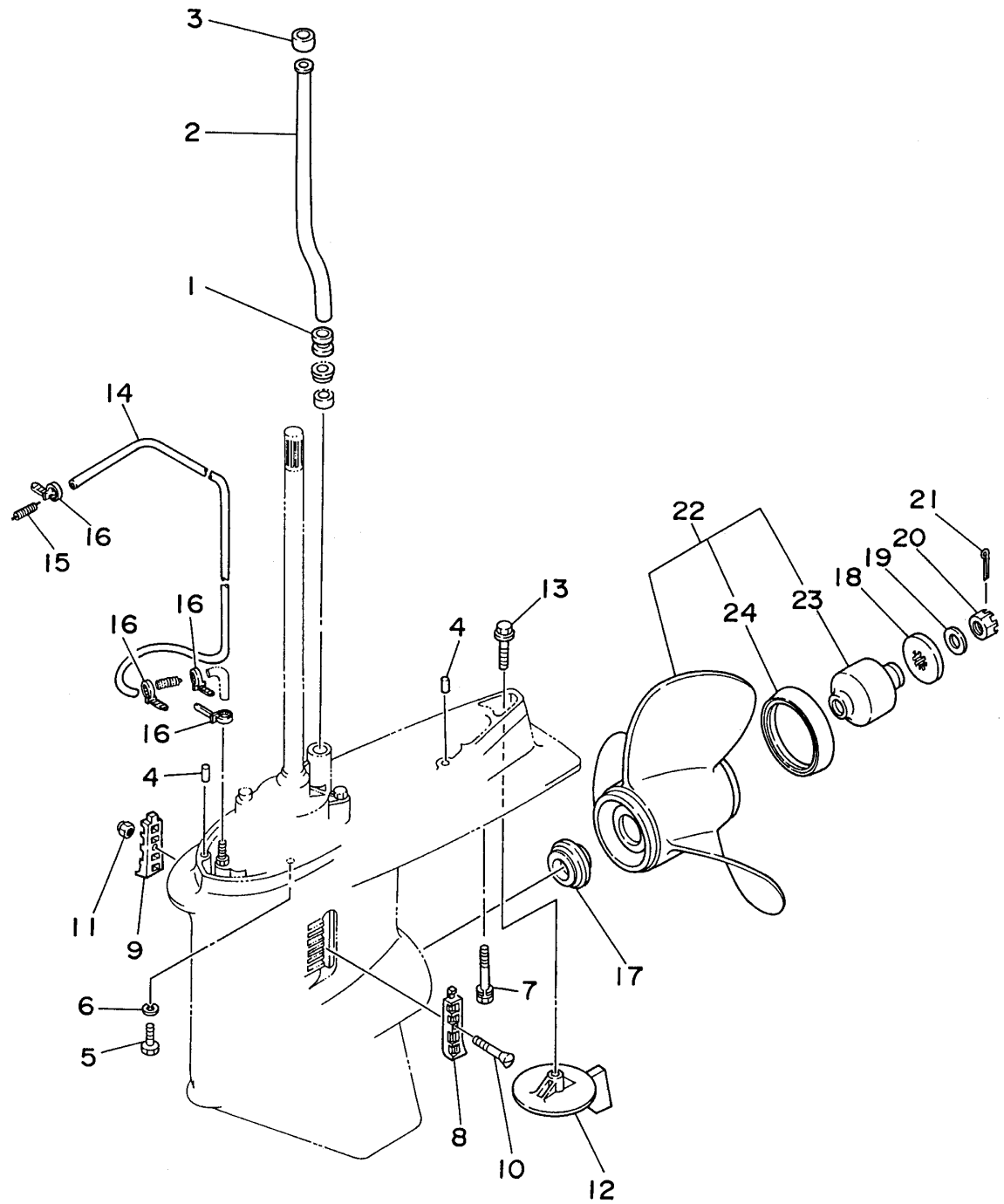


64DYMUS-6210

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-44366-00-00	DAMPER, WATER SEAL	1	
2	6E5-44361-00-00	TUBE, WATER	1	UR L0NG
	6E5-44361-20-00	TUBE, WATER	1	UR ULTRA LONG
3	6E5-44365-00-00	DAMPER, WATER SEAL	1	
4	93608-12M05-00	PIN, DOWEL	2	
5	97075-10045-00	BOLT	6	
6	92990-10100-00	WASHER, SPRING	6	
7	90119-10M89-00	BOLT, WITH WASHER	1	
8	6J9-45214-00-00	COVER, WATER INLET	1	
9	6J9-45215-00-00	COVER, WATER INLET	1	
10	90142-05M04-00	SCREW, COUNTERSUNK	1	
11	90185-05002-00	NUT, SELF-LOCKING	1	
12	6J9-45371-01-00	TAB-TRIM	1	
13	90105-10M67-00	BOLT, WASHER BASED	1	
14	90445-07M33-00	HOSE	1	
15	6E5-83558-00-00	END, NIPPLE	1	
16	90465-11M10-00	CLAMP	4	
17	6E5-45987-01-00	SPACER	1	
18	688-45997-01-00	SPACER	1	
19	92990-18200-00	WASHER	1	
20	90171-18M04-00	NUT, CASTLE	1	
21	91490-40030-00	PIN, COTTER	1	
22	6G5-45930-00-98	PROPELLER (3X13-3/8"X25"-M)	1	UR S/S
	6G5-45932-00-98	PROPELLER (3X15-3/4"X13"-M)	1	UR S/S
	6G5-45941-00-98	PROPELLER (3X15-1/4"X15"-M)	1	UR AL
	6G5-45943-01-98	PROPELLER (3X13-3/4"X21"-M)	1	UR AL
	6G5-45945-01-98	PROPELLER (3X14"X19"-M) ..	1	UR AL
	6G5-45947-01-98	PROPELLER (3X14-1/2"X17"-M)	1	UR AL
	6G5-45949-00-98	PROPELLER (3X13-1/2"X23"-M)	1	UR AL

CONTINUED ON NEXT FRAME ➤

LOWER CASING - DRIVE 2 (150 - 175 - 2



64DYMUS-6210

Ref. No.	Part Number	Description	Qty	Remarks
22	6G5-45952-00-98	PROPELLER (3X14-5/8"X16"-M)	1	UR AL
	6G5-45970-02-98	PROPELLER (3X15-1/4"X15"-M)	1	UR S/S
	6G5-45972-02-98	PROPELLER (3X13-3/4"X21"-M)	1	UR S/S
	6G5-45974-03-98	PROPELLER (3X13-3/4"X19"-M2)	1	UR S/S
	6G5-45976-01-98	PROPELLER (3X13-3/8"X23"-M)	1	UR S/S
	6G5-45978-03-98	PROPELLER (3X13-3/4"X17"-M2)	1	UR S/S
	6R4-45970-A0-00	PROPELLER (3X15-1/4"X19"-M)	1	UR S/W
	6R4-45972-A0-00	PROPELLER (3X14-7/8"X21"-M)	1	UR S/W
	6R4-45974-A0-00	PROPELLER (3X14-7/8"X23"-M)	1	UR S/W
	6R4-45976-A0-00	PROPELLER (3X14-1/2"X15"-M)	1	UR S/W
	6R4-45978-A0-00	PROPELLER (3X15-1/4"X17"-M)	1	UR S/W
23	6G5-45981-00-00	. DAMPER RUBBER, PROPELLER	1	
24	6G5-45986-00-94	. RING, DEFLECTOR	1	

LOWER CASING - DRIVE 3 (L150 - L200)

Ref. No.	Part Number	Description	Qty	Remarks
1	64G-45300-20-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR L150
	64H-45300-20-8D	LOWER UNIT ASSEMBLY (REF. #2~76)	1	UR L200
2	6J9-45301-03-8D	CASING, LOWER	1	
3	91690-30016-00	PIN, SPRING	1	
4	93311-928U5-00	BEARING	1	
5	93390-000U2-00	BEARING	1	
6	93341-465U4-00	BEARING	1	
7	6G5-45567-01-10	SHIM (T:0.10MM)	1	UR
	6G5-45567-01-12	SHIM (T:0.12MM)	1	UR
	6G5-45567-01-15	SHIM (T:0.15MM)	1	UR
	6G5-45567-01-18	SHIM (T:0.18MM)	1	UR
	6G5-45567-01-30	SHIM (T:0.30MM)	1	UR
	6G5-45567-01-40	SHIM (T:0.40MM)	1	UR
	6G5-45567-01-50	SHIM (T:0.50MM)	1	UR
8	90340-08M04-00	PLUG, STRAIGHT SCREW	1	
9	688-45341-00-00	PLUG, DRAIN	1	
10	90430-08020-00	GASKET	2	
11	90206-22M19-00	WASHER, WAVE	1	
12	90201-22M01-00	WASHER, PLATE	2	
13	61A-45527-00-00	COLLAR, DRIVE SHAFT	1	
14	61A-45538-00-00	SPACER 1	1	
15	6G5-45536-01-00	SLEEVE, DRIVE SHAFT	1	
16	64D-45376-00-94	GUIDE, SEAL DAMPER	1	
17	688-45375-00-00	DAMPER, SEAL	1	
18	6J8-45378-00-00	NIPPLE, HOSE	1	
19	6E5-45321-00-00	PLATE	1	
20	93210-58677-00	O-RING (93210-58114)	1	

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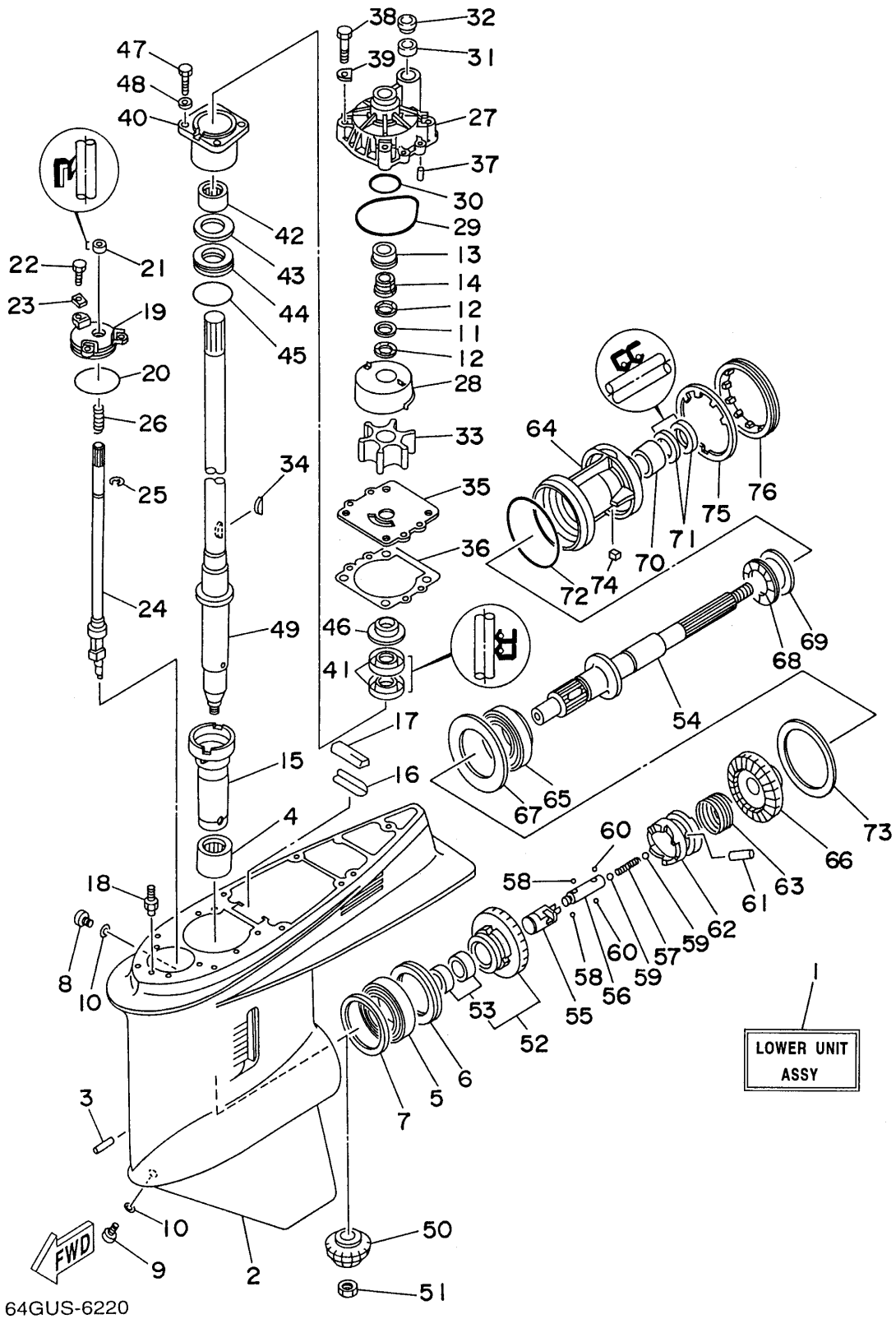
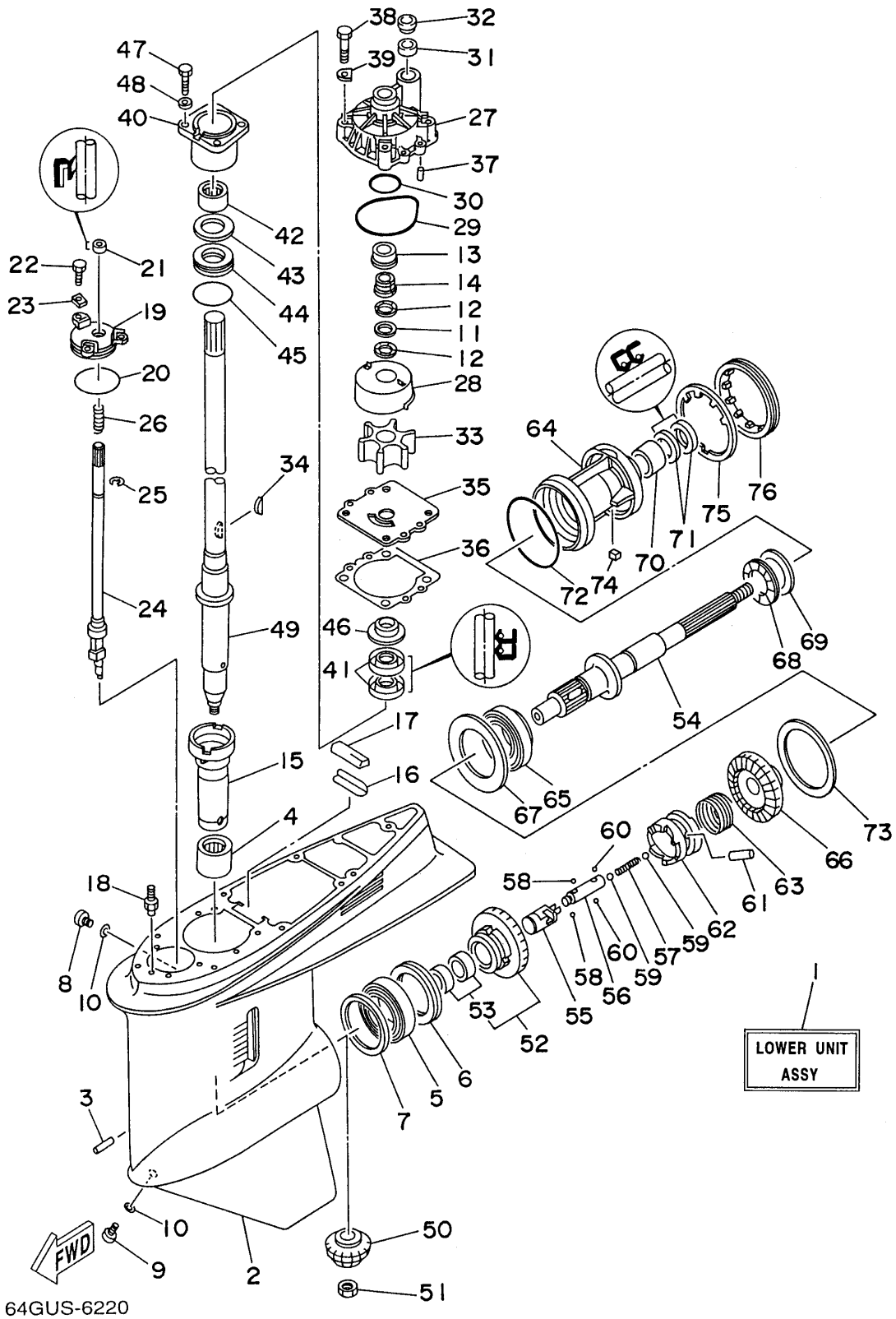


LOWER CASING - DRIVE 3 (L150 - L200)



Ref. No.	Part Number	Description	Qty	Remarks
21	93106-09014-00	OIL SEAL	1	
22	97095-06020-00	BOLT	3	
23	90209-06M04-00	WASHER, SPEC"L SHAP	3	
24	6K1-44150-00-00	SHIFT CAM ASSEMBLY	1	
25	99001-08600-00	CIRCLIP	1	
26	90501-11M10-00	SPRING, COMPRESSION	1	
27	61A-44311-00-00	HOUSING, WATER PUMP	1	
28	61A-44322-00-00	INSERT, CARTRIDGE	1	
29	93210-86M38-00	O-RING	1	
30	93210-37M67-00	O-RING	1	
31	6E5-44365-00-00	DAMPER, WATER SEAL	1	
32	6E5-44312-00-00	COVER, WATER PUMP HOUSING	1	
33	6E5-44352-00-00	IMPELLER	1	
34	90280-04M05-00	KEY, WOODRUFF	1	
35	6G5-44323-00-00	OUTER PLATE, CARTRIDGE	1	
36	6E5-44315-A0-00	GASKET, WATER PUMP	1	
37	93606-12019-00	PIN, DOWEL	2	
38	97095-08045-00	BOLT	4	
39	90209-08M02-00	WASHER	4	
40	6E5-45331-00-94	HOUSING, BEARING	1	
41	93101-28M16-00	OIL SEAL	2	
42	93315-430V5-00	BEARING, CYLINDRICAL	1	
43	6E5-45587-01-10	SHIM (T:0.10MM)	1	UR
	6E5-45587-01-12	SHIM (T:0.12MM)	1	UR
	6E5-45587-01-15	SHIM (T:0.15MM)	1	UR
	6E5-45587-01-18	SHIM (T:0.18MM)	1	UR
	6E5-45587-01-30	SHIM (T:0.30MM)	1	UR
	6E5-45587-01-40	SHIM (T:0.40MM)	1	UR

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LOWER CASING - DRIVE 3 (L150 - L200)

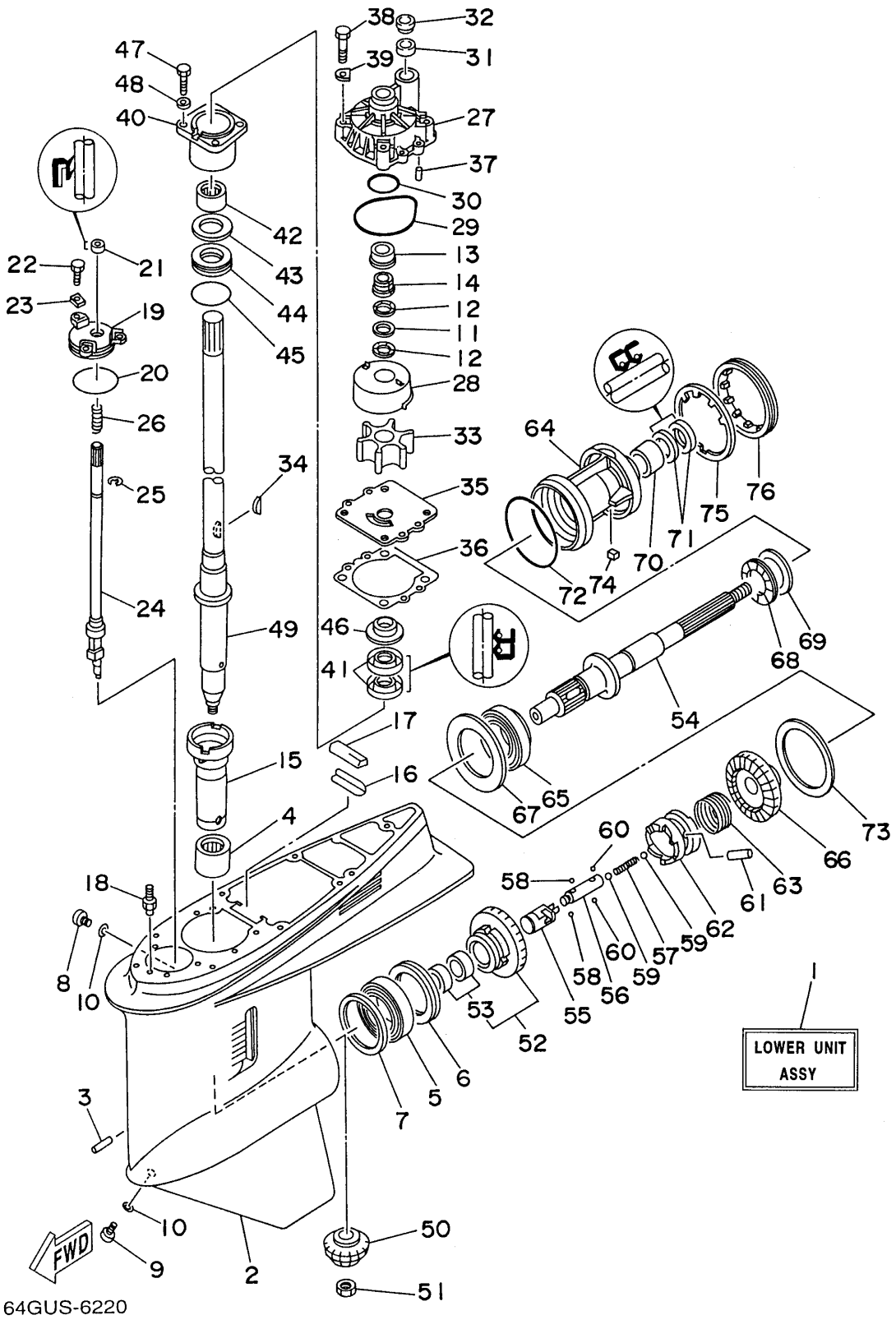
Ref. No.	Part Number	Description	Qty	Remarks
43	6E5-45587-01-50	SHIM (T:0.50MM)	1	UR
44	93341-930V2-00	BEARING	1	
45	93210-54534-00	O-RING	1	
46	6E5-45344-00-00	COVER, OIL SEAL	1	
47	97095-08025-00	BOLT	4	
48	92990-08600-00	WASHER, PLATE	4	
49	6G5-45501-21-00	DRIVE SHAFT COMP.	1	
50	6G5-45501-01-00	DRIVE SHAFT COMP.	1	UR L150
	6G5-45551-10-00	PINION	1	UR L200
51	90170-16M01-00	NUT	1	
52	6K1-45560-01-00	GEAR	1	
53	93315-425V3-00	. BEARING	2	
54	6K1-45611-10-00	SHAFT, PROPELLER	1	
55	6K1-45641-00-00	SHIFTER	1	
56	6E5-45634-01-00	SLIDE, SHIFT	1	
57	90501-16M37-00	SPRING, COMPRESSION	1	
58	93507-32031-00	BALL	2	
59	93511-32027-00	BALL	2	
60	93503-16010-00	BALL	2	
61	90250-08M07-00	PIN, STRAIGHT	1	
62	6G5-45631-00-00	CLUTCH, DOG	1	UR L150
	6G5-45631-10-00	CLUTCH, DOG	1	UR L200
63	6E5-45633-01-00	RING, CROSS PIN	1	
64	6K1-45332-01-94	HOUSING, BEARING	1	
65	93332-00048-00	BEARING	1	
66	6K1-45570-01-00	GEAR	1	UR L150
	6K1-45570-20-00	GEAR	1	UR L200
67	6K1-45576-00-00	WASHER, THRUST	1	
68	93341-440U5-00	BEARING	1	

CONTINUED ON NEXT FRAME ➤

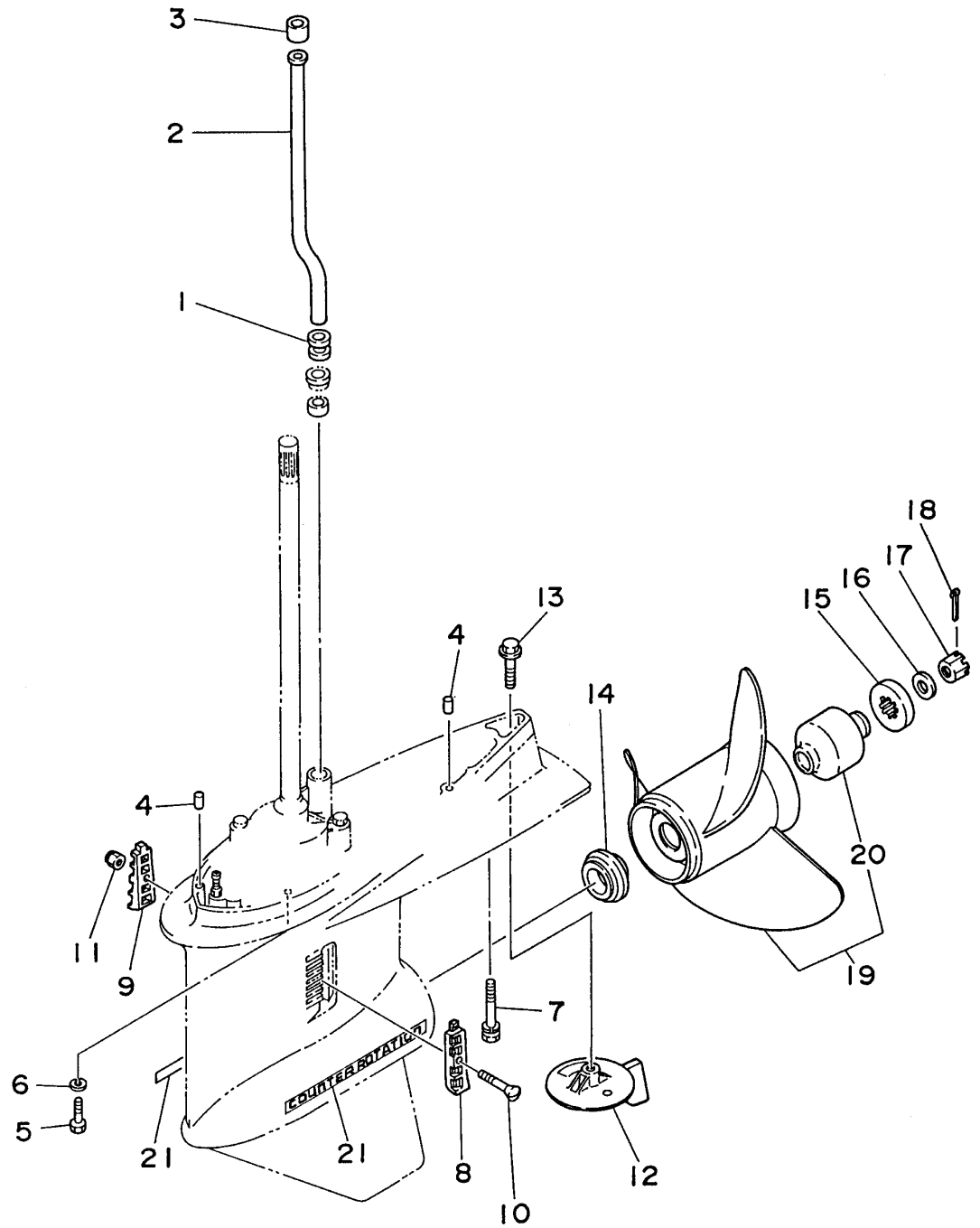
64GUS-6220

LOWER CASING - DRIVE 3 (L150 - L200)

Ref. No.	Part Number	Description	Qty	Remarks
69	6K1-45578-01-10	SHIM (T:0.10MM)	1	UR
	6K1-45578-01-12	SHIM (T:0.12MM)	1	UR
	6K1-45578-01-15	SHIM (T:0.15MM)	1	UR
	6K1-45578-01-18	SHIM (T:0.18MM)	1	UR
	6K1-45578-01-30	SHIM (T:0.30MM)	1	UR
	6K1-45578-01-40	SHIM (T:0.40MM)	1	UR
	6K1-45578-01-50	SHIM (T:0.50MM)	1	UR
70	93315-430U8-00	BEARING	1	
71	93101-30M17-00	OIL SEAL	2	
72	93210-97M55-00	O-RING	1	
73	6G5-45577-02-10	SHIM (T:0.10MM)	1	UR
	6G5-45577-02-12	SHIM (T:0.12MM)	1	UR
	6G5-45577-02-15	SHIM (T:0.15MM)	1	UR
	6G5-45577-02-18	SHIM (T:0.18MM)	1	UR
	6G5-45577-02-30	SHIM (T:0.30MM)	1	UR
	6G5-45577-02-40	SHIM (T:0.40MM)	1	UR
	6G5-45577-02-50	SHIM (T:0.50MM)	1	UR
74	90282-04M00-00	KEY, STRAIGHT	1	
75	6G5-45383-01-00	WASHER, CLAW	1	
76	6G5-45384-00-00	NUT	1	



LOWER CASING - DRIVE 4 (L150 - L200)



Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-44366-00-00	DAMPER, WATER SEAL	1	
2	6E5-44361-20-00	TUBE, WATER	1	
3	6E5-44365-00-00	DAMPER, WATER SEAL	1	
4	93608-12M05-00	PIN, DOWEL	2	
5	97075-10045-00	BOLT	6	
6	92990-10100-00	WASHER, SPRING	6	
7	90119-10M89-00	BOLT, WITH WASHER	1	
8	6J9-45214-00-00	COVER, WATER INLET	1	
9	6J9-45215-00-00	COVER, WATER INLET	1	
10	90142-05M04-00	SCREW, COUNTERSUNK	1	
11	90185-05002-00	NUT, SELF-LOCKING	1	
12	6K1-45371-02-00	TAB-TRIM	1	
13	90105-10M67-00	BOLT, WASHER BASED	1	
14	6E5-45987-01-00	SPACER	1	
15	688-45997-01-00	SPACER	1	
16	92990-18200-00	WASHER	1	
17	90171-18M04-00	NUT, CASTLE	1	
18	91490-40030-00	PIN, COTTER	1	
19	6K1-45970-01-98	PROPELLER (3X15-1/4"X15"-ML)	1	UR S/S
	6K1-45972-01-98	PROPELLER (3X13-3/4"X21"-ML)	1	UR S/S
	6K1-45974-02-98	PROPELLER (3X13-3/4"X19"-ML1)	1	UR S/S
	6K1-45978-02-98	PROPELLER (3X13-3/4"X17"-ML1)	1	UR S/S
	6R1-45970-A0-00	PROPELLER (3X15-1/4"X19"-ML)	1	UR S/W
	6R1-45972-A0-00	PROPELLER (3X14-7/8"X21"-ML)	1	UR S/W
	6R1-45974-A0-00	PROPELLER (3X14-7/8"X23"-ML)	1	UR S/W

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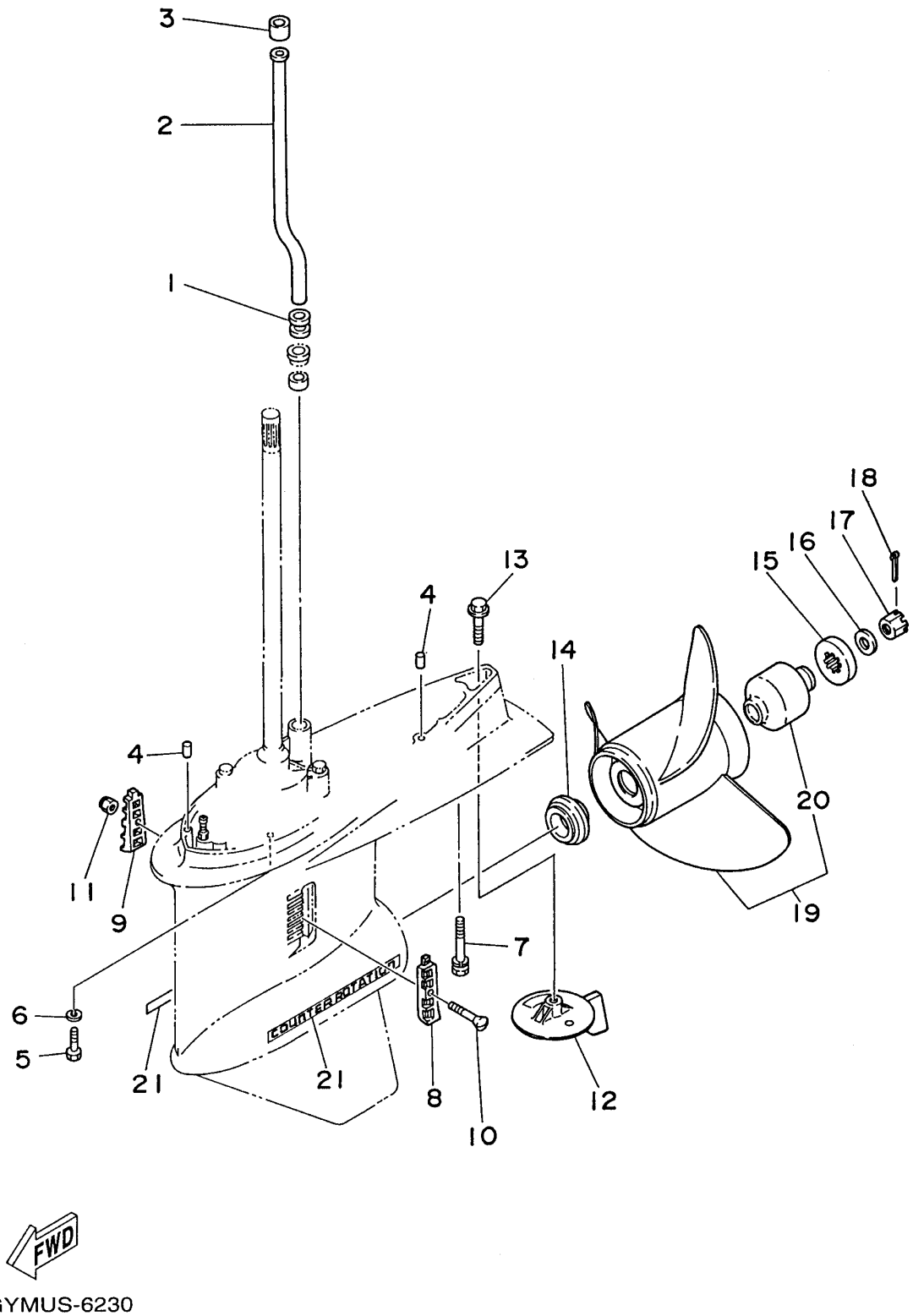
64GYMUS-6230

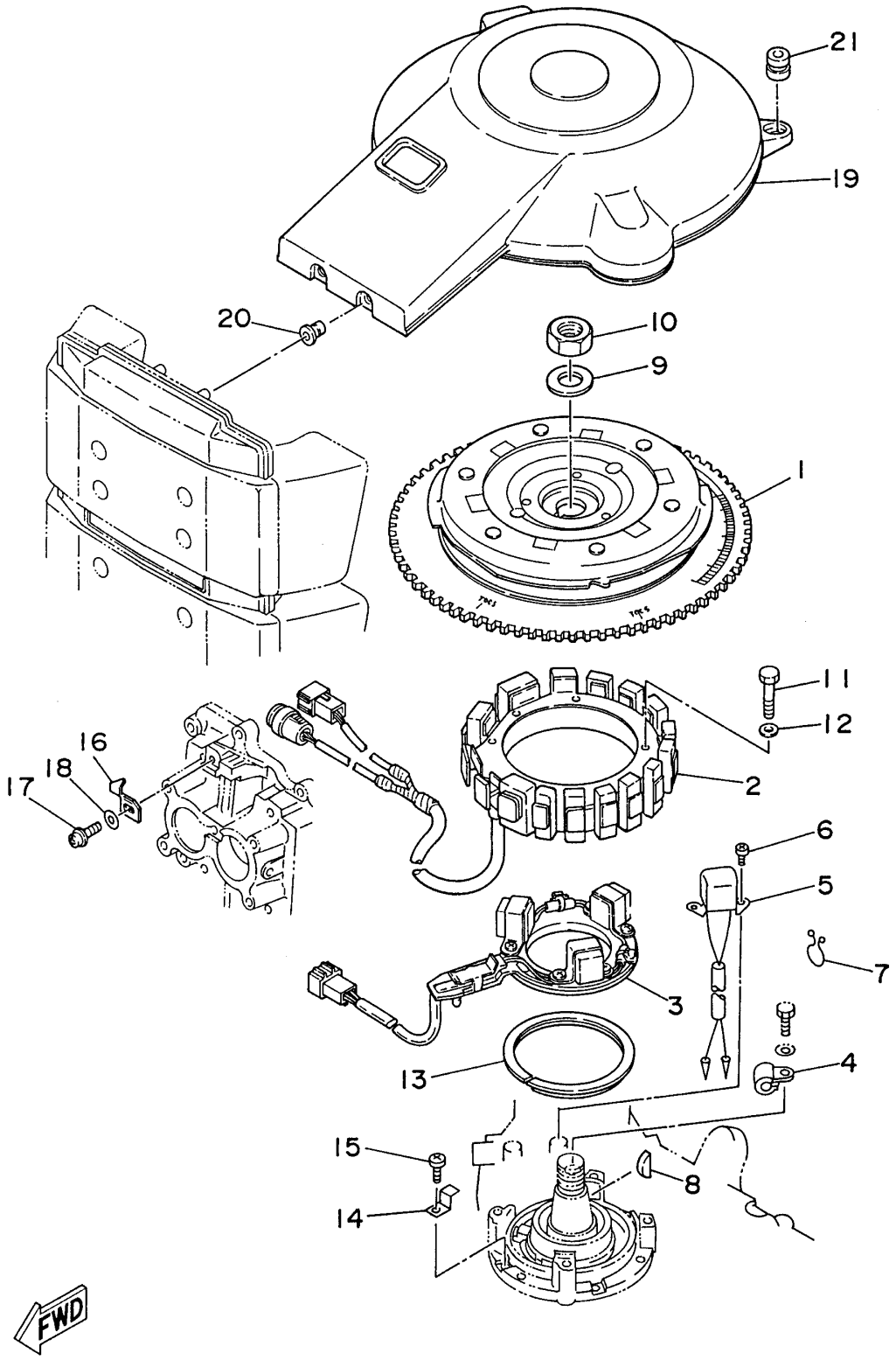
LOWER CASING - DRIVE 4 (L150 - L200)



64GYMUS-6230

Ref. No.	Part Number	Description	Qty	Remarks
19	6R1-45976-A0-00	PROPELLER (3X14-1/2"X15"-ML)	1	UR S/W
	6R1-45978-A0-00	PROPELLER (3X15-1/4"X17"-ML)	1	UR S/W
20	6G5-45981-00-00	. DAMPER RUBBER, PROPELLER	1	
21	6K1-45392-00-00	GRAPHIC, LOWER	2	AP

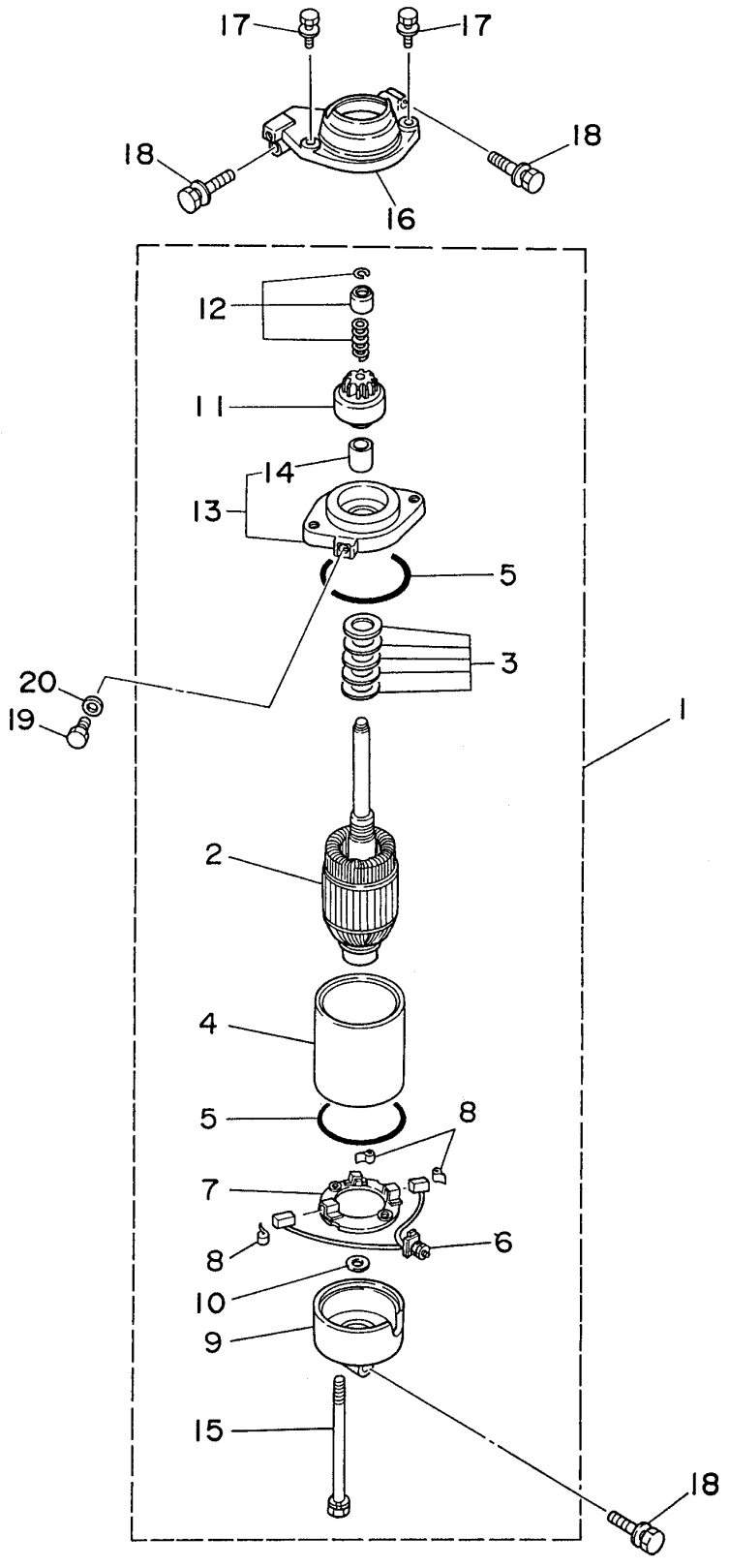
GENERATOR



64DJA-6180

Ref. No.	Part Number	Description	Qty	Remarks
1	64D-85550-00-00	ROTOR ASSEMBLY	1	
2	6R3-85510-00-00	STATOR ASSEMBLY	1	
3	64D-85580-00-00	COIL, PULSER	1	
4	90465-08028-00	CLAMP	1	
5	6R5-85895-01-00	CRANK POSITION SENDER	1	
6	98580-05012-00	SCREW, PAN HEAD	2	
7	90464-16039-00	CLAMP	1	
8	90280-05049-00	KEY, WOODRUFF	1	
9	90201-21M18-00	WASHER, PLATE	1	
10	90170-20137-00	NUT	1	
11	97013-06070-00	BOLT	4	
12	92990-06600-00	WASHER, PLATE	4	
13	688-41611-00-00	RETAINER, MAGNETO BASE	1	
14	688-41612-00-00	RETAINER, MAGNETO BASE	4	
15	97880-06018-00	SCREW, PAN HEAD	4	
16	6E5-81332-00-00	PLATE, TIMING	1	
17	97985-06210-00	SCREW, WITH WASHER	1	
18	92990-06600-00	WASHER, PLATE	1	
19	64D-81337-00-00	COVER, FLYWHEEL	1	UR S/W
	6R3-81337-00-00	COVER, FLYWHEEL	1	UR NOT S/W
20	6G5-82317-00-00	DAMPER, IGNITION COIL	2	UR NOT S/W
	90480-13M24-00	GROMMET	1	UR S/W
21	663-82317-01-00	DAMPER, IGNITION COIL	2	

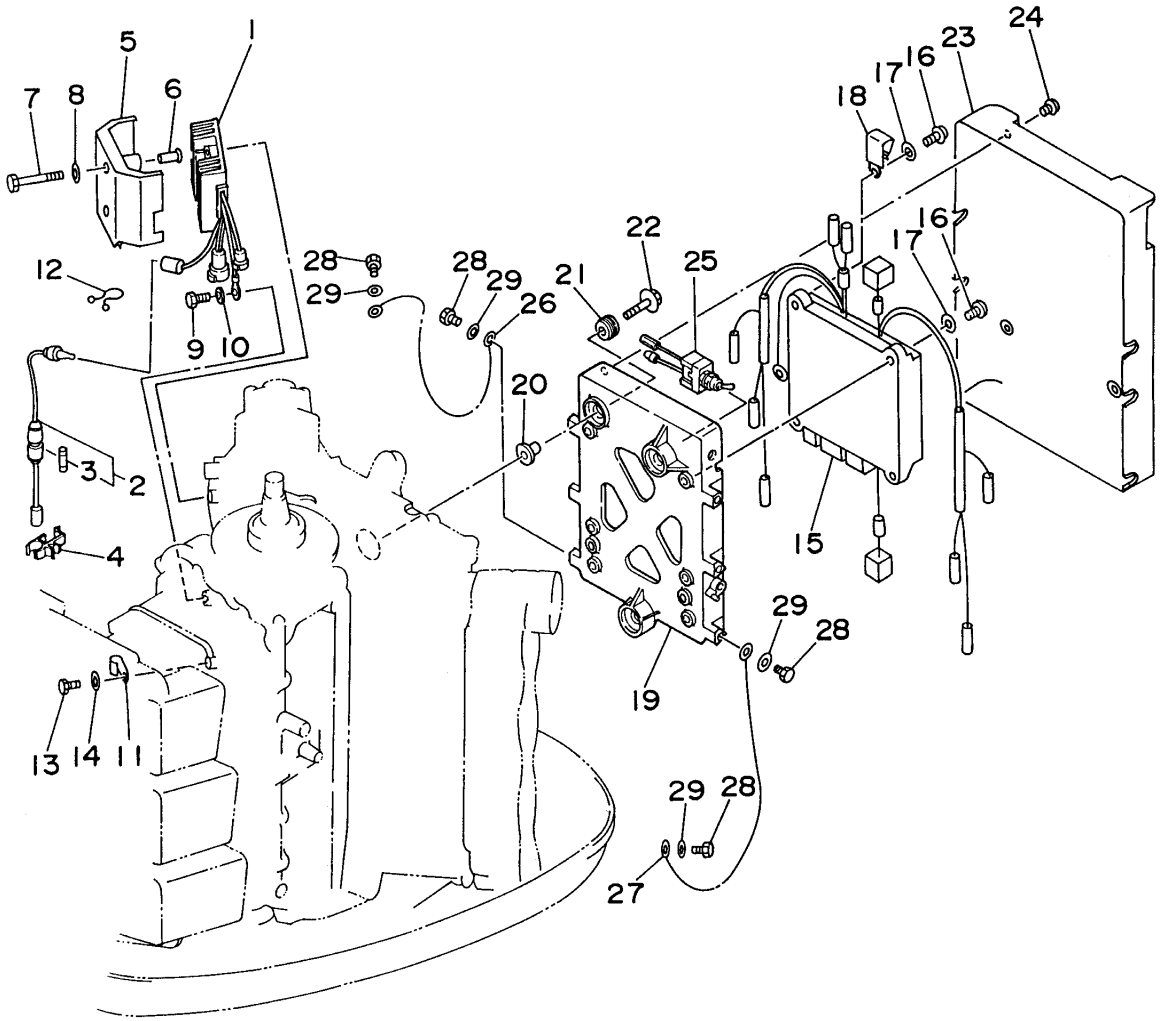
STARTING MOTOR



6R3JA-4181

Ref. No.	Part Number	Description	Qty	Remarks
1	6E5-81800-12-00	STARTING MOTOR ASSEMBLY	1	
2	6E5-81850-11-00	. ARMATURE ASSEMBLY	1	
3	6E5-81809-10-00	. WASHER KIT	1	
4	6E5-81810-10-00	. STATOR ASSEMBLY	1	
5	6E5-81847-10-00	. O-RING	2	
6	6E5-81801-10-00	. BRUSH SET	1	
7	6E5-81840-10-00	. BRUSH HOLDER ASSEMBLY	1	
8	6E5-81813-10-00	. SPRING, BRUSH	3	
9	6E5-81820-11-00	. REAR BRACKET ASSEMBLY	1	
10	6E5-81824-00-00	. WASHER 2	1	
11	6E5-81807-11-00	. GEAR ASSEMBLY, STARTING MOTOR	1	
12	61H-81857-00-00	. RETAINER	1	
13	6E5-81830-10-00	. FRONT BRACKET ASSEMBLY	1	
14	688-81831-00-00	. . METAL, FRONT	1	
15	6E5-81826-10-00	. BOLT	2	
16	6K7-81822-00-94	BLACKET, STARTING MOTOR	1	UR 200/L200
	6R3-81822-00-94	BRACKET, STARTING MOTOR	1	UR
17	90119-08M76-00	BOLT, WITH WASHER	2	
18	90119-08M77-00	BOLT, WITH WASHER	3	
19	97095-08016-00	BOLT	1	
20	92990-08600-00	WASHER, PLATE	1	

ELECTRICAL 1



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64DJA-6200

Ref. No.	Part Number	Description	Qty	Remarks
1	6R3-81960-10-00	RECTIFIER & REGULATOR ASSEMBLY	1	
2	6R3-82150-00-00	FUSE HOLDER ASSEMBLY	1	
3	705-82151-00-00	. FUSE (30A)	1	
4	6G5-82152-00-00	HOLDER, FUSE	1	
5	64D-81942-00-00	COVER	1	
6	90387-06M66-00	COLLAR	2	
7	97013-06055-00	BOLT	2	
8	92990-06600-00	WASHER, PLATE	2	
9	97013-06012-00	BOLT	1	
10	92990-06600-00	WASHER, PLATE	1	
11	90465-08M51-00	CLAMP	1	
12	90464-16039-00	CLAMP	1	
13	97013-06012-00	BOLT	1	
14	92990-06600-00	WASHER, PLATE	1	
15	64D-85540-00-00	C.D.I. UNIT ASSEMBLY	1	UR
	64E-85540-00-00	C.D.I. UNIT ASSEMBLY	1	UR 200/L200
16	98580-06020-00	SCREW	4	
17	92990-06600-00	WASHER, PLATE	4	
18	90465-08M33-00	CLAMP	1	
19	6R3-85542-03-4D	BRACKET	1	
20	90387-06M03-00	COLLAR	3	
21	90480-09M12-00	GROMMET	3	
22	90119-06M60-00	BOLT, WITH WASHER	3	
23	64D-85537-00-00	COVER	1	
24	90159-06M11-00	SCREW, WITH WASHER	4	
25	6R3-8259E-00-00	SWITCH ASSEMBLY	1	
26	662-82519-00-00	WIRE, EARTH LEAD	1	
27	6R3-82519-00-00	WIRE, EARTH LEAD	1	

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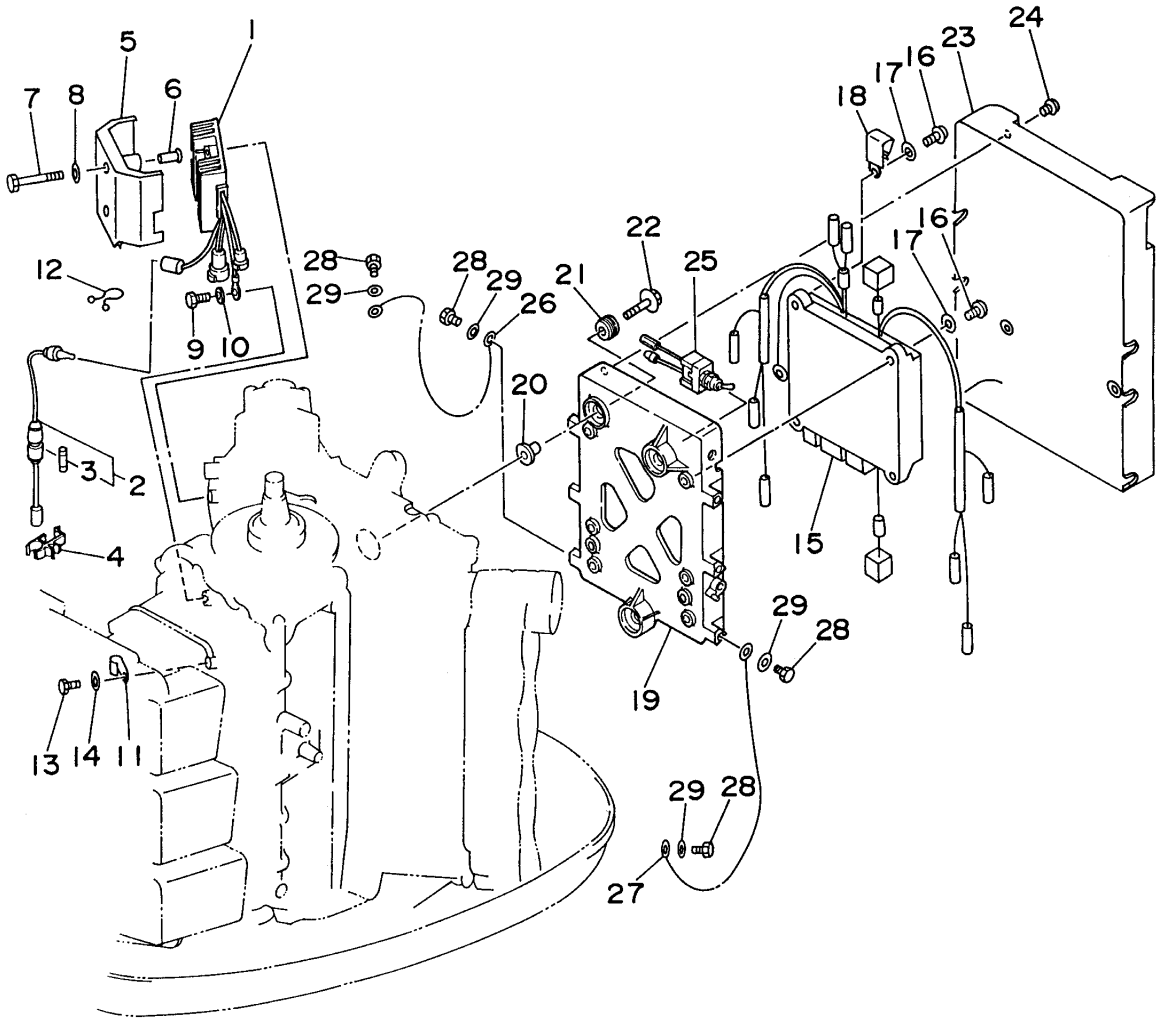
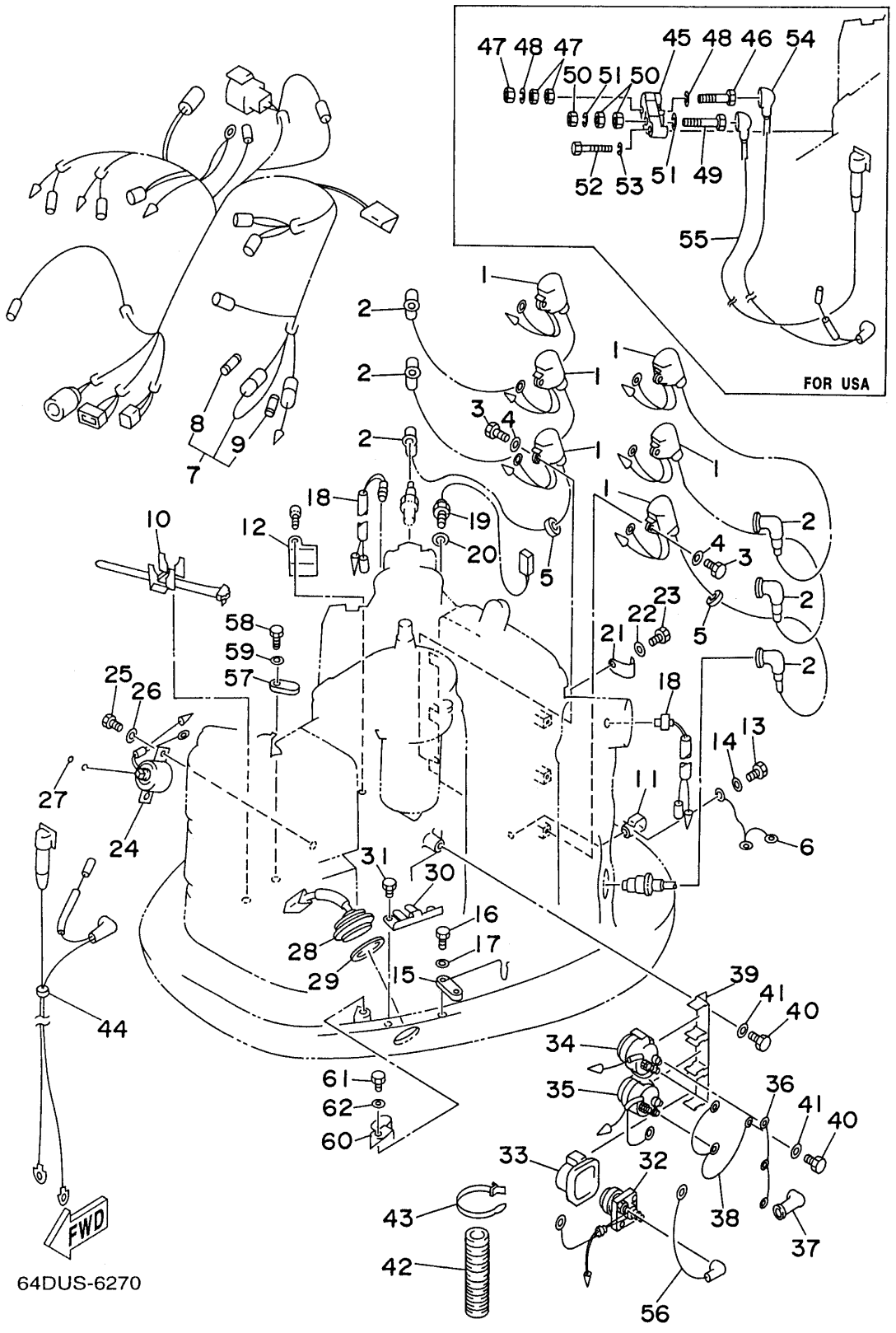
ELECTRICAL 1



64DJA-6200

Ref. No.	Part Number	Description	Qty	Remarks
28	97095-06012-00	BOLT	5	
29	92990-06600-00	WASHER, PLATE	5	

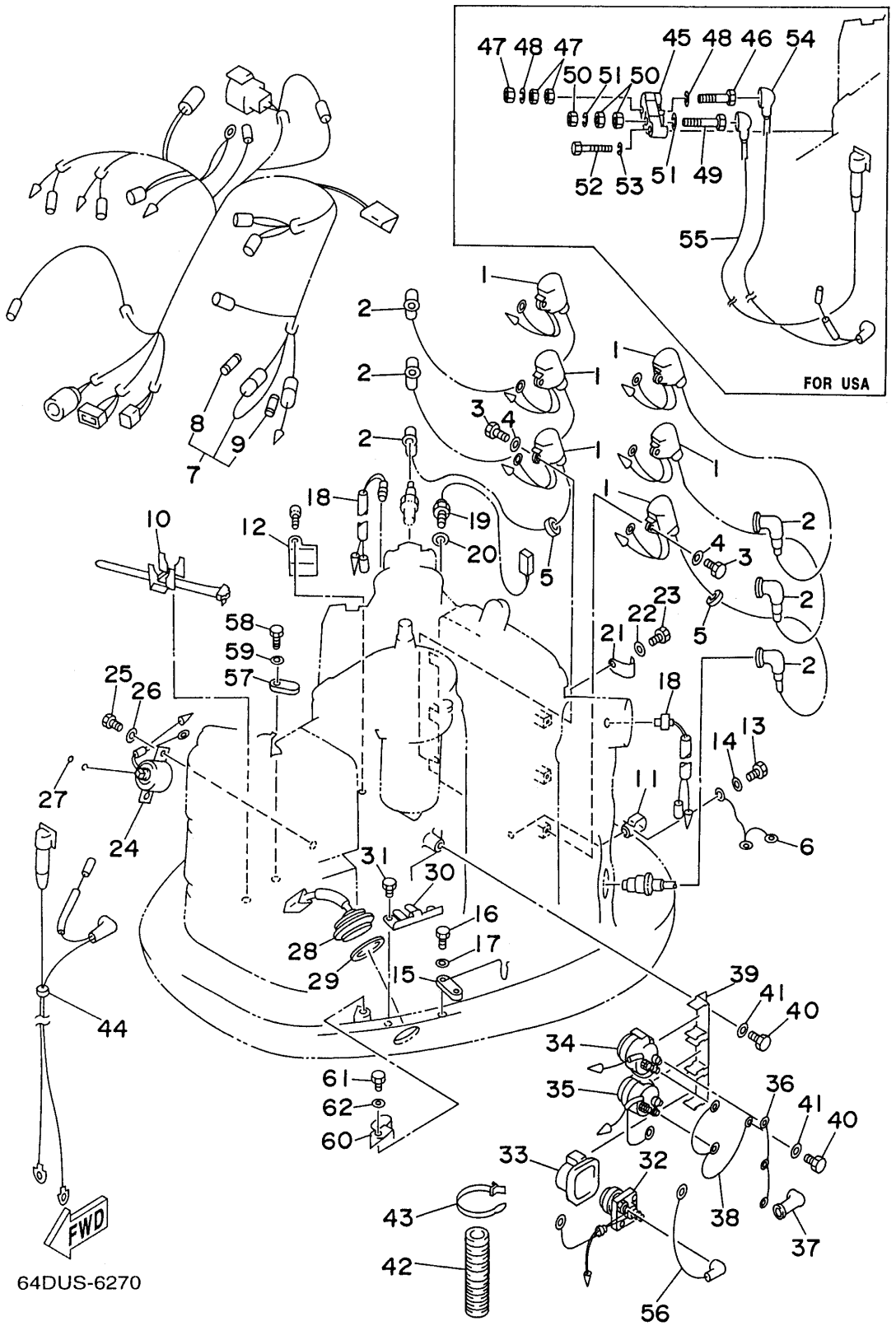
ELECTRICAL 2



Ref. No.	Part Number	Description	Qty	Remarks
1	6R3-85570-01-00	IGNITION COIL ASSEMBLY	6	
2	6E3-82370-20-00	PLUG CAP ASSEMBLY	6	
3	97095-06020-00	BOLT	6	
4	92990-06600-00	WASHER, PLATE	6	
5	90480-25161-00	GROMMET	2	
6	6E5-82531-00-00	WIRE, LEAD	1	
7	64D-82590-00-00	WIRE HARNESS ASSEMBLY	1	
8	682-82151-00-00	. FUSE (20A)	1	
9	705-82151-00-00	. FUSE (30A)	1	
10	688-82594-00-00	CLAMP	1	
11	90465-08M33-00	CLAMP	1	
12	90465-10M14-00	CLAMP	1	
13	97095-06012-00	BOLT	1	
14	92990-06600-00	WASHER, PLATE	1	
15	6K7-82588-00-00	PLATE	1	
16	97095-06020-00	BOLT	1	
17	92990-06600-00	WASHER, PLATE	1	
18	688-82560-10-00	THERMO SWITCH ASSEMBLY	2	
19	61A-85790-00-00	THERMOSENSOR ASSEMBLY	1	
20	92990-10600-00	WASHER, PLATE	1	
21	90465-08028-00	CLAMP	1	
22	97095-06012-00	BOLT	1	
23	92990-06600-00	WASHER, PLATE	1	
24	64D-86110-00-00	SOLENOID	1	UR
	64E-86110-00-00	SOLENOID	1	UR 200/L200
25	97095-06016-00	BOLT	2	
26	92990-06600-00	WASHER, PLATE	2	
27	93210-03261-00	O-RING	1	
28	6R3-82563-00-00	TRIM & TILT SWITCH ASSEMBLY	1	

CONTINUED ON NEXT FRAME ➤

ELECTRICAL 2



64DUS-6270

Ref. No.	Part Number	Description	Qty	Remarks
29	6E5-82587-00-00	GASKET	1	
30	6R3-83614-00-00	BRACKET	1	
31	97095-06012-00	BOLT	2	
32	61A-81941-00-00	STARTER RELAY ASSEMBLY	1	
33	689-81952-10-00	HOLDER, RELAY	1	
34	6E5-81950-00-00	RELAY ASSEMBLY	1	
35	6E5-8195A-00-00	RELAY ASSEMBLY	1	
36	6G5-87149-10-00	CONNECTOR	1	
37	6G5-82119-00-00	COVER, LEAD WIRE	2	
38	6E5-82116-00-00	WIRE, MINUS LEAD	1	
39	6G5-81948-11-00	BRACKET	1	
40	97095-06016-00	BOLT	2	
41	92990-06600-00	WASHER, PLATE	2	
42	6E9-83557-70-00	TUBE	1	
43	90465-13M36-00	CLAMP	1	
44	64D-82105-00-00	WIRE HARNESS	1	
45	64D-81920-00-00	TERMINAL ASSEMBLY	1	
46	90101-08M26-00	BOLT	1	
47	95380-08700-00	NUT	3	
48	92990-08100-00	WASHER	2	
49	90101-06M24-00	BOLT	1	
50	95380-06700-00	NUT	3	
51	92995-06100-00	WASHER, SPRING	2	
52	97095-06035-00	BOLT	2	
53	92995-06100-00	WASHER, SPRING	2	
54	64D-82117-00-00	WIRE, LEAD	1	
55	64D-82116-00-00	WIRE, MINUS LEAD	1	
56	6E5-82117-00-00	WIRE, LEAD	1	
57	6E5-82588-00-00	PLATE	1	

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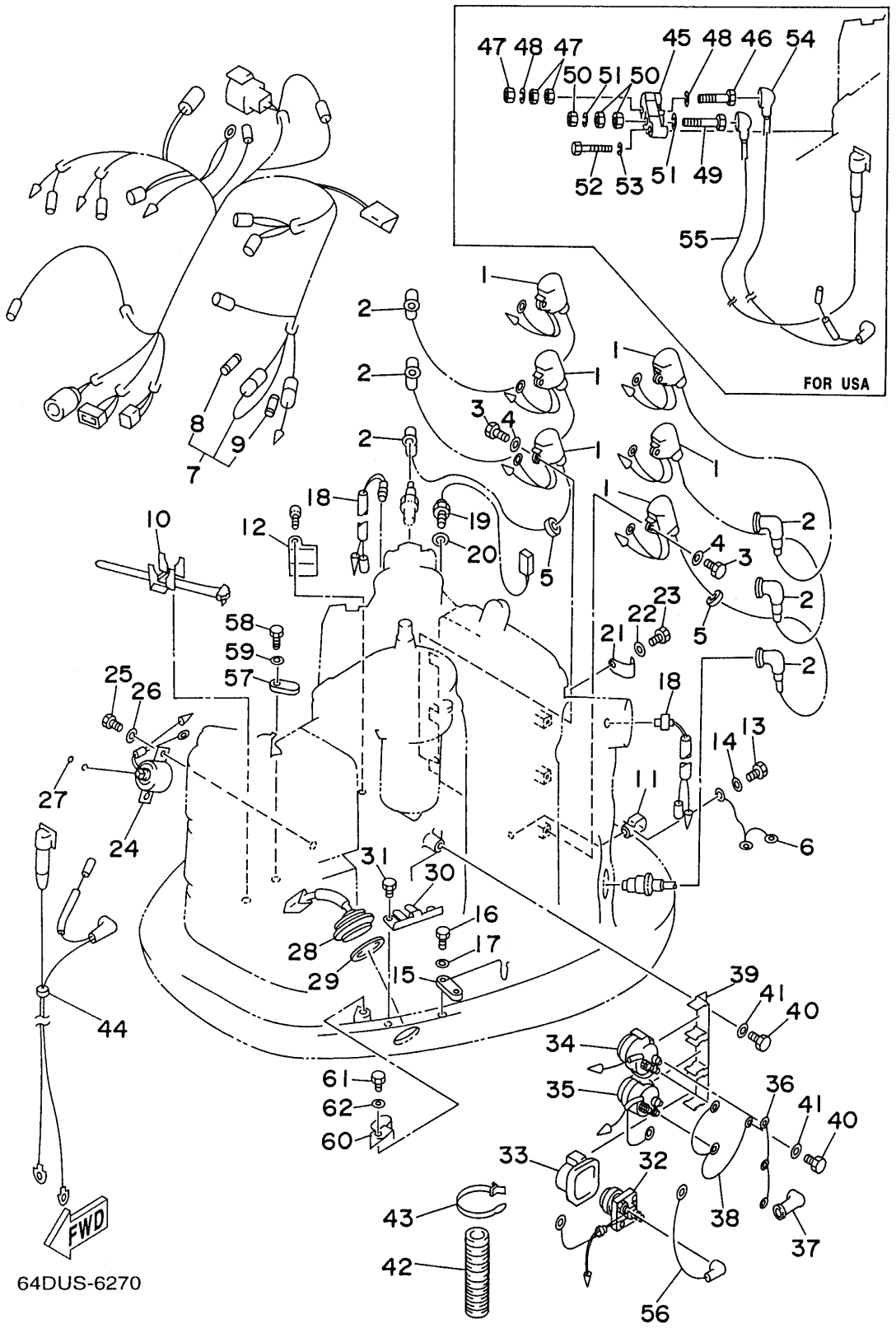
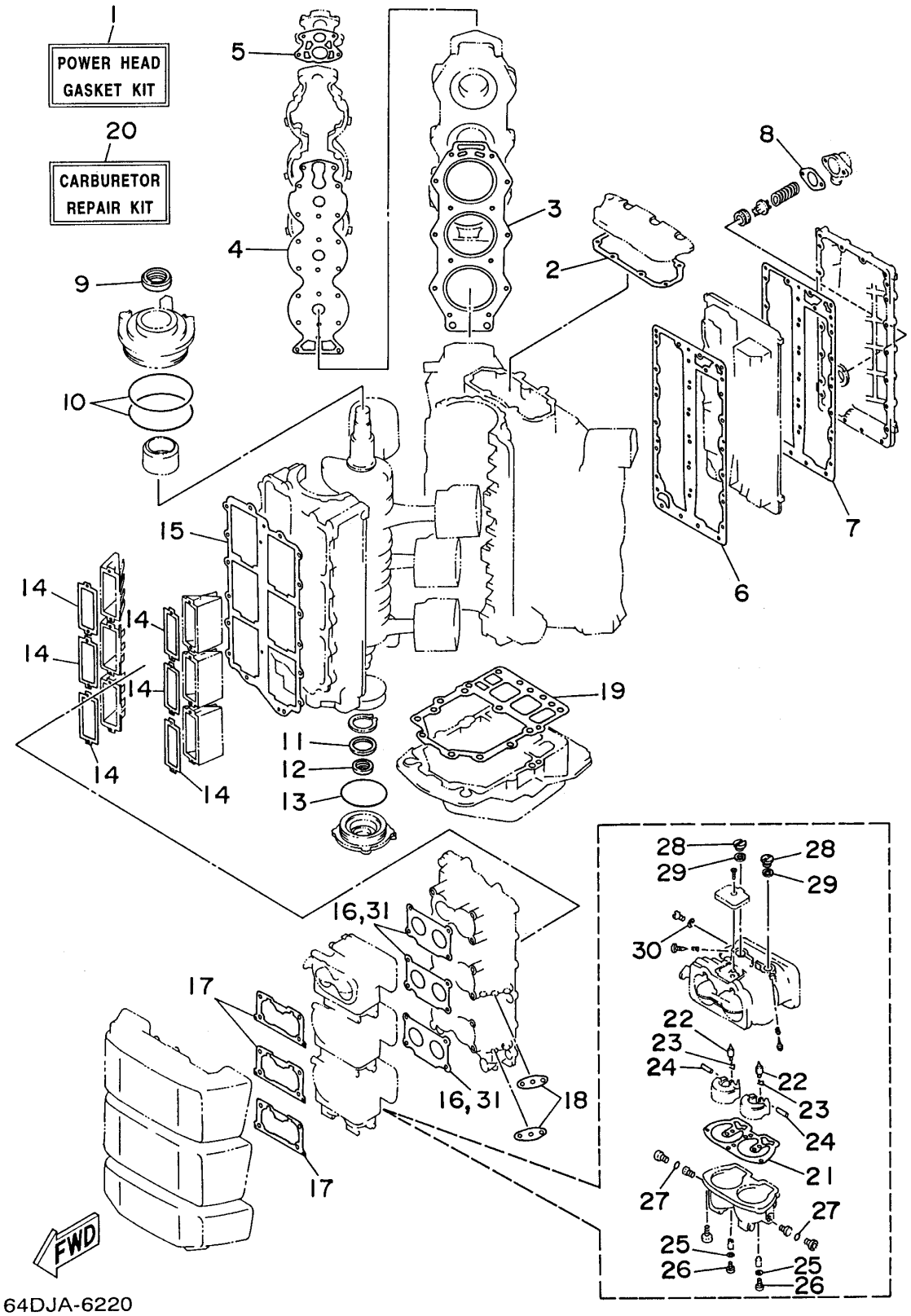
ELECTRICAL 2



64DUS-6270

Ref. No.	Part Number	Description	Qty	Remarks
58	97095-06020-00	BOLT	1	
59	92990-06600-00	WASHER, PLATE	1	
60	90465-12M25-00	CLAMP	1	
61	97095-06012-00	BOLT	1	
62	92990-06600-00	WASHER, PLATE	1	

REPAIR KIT 1-1



64DJA-6220

Ref. No.	Part Number	Description	Qty	Remarks
1	64D-W0001-00-00	POWER HEAD GASKET KIT ..	1	
2	6E5-11381-A2-00	. GASKET 1	1	
3	6G5-11181-A0-00	. GASKET, CYLINDER HEAD 1	2	
4	6G5-11193-A0-00	. GASKET, HEAD COVER 1 ...	2	
5	688-12414-A1-00	. GASKET, COVER	2	
6	6G5-41112-A1-00	. GASKET, EXHAUST INNER COVER	1	
7	6G5-41112-A1-00	. GASKET, EXHAUST INNER COVER	1	
8	6G5-11382-A1-00	. GASKET 2	1	
9	93102-40M38-00	. OIL SEAL	1	
10	93211-04384-00	. O-RING	2	
11	93102-35M13-00	. OIL SEAL	1	
12	93101-22M15-00	. OIL SEAL	1	
13	93210-74M35-00	. O-RING	1	
14	6E5-13621-A1-00	. GASKET, VALVE SEAT	6	
15	6G5-13645-A1-00	. GASKET, MANIFOLD 1	1	
16	6E5-14198-A2-00	. GASKET	3	
17	6K7-14483-00-00	. GASKET	3	
18	650-24431-A0-00	. GASKET, FUEL PUMP 1	2	
19	6G5-45113-A1-00	. GASKET, UPPER CASING ...	1	
20	64D-W0093-00-00	CARBURETOR REPAIR KIT ...	1	
21	64D-14384-00-00	. GASKET, FLOAT CHAMBER .	1	
22	6E5-14546-00-00	. VALVE, NEEDLE	2	
23	6E5-14159-00-00	. CLIP	2	
24	6E5-14386-02-00	. PIN, FLOAT	2	
25	61U-14959-00-00	. GASKET	2	
26	64D-14394-00-00	. VALVE, DRAIN	2	
27	6E5-14398-01-00	. GASKET	2	

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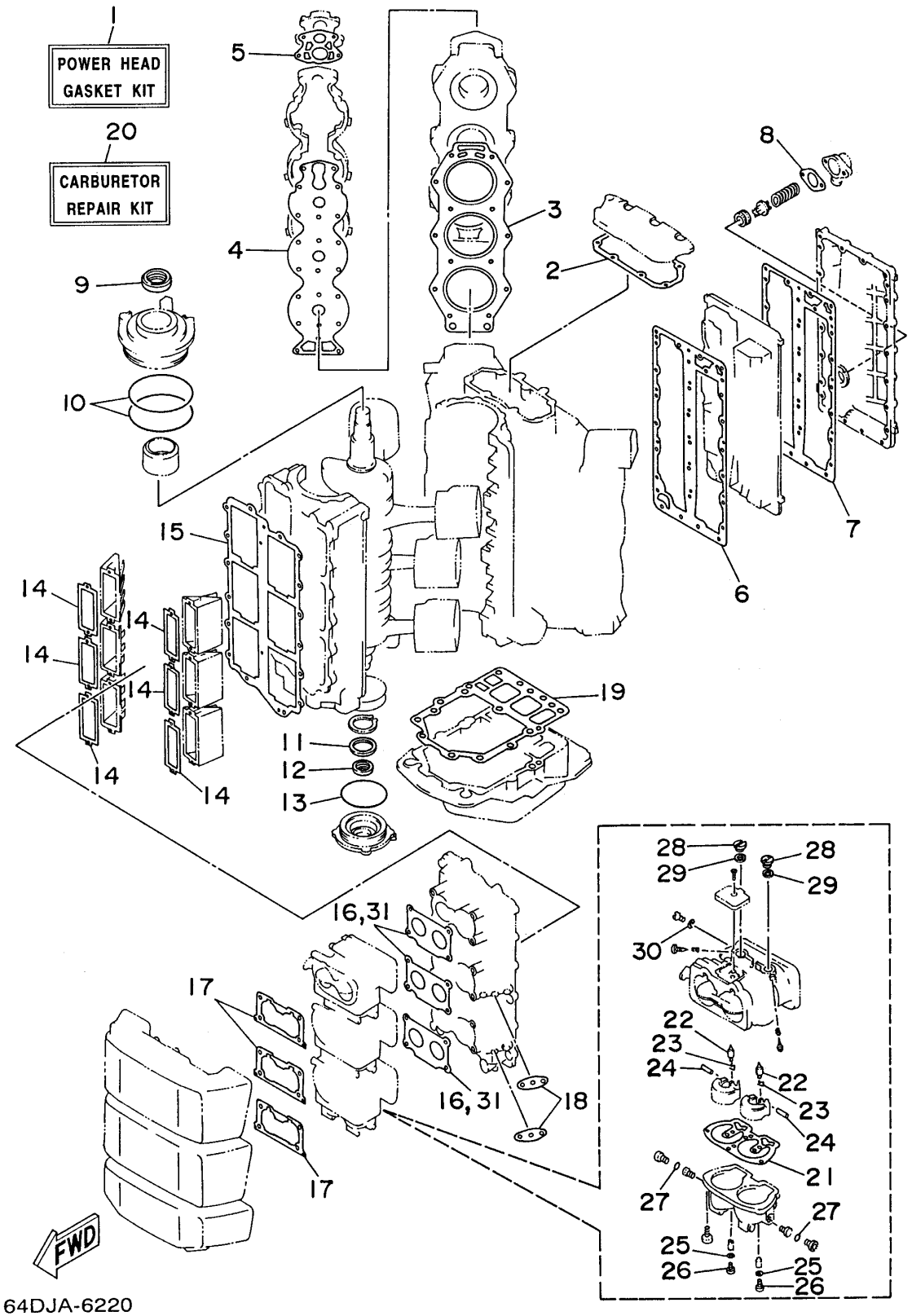
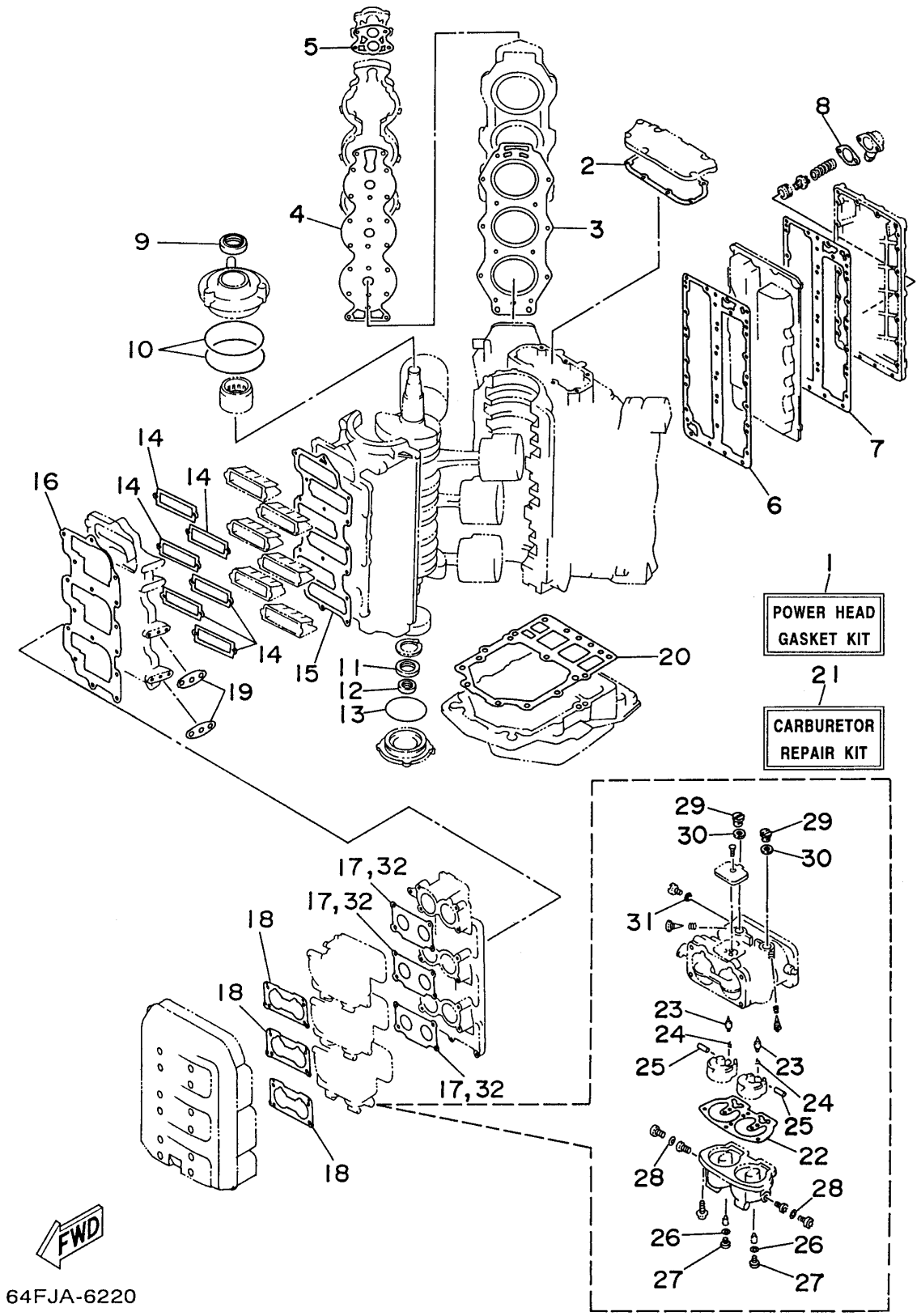


REPAIR KIT 1-1

Ref. No.	Part Number	Description	Qty	Remarks
28	6E5-14328-01-00	. PLUG	2	
29	6E5-14979-00-00	. GASKET	2	
30	6J8-14995-00-00	. GASKET	1	
31	6E5-14198-A2-00	. GASKET	1	

REPAIR KIT 1-2 (200 - L200:SALTWATER

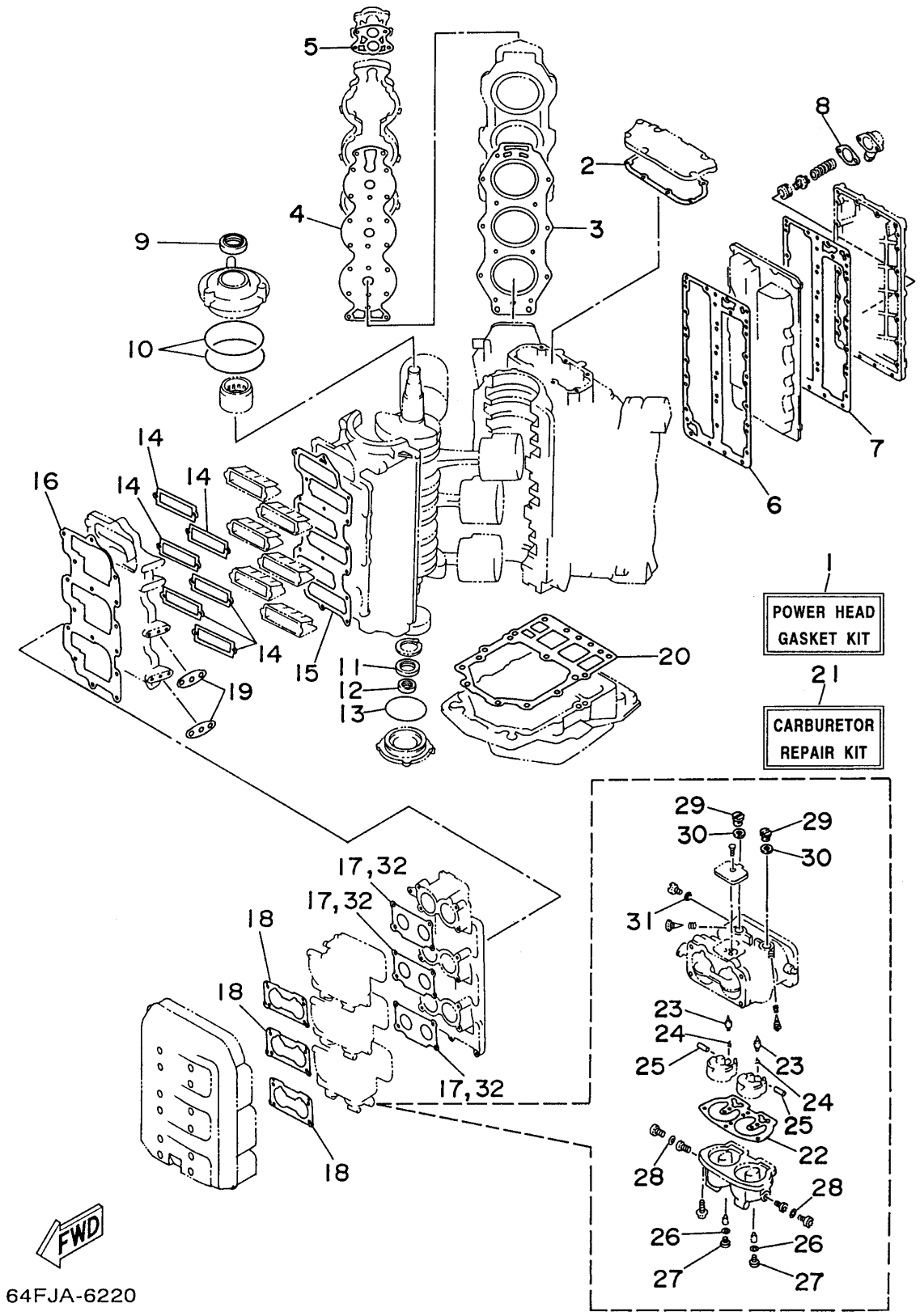


Ref. No.	Part Number	Description	Qty	Remarks
1	64H-W0001-00-00	POWER HEAD GASKET KIT ..	1	
2	6E5-11381-A2-00	. GASKET 1	1	
3	6G5-11181-A0-00	. GASKET, CYLINDER HEAD 1	2	
4	6G5-11193-A0-00	. GASKET, HEAD COVER 1 ...	2	
5	688-12414-A1-00	. GASKET, COVER	2	
6	6G5-41112-A1-00	. GASKET, EXHAUST INNER COVER	1	
7	6G5-41112-A1-00	. GASKET, EXHAUST INNER COVER	1	
8	6G5-11382-A1-00	. GASKET 2	1	
9	93102-40M38-00	. OIL SEAL	1	
10	93211-04384-00	. O-RING	2	
11	93102-35M13-00	. OIL SEAL	1	
12	93101-22M15-00	. OIL SEAL	1	
13	93210-74M35-00	. O-RING	1	
14	6K7-13621-A1-00	. GASKET, VALVE SEAT	6	
15	6K7-13646-A2-00	. GASKET, MANIFOLD 2	1	
16	64E-13645-A0-00	. GASKET, MANIFOLD 1	1	
17	6E5-14198-A2-00	. GASKET	3	
18	6K7-14483-00-00	. GASKET	3	
19	650-24431-A0-00	. GASKET, FUEL PUMP 1	2	
20	6G5-45113-A1-00	. GASKET, UPPER CASING ...	1	
21	64D-W0093-00-00	CARBURETOR REPAIR KIT ...	1	
22	64D-14384-00-00	. GASKET, FLOAT CHAMBER .	1	
23	6E5-14546-00-00	. VALVE, NEEDLE	2	
24	6E5-14159-00-00	. CLIP	2	
25	6E5-14386-02-00	. PIN, FLOAT	2	
26	61U-14959-00-00	. GASKET	2	
27	64D-14394-00-00	. VALVE, DRAIN	2	

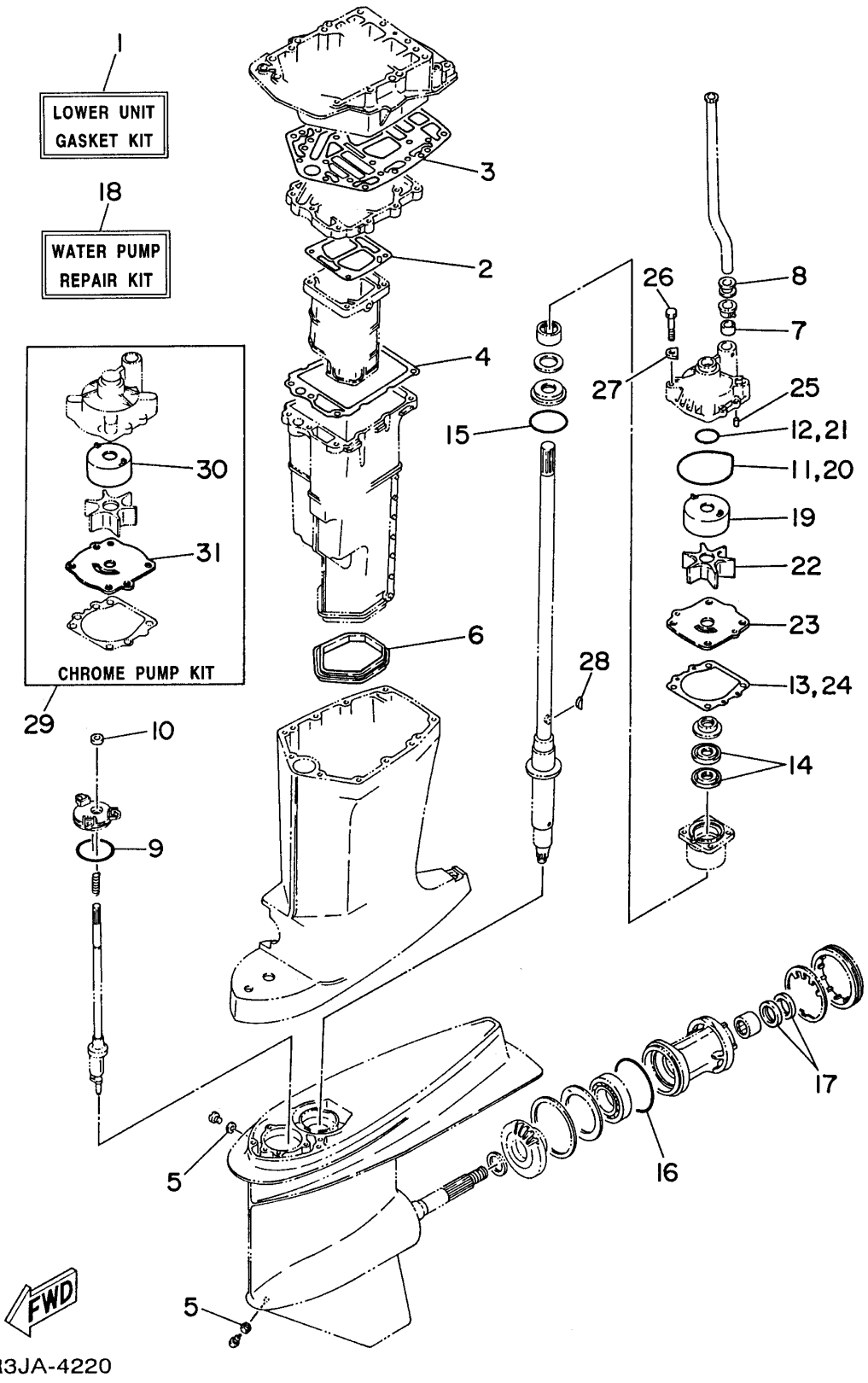
CONTINUED ON NEXT FRAME ➤

REPAIR KIT 1-2 (200 - L200:SALTWATER

Ref. No.	Part Number	Description	Qty	Remarks
28	6E5-14398-01-00	. GASKET	2	
29	6E5-14328-01-00	. PLUG	2	
30	6E5-14979-00-00	. GASKET	2	
31	6J8-14995-00-00	. GASKET	1	
32	6E5-14198-A2-00	. GASKET	1	



REPAIR KIT 2



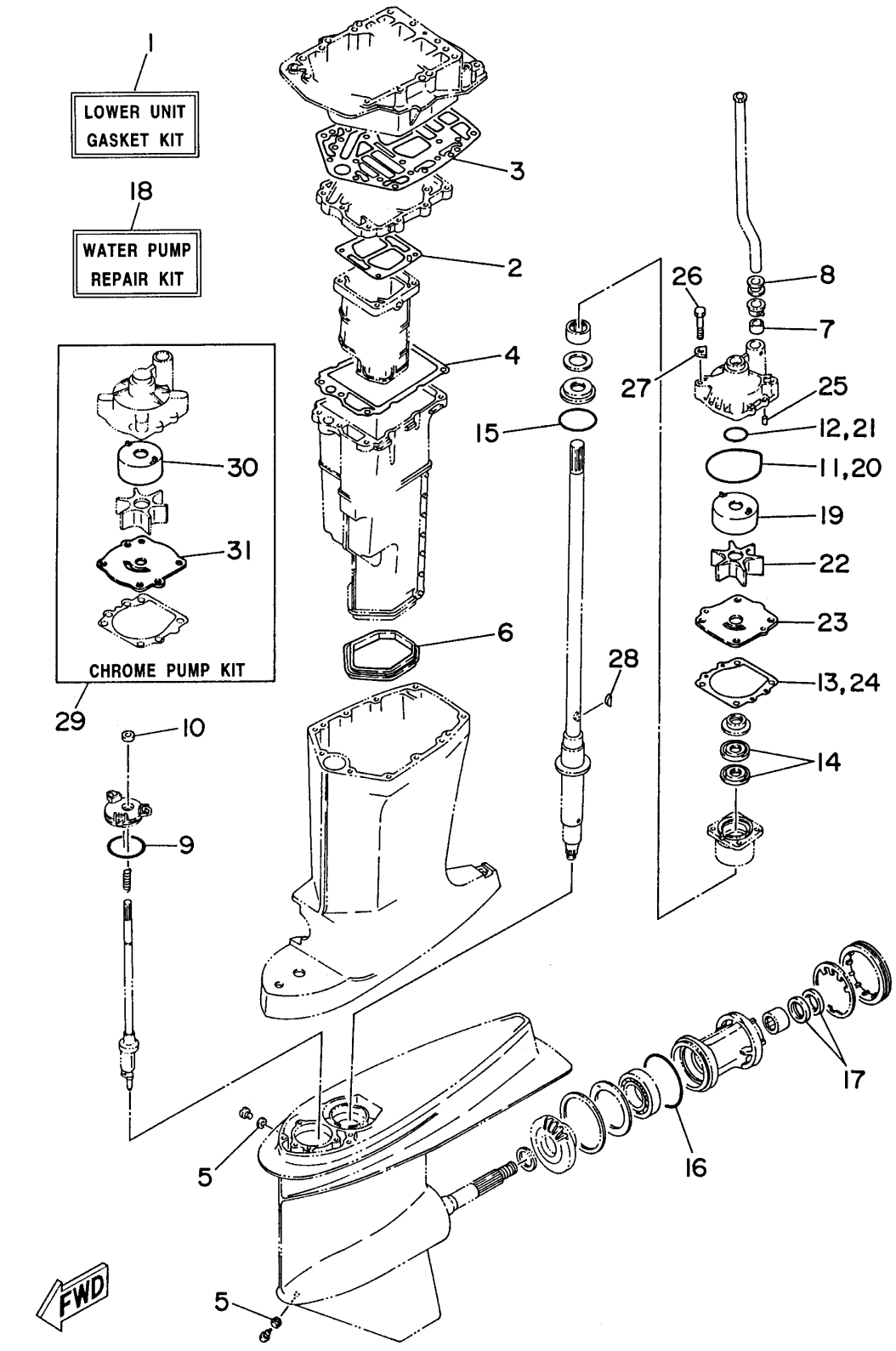
6R3JA-4220

Ref. No.	Part Number	Description	Qty	Remarks
1	6G5-W0001-C1-00	LOWER UNIT GASKET KIT ...	1	
2	6G5-41134-A0-00	. GASKET, EXHAUST MANIFOLD	1	
3	6G5-45114-A0-00	. GASKET, UPPER CASING ...	1	
4	6E5-41135-A0-00	. GASKET, EXHAUST MANIFOLD	1	
5	90430-08020-00	. GASKET	2	
6	6E5-45123-00-00	. GASKET, MUFFLER	1	
7	6E5-44365-00-00	. DAMPER, WATER SEAL	1	
8	6E5-44366-00-00	. DAMPER, WATER SEAL	1	
9	93210-58677-00	. O-RING (93210-58114)	1	
10	93106-09014-00	. OIL SEAL	1	
11	93210-86M38-00	. O-RING	1	
12	93210-37M67-00	. O-RING	1	
13	6E5-44315-A0-00	. GASKET, WATER PUMP	1	
14	93101-28M16-00	. OIL SEAL	2	
15	93210-54534-00	. O-RING	1	
16	93210-97M55-00	. O-RING	1	
17	93101-30M17-00	. OIL SEAL	2	
18	61A-W0078-A1-00	WATER PUMP REPAIR KIT ...	1	
19	61A-44322-00-00	. INSERT, CARTRIDGE	1	
20	93210-86M38-00	. O-RING	1	
21	93210-37M67-00	. O-RING	1	
22	6E5-44352-00-00	. IMPELLER	1	
23	6G5-44323-00-00	. OUTER PLATE, CARTRIDGE .	1	
24	6E5-44315-A0-00	. GASKET, WATER PUMP	1	
25	93606-12019-00	. PIN, DOWEL	2	
26	97095-08045-00	. BOLT	4	
27	90209-08M02-00	. WASHER	4	

CONTINUED ON NEXT FRAME ➤

REPAIR KIT 2

Ref. No.	Part Number	Description	Qty	Remarks
28	90280-04M05-00	. KEY, WOODRUFF	1	
29	61A-W0078-0A-00	CHROME PUMP KIT	1	
30	6R3-44322-40-00	. INSERT, CARTRIDGE	1	
31	6G5-44323-40-00	. OUTER PLATE, CARTRIDGE .	1	



6R3JA-4220

1994 GENERAL

Instrument Wiring, Dual-Station, and C-Model Wiring & Adapters

Effective 12/6/93, this Technical Bulletin replaces O93-009; please remove and destroy O93-009. ➤Denotes a change in the original Technical Bulletin.

INTRODUCTION

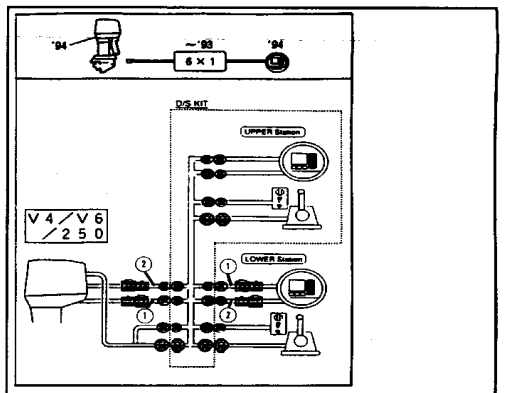
As explained in Technical Bulletin O93-005, some 1994 model Yamaha outboards have new style instruments and new watertight locking electrical connectors. This bulletin contains important information about instrument wiring, dual-station rigging, and C-model instrument wiring on these 1994 Yamaha outboards. Yamaha has developed special wiring adapters and adapter kits to make installations easier.

RIGGING INFORMATION

Dual-Station Rigging and Wiring

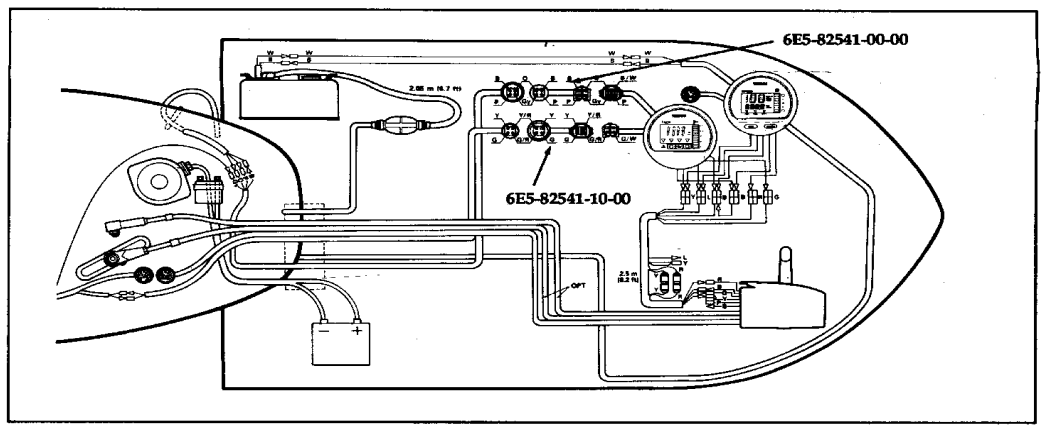
Two 6E5-ADPKT-GA-GE adapter kits are required to connect a '94 engine to a '93 6X1 Dual-Station Kit or vice versa. Each adapter kit contains one 6E5-82541-00-00 adapter wire and one 6E5-82541-10-00 adapter wire. Refer to the illustration for connector configuration.

NOTE: These are the same adapters used for instrument connections described in the next section.



Instrument Wiring

To connect a '93 Yamaha outboard to the new '94 style instruments or to connect a '94 Yamaha engine to '93 instruments, use **one** 6E5-ADPKT-GA-GE adapter kit. See the illustration for wiring instructions.



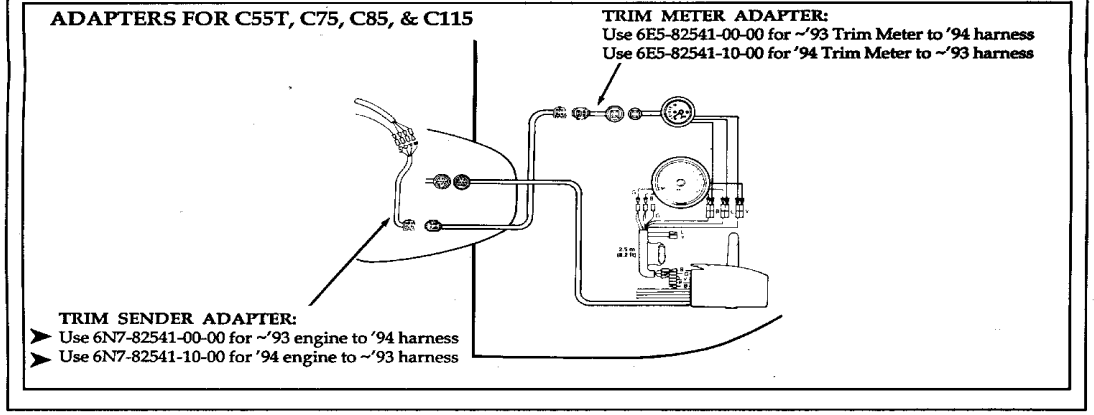
Rigging Information (Cont'd.)

C-Model Wiring

The C55T, C75, C85, and C115 require only a trim meter or trim sensor adapter when using an engine (trim sensor), trim meter, and /or harness that does not match. Use the 6N7-82541-00-00 trim sensor adapter lead when installing a 1993 or earlier C85 or C115 to a 1994 harness. The 6N7-82541-10-00 adapter lead is used to connect a 1994 engine to a 1993 or earlier harness.

Use the 6E5-82541-00-00 adapter to connect a '94 harness to a '93 trim meter. Use the 6E5-82541-10-00 adapter to connect a '94 trim meter to the '93 harness.

ADAPTERS FOR C55T, C75, C85, & C115



PARTS INFORMATION

Parts Number	Description	Remarks	Dealer Cost
6E5-ADPKT-GA-GE	Gauge Adapter Kit	2 req'd for Dual Sta.	
6E5-82541-00-00	Meter Adapter Lead	~ '93 Trim Meter to '94 Harness	
6E5-82541-10-00	Meter Adapter Lead	'94 Trim Meter to ~'93 Harness	
6N7-82541-00-00	Trim Sensor Adapter	~ '93 Engine to '94 Harness	
6N7-82541-10-00	Trim Sensor Adapter	'94 Engine to ~ '93 Harness	

WARRANTY INFORMATION

This bulletin is for information only. No special warranty applies.

POWER TRIM AND TILT MODELS

Troubleshooting and Repair Tips and New Tool

INTRODUCTION

A large number of power-trim-and-tilt unit replacements are actually *unnecessary*. When a customer asks for repairs because "the power trim and tilt doesn't hold position" or "the power trim and tilt leaks down," the technician is often tempted to replace the whole unit. Yet, when units are inspected later, it is usually found that just one valve caused the problem — usually the main valve (up side).

This bulletin gives a simple troubleshooting procedure for checking the valves in the power trim and tilt (PT&T) unit. This bulletin also explains how to use the new **Main Valve Leak Tester** (YB-39952) tool. Use the service manual for the model and the Power Trim and Tilt training videotape (VID-10660-00-08) for more information about servicing Yamaha systems.

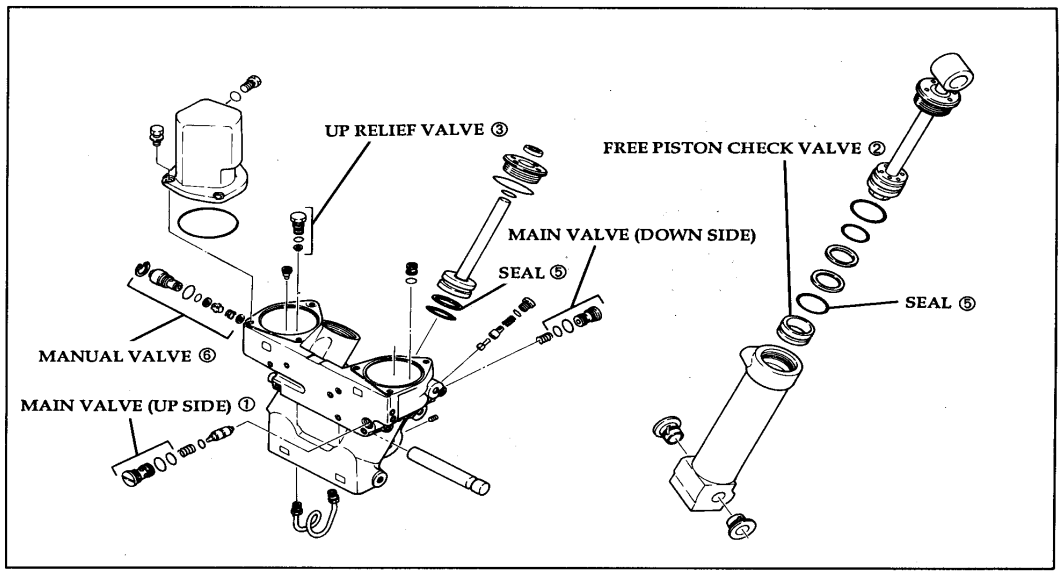
ESSENTIAL TOOL SHIPMENT

See Technical Bulletin O93-018 for information about the shipment of the Main Valve Leak Tester, which is a new essential tool.

SERVICE PROCEDURE

When checking for the cause of the leak, start with the components most likely to cause the problem. Here are the likely components, in order of probability:

1. Main Valve (up side) — 75% of failures
2. Free Piston Check Valve (6G5 unit on V4 and V6 only)
3. Up Relief Valve
4. A combination of the above pieces
5. Worn or Damaged Seals on Pistons
6. Manual Valve



Service Procedure (Cont'd.)

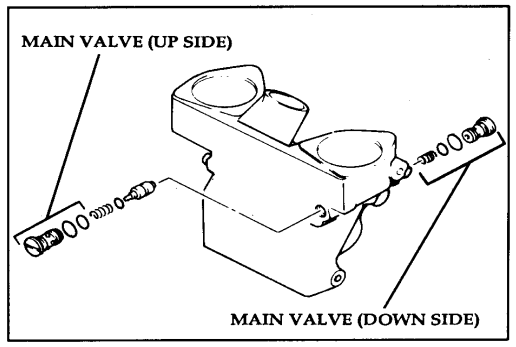
NOTE: You will probably find discolored hydraulic fluid and some scratches on the cylinders when you disassemble the PT&T unit. This is normal, even in properly working units, and it rarely causes problems. The pistons rub on the aluminum cylinder walls during normal operation, resulting in very fine metal particles which cause the discoloration and scratching. While cleaning the PT&T unit during servicing, clean out all passages thoroughly and remove any sludge created by these fine particles. Use new fluid when reassembling the PT&T.

Here is information to help you check some of the main components:

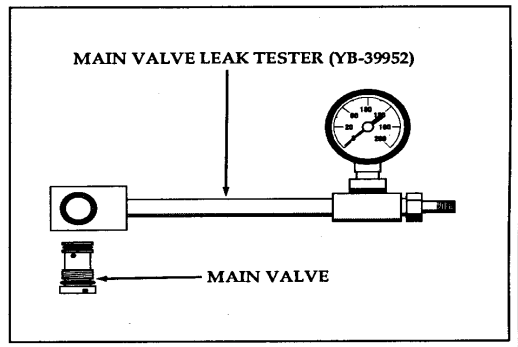
Main Valve (Up Side)

The main valve (up side) is located on the transom side of the PT&T. Test it using the new Main Valve Leak Tester.

1. Clean the main valve thoroughly using Yamaha Plug and Point Cleaner (LUB-PLUGP-13-00). Dip the valve in clean Yamaha Power Trim and Tilt Fluid (LUB-PWRTF-11-00) to fully lubricate the O-rings and check ball.



2. Using care not to damage the O-rings, screw the main valve into the tool and make sure that the valve is fully seated.
3. Using a standard shop air supply (80 to 120 psi) with the proper fitting, apply air pressure to the air valve then quickly remove the air supply.



⚠WARNING

Always wear approved eye protection during this procedure. Do not point the end of the main valve toward yourself or others when applying air pressure. Eye or other bodily injury may result. If the check ball leaks, oil and air will be sprayed out at high pressure from the end of the valve. Hold the tool so the check-valve ball end of the main valve is pointed away from yourself and others.

4. Note the pressure gauge reading. If there is no change in pressure after 30 seconds to one minute, the main valve is good. Press the pin in the air valve to release the pressure.

Service Procedure (Cont'd.)

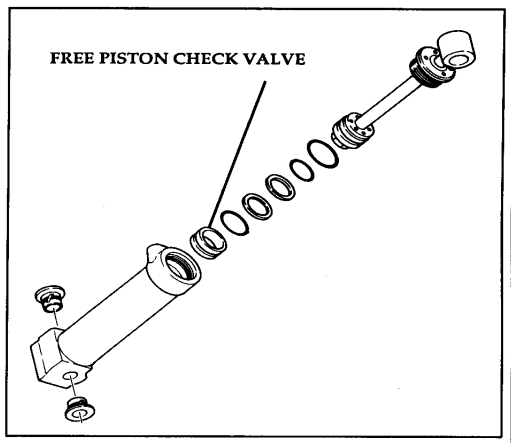
5. If there is a slow air leak, carefully dip the main-valve end of the tool into a container of clean Power Trim and Tilt fluid. Bubbles will show if the leak is coming from a damaged O-ring or from the check ball. If the check ball is leaking, release the air pressure from the tool. Repeat steps 1 through 4 again before replacing the valve.

Tip:

If the UP main valve has only a minor leak and the DOWN main valve tests good, switch the valves and reassemble. A minor leak in the DOWN main valve will cause no problems.

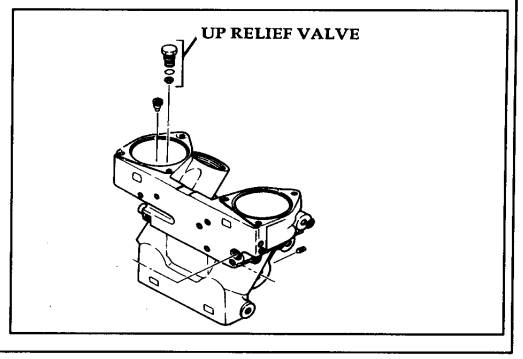
Free Piston Check Valve (6G5 Unit Only)

The free piston check valve is only in the PT&T units on 1987 and later V4 and V6 units. The check valve consists of a trapped ball & spring, and a small hole in the free (or floating) piston. Carefully clean this check valve by using Yamaha Plug & Point Cleaner. It is very difficult to test this valve properly. If the main valve tests good and the free piston check valve is suspected, replace it.



Up Relief Check Valve Testing

This check valve causes leak down less than 10% of the time. Again, carefully clean this check valve using Yamaha Plug & Point Cleaner. Some designs of these valves fully disassemble which makes them easy to clean and inspect. Others do not easily disassemble and require extensive cleaning — it helps to depress the support for the ball through the side hole with a small screwdriver.



Seals and Manual Valve

Inspect the seals and the manual-valve parts for wear or damage. Replace parts if needed.

WARRANTY PROCEDURE

- Normal warranty procedures apply for any failure within the warranty period.
- You must have prior authorization from your Regional Technical Advisor before replacing a power-trim-and-tilt assembly.
- Authorization for replacement will not be issued unless the repair procedures described in this bulletin are tried first.

ROUTE TO: ☑ SERVICE ☐ PARTS ☑ WARRANTY ☐ SALES

ALL 1994 V4 & V6

BATTERY DRAIN

INTRODUCTION

The 1994 digital speedometer memory hold circuit can cause excessive current drain on the battery.

PROBLEM: Current draw by the memory hold circuit can cause the battery to discharge after prolonged storage.

CAUSE: The fuel sender circuit remains active when the ignition key is turned off.

REMEDY: Install a relay into the fuel sender circuit of the speedometer.

NOTE: Before installing the relay, look at the plastic tape around the wiring harness on the back of the speedometer. If the tape is gray, the speedometer is modified internally and does not require the relay.

AFFECTED UNITS

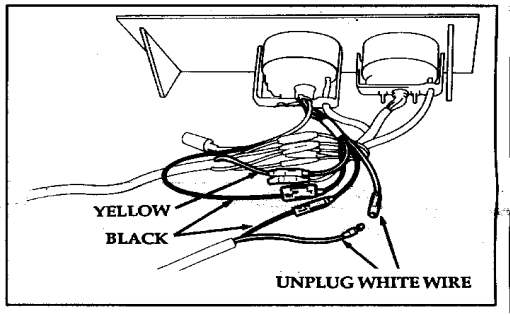
Model	Primary I.D. Range
115TJRS	6E5L-396259 ~ 397476
115TLRS	6E5L-396252 ~ 397627
115TXRS	6E5UL-724848 ~ 725497
P115TLRS	6E5L-060596 ~ 060817
130TLRS	6L1L-306769 ~ 307286
130TXRS	6L1UL-702966 ~ 703391
150TLRS	6G4L-408018 ~ 408379
150TXRS	6G4UL-759530 ~ 760363
P150TLRS	6J9L-355141 ~ 355842
175TLRS	6G5L-403801 ~ 403884
175TXRS	6G5UL-755786 ~ 756044
P175TLRS	62HL-300101 ~ 300435
200TJRS	6G6L-405983 ~ 406259
200TLRS	6G6L-405956 ~ 406174
200TXRS	6G6UL-765272 ~ 766849
P200TLRS	61HL-301955 ~ 302533
225TLRS	6K7L-351648 ~ 351768
225TXRS	62JUL-700101 ~ 700596
250TXRS	61AUL-703752 ~ 704337
250TURS	61ASU-800334 ~ 800415

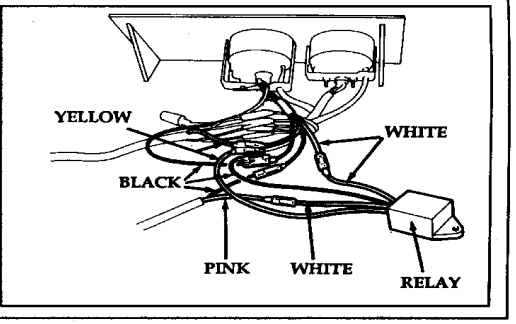
SERVICE INFORMATION

1. Locate the harness for the speedometer. This harness contains a yellow, white, red, and 2 black wires.
2. If there is an empty female connector on the boat wiring harness, connect the yellow and black wires on the sensor relay to the corresponding colored wires on the boat/speedometer harness. If there is no empty female connectors on the wiring harness, use the black and yellow jumpers provided in the kit.

NOTE: There are two black wires on the speedometer sensor harness. You may use either of these black wires for this relay installation.

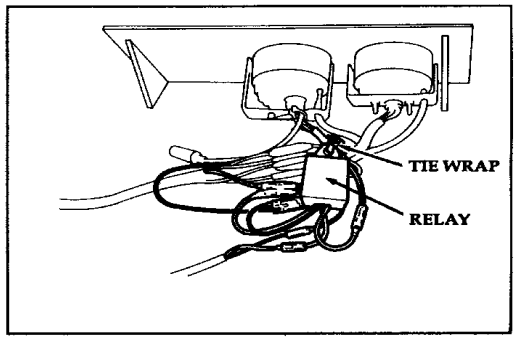
3. Locate and unplug the white wire from the speedometer. It should be plugged into the pink sensor wire on the boat wiring harness. Plug the male white connector on the relay into the female wire connector on this white speedometer wire. Plug the white female wire connector on the relay onto the pink male wire connector on the boat harness.





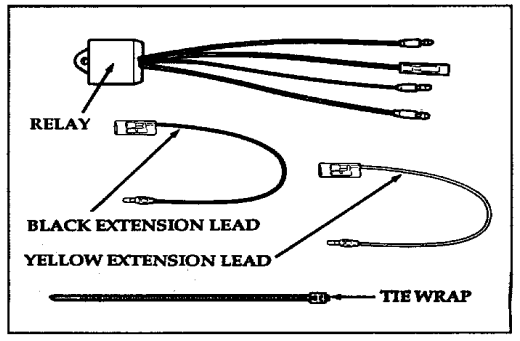
Service Information (Cont'd.)

4. Using the tie wrap from the kit, tie the wiring neatly so it does not hang down from under the dashboard. There is a mounting tab on the sensor to tie it to the boat harness.



PARTS INFORMATION

Part Number	Description	Remarks	Dealer Cost
90891-40220-00	Speedometer Relay Kit	Contents: Relay (qty. 1) Black jumper wire lead (qty. 1) Yellow jumper wire lead (qty. 1) Tie wrap (qty. 1)	

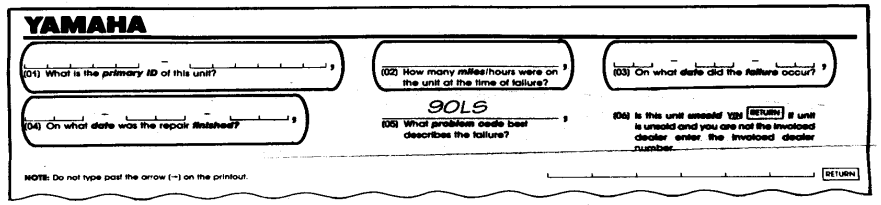


WARRANTY INFORMATION

Affected Units

This installation is authorized for **all affected units** (listed on Page 1 of this bulletin), regardless of ownership or warranty status.

To receive credit for the parts and labor, submit a standard Service-Per-Bulletin warranty request. The labor allowance is 0.5 hours. The Problem Code for **all affected units (listed on Page 1 of this bulletin) is 90LS.**



Gauge installed on units other than units listed on Page 1 of this bulletin

If the 1994 digital speedometer is used on either any other 1994 models (such as the 3 cylinder 50HP ~ 90HP models) or a prior year model that is still covered by the factory warranty, submit a standard warranty request. Fill in extra labor of 0.5 hours on Line 10. Use Problem Code 99. On lines 8, 9, 11, 13, 14, and 15 fill in the information as follows:

- Line 8 (primary part failed) - 90891-40220-00
- Line 9 (quantity) - 01
- Line 11 - INSTALL SPEEDO RELAY - UNIT NOT COVERED BY 90LS
- Line 13 - BATTERY DEAD
- Line 14 - BATTERY DRAIN BY SPEEDO
- Line 15 - INSTALL RELAY PER BULLETIN 094-002

If the unit is out of warranty, contact your Regional Technical Advisor for authorization.

OUTBOARD | 07/06/94 | O94-006

TECH EXCHANGE

SUBJECT: 1. Erratic Fuel Flow Readings on Fuel Management Gauge
2. Fuel Management Gauge MPG Feature Does Not Operate

Erratic Fuel Flow Readings

The fuel flow gauge on the Fuel Management System may read properly for a while, with steady and expected readings, then jump to higher, erratic readings, or just may produce high erratic readings. This problem will be more pronounced, and can possibly only appear at higher engine power settings. This is usually caused by air entering into the fuel line before the fuel flow sender. The bubbles of air will cause the sender to show a greater than actual fuel flow. This air can be the result of a bad fuel pick up in the fuel tank, but is usually caused by a leak at a fitting or from a fuel line for an auxiliary motor. **Check the following:**

1. **Check ALL fuel fittings and hoses for leaks.** It is possible for air to leak through a fitting without any signs of fuel leakage. Especially if there is an anti-siphon valve in the fuel system.

⚠WARNING

Gasoline and its vapors are highly flammable and explosive. Keep fuel away from sparks, lit cigarettes, or open flames. Work in a well-ventilated area.

2. **Is an anti-siphon valve used on the boat?** If yes, this valve requires a vacuum in the fuel line before the valve will open. This vacuum will increase the chance of pulling air from either a loose fitting or an auxiliary engine. The anti-siphon valve is necessary if any of the fuel line or fuel system components drop below the top of the fuel tank. Do not remove the valve, just be aware that its presence will make the fuel system more sensitive to improper connections.

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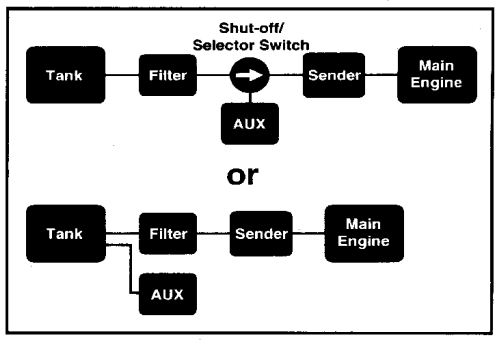
3. **Is an auxiliary engine's fuel line connected to the same fuel tank outlet?** An auxiliary engine's fuel line must use either a separate fuel outlet from the fuel tank or have a fuel shut off/selector valve. If not, the primary engine will, over time, pull the fuel out of the auxiliary engine fuel line and start pulling air from the auxiliary engine!



4. **Check the fuel tank pickup**. Does the problem only occur with less than a full tank of fuel? If yes, there could be a hole in the side of the fuel pickup.

5. **Troubleshooting tip** - If you cannot find an air leak by checking for the above conditions, then test as follows: Temporarily install a short section of clear fuel line into the fuel line after the fuel flow sender. Then run the engine and watch the clear line for any indication of air bubbles. If no bubbles appear and the gauge reads erratically, there is no air in the system and there must be an electrical or gauge problem (see # 6). If air bubbles are present, then move the clear line to the fuel filter outlet. If the bubbles are now gone, the air leak is between the fuel filter and the fuel sender. If bubbles are still present, then move the clear line to the fuel tank outlet, etc.

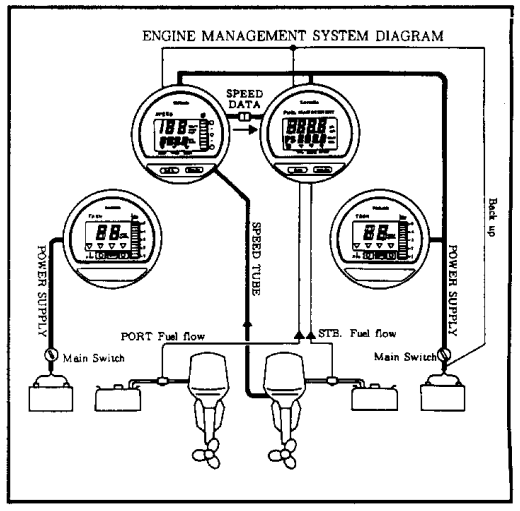
6. **VHF or other radio transmissions can cause erratic fuel management gauge operation.** If the wire to the antenna is located within one foot of the gauges, the radio transmission can cause erratic gauge operation. If any aftermarket extension has been used for the fuel management gauge to speedometer connection, then this minimum distance drastically increases (this is why Yamaha does not provide any extensions). Erratic gauge operation can also result from any pulsating power wire (such as a wire to a relay for trim plates) that is located too close to the gauges.

MPG Feature Does Not Operate

A wiring problem usually causes this problem. Note the following:

1. **The fuel management gauge must be connected to the speedometer.** The fuel management gauge must be able to receive speed information from the speedometer in order to calculate miles per gallon. There is a black wire lead (similar to a coaxial lead) coming out of each gauge with a special round connector plug. These wires must be connected together.

2. **The fuel management gauge and the speedometer must be connected to the same power source.** The fuel management gauge must receive the information from the speedometer when turned on. If not, it will not indicate MPG. This means that on a twin engine boat, when one key is turned on three gauges should come on (Tachometer, Speedometer, & Fuel Management gauges) while only one (Tachometer) will come on when the other key is turned on.



3. **The black, red, or yellow wires to both the speedometer & fuel management gauge must have good connections**. If there are any loose connections, especially at any splice joints, that causes **any** momentary break in either the black ground wire, yellow, or red power wires, the MPG will not indicate. If the speedometer black ground wire is disconnected the speedometer will operate normally (it will be grounded through the fuel management gauge connection) but the MPG feature will not operate.

NOTE: For more information about the Fuel Management Gauge System, see the '94 Outboard Model Guide and Technical Bulletin O93-005.

SUBJECTS:
1. **Rebuilding the Pan-mounted PT & T Switch**
2. **Outboard/Stern Drive Replacement Ignition Keys**
3. **Warranty Transfer Fees Dropped**

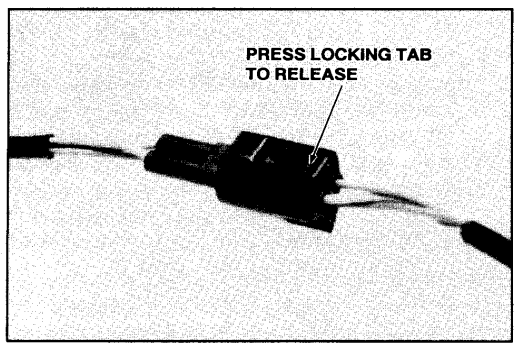
Rebuilding the Pan-mounted PT&T Switch

The pan-mounted power trim & tilt switch can fail with age. If this happens to one of your customer's units, it can cause a major inconvenience if the new switch is not in stock in your parts department. Usually, the switch can be made operational by a simple 5 minute repair. In most cases, you need only to disassemble the switch, clean the terminals, and reassemble the switch to make the switch functional again.

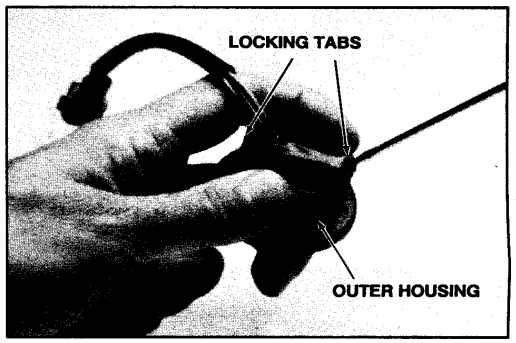
REPAIR PROCEDURES

1. Remove the switch from the engine.

NOTE: Most of Yamaha's engine electrical connectors are the locking type. The lock can be easily released by pressing on the connector as shown in the illustration.



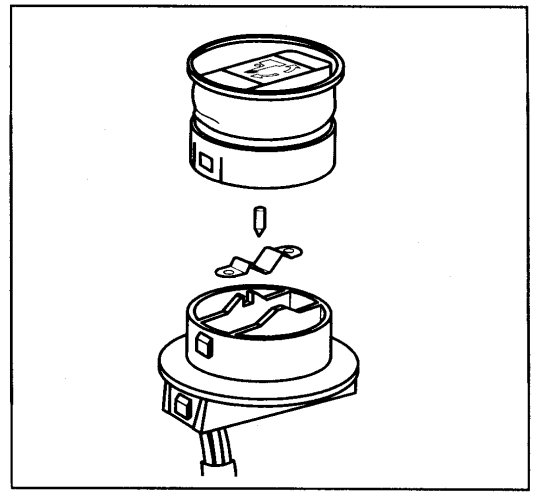
2. Note the location of the wires on the back of the switch in relation to the propeller end of the motor drawing on the switch. This location determines that the "UP" and "DOWN" function of the PT&T operates properly.
3. Holding the switch as shown, release the two outer housing lock tabs with a flat blade screwdriver.



4. Carefully roll the rubber covering away from the switch body to expose the inner housing. Again, with a flat blade screw driver, release the two inner housing locks. Be careful to note the location of the various internal parts and make sure you do not lose any of the parts.
5. Clean the four contact surfaces with emery cloth or #600 wet & dry sand paper. Clean with contact cleaner before reassembly.

Rebuilding the Pan-mounted PT&T Switch (Cont'd.)

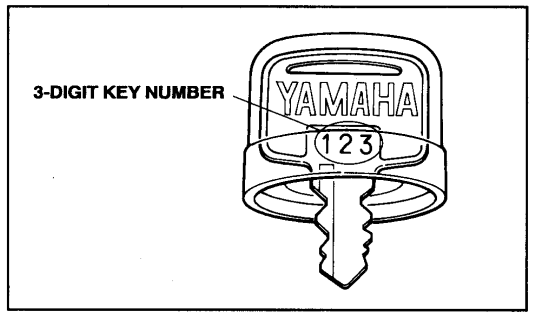
6. Reassemble the switch. Make sure the switch parts are positioned as shown in the drawing. Be sure the motor drawing on the switch rocker is correctly positioned as described earlier.
7. Test switch continuity with an ohmmeter. Reinstall the switch onto the motor pan, then test the operation of the power trim & tilt, verifying that the "UP" and "DOWN" works correctly.



Outboard/Stern Drive Replacement Ignition Keys

SPARE KEYS

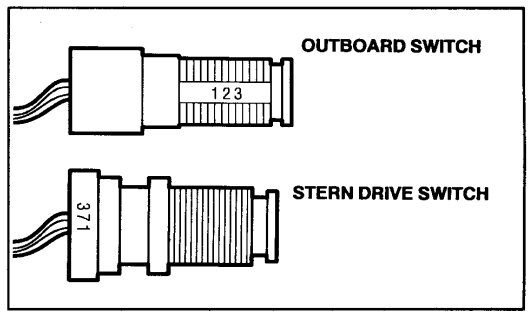
- Spare keys are available for Yamaha Outboards and Stern Drives. If you need to order a spare keys for a customer, locate the 3-digit number on the key just below the embossed word YAMAHA. If the existing key has a black rubber cover, lift the cover slightly to expose the number.



- Match the 3-digit number to the same number on the following list and order the corresponding part number. The new key will arrive pre-cut and ready to use.

LOST KEYS

- If all keys to a Yamaha outboard or stern drive are lost and the key numbers were not recorded, you can still order the proper pre-cut key. The key number is stamped on the threaded neck of the key switch on outboards. On stern drives, the number is heat stamped on one of the bottom square flanges. On some outboard switches there may be other numbers (3 or 4 digit stamped on the other side). Copy the 3-digit versions and cross reference to the list. Only one set of 3-digit numbers will correspond to the key list. Order the proper key from the list.



Outboard/Stern Drive Replacement Ignition Keys (Cont'd.)

NOTE: If the customer's rig has dual-engines with a Yamaha dual-key switch panel, both keys will be the same number.

IMPORTANT TIP

- After the new key(s) have arrived, suggest to the owner that the number be written in the special space inside the front cover of the owner's manual.

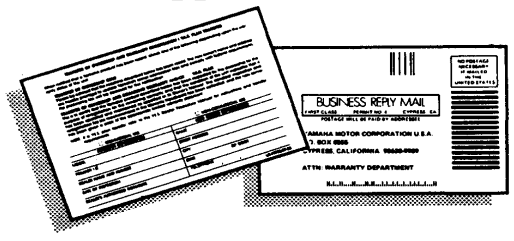
KEYS:

Key Number	Part Number
111*	90890-55957-00
112*	90890-55958-00
113*	90890-55959-00
121*	90890-55960-00
122*	90890-55961-00
123*	90890-55962-00
371	90890-55868-00
372	90890-55869-00
373	90890-55870-00
374	90890-55871-00
375	90890-55872-00
376	90890-55873-00
377	90890-55874-00
378	90890-55875-00
379	90890-55876-00
380	90890-55877-00
381	90890-55878-00
382	90890-55879-00
383	90890-55880-00
384	90890-55881-00
385	90890-55882-00
386	90890-55883-00
387	90890-55884-00
388	90890-55885-00
389	90890-55886-00
390	90890-55887-00
451*	90890-55820-00
452*	90890-55821-00
453*	90890-55822-00
454*	90890-55823-00
455*	90890-55824-00
456*	90890-55825-00
457*	90890-55826-00
458*	90890-55827-00
459*	90890-55828-00
460*	90890-55829-00
461*	90890-55830-00
462*	90890-55831-00
463*	90890-55832-00
464*	90890-55833-00
465*	90890-55834-00
466*	90890-55835-00
467*	90890-55836-00
468*	90890-55837-00
469*	90890-55838-00
470*	90890-55839-00
Key Cap	676-82577-00-00

*Keys used for Outboards only

Warranty Transfer Fee Dropped

Yamaha's factory warranty has always been a strong selling point. Now we've found a way to make that coverage even more valuable. **Beginning last May 1, 1994, Yamaha eliminated the fees for transfer of warranty coverage to the new owner! You will no longer be charged the $10 for an in-warranty transfer.**



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Send your tips to: Yamaha Motor Corporation, U.S.A., Attn: Tech Exchange, P.O. Box 6555, Cypress, CA 90630

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SUBJECTS: 1. Oxygenated Fuels
2. Overheating When Using Flush Attachment

Oxygenated Fuels

Beginning in 1992, all gasoline sold during the winter months (usually October through February) in 39 designated metropolitan areas (and **all** of California) must be oxygenated as mandated by the 1990 Amendments to the Federal Clean Air Act. The purpose of the oxygenated fuel is to reduce the amount of carbon monoxide in the air. Internal combustion engines tend to emit more carbon monoxide at low operating temperatures such as when first started and during longer warm-up times in the colder, winter months.

The information provided in this Tech Exchange clarifies some concerns that customers and dealers may have about the use of oxygenated fuels in Yamaha outboards.

What is "Oxygenated Gasoline"?

Oxygenated gasoline is a blend of gasoline and one or more combustible liquids containing oxygen. Presently, two different classes of oxygenates are being added to gasoline: alcohol (both ethanol and methanol) and ethers (methyl tertiary-butyl-ether; MTBE). The oxygen content of the gasoline must be 2.7%.

Can oxygenated fuels be used in Yamaha Outboards?

Yes, oxygenated fuel can be used in Yamaha outboards. This Tech Exchange addresses concerns regarding its use.

Service, Storage, & Usage Information
PRACTICE GOOD FUEL MANAGEMENT . . .

Don't worry about instructing customers about testing or identifying oxygenated fuel. If they are in one of the mandated areas, oxygenated fuel is all they can purchase. Instead, educate your customers about oxygenated gasoline using the following tips:

- Match gasoline purchases to consumption. Don't buy more than will be used in one month.
- Store gasoline in a tightly-closed, approved container in a cool, dry place.
- Store boats with built-in fuel tanks FULL with fresh fuel and treat the fuel with a stabilizer such as Yamaha Fuel Conditioner & Stabilizer

NOTE: Yamaha Ring Free Fuel Additive can be used with all oxygenated gasoline and is recommended for use in all Yamaha outboard engines. For more information about Ring Free, *refer to* Technical Bulletin O91-014.

Carburetor Jetting

Oxygenated fuels have a very slight leaning affect on the fuel mixture. This will not cause any problems with the performance of Yamaha outboards. At times the leaner mixture may cause the idle to be slightly rougher than normal. If this occurs, richen the pilot screws 1/4 turn.

Water Absorbing Additives

If the oxygenated gasoline being used contains an alcohol blend, **do not use** additional alcohol based water absorbing additives. If there is water in the fuel tank prior to refueling, **do not use** oxygenated gasoline until all water has been removed from the tank.

⚠WARNING

Gasoline and oxygenated gasoline are extremely flammable and can be explosive under certain conditions. Follow the recommendations in the owner's and service manuals for handling and storing gasoline.

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Phase Separation

Although small amounts of water in the fuel will normally not affect or interfere with engine operation, problems can develop if too much water is present in alcohol oxygenated gasoline. If there is enough water in the oxygenated fuel, the alcohol and gasoline will separate into two liquid phases: a top phase or layer which is almost entirely gasoline, (and oil, in the case of 2-stroke premix fuel) and a bottom phase of water and alcohol. Phase separation makes the engine difficult or often impossible to start. Replace the separated fuel with fresh gasoline.

Parts Information

Part Number	Description	Remarks	Dealer Cost
LUB-RNGFR-EE-12	Ring Free Fuel Additive	Case/12	
LUB-FUELC-12-00	Fuel Conditioner & Stabilizer	Case/12	

Overheating When Using Flush Attachment

Yamaha Marine Field Service has received some reports about overheating when using a flush attachment, especially aftermarket flush attachments. NEVER TROUBLESHOOT AN OVERHEATING PROBLEM ON A YAMAHA OUTBOARD WHILE USING A FLUSH ATTACHMENT!

When using a flush attachment, the water entry into the engine's cooling system is directly related to the supply of water pressure, size of the hose used, and the design of the attachment. All these areas are of no concern when the motor is being operated in the water. The Yamaha water intake screens on the lower unit are designed to direct water into the intake as the lower unit travels through the water. A flush attachment commonly directs water at the side of the intake. This produces excessive turbulence around the intake screen reducing the amount of water entering the intake. If you must operate an engine on a flush attachment with inferior water flow, the intake screens can be temporarily removed to increase water flow. **Do not** forget to reinstall the intake screens after removing the flush attachment.

For best results, use the flush attachment available from Yamaha Parts and Accessories, Part No. ABB-MOTOR-FL-SH.

Engine Oil Tank Overflowing - V4 & V6 Models

We have received reports of overflowing engine oil tanks with no evidence of any defective parts. Two causes for this overflowing have been identified. If you encounter this overflowing problem, check the following to prevent needless parts replacement:

- Low battery voltage
- Improper alignment of the filter screen on the engine oil sender

VERY LOW BATTERY VOLTAGE WITH MAIN SWITCH ON:

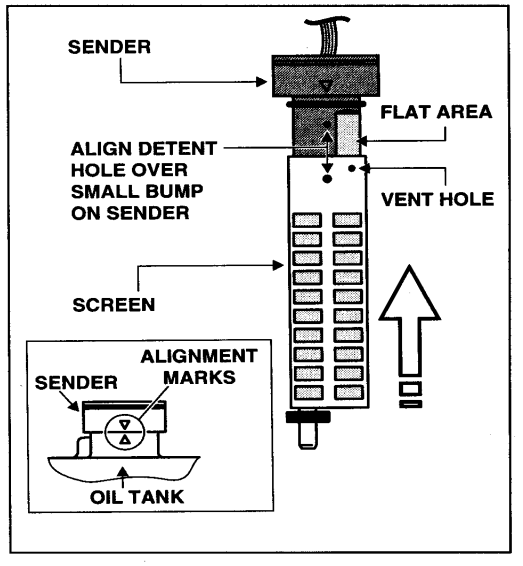
This problem is usually caused when a customer leaves the main (key) switch on when the boat is in storage. After time, the battery will discharge to the point where the voltage drops and the electronic circuitry on the engine cannot operate properly. When this happens, the transfer pump will start transferring oil to the engine oil tank, overflowing it. Operation returns to normal after the battery is charged.

IMPROPER LOCATION OF THE FILTER SCREEN ON THE ENGINE OIL LEVEL SENDER:

All engines built since 1987 have a tubular plastic screen installed around the oil level sender. This screen has a vent hole near the top of the tube. This hole lines up at the center of the flat area on the sender. This hole is to let air escape so oil can pass through the screen. The fitting at the bottom of the tube is offset and should line up with the oil tank outlet. Sometimes when someone is inspecting an engine (especially engines on display), they will twist or turn the top of the oil sender. The offset outlet of the screen will keep the filter screen from twisting, but the sender itself will twist easily, causing the filter screen tube to distort and bind the up and down action of the sensor float. Or, the screen will twist so the vent hole is blocked. Either of these conditions will cause the sensor to operate improperly overflowing the engine oil tank. Even twisting the sender back to the correct position may not correct the problem because the screen inside the oil tank may be in the wrong position.

Refer to the illustrations and make sure the filter screen is properly positioned before replacing any parts. Remember the following when installing and aligning the screen:

- The vent hole goes at the center of the flat area on the sender.
- The offset outlet fitting aligns with the oil tank outlet.
- There is an alignment detent hole on the screen that fits over a small bump on the sender just to the side of the flat area. This alignment bump is even with the arrow marking on the side of the sender cap.
- Make sure the above mentioned arrow marking on the sender cap aligns with the arrow marking on the oil tank.
- Make sure to check the screen for plugging and clean it if necessary.



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SUBJECTS: 1. Power Trim & Tilt Valve Components Locations
2. Engine Oil Tank Overflowing - V4 & V6 Models

Effective 4/10/95, this Tech Exchange replaces O95-001A; please remove and destroy O95-001A.
➤Denotes a change in the previous Tech Exchange.

Power Trim & Tilt Valve Components Locations

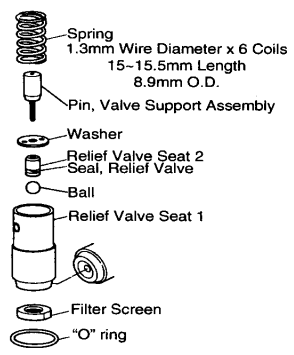
The parts microfiche and service manuals do not accurately show the latest valve components orientation for correct assembly. This has caused some confusion with mechanics. The following illustrations show proper assembly sequence for:

- Up and Down Relief Valves (Types 6H1-13 & 61A)
- One-way Valve (Type 6H1-13)
- Two-way Valve (Type 61A)

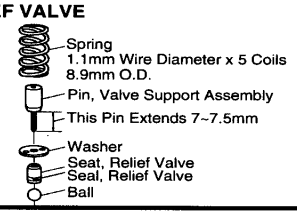
Place copies of these illustrations in your service manuals for future reference.

TYPE 61A

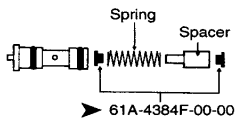
UP RELIEF VALVE



DOWN RELIEF VALVE

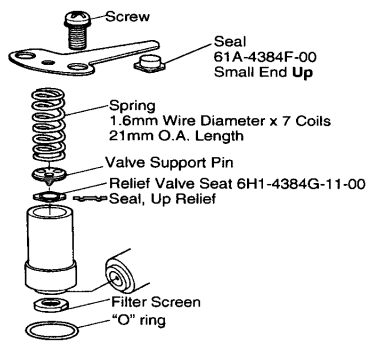


TWO WAY VALVE

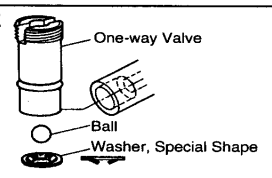


TYPE 6H1-13

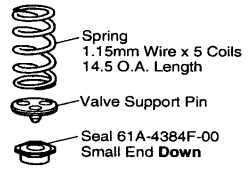
UP RELIEF VALVE



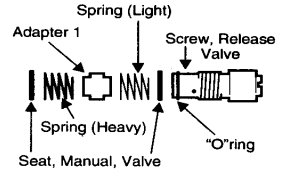
ONE WAY VALVE



DOWN RELIEF VALVE
(Under Oil Pump)



70/90 MANUAL RELEASE VALVE



Technical BULLETIN

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GENERAL

OUTBOARD DIAGNOSTIC REFERENCE LIST

INTRODUCTION

This bulletin contains a reference list of Technical Bulletins and Update Seminars materials to help you in servicing Yamaha outboards. The list is arranged by engine size, for your convenience.

DIAGNOSTIC REFERENCE LIST

Model	Year	Problem/Title	Location	Comments
250	90,91	IGNITION STATOR REPLACEMENT	BUL O90-013	90KF MISFIRE PROBLEM
250	90-92	REVISED L/U SHIM SPECIFICATION	BUL O92-005	
250	90-91	IMPROVED FUEL HOSE ROUTING	MTG 92-P42	HOSE CAN BE KINKED
250	90-95	PRIMESTART OPER. & TROUBLESHOOTING	MTG 94-P40	SEE ALSO MTG 95-P59
250	90-95	LINKAGE ADJUSTMENT PROCEDURES	MTG 94-P41	SEE ALSO MTG 95-P60
225-250	94	WIRING ADAPTERS	BUL O93-007	FOR RIGGING
225X & 250	94	CRANKSHAFT BALANCER CORROSION PROTECT.	MTG 94-P6	CAUSES NOISE
225X & 250	94	CHANGE IN CHARGING VOLTAGE	MTG 94-P6	NEW VOLTAGE REGULATOR
225X	94-95	PRIMESTART OPER. & TROUBLESHOOTING	MTG 94-P40	SEE ALSO MTG 95-P59
225X	94	LINKAGE ADJUSTMENT PROCEDURES	MTG 94-P41	
225	90,91	SPARK PLUG FOULING	BUL O91-013	
225	87,88,89	SPARK PLUG FOULING	BUL O90-005	
225	87,88	EXCESSIVE OIL CONSUMPTION	BUL O87-009	
225	87-94	POWER DROP WHILE CRUISING	MTG 92-P64	COMPUTER RELATED
225	87-89	REPLACEMENT CARBURETOR USAGE	MTG 93-P9	
225	90-94	PRIMESTART OPER. & TROUBLESHOOTING	MTG 94-P39	SEE ALSO MTG 95-P58
220-250	84-95	YMIS OPERATION & TROUBLESHOOTING	MTG 94-P16	SEE ALSO MTG 95-P47
150-225	87-90	TRIM TAB RETAINING MODIFICATIONS	MTG 92-P67	P/N 6J9-45371-01-00
150-225	90	TOP COWLING BRACE - COWL. HITTING P/H	BUL O90-011	90KD1 or 90KD2
150-200	90	ENGINE MISFIRE AND/OR HIGH PITCH NOISE	MTG 92-P62	CDI FILTER & COWLING
L150,L200	87	OVERHEAT SYSTEM MALFUNCTION	BUL O86-007	TRIM PLATES TRIGGER HORN
P150	All	REPLACEMENT LOWER UNIT GEARS	BUL O93-017	NEW BACKLASH SPECS.
P150	92-94	LOWER UNIT GEAR REPLACEMENT	BUL O94-003	90LR1 OR 90LR2
115-250	94-95	FUEL MANAGEMENT GAUGE REPAIR	TCX O94-006	ERATIC FUEL FLOW /NO MPG
115-250	94	BATTERY DRAIN	BUL O94-002	OTHER MODELS W/94 SPEEDO
115-250	94	INCORR. WIRE CONNECT. & TACHO. DAMAGE	BUL O93-010	FOR RIGGING
115-250	94	INCORRECT SPEEDOMETER OPERATION	BUL O93-016	REMOVE DAMPER
115-250	92	MODIFIED TRIM SENDER	MTG 93-P7	P/N 6R3-83672-01-00
115-250	92	IMPROVED GEAR SHIFT SHAFT	MTG 93-P8	
115-250	86-92	DRILLING A CARB. CLEAN-OUT PASSAGE	MTG 95-P77	
115-250	All	ENGINE V-BLOCK IDENTIFICATION	MTG 95-P78	
115-225	94	WIRING ADAPTERS	BUL O93-006	FOR RIGGING
115-225	84-89	IMPROPER OIL PUMP SELECTION	BUL O91-017	SEE ALSO BUL 91-016
115-225	84-89	REPLACEMENT OIL PUMP CONVERSION	BUL O90-016	SEE ALSO BUL 91-017
115-225	84-87	IMPROVED SHIFTER SHAFT SUPPORT	BUL O87-005	GREASE FITTING ADDED
115-225	84-90	LOWER UNIT SHIMMING	BUL O90-017	
115-225	84-89	IMPROVED FUEL PUMP DIAPHRAGM	MTG 92-P41	TORQUE TO 65 IN-LBS
115-225	86-87	NIKKI CARBURETOR MIXTURE SCREWS	MTG 92-P60	FROM BRASS TO STEEL
115-225	90-94	FLASHING GAUGES AND RPM REDUCTION	MTG 91-P11	LOOSE MAIN FUSE/MTG 92-P66
115-225	90-94	BATTERY ISOLATOR USAGE	MTG 92-P52	
115-225	92	SERVICE MANUAL ERRORS	MTG 92-P58	
115-225	90	SERVICE MANUAL ERRORS	BUL O91-010	ELECTRICAL & SHIMMING
115-225	91-93	EXHAUST GASKET REPLACEMENT PROGRAM	BUL O92-012	90LF
115-220	84,85	ROTOR AND PULSER COIL CHANGES	BUL O86-004	MISFIRE IF MISMATCHED
115-220	84,85	OIL TANK CHECK VALVE	BUL O86-001	NO OIL TRANSFER
115-220	84	OIL PUMP REPLACEMENT PROGRAM	BUL O85-002	SEE ALSO BULL 90-009

DIAGNOSTIC REFERENCE LIST (Cont'd.)

Model	Year	Problem/Title	Location	Comments
90-250	94	LOWER UNIT IDENTIFICATION INFORMATION	MTG 94-P10	
P60-250	95	IMPROVED PT&T PAN SWITCH	MTG 95-P29	
50-250	94-95	MULTIFUNCTION SPEEDO CHANGES & UPDATES	MTG 95-P65	
50-250	All	PT&T PAN SWITCH REPAIR	TCX O94-011	
50-250	93	IMPROVEMENTS TO POWER TILT	MTG 94-P6	SEE ALSO MTG 95-P34
40-250	All	PWR TRIM & TILT SENDER TROUBLESHOOTING	MTG 94-P21	SEE ALSO MTG 95-P37
40-250	84-94	GENERAL PISTON REPLACEMENT INFO.	MTG 94-P11	SEE ALSO MTG 95-P42
40-250	All	PT&T TROUBLESHTING & REPAIRS	BUL O93-019	
C55-C115	All	WIRING ADAPTERS	BUL O93-009A	
90	84,85	ROTOR AND PULSER COIL CHANGES	BUL O86-004	MISFIRE IF MISMATCHED
CV85E	89,90,91	SERVICE MANUAL ERRORS	BUL O91-008	SHIMMING
C75 & C85	94	LOWER UNIT IDENTIFICATION INFORMATION	MTG 94-P10	
70,90	84-87	IMPROVED SHIFTER PARTS	BUL O93-020	SEE ALSO MTG 95-P79
70,90	84-87	NEW WATER INTAKE COVERS	BUL O86-009	HIGH SPEED OVERHEATING
70,90	84	OIL PUMP REPLACEMENT PROGRAM	BUL O85-002	SEE ALSO BULL 90-009
70,90	84-90	LOWER UNIT SHIMMING	BUL O90-017	
70,90	84-89	IMPROVED FUEL PUMP DIAPHRAGM	MTG 92-P41	TORQUE TO 65 IN-LBS
70,90	90	SERVICE MANUAL ERRORS	BUL O91-004	ELECTRICAL & SHIMMING
70,90	89	OIL PUMP SEAL HOUSING REPLACEMENT	BUL O89-003	SEE ALSO BUL 91-015
70,90	89	OIL PUMP DISTANCE COLLAR	BUL O91-015	
P60,70,90	92-94	IGNITION SYSTEM OPERATION	BUL O92-001	#2 NO FIRE
P60,70,90	91	SERVICE MANUAL ERRORS	BUL O91-009	ELECTRICAL
P60,70,90	91	TRIM CAP SEAL POPPING OUT	MTG 93-P10	P/N 6H1-4384E-20-00
P60,70,90	92	INCORRECT SPARK PLUG SPECIFICATIONS	MTG 93-P11	B8HS-10
P60,70,90	92-94	YMIS OPERATION & TROUBLESHOOTING	MTG 94-P16	
P60,70,90	92-94	PRIMESTART OPERA. & TROUBLESHOOTING	MTG 94-P38	SEE ALSO MTG 95-P57
50, 70, 90	94	WIRING ADAPTERS	BUL O93-008	FOR RIGGING
70	88	ERRATIC TACHOMETER READING	BUL O88-001	
P60,70	92	LIGHTING COIL CHANGED SPECIFICATIONS	MTG 93-P11	
CV55E	89,90,91	SERVICE MANUAL ERRORS	BUL O91-007	SHIMMING
40,50,P50	95	PRIMESTART OPER. & TROUBLESHOOTING	MTG 95-P56	
40,50,P50,	95	RIGGING COMPONENT INFORMATION	BUL O94-005	40/50 PSH TO OPN.
CV40E	90 & 91	SERVICE MANUAL ERRORS	BUL O91-006	SHIMMING
C40MSH	92	INCORRECT STARTING I.D. NUMBER	MTG 93-P12	
40EJ	91 & 92	INCORRECT MOUNTING BOLTS	MTG 93-P12	USE 12MM BOLTS
40,50	84-88	OIL SEAL HOUSING IMPROVEMENTS	MTG 92-P61	PREVENTS CHATTERING NOISE
40,50	84-89	IMPROVED FUEL PUMP DIAPHRAGM	MTG 92-P41	TORQUE TO 65 IN-LBS
40,50	84,85	RECONDITIONING PROGRAM	BUL O85-001	SEE ALSO BULL 90-009
40,50	89	OIL PUMP SEAL HOUSING REPLACEMENT	BUL O89-003	SEE ALSO BUL 91-015
40,50	89	OIL PUMP DISTANCE COLLAR	BUL O91-015	
40,50	84-90	LOWER UNIT SHIMMING	BUL O90-017	
40,50	90	SERVICE MANUAL ERRORS	BUL O91-003	SHIMMING
40,50	84-87	NEW STYLE LOWER UNIT HOUSING	BUL O87-008	REPLACEMENT PART
40,50	89-94	PRIMESTART OPER. & TROUBLESHOOTING	MTG 94-P37	SEE ALSO MTG 95-P51
30	84-90	LOWER UNIT SHIMMING	BUL O90-017	
25,30, C25/30	84-87	DISCONTINUED USE OF EXH. MANIFOLD UPP. CASE	MTG 95-P18	
25,30	84-87	NEW STYLE LOWER UNIT HOUSING	BUL O87-008	REPLACEMENT PART
25,30	84-87	CHANGE IN PROPELLER SHAFT	MTG 92-P49	MUST USE NEW PARTS
25	88-94	UNSTABLE SPEED	MTG 95-P19	
25	88,89,90	MIDRANGE ENGINE SURGING	BUL O90-006	
25	88,89,90	IMPROVED LOWER UNIT PINION BEARING	BUL O90-001	REPLACEMENT PARTS
25	91	SERVICE MANUAL ERRORS	BUL O91-002	ELECTRICAL
25	90	SERVICE MANUAL ERRORS	BUL O91-001	ELECTRICAL
9.9,F9.9,15	84-87	NEW STYLE LOWER UNIT NEEDLE BEARING	BUL O87-010	
F/T9.9, T9.9	85-94	PRIMESTART OPER. & TROUBLESHOOTING	MTG 94-P35	SEE ALSO MTG 95-P52
F9.9	84-87	NEW STYLE LOWER UNIT NEEDLE BEARING	BUL O87-010	
F9.9, FT9.9	85-86	REPL. EXHAUST GUIDE OR OIL PAN	MTG 91-P8	
F9.9, FT9.9	85-90	MODIFIED UPPER CASING	MTG 92-P42	TO PREVENT CORROSION
F9.9, FT9.9	85-93	FUEL STARVATION WHEN USED AS AUX.	MTG 92-P57	
FT9.9	85-90	IMPROVED RETENTION OF PROPELLER	MTG 92-P43	NUT AND RING SEPARATED
FT9.9,F9.9	84-89	TACHOMETER INSTALLATION	BUL O85-007	NEW RECTIFIER CHANGED
F9.9Q T9.9Q	92	MODIFIED ELECTRICAL PARTS	BUL O92-002	EARLY '92s
F9.9 & T9.9	92	ACCELERATOR PUMP BLEEDING	BUL O91-018	SEE ALSO TECH 93,P13
F9.9 & T9.9	92	HARD STARTING & STALLING WHEN COLD	MTG 93-P13	DRILL STARTER JET
			BUL O93-002	

DIAGNOSTIC REFERENCE LIST (Cont'd.)

Model	Year	Problem/Title	Location	Comments
6,8	84-90	TEARING OF SHIFT SHAFT BOOT	MTG 91-P1	
3	88	IMPROVED CARBURETOR JETTING	BUL O88-005	HESITATION
All	All	OXYGENATED FUELS	TCX O94-012	
All	All	OVERHEATING WHEN USING FLUSH ATTACHMENT	TCX O94-012	
All	All w/oil inj.	CHECKNG PRECISION BLEND OIL PUMP OUTPUT	MTG 95-P20	
All	All w/oil inj.	PRECISION BLEND SYSTEM INF.	MTG 95-P21	
All	All	REPLACEMENT IGNITION KEYS	TCX O94-011	

KEY: BUL - SEE SERVICE TECHNICAL BULLETIN. EXAMPLE: **BUL O92-012;** SEE BULLETIN O92-012 FOR EXHAUST GASKET REPLACEMENT INFORMATION.
TCX - SEE TECH EXCHANGE - TECH EXCHANGES CONTAIN TWO OR MORE SUBJECTS AND ARE NUMBERED AND FILED IN YOUR TECHNICAL LIBRARY AS TECHNICAL BULLETINS
MTG - SEE MARINE TECHNICAL GUIDE 19XX PAGE XX (Available on micro fiche). EXAMPLE: **MTG93-P12;** SEE 93 TECH., GUIDE, PAGE 12, FOR INFO ABOUT INCORRECT MOUNTING BOLTS ON THE '91 & '92 40EJ-JETDRIVE.
MARINE TECHNICAL GUIDES ARE DISTRIBUTED ***ONLY*** AT YAMAHA'S ANNUAL UPDATE SEMINARS AND ARE NO LONGER AVAILABLE IN BOOK FORM. IF YOU DID NOT ATTEND THE UPDATE SEMINAR, MICRO-FICHE MUST BE USED. SEE ORDERING INSTRUCTIONS BELOW.

NOTE: AT THE END OF EACH CALENDAR YEAR, ALL TECHNICAL BULLETINS, FLAT RATE TABLES, AND UPDATE SEMINAR MATERIALS ARE FILMED ON MICROFICHE. IF YOU DID NOT ATTEND A SEMINAR OR IF YOU NEED MICROFICHE COPIES OF OLDER TECHNICAL BULLETINS, CALL 1-800-221-5362 TO ORDER THESE MATERIALS ON MICROFICHE.

WARRANTY INFORMATION

This builletin is for information only. No special warranty applies.

ROUTE TO: ☑ SERVICE ☑ PARTS ☐ WARRANTY ☐ SALES

SUBJECTS:
1. **Engine Noise or Interference in Radios or Other Electronic Equipment**
2. **Resetting Trip Meter Distance**
3. **Marine Exhaust Emission Regulation Update**

Engine Noise or Interference in Radios or Other Electronic Equipment

Use the following information to identify the source of and eliminate noise or interference in radios or other electronic equipment.

IDENTIFY THE SOURCE:

Customer complaints of noise or interference can usually be traced to the ignition (most common) or the charging system. Check for these symptoms:

Ignition Noise - Snapping noise from the radio speaker that varies directly with engine speed. On other equipment, like chart recorders, there will be sharp lines or other distinct interference.

Charging System Noise - A hum, whine, or whistle will emit from the speaker. The pitch of this sound will increase with engine speed.

If you cannot positively identify the source, disconnect the stator or lighting coil from the rectifier on the engine, then run the engine. If the noise or interference disappears, the problem is in the charging system. If not, the ignition is at fault.

ELIMINATING THE PROBLEM:

Ignition Noise
Ignition noise is caused by the transmission through the air of radio frequency electromagnetic energy. Ignition noise can usually be eliminated by using resistor spark plugs and resistor spark plug caps. (Resistor spark plug caps are more effective than resistor spark plugs, however, changing both is recommended.)

Spark Plugs - NGK spark plugs are identified by an "R" in the plug type number.
Example = an engine with a standard B8HS-10 would use a **BR8HS-10** resistor plug.

Some Yamaha outboards already have resistor plugs as standard equipment ('94 & '95 V4s & V6s - except the C115). The computer controlled models have both resistor plugs and caps.

Resistor Spark Plug Caps - Resistor spark plug caps should have a resistance reading of about 5KΩ. Replace the cap if it reads shorted or open. The part number for the resistor spark plug cap is: **6E3-82370-20-00.**

NOTE: In severe cases, you may reduce ignition noise by increasing the distance between the engine electrical wiring and the electronic equipment and wiring. For example, locate the engine wiring on one side of the boat and the electronic systems and accessories wiring on the opposite side.

Charging System Noise
All charging systems produce some electronic noise, and it is present in all boat wiring. All electronic manufacturers include noise filters in their equipment to reduce interference. Naturally, the better the equipment, the better the filter. Some low quality equipment (or high quality equipment with defective filters) may not adequately filter out charging system noise. Also, an outboard motor produces a different type of charging system noise than stern drive does. If the equipment manufacturer does not allow for outboard charging system noise, the noise may not filter out. Contact the equipment manufacturer for advice if you have problems.

If you have technical tips you think other dealers could use, let us know. You'll receive credit in the Tech Exchange for ideas we use, and we'll send you an exclusive Yamaha Tech Exchange hat as our thanks.
Send your tips to: Yamaha Motor Corporation, U.S.A., Attn: Tech Exchange, P.O. Box 6555, Cypress, CA 90630

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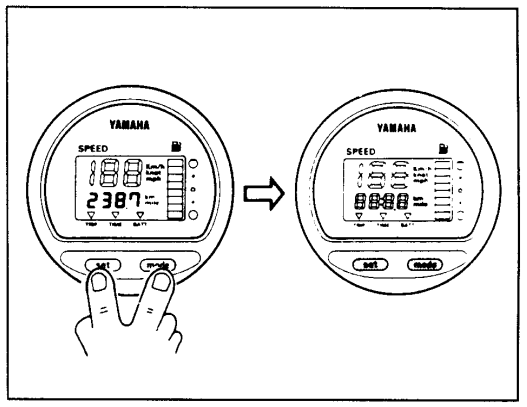
Resetting Trip Meter Distance

Some customers who have had experience with older Yamahas have been confused when attempting to reset the trip distance meter on a 1994 or 1995 Yamaha mulitfiunction speedometer. The trip distance meter used from 1987 to 1993 could be reset with the use of **only one button.** The 1994 and later multifunction speedometer has a trip distance meter which requires that **both the "SET" and "MODE" buttons** be pressed at the same time to reset the trip distance.



Marine Exhaust Emission Regulation Update

This past fall the Environment Protection Agency (EPA) proposed regulations for emission control for marine engines, including outboards, personal watercraft, and stern drives. Yamaha and other members of the marine industry have worked with the EPA to redefine the proposal in a way that increases its technical feasibility and cost effectiveness. While further cooperation between the EPA and the marine industry will be needed, enough of the potential basics of regulations is known to provide a general outline of its material aspects.

IMPLEMENTATION DATE:

Beginning with the 1998 model year, manufacturers will have nine years to phase in complying models. Full fleet compliance will be required in 2006.

EMISSION CONTROLS:

The regulation will eventually require a 75% hydrocarbon reduction from today's typical two-stroke engines. NO_x and CO emissions will also have controls limits.

TECHNICAL ISSUES:

At this time there appear to be three basic technology types which are candidates to achieve regulation compliance:

- Four-Stroke
- Two- Stroke Direct-Injection
- Catalyzed Two-Stroke

It cannot now be assumed that only one of these technologies will be adopted. It is foreseeable that some models and applications will benefit from one technology while the performance needs of other models will require another technology.

Yamaha customers expect marine performance products which are both cost-effective and technically superior. We can expect that Yamaha, with its abilities in leading-edge technology and its long history of emission-control experience with a host of other products, will continue to be the leader in successfully meeting the challenge.

OUTBOARD | 2/27/95 | O95-005

SUBJECTS: 1. Reformulated Gasoline
2. Areas Exceeding Federal Ozone Standards

Reformulated Gasoline

Beginning January 1, 1995, extreme and severe non-ozone attainment cities are required to sell only reformulated gasoline (RFG) year round, not seasonally like Oxygenated fuels. Topic number 2 in this Tech Exchange contains a list of affected cities. Other serious, moderate, and marginal attainment areas will phase in this gasoline to fulfill their individual agendas for pollution abatement.

What is RFG?

As the name indicates, it is the next generation of fuels reformulated to reduce pollutants and protect the environment. The main focus of RFG is to reduce pollutants that affect the ozone, however, it will contain the same Oxygenates used in fuels that are currently being used (seasonally) in various mandated areas to lower CO emissions. Oxygenated fuels are primarily used between the months of October and February in these selected areas. The following table illustrates the major ingredients of RFG that will be reformulated and the environmental benefits of reformulation.

FOCUS OF FUEL REFORMULATING

Potential Reformulation
Reduce Sulfur
Reduce Benzene
Reduce Aromatics & Olefins
Reduce fuel volatility
Increase oxygen contents
Alter distillation characteristics
Deposit control additives

Environmental Benefits
Reduces acid rain, improves vehicle catalyst efficiency
Reduces incidence of cancer, reduces toxicity of emissions
Reduces photochemical reactivity/smog formation
Reduces evaporative emissions/smog formation
Reduces tailpipe/exhaust CO emissions, replaces toxic components
Control of evaporative & exhaust emissions
Reduce engine deposits, thus reducing exhaust emissions

Can Yamaha Products Operate On Reformulated Gasoline?

Extensive testing has been done on the affects of RFG on lubricity and material compatibility, **particularly with 2-stroke engines.** Results show no adverse affects or catastrophic failures when using RFG. Tests also indicate that no increase in service intervals beyond the existing Yamaha recommendations were necessary.

RUNNING CHARACTERISTICS WITH RFG

Because RFG contains oxygenates, the fuel mixture can lean-out slightly causing a rougher than normal idle. This can usually be corrected by small adjustments to the idle mixture screws. **Be sure to refer to your Yamaha technical specifications for correct fuel mixture settings!**

GUIDELINES FOR RFG USAGE

- Become familiar with the areas where RFG is sold. Normally the gas station will post a sign about the type of fuel they sell.
- Storage life of RFG is shorter than the fuel sold in the past. Treat stored fuel with Yamaha Fuel Stabilizer and Conditioner. Be sure to store gasoline in an approved container and place in a cool, dry place.
- In the case of large fuel tanks (such as in a boat or a large touring motorcycle), be sure to keep the tank completely full to prevent water accumulation. The expanding and contracting of the fuel causes air to enter the fuel tank. Water in the air will condense in the tank if the tank is not kept full.
- Be sure to use fresh fuel when doing a tune-up on any unit that has been in storage for a long time.

If you have technical tips you think other dealers could use, let us know. You'll receive credit in the Tech Exchange for ideas we use, and we'll send you an exclusive Yamaha Tech Exchange hat as our thanks.
Send your tips to: Yamaha Motor Corporation, U.S.A., Attn: Tech Exchange, P.O. Box 6555, Cypress, CA 90630

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Reformulated Gasoline (Cont'd.)

SUMMARY

More information will become available during the next year as RFG penetrates the market. If you want more information on gasoline, send for the technical manual, *Changes in Gasoline II* at:

Changes in Gasoline II
Technicians Manual
Downstream Alternatives, Inc.
PO Box 190
Bremen, IN 46506-0190

The cost of this manual is $2.00 each.

Areas Exceeding Federal Ozone Standards

The following charts show the areas of the country that exceed the Federal Ozone Standards. The nine cities in the **Extreme and Severe** areas are required to start selling RFG during 1995. This program is optional in the other listed areas.

RFG FUEL AREAS EXCEEDING FEDERAL OZONE STANDARDS

*Extreme Areas**	*Moderate Areas*	*Marginal Areas*	
Los Angeles*	Atlantic City, NJ	Albany, NY	South Bend, IN
	Bowling Green, KY	Allentown, PA-NJ	Stockton, CA
*Severe Areas**	Charleston, WV	Altoona, PA	Sussex County, DE
Baltimore, MD	Charlotte, NC-SC	Birmingham, AL	Tampa, FL
Chicago, IL-IN-WI	Cincinnati, OH-KY-IN	Buffalo, NY	Waldo County, ME
Houston, TX	Cleveland, OH	Canton, OH	York, PA
Milwaukee, WI	Dallas, TX	Columbus, OH	Youngstown, OH-Sharon, PA
Muskegon, MI	Dayton-Springfield, OH	Erie, PA	
New York, NY-NJ-CT	Detroit, MI	Essex County, NY	
Philadelphia, PA-NJ-DE-MD	Grand Rapids, MI	Evansville, IN-KY	
San Diego, CA	Greensboro, NC	Fayetteville, NC	
	Jefferson County, NY	Greenbrier County, WV	
*Serious Areas**	Kewaunee County, WI	Greenville-Spartanburg, SC	
Atlanta, GA	Knox County, ME	Hancock County, ME	
Bakersfield, CA	Louisville, KY-IN	Harrisburg, PA	
Baton Rouge, LA	Memphis, TN-AR-MS	Indianapolis, IN	
Beaumont, TX	Miami, FL	Johnson City-Kingsport-Bristol, TN	
Boston, MA-NH	Modesto, CA	Johnstown, PA	
El Paso, TX	Nashville, TN	Kansas City, MO-KS	
Fresno, CA	Pittsburgh, PA	Knoxville, TN	
Hartford, CT	Portland, ME	Lake Charles, LA	
Huntington, WV-KY-OH	Raleigh-Durham, NC	Lancaster, PA	
Parkersburg, WV-OH	Reading, PA	Lewiston, ME	
Portsmouth, NH-ME	Richmond, VA	Lexington, KY	
Providence, RI	Salt Lake City, UT	Lincoln County, ME	
Sacramento, CA	San Francisco-Oakland-San Jose, CA	Manchester, NH	
Sheboygan, WI	Santa Barbara, CA	Montgomery, AL	
Springfield, MA	Smyth County, VA	Norfolk, VA	
Washington, DC-MD-VA	St. Louis, MO-IL	Owensboro, KY	
	Toledo, OH	Paducah, KY	
	Visalia, CA	Poughkeepsie, NY	
	Worcester, MA	Scranton, PA	

*Nine cities with highest ozone levels designated extreme or severe will be required to implement reformulated gasoline programs in 1995. Other ozone non-attainment areas may elect to "opt-in" to this program.

Oxygenated Fuel Sold Seasonally in These Areas Exceeding Federal Carbon Monoxide Standards

Albuquerque, NM	Fairbanks, AK	Memphis, TN	Reno, NV
Anchorage, AK	Ft Collins, CO	Minneapolis, MN	Sacramento, CA
Baltimore, MD	Fresno, CA	Missoula, MT	San Diego, CA
Boston, MA	Grants Pass, OR	Modesto, CA	San Francisco, CA
Chico, CA	Greensboro, NC	New York/Northern NJ	Seattle, WA
Cleveland, OH	Hartford, CT	Philadelphia, PA	Spokane, WA
Colorado Springs, CO	Klamath County, OR	Phoenix, AZ	Stockton, CA
Denver/Boulder, CO	Las Vegas, NV	Portland, OR	Syracuse, NY
Duluth, MN	Los Angeles, CA	Provo/Orem, UT	Washington, DC
El Paso, TX	Medford, OR	Raleigh, NC	

OUTBOARD	3/20/95	O95-006

SUBJECTS: 1. Lower Unit Seal Placement
2. Improved Low Speed Acceleration - P200R,S,T
3. Service Guide & Service Manual Corrections - F50T

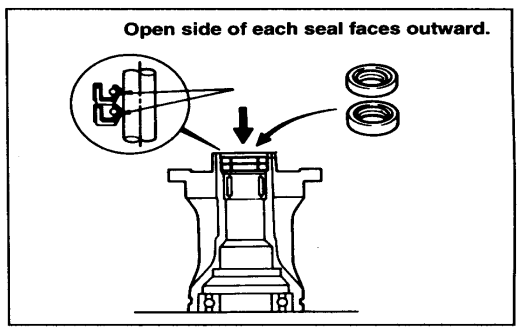
Lower Unit Seal Placement

Outboard technicians more familiar with other brands of marine products have questioned whether the lower unit oil seals (driveshaft and propeller shaft) in Yamaha products are positioned in the correct direction. The correct position is shown in the service manuals. Both seal combinations (two for the driveshaft and two for the propeller shaft) should be installed with the open side of each seal facing outward. Make sure both seals in each combination face in the same direction.

Factory engineers find that having both seals facing the same direction improves sealing and increases seal life. This arrangement improves lubrication and provides double protection against water entering the lower unit:

- *Improved lubrication* - occurs when the lower unit pressurizes during warm-up forcing a small amount of oil under the seal.
- *Prevents water from entering the lower unit* - When the pressurized lower unit cools off the double seal lips keep water out of the lower unit. The double seals work so well that you may hear a small rush of air when the lower unit oil fill plug is removed from a Yamaha lower unit. This is normal.

Always follow the procedures in the Yamaha Service Manuals and other Yamaha technical publications when servicing a Yamaha outboard lower unit!



Improved Low Speed Acceleration - P200R,S,T

Some operators have reported slightly reduced low speed acceleration when comparing 1993 and later model P200s against the 1991 and 1992 model P200s. Beginning with the 1993 models, the port cylinder main jets were leaned-out slightly to increase spark plug life and to improve fuel economy. This jetting change, in some boat applications, can also increase boat planing time. If you have experienced this complaint, changing the main jets to the 1991/1992 specification may improve acceleration. Follow the steps below:

1. Locate the main jets on the port side of the carburetors (the same side as the oil tank).
2. Use a 12mm wrench to remove the main jet.
3. Install the new main jets with a new O-ring and gasket.
4. Use the fuel line primer pump to fill the carburetors with fuel then inspect for leaks.

⚠WARNING

Fuel is highly flammable. Do not perform this procedures on a hot engine, or around cigarettes, open flames, sparks, or other sources of ignition. Wipe up any spilled fuel immediately and dispose of cleaning materials properly.

If you have technical tips you think other dealers could use, let us know. You'll receive credit in the Tech Exchange for ideas we use, and we'll send you an exclusive Yamaha Tech Exchange hat as our thanks.
Send your tips to: Yamaha Motor Corporation, U.S.A., Attn: Tech Exchange, P.O. Box 6555, Cypress, CA 90630

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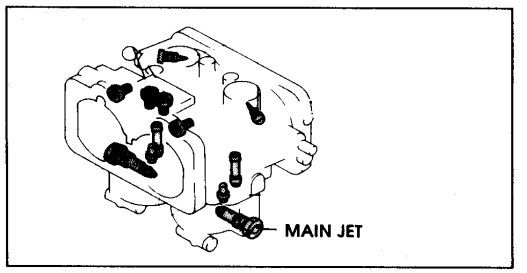
Required Parts:

Part Number	Description	Qty.
6E5-1492E-82-00	Main Jet #164	3
6E5-14997-00-00	O-ring	3
6E5-14397-00-00	Gasket, alum.	3

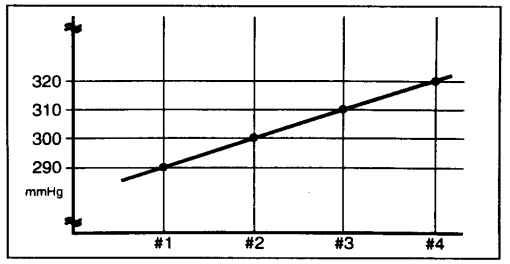


Service Guide & Service Manual Corrections - F50T

The F50 Service Guide that was recently distributed, the F50T Service Manual (Part number LIT-18616-01-23), and the F50T Chapter in the '95 Model & Service Guide that was handed out at the recent '95 Marine Update Seminars contain some specifications errors. These specifications changed after the publications went to press. Please revise your books according to the following information:

NOTE: The latest issue of the service manual microfiche (dated March 15, 1995) has all of the corrections listed below.

The graph on the bottom of page 4-18 in the service manual can be confusing as it appears that the #4 cylinder has a lower vacuum pressure. This is because of the graph format. Refer to the revised graph on page 4-18 in the service manual microfiche (a copy is shown below). The revised graph is easier to understand.



Change	F50A, F50T Service Manual	F50 Service Guide	'95 Model & Service Guide
Maximum Ignition timing is 30° (Delete 35°)	Page 2-6	Page 14	Page 87
Charge Coil peak output voltage 151 volts	Page 2-6	N/R	N/R
Pulser Coil peak output voltage 7.7 volts	Page 2-6	N/R	N/R
CDI Unit peak output voltage 134 volts	Page 2-6	N/R	N/R
Over Revolution Protection starts at 6200rpm ±70rpm	Page 2-6	Page 15	Page 89
Remove any reference to Link Rod ② (in Service Manual) and Link Rod ③ (in Service Guide)	Page 4-17	Page 26	N/R
Throttle Dashpot Adjustment changed to 1700rpm ±50rpm	N/R	Page 29	Page 99
Choke Valve Closing Adjustment make the following changes: 1. Add first adjusting step: • Push the choke linkage down to close the choke. 2. Add a down arrow to push the choke linkage closed to the drawing the same as the drawing on the top of the page for the Unloader Adjustment. 3. Add 1mm to the specified gap determined from the chart.	Page 4-22	Page 32	N/R

N/R = Not Required