

MODEL Y SERIES

ASSEMBLY INSTRUCTIONS

For Yamaha Motors 70-100 HP, 1984 to present

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Remove the bolts holding the gearbox to the exhaust housing and remove the gearbox assembly.
2. Remove the water pump assembly from the propeller drive, including the lower stainless steel plate, gaskets, impeller drive key, and dowel pins.
3. Install the jet driveshaft assembly into the spiral pump housing locking it in place with the four 5/16-18 x 1 bolts with LOCK WASHERS, 12 FT-LBS. No lockwashers are used. Use grease on the threads.
4. Install the water pump assembly on top of the 1-3/8" thick aluminum adapter and stainless steel plate, with gaskets and dowel pins. Be sure also, to install the water pump impeller drive key removed from the propeller drive. Lock in place using four 5/16-18 bolts and lockwashers. Grease the threads.
5. The large 3/4" adapter plate is attached to the exhaust housing to hold the jet drive. A 3/8 x 1-1/2 pin in the front of the plate guides the disconnected shift rod. Two 6 x 16mm dowels locate the plate, four M10 x 35mm bolts with lockwashers and one M8 x 30mm bolt with lockwasher secure it, 22 FT-LBS. Grease bolt threads and the end of the pin where it slides in the shift rod.
6. Next attach the jet drive to the motor. Two 3/16 x 1/2 dowel pins center the jet drive on the adapter plate. Four 3/8-16 bolts and lockwashers from below and one 3/8-16 x 1-1/4 bolt from above rear, are used. Select the lower bolt lengths to suit the different counter bore depths so that all bolts enter the adapter plate the same depth, 22 FT-LBS.

Grease the bolt threads, driveshaft spline generously, and rubber water tube pilot and guide the jet into place. Tighten the five bolts.

7. Next, install the impeller. Grease the shaft threads, key and impeller bore. Place the plastic sleeve inside the impeller, hold the key in the nose of the impeller with your forefinger and slide onto the driveshaft. Install the eight shim washers and nut retainer on the shaft, up against the impeller, and bring the nut up snug by hand. Be careful that the retainer does not fall into the thread groove and jam the nut.

Then bump the nut with a wrench. If the ears of the retainer do not line up with the flats on the nut, spin the nut off, turn the retainer over and tighten the nut again. In one of these two positions you will have alignment and can fold the ears up against the nut to retain it. The flat in the retainer is angled to the ears to allow this.

When, after use in sand and gravel, the blade clearance becomes more than about 1/32" between the impeller edge and the water intake casing wall, one or more of the shim washers can be transferred from the bottom stack to the top of the impeller, which moves the impeller down into the tapered casing to reduce the clearance.

MODEL Y

Shims should not be used above the impeller on new installations where no wear has occurred, unless the blade clearance exceeds 1/32 inch. Insufficient blade clearance will do more harm than good from any performance gains it might provide.

8. Place the intake casing in position with the lower end at the rear and tighten the six nuts, 12 FT-LBS. No lockwashers are used. Grease the threads.
9. Attach the shift cable and cable anchor bracket to the jet drive.

With the shift handle in forward and the reverse gate in forward, with the cam roller at the end of the slot, adjust the cable end and/or cable anchor position to this condition. Shift to reverse and back to forward. The roller should be at the end of the cam slot such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this.

If this forward lock condition is not met, readjust the cable positions.

10. When converting to jet drive, your motor will have to be raised to height shown in the diagram on page 3, using a straight edge under the boat. Test run the boat and then raise or lower the motor 5/16 inch at a time to obtain the best results.

The motor has four sets of upper mounting holes. You will use one set to begin with. Mark pencil lines on the boat transom through the other sets. Then if you wish to go up or down 5/16 inch, you can drill one alternate set of holes 5/16 inch up or down from the pencil marks. By alternating between these two sets of transom holes and the four sets of motor holes, the motor can be moved in 5/16 inch increments over almost one inch. The transom height should be about 26 inches measured vertically from the boat bottom.

If you raise it too much it will suck air and cavitate, either on start up or when banking on turns. When cavitating, the motor overspeeds in spurts and shakes considerably in the motor mount. This is not a normal condition and should be avoided by proper adjustment of motor height on each individual boat. If you lower it too much you will have excessive drag, therefore mount the motor as high as possible without allowing cavitation.

MODEL Y

CAUTION

When starting the engine for the first time, watch to see that cooling water comes out of the small hole at the rear side of engine just below the powerhead. This is to check your assembly of the cooling water pump and its connections.

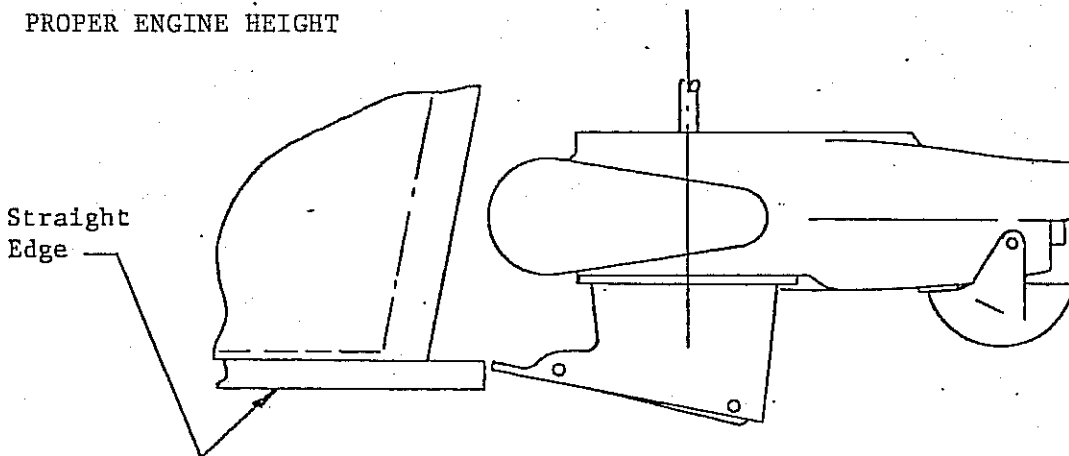
The cooling system can be flushed by removing the slotted screw next to the grease fitting. A hose coupling is available from a **YAMAHA** dealer. Turn on the water gently, start the motor, set to idle and watch for cooling water at the tell tale. Adjust water pressure if needed. Replace the screw after flushing.

MAINTENANCE AND LUBRICATION

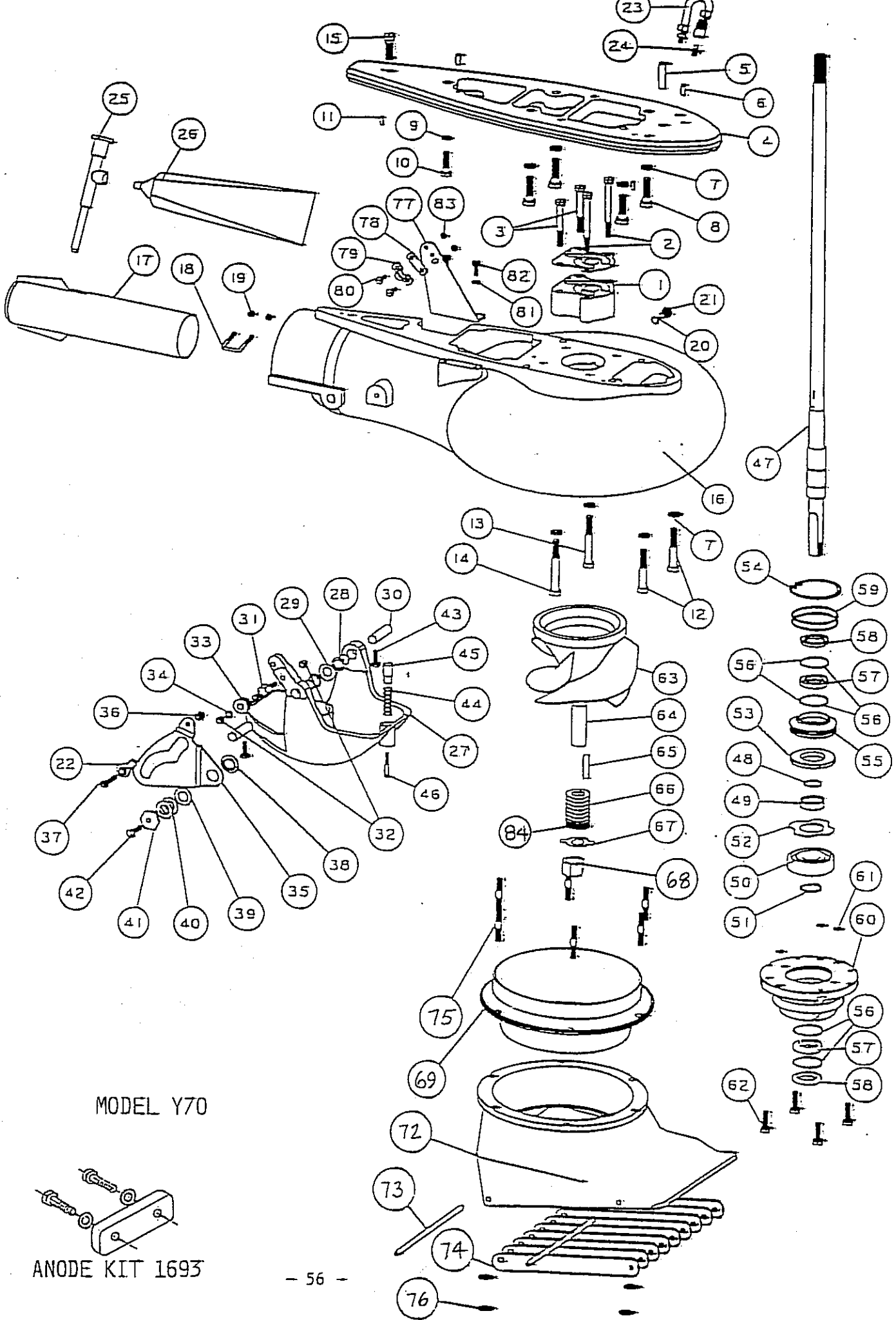
See separate sheet.

GOOD BOATING AND HAVE FUN!

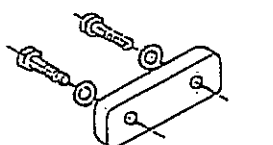
PROPER ENGINE HEIGHT



Specialty Manufacturing Company
Outboard Jets
2035 Edison Avenue
San Leandro, CA 94577



MODEL Y70



ANODE KIT 1693

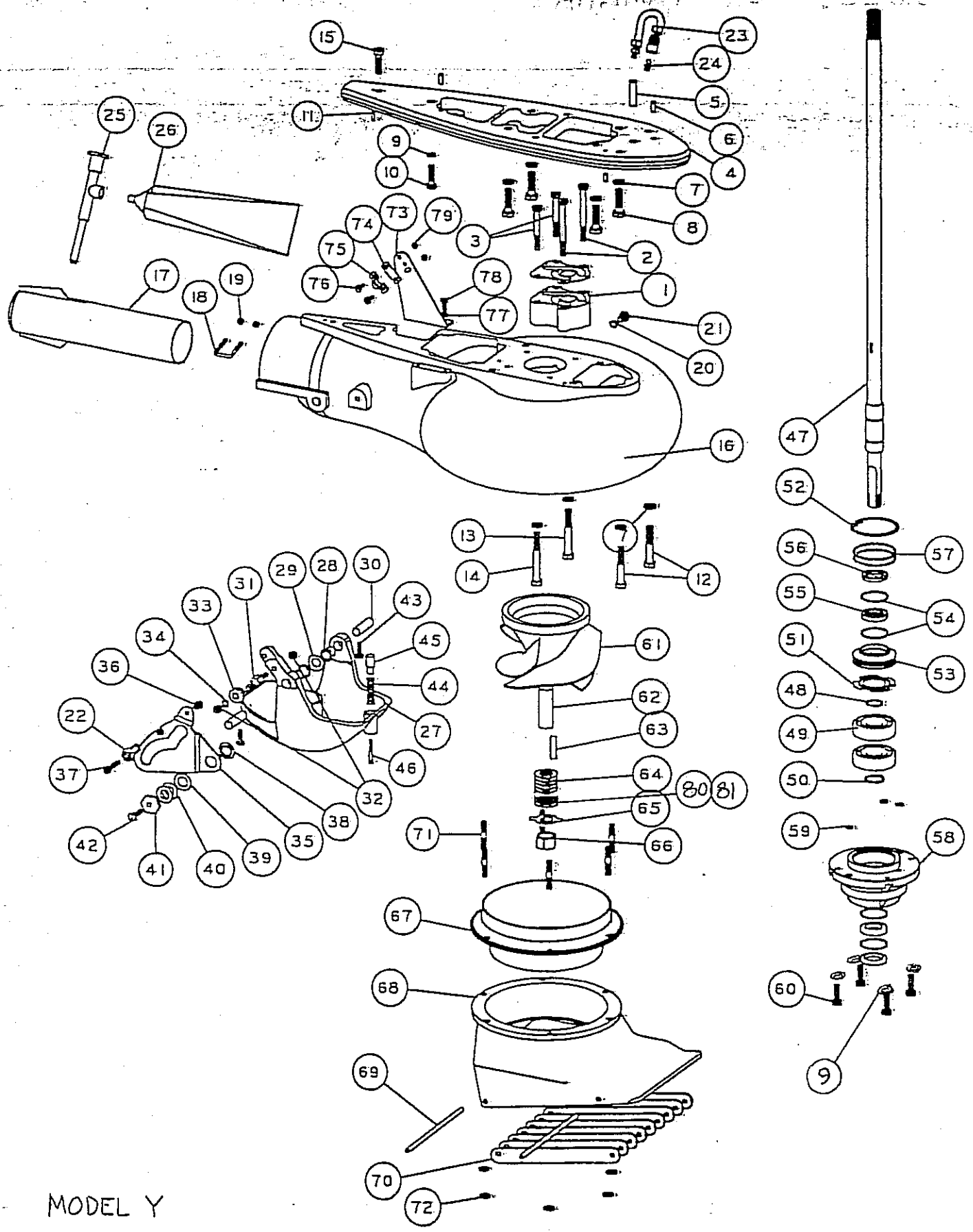
MODEL Y70, Y70-04 YAMAHA 60-70 HP
2 STROKE, 51.8 CU. IN.

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	873	PUMP ADAPTER, Y	49	1	467	COLLAR BACKFIT 7305
2	2	600	BOLT HEX HD 5/16-18 X 3 1/4	50	1	502	BEARING 7306B-UA
3	2	603	BOLT HEX HD 5/16-18 X 2 1/2	51	1	511	TRUARC 5100-98
4	1	871	ADAPTER PLATE Y	52	1	830	THRUST WASHER
5	1	874	SHIFT GUIDE Y	53	1	831	SPACER
6	2	616	DOWEL PIN 6 X 16MM	54	1	513	TRUARC N6002-250ZD
7	8	636	WASHER SPRING LOCK M10	55	1	432	UPPER SEAL CARRIER W/SEALS & "O" RINGS
8	4	592	BOLT HEX HD M10-1.25 X 35MM	56	4	517	SPIROLOX RR-160S
9	1	640	WASHER SPRING LOCK 5/16	57	2	606	SEAL INNER
10	1	591	BOLT HEX HD M8-1.25 X 30MM	58	2	507	SEAL OUTER 6324-S
11	2	631	DOWEL PIN 3/16 X 1/2	59	2	527	O RING 568-141 3/32 X 2-5/16 X 2-1/2
12	2	608	BOLT HEX HD 3/8-16 X 2 1/4	60	1	108.5	BEARING CARRIER W/SEALS & O"RINGS 5/16
13	1	609	BOLT HEX HD 3/8-16 X 2 3/4	61	3	521	O RING 568-011 1/16 X 5/16 X 7/16
14	1	610	BOLT HEX HD 3/8-16 X 3	62	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
15	1	606	BOLT HEX HD 3/8-16 X 1 1/4	63	1	106.24	IMPELLER 7 3/16 W/136 SLEEVE
		90800	VOLUTE WITH GATE Y	64	1	136	SHAFT SLEEVE PLASTIC LARGE
16	1	908	VOLUTE WITH EXHAUST TUBE Y	65	1	434	IMPELLER TEE KEY - SQUARE
17	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	65	1	1706	IMPELLER TEE KEY - 1/2 ROUND
18	1	846	CLIP EXHAUST TUBE 1 3/8	66	8	121	SHIM WASHER LARGE
19	2	621	NYLOC 10-32	67	1	781	NUT KEEPER LARGE/PKG. 2 PER BAG
20	1	1025	WASHER FIBER M8	68	1	122.1	SHAFT NUT 3/4-16 BRASS
21	1	1024	BOLT HEX HD M8 X 1.25 X 12MM			1840.01	INTAKE ASSY 7 3/16 FLANGED W/GRILL & LINER
22	1	553.2	BALL END 1/4 X 10-32 CABLE	69	1	1831	LINER 7 3/16 FLANGED
23	1	975	LUBE HOSE ASSY	72	1	1332.01	INTAKE PAINTED ONLY EX-LARGE
24	1	539	ZIRC FITTING 1/4-28	73	2	14	GRILL ROD
25	1	550	GREASE GUN	74	9	117	GRILL BAR LARGE
26	1	552	GREASE, 10 OZ TUBE NO. 630-AA	75	6	1319	STUD-INTAKE LARGE
27	1	1172	REVERSE GATE LARGE	76	6	625	NYLOC 5/16-18
28	2	536	NYLINER 1/2 ID X 13/16			171	BRACKET ASSY MORSE W/CLAMP & HDW
29	2	1178	SPRING GATE PIVOT 1/2	77	1	156	BRACKET CABLE SUPPORT
30	2	823	PIN GATE PIVOT 1/2 LARGE	78	1	542	SHIM MORSE AO35777
31	1	1043	SHAFT ROLLER	79	1	543	CLAMP CHRYS 164317
32	2	624	NYLOC 1/4-28	80	2	561	FIL HD SLOTTED 10-24 X 5/8
33	1	1042	ROLLER ASSY	81	2	635	1/4 WASHER AN960C416
34	1	635	1/4 WASHER AN960C416	82	2	572	BOLT HEX HD 1/4-20 X 5/8
35	1	1034	SHIFT CAM LARGE	83	2	619	NYLOC 10-24
36	1	623	NYLOC 1/4-20	84	1	1719	TORSIONAL DAMPER 3/4
37	1	573	BOLT HEX HD 1/4-20 X 3/4				
38	1	1037	BUSHING CAM				
39	1	1038	WASHER CAM				
40	2	1039	SHIM-CAM				
41	1	1036	CAM ECCENTRIC DRILLED				
42	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH				
43	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
44	1	1170	SPRING GATE BUMPER				
45	1	1497	GATE BUMPER				
46	1	559.2	FIL HD SLOTTED 10-32 X 1-1/4 PATCH				
		921.1	SHAFT ASSY COMPLETE, Y70, 16T 5/16				
47	1	920	SHAFT ONLY, Y70, 16T 29 13/16				
		1804.1	SHAFT ASSY COMPLETE, Y70-04, 16T 5/16				
47	1	1803	SHAFT ONLY, Y70-04, 16T 29 13/16				
48	1	41	SHAFT BEARING THRUST RING				

SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	12 FT-LBS
3/8-16 (M10)	22 FT-LBS

TILLER STEERING
 SHIFT CABLE ASSY 1317 SEE PAGE 23

BEARING, SEAL, SNAP & "O" RING KIT
 1 BRG 462.1



MODEL Y

MODEL Y90 YAMAHA

REF	QTY	PART NO	DESCRIPTION	REF	QTY	PART NO	DESCRIPTION
1	1	873	PUMP ADAPTER Y	56	2	507	SEAL OUTER 6324-5
2	2	600	BOLT HEX HD 5/16-18 X 3 1/4	57	2	527	O RING 568-141 3/32X2 5/16X2 1/2
3	2	603	BOLT HEX HD 5/16-18 X 2 1/2	58	1	393-5	BEARING CARRIER W/SEALS & O RINGS 5/16
4	1	871	ADAPTER PLATE Y	59	3	521	O RING 568-011 1/16X5/16X7/16
5	1	874	SHIFT GUIDE Y	60	4	602-1	BOLT HEX HD 5/16-18 X 1 PATCH
6	2	616	DOWEL PIN 6 X 16 MM	61	1	1756	IMPELLER T 3/8 W/136 SLEEVE
7	8	636	WASHER SPRING LOCK M10	62	1	136	SHAFT SLEEVE PLASTIC LARGE
8	4	592	BOLT HEX HD M10-1.25 X 35MM	63	1	434	IMPELLER TEE KEY
9	5	640	WASHER SPRING LOCK 5/16	64	9	121	SHIM WASHER LARGE
10	1	591	BOLT HEX HD M8-1.25 X 30MM	65	1	781	NUT KEEPER LARGE/PKG 2 PER BAG
11	2	631	DOWEL PIN 3/16 X 1/2	66	1	122-1	SHAFT NUT 3/4-16 BRASS
12	2	608	BOLT HEX HD 3/8-16 X 2 1/4			1333	INTAKE ASSY FLANGED WITH GRILL & LINER
13	1	609	BOLT HEX HD 3/8-16 X 2 3/4	67	1	1431	LINER T 3/8 FLANGED
14	1	610	BOLT HEX HD 3/8-16 X 3	68	1	1332	INTAKE PAINTED ONLY
15	1	606	BOLT HEX HD 3/8-16 X 1 1/4	69	2	14	GRILL ROD
		90800	VOLUTE WITH GATE Y	70	9	117	GRILL BAR LARGE
16	1	908	VOLUTE WITH EXHAUST TUBE Y	71	5	1319	STUD - INTAKE LARGE
17	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	72	6	625	NYLOC 5/16-18
18	1	845	CLIP EXHAUST TUBE 1 3/8			171	BRACKET ASSY MORSE W/CLAMP & HARDWARE
19	2	621	NYLOC 10-32	73	1	156	BRACKET CABLE SUPPORT
20	1	1023	WASHER FIBER 3/8	74	1	542	SHIM MORSE A035777
21	1	1022	BOLT HEX HD 3/8-16 X 1/2	75	1	543	CLAMP CHRYS 154317
22	1	553-2	BALL END 1/4X10-32 CABLE	76	2	561	FIL HD SLOTTED 10-24 X 5/8
23	1	975	LUBE HOSE ASSY	77	2	635	1/4 WASHER AN960C416
24	1	539	ZIRC FITTING 1/4-28	78	2	572	BOLT HEX HD 1/4-20 X 5/8
25	1	550	GREASE GUN	79	2	619	NYLOC 10-24
26	1	552	GREASE 10 OZ TUBE NO. 630-AA				
27	1	1172	REVERSE GATE, LARGE	NOTE:	FLUSH SCREW	& WASHER METRIC ON BLUE VOLUTES	
28	2	536	NYLINER 1/2 10 X 13/16	20	1	1025	WASHER FIBER M8
29	1	1178	SPRING GATE PIVOT 1/2	21	1	1024	BOLT HEX HD M8-1.25 X 12
30	2	823	PIN GATE PIVOT 1/2 LARGE				
31	1	1043	SHAFT ROLLER				
32	2	624	NYLOC 1/4-28				
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36	1	623	NYLOC 1/4-20				
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38	1	1037	BUSHING CAM				
39	1	1038	WASHER CAM				
40	2	1039	SHIM - CAM				
41	1	1036	CAM ECCENTRIC DRILLED				
42	1	574-1	BOLT HEX HD 1/4-20 X 1 PATCH				
43	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
44	1	1170	SPRING GATE BUMPER				
45	1	1497	GATE BUMPER				
46	1	559-2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH				
		968-1	SHAFT ASSY COMPLETE, Y090, 18T 5/16				
47	1	967	SHAFT ONLY, Y090, 18T				
48	1	41	SHAFT BEARING THRUST RING				
49	2	502	BEARING 7305B-UA				
50	1	511	TRUARC 5100-98				
51	1	404	BACKUP WASHER				
52	1	513	TRUARC M5002-250ZD				
53	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS				
54	4	517	SPIROLOX RR-150S				
55	2	506	SEAL INNER				

SIZE

TORQUE

TILLER STEERING

1/4-20 (M6)

8-9 FT-LBS.

SHIFT CABLE 1317

SHIFT CABLE 1383

5/16-18 (M8)

12

3/8-16 (M10)

22

MAINTENANCE AND LUBRICATION OUTBOARD JET DRIVE

BEARING LUBRICATION

A grease gun and tube of grease is supplied with your jet drive. We recommend greasing the bearing every 10 hours. Make greasing a part of your cleanup after the days use. Pump in just enough grease to fill the lube hose. Then reconnect the lube hose coupling to the zerk grease fitting.

Every 30-40 hours, pump in extra grease so as to purge any moisture. The texture of the grease coming out gives an indication of conditions inside the bearing housing. A gradual increase in moisture content indicates seal wear. If the grease begins to turn dark, dirty gray, the bearing and seals should be inspected and replaced if necessary. Some discoloration of the grease is normal during the break in period on new sets of seals.

We have selected a water resistant grease of the proper consistency for this application. If you use a substitute grease, be sure it is water resistant and of the same consistency.

IMPELLER

Your jet drive is equipped with a key to protect the unit in the event of a rock jam. This can be reached by removing the water intake, and then the driveshaft nut, similar to a propeller drive. After replacing the key, pull the shaft nut up tight to remove any play between the impeller and shaft. Note the position of the impeller shim washers, and replace them in the same order.

REVERSE GATE MECHANISM

Occasionally check adjustment of the gate shifting linkage. In "forward" the gate should be firmly locked in position. Pull on the gate by hand to verify this. This will prevent wave action from accidentally shifting the gate into reverse as the boat is violently maneuvered

GENERAL

Check all mounting bolts, intake screws, linkage connections, etc., occasionally to be sure they are tight.

SALT WATER USE

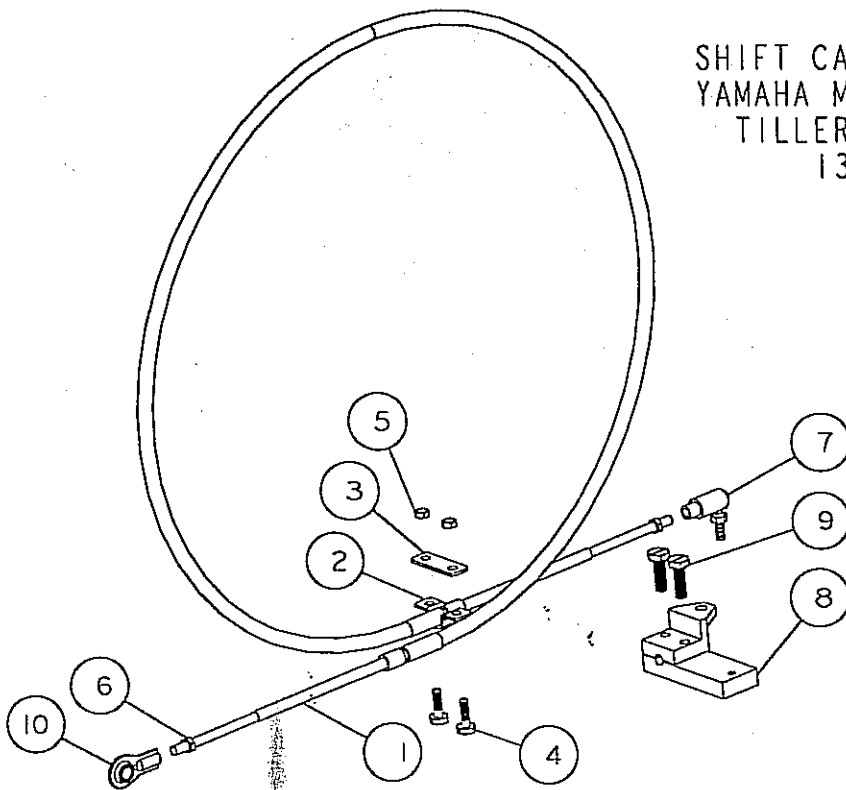
Aluminum and stainless steel have been used in the construction of your jet drive. These materials have either been treated or are inherently resistant to corrosion. It is recommended, however, that when not in use the motor be tipped up so that the jet unit is out of the water. When used in salt water more than in fresh water, remove mounting hardware, grease, and reassemble once a year. Failure to do this may result in hardware that is difficult if not impossible to remove at a later date.

GUARANTEE

Due to inflexible government regulation, we do not have a written warranty. We have, however, a good reputation for fairness with our customers which we intend to maintain. If you think you have a warranty situation, regarding material, workmanship, call us before making repairs.

Specialty Manufacturing Company
Outboard Jets
2035 Edison Avenue
San Leandro, CA 94577

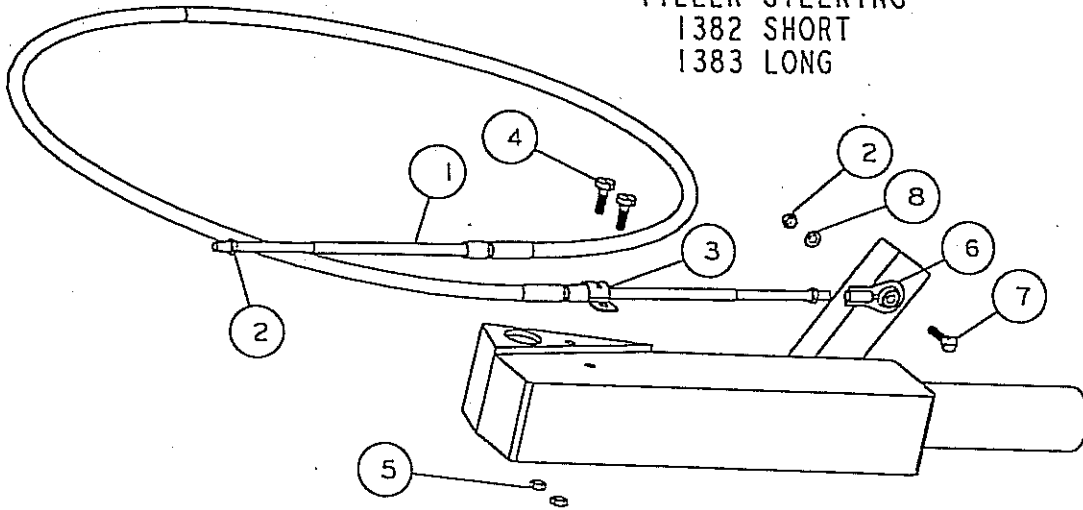
SHIFT CABLE ASSEMBLY
YAMAHA MODEL Z50, Y70
TILLER STEERING
1317



REF	QTY	PART NO	DESCRIPTION
1	1	549	CABLE 3 1/2 FT MOR 33C SUPREME
2	1	543	CLAMP CHRYS 154317
3	1	542	SHIM MORSE A035777
4	2	561	FIL HD SLOTTED 10-24 X 5/8
5	2	619	NYLOC 10-24
6	2	621.1	HEX NUT 10-32 JAM
7	1	544.1	BALL JOINT MORSE 31799-001
8	1	1316	CABLE BLOCK Z Y TILLER
9	2	573	BOLT HEX HD 1/4-20 X 3/4
10	1	553.2	BALL END 1/4X10-32 CABLE

6. AUG. 97

SHIFT CABLE ASSEMBLY
 YAMAHA MODEL AJM,Y
 TILLER STEERING
 1382 SHORT
 1383 LONG



REF	QTY	PART No	DESCRIPTION
1	1	547	CABLE 4 FT MOR 33C SUPREME SHORT
1	1	547.1	CABLE 4 1/2 FT MOR 33C SUPREME LONG
2	3	621.1	HEX NUT 10-32 JAM
3	1	543	CLAMP CHRYS 154317
4	2	561	FIL HD SLOTTED 10-24 X 5/8
5	2	619	NYLOC 10-24
6	1	553.1	BALL END No. 10X10-32 CABLE
7	1	558.2	BOLT HEX HD 10-32 X 3/4
8	1	637	WASHER SPRING LOCK No. 10

6. AUG. 97