MODEL M JOHNSON / EVINRUDE SERIES
ASSEMBLY INSTRUCTIONS
4 CYLINDER, 1969 TO 1977

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal position. Remove the engine cover and disconnect the electric shift wires. Slide the insulating sleeves back over the bare wire hot leads on the power head. As the gearbox is lowered, the lower wire leads will come out of the exhaust housing. (On mechanical shift models, disconnect upper shift rod pin.)

2. To lower the gearbox, remove the 5 exposed bolts. Remove the trim tab and the bolt up inside the trim tab opening. Bump the gearbox loose and slowly lower, at the same time push and pull on the electric shift wire leads to assist them in coming out of the exhaust housing. Seal wire hole with 3/8 x 1 rubber plug.

3. Remove the water pump, including stainless steel plate, and the upper driveshaft "O" ring from the gearbox assembly.

4. Where required, cut about 7/8 inch off the plastic tube extending beneath the water pump, so that when it is installed in the jet, it will clear the bottom of the housing. This is for recirculating cooling water. See diagram on page 3.

5. In the engine exhaust housing, the rear 7/16 inch bolt hole must be drilled out for a smaller bolt coming down from above. A drill and spotfacer kit is available on loan from the factory or your dealer. Drill the hole through with a 25/64 drill first. Then back spotface the top of the hole to provide a flat seat for the 1/2 inch long spacer sleeve which goes under the bolt head to provide wrench clearance. Spotface until the bolt, with spacer sleeve in place, will extend through 5/8 inch. See diagram on page 3.

6. Attach the driveshaft assembly to the jet drive using the 4 – 5/16-18 x 1 long bolts and lockwashers.

7. Mount the water pump assembly to the jet. Be sure the water pump impeller key is in place. Slide the "O" ring onto the driveshaft spline, where used.

8. Remove the rubber cushion exhaust tube seal from the propeller gearbox and place in the jet housing. Place the 2 plastic water tube guides into the water pump. Lightly grease the water tube ends and rubber sockets, and the exhaust tube and rubber seal, for easy entry. Generously grease the driveshaft spline and you are ready to install the jet.

HYDRAULIC SHIFTING MOTORS – 1973

Before mounting the jet, the hole in the exhaust housing, through which the shift rod passed, must be plugged. Use the rubber grommet supplied.

9. The jet is held in place by 4 – 3/8 bolts and lockwashers from below and 1 – 3/8 bolt and spacer sleeve from above, rear. Lightly grease the bolt threads and carefully guide the jet into place being sure the water tubes engage properly. Tighten the 5 bolts.

10. 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 8 shim washers and nut retainer on the shaft, up against the impeller, and bring the nut up snug by hand. <u>Be careful that the retainer does not fall into the thread groove and jam the nut.</u>

    Then bump the nut up snug 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 liner, one or more of the stainless 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.

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.

Place the intake casing in position with the lower end at the rear and tighten the six nuts. No lockwashers are used. Grease the threads.

11. When converting electric shift motors to jet drive, it is necessary to use a single lever remote control with shift cable to operate the reverse gate. The OMC control #172079 or Morse Model M R O both work well.

    For installation in which the choke switch, ignition switch, and hot light are mounted in the Hydro-electric remote control, a clean installation can be made by removing the cable harness from the remote control and mounting it on the dashboard using an OMC dash panel, part #312694.

12. Attach the shift cable and cable anchor bracket to the jet drive.

    Using a light finger pressure on the gate, move the gate toward reverse until the cam roller is nested in the neutral notch of the cam.

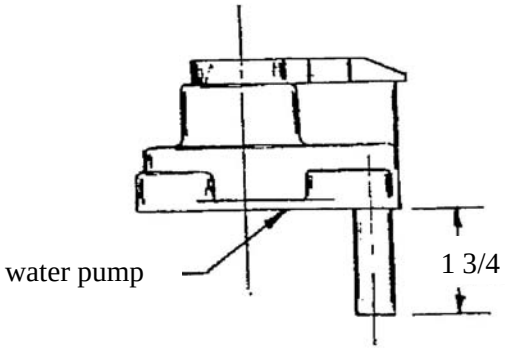
    Adjust the shift cable end and the cable anchor bracket on the jet drive such that the roller is in the neutral notch when the shift handle is in neutral. Tighten hardware.

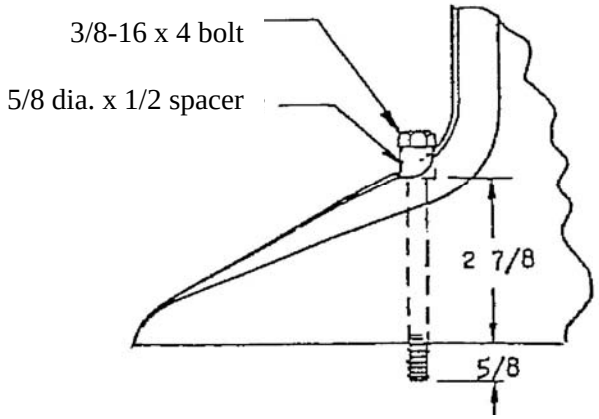
    Shift to forward. The roller should be well onto the flat section of the cam such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this.

    If this forward lock condition is not met, readjust the cable positions, giving less importance to the roller position in neutral.

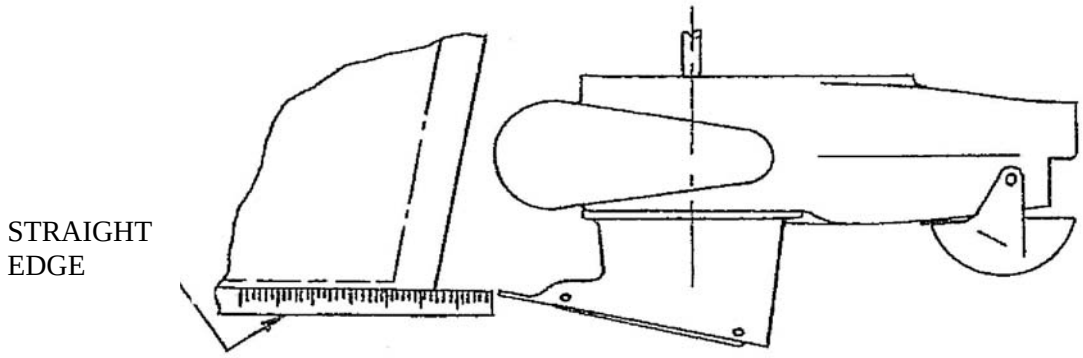
13. When converting to jet drive, your motor will have to be raised to height shown in diagram on page 3, using a straight edge under the boat. Test run the boat and then raise or lower the motor 5/16 inch at a time to obtain the best results. If you raise it too much it will suck air and cavitate, either on start up or when banking on turns. When cavitating, the engine overspeeds in spurts and shakes considerably in the engine mount. This is not a normal condition and should be avoided by proper adjustment of engine height on each individual boat. If you lower it too much you will have excessive drag, therefore mount the engine as high as possible without allowing cavitation.

    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 the engine just below the powerhead. This is to check your assembly of the cooling water pump and its connections.





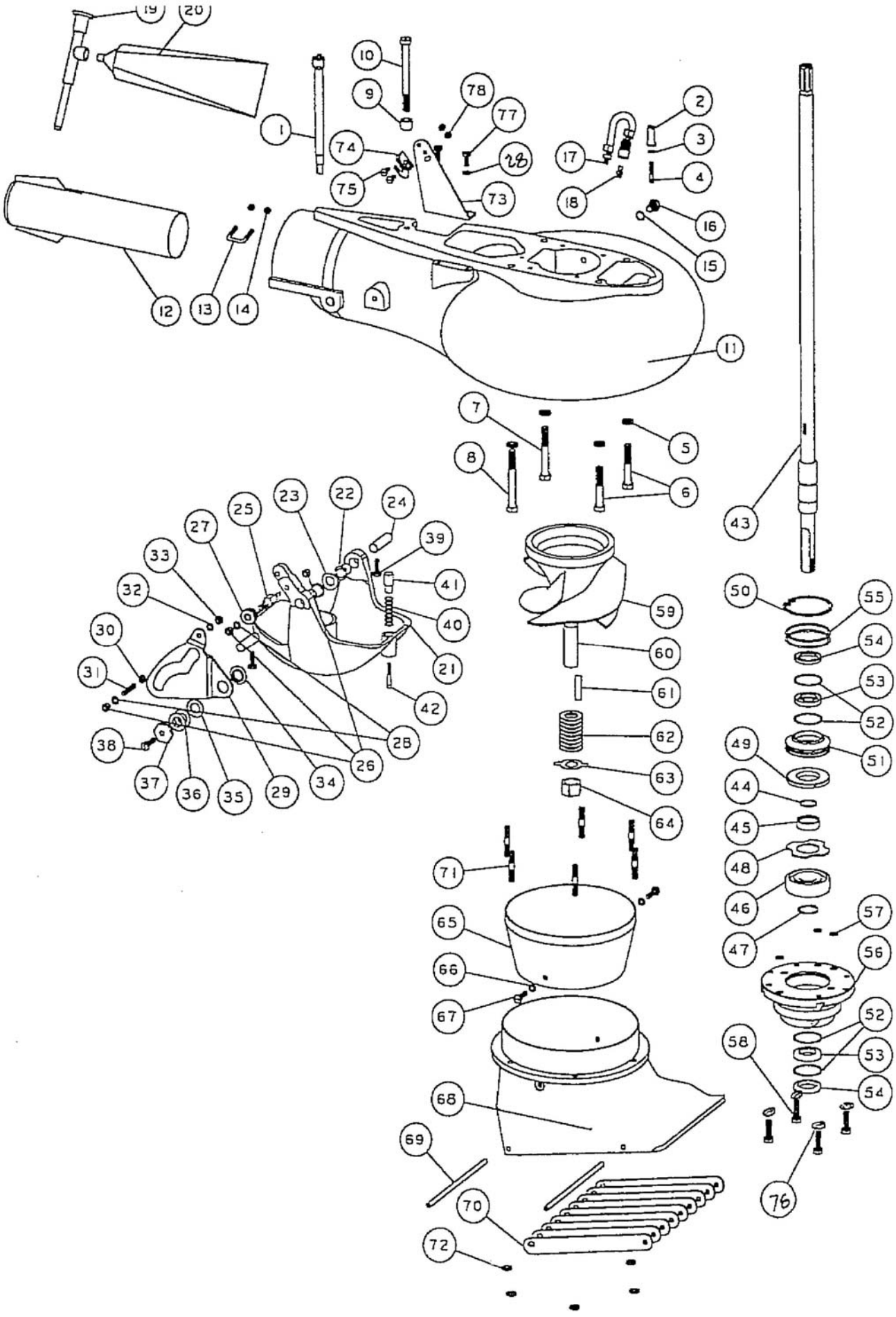
PROPER ENGINE HEIGHT



MAINTENANCE AND LUBRICATION

See separate sheet.

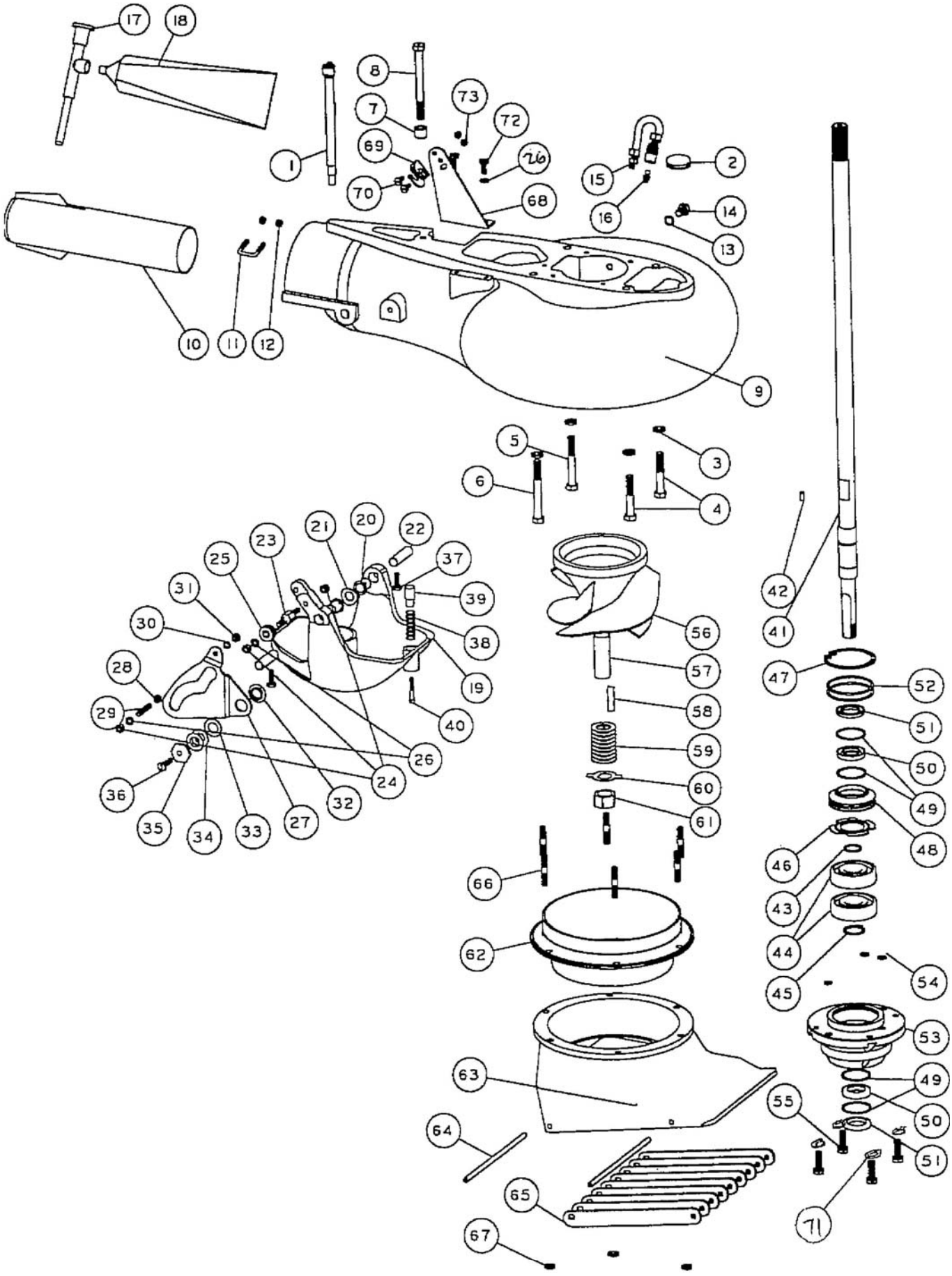
GOOD BOATING AND HAVE FUN!


19
20
10
9
78
77
28
74
75
73
1
17
18
2
3
4
16
15
12
13
14
11
7
8
5
6
43
23
22
24
25
27
33
32
30
31
39
41
40
21
42
28
26
34
29
35
36
37
38
59
60
61
62
63
64
50
55
54
53
52
49
51
44
45
48
46
47
57
56
58
76
71
65
66
67
68
69
70
72

MODEL M73 JOHNSON / EVINRUDE

REF	QTY	PART NO.	DESCRIPTION
1	1	403.23	SPOTFACER & DRILL KIT 5/8
2	1	298.3	RUBBER PLUG, EXHAUST HSG 1973 & LATER
3	4	636	WASHER SPRING LOCK M10
4	2	608	BOLT HEX HD 3/8-16 X 2 1/4
5	1	609	BOLT HEX HD 3/8-16 X 2 3/4
6	1	611	BOLT HEX HD 3/8-16 X 3 1/4
7	1	181	SPACER, REAR MOUNTING BOLT
8	1	612	BOLT HEX HD 3/8-16 X 4
		19100	VOLUTE WITH GATE M
9	1	191	VOLUTE WITH EXHAUST TUBE M
10	1	128	EXHAUST TUBE ASSY LARGE 2 1/2
11	1	846	CLIP EXHAUST TUBE 1
12	2	621	NYLOC 10-32
13	1	1023	WASHER FIBER 3/8
14	1	1022	BOLT HEX HD 3/8-16 X 1/2
15	1	975	LUBE HOSE ASSY
16	1	539	1/4-28 THREAD HYDRAULIC ZIRC
17	1	550	GREASE GUN 30195
18	1	552	GREASE 10 OZ TUBE NO.630-AA
19	1	1172	GATE PAINTED LARGE 1/2 CAM
20	2	536	NYLINER 4217A 1/2ID X .82
21	1	1178	SPRING GATE PIVOT 1/2
22	2	823	PIN GATE PIVOT 1/2 LARGE
23	1	1043	SHAFT ROLLER
24	3	624	NYLOC 1/4-28
25	1	1042	ROLLER ASSY
26	4	635	1/4 WASHER AN960C416
27	1	1034	SHIFT CAM LARGE
28	1	62	NUT HEX JAM 1/4-28
29	1	1199	PIVOT - CABLE END
30	1	638	WASHER SPRING LOCK 1/4
31	1	622	NUT HEX 1/4-28
32	1	1037	BUSHING CAM
33	1	1038	WASHER CAM
34	2	1039	SHIM - CAM
35	1	1036	CAM ECCENTRIC DRILLED
36	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH
37	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH
38	1	1170	SPRING GATE BUMPER
39	1	1497	GATE BUMPER - LONG
40	1	559.2	FIL HD SLOT 10-32X 1 1/4 PATCH
		962.1	DSHAFT ASSY MD73 - 5/16
41	1	961	DRIVESHAFT & SLV MD73
42	1	631	DOWEL PIN 3/16 X 1/2
43	1	41	SHAFT BEARING THRUST RING
44	2	502	BEARING 7305B-UA
45	1	511	TRUARC 5100-98SPP
46	1	404	BACKUP WASHER LARGE PLATED
47	1	513	TRUARC N5002-250ZDL
48	1	432	SEAL RING ASSY LARGE
49	4	517	SPIROLOX RR-150S
50	2	506	SEAL INNER 0857
51	2	507	SEAL OUTER 1317 REV B
52	2	527	O RING 568-141
53	1	393.5	BRG CARR SEALS DOUBLE - 5/16
54	3	521	O RING 568-011 1/16X5/16X7/16
55	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
56	1	106.25	IMPELLER 7 3/8 136, 1706(2)
57	1	136	SHAFT SLEEVE PLASTIC LARGE
58	1	434	KEY, TEE IMPELLER LARGE 3/16
59	9	121	SHIM WASHER LARGE
60	1	781	NUT KEEPER FOLDED LARGE
61	1	122.1	SHAFT NUT 3/4-16 BRASS
		1333	INTAKE ASSY 7 3/8 FLANGED
62	1	1431	LINER 7 3/8 FLANGED
63	1	1332	INTAKE PAINTED 7 3/8 FLANGED
64	2	14	GRILL ROD
65	9	117	GRILL BAR LARGE
66	9	???	SHAFT SLEEVE PLASTIC LARGE
67	6	625	NYLOC 5/16-18
		170	BRACKET ASSY OMC
68	1	156	BRACKET CABLE SUPT OMC, MORSE
69	1	546	CLIP OMC 305736
70	2	562	PAN HD PHILLIPS 10-32 X 1/2
71	4	640	WASHER SPRING LOCK 5/16
72	2	572	BOLT HEX HD 1/4-20 X 5/8
73	2	621	NYLOC 10-32

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


17
18
8
7
69
70
1
73
72
76
68
15
16
2
14
13
10
11
12
9
5
6
3
4
21
20
22
23
25
31
30
28
29
37
39
38
19
40
26
24
32
27
33
34
35
36
56
57
58
59
60
61
66
62
63
64
65
67
42
41
47
52
51
50
49
48
46
43
44
45
54
53
49
50
51
55
71

MODEL M JOHNSON / EVINRUDE

REF	QTY	PART NO.	DESCRIPTION
1	1	403.23	SPOTFACER & DRILL KIT 5/8
2	1	277	RUBBER PLUG ASSY LM
3	1	632	WASHER M5
4	1	559.1	FIL HD SLOTTED 10-32 X 1 PAT
5	4	636	WASHER SPRING LOCK M10
6	2	608	BOLT HEX HD 3/8-16 X 2 1/4
7	1	609	BOLT HEX HD 3/8-16 X 2 3/4
8	1	611	BOLT HEX HD 3/8-16 X 3 1/4
9	1	181	SPACER, REAR MOUNTING BOLT
10	1	612	BOLT HEX HD 3/8-16 X 4
		19100	RECOUP GATE M CAM
11	1	191	RECOUP TUBE M
12	1	128	EXHAUST TUBE ASSY LARGE 2 1/2
13	1	846	CLIP EXHAUST TUBE 1
14	2	621	NYLOC 10-32
15	1	1023	LUBE HOSE ASSY
16	1	1022	BOLT HEX HD 3/8-16 X 1/2
17	1	975	LUBE HOSE ASSY
18	1	539	1/4-28 THREAD HYDRAULIC ZIRC
19	1	550	GREASE GUN 30195
20	1	552	GREASE 10 OZ TUBE NO.630-AA
21	1	1172	GATE PAINTED LARGE 1/2 CAM
22	2	536	NYLINER 4217A 1/2ID X .82
23	1	1178	SPRING GATE PIVOT 1/2
24	2	823	PIN GATE PIVOT 1/2 LARGE
25	1	1043	SHAFT ROLLER
26	3	624	NYLOC 1/4-28
27	1	1042	ROLLER ASSY
28	4	635	1/4 WASHER AN960C416
29	1	1034	SHIFT CAM LARGE
30	1	62	NUT HEX JAM 1/4-28
31	1	1199	PIVOT - CABLE END
32	1	638	WASHER SPRING LOCK 1/4
33	1	622	NUT HEX 1/4-28
34	1	1037	BUSHING CAM
35	1	1038	WASHER CAM
36	2	1039	SHIM - CAM
37	1	1036	CAM ECCENTRIC DRILLED
38	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH
39	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH
40	1	1170	SPRING GATE BUMPER
41	1	1497	GATE BUMPER - LONG
42	1	559.2	FIL HD SLOT 10-32X 1 1/4 PATCH
		198.1	DSHAFT ASSY M4T - 5/16
43	1	188	DRIVESHAFT & SLV M4T
44	1	41	SHAFT BEARING THRUST RING
45	1	467	COLLAR BACKFIT 7305
46	1	502	BEARING 7305B-UA
47	1	511	TRUARC 5100-98SPP
48	1	830	THRUST WASHER LARGE
49	1	831	SPACER 7305 MILLED
50	1	513	TRUARC N5002-250ZDL
51	1	432	SEAL RING ASSY LARGE
52	4	517	SPIROLOX RR-150S
53	2	506	SEAL INNER 0857
54	2	507	SEAL OUTER 1317 REV B
55	2	527	O RING 568-141
56	1	108.5	BRG CARR SEALS LARGE - 5/16
57	3	521	O RING 568-011 1/16X5/16X7/16
58	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
59	1	106.24	IMPELLER 7 3/16 136, 1706(2)
60	1	136	SHAFT SLEEVE PLASTIC LARGE
61	1	434	KEY, TEE IMPELLER LARGE 3/16
62	9	121	SHIM WASHER LARGE
63	1	781	NUT KEEPER FOLDED LARGE
64	1	122.1	SHAFT NUT 3/4-16 BRASS
		141.3	INTAKE ASSY 7 3/16
65	1	184	LINER CASTING 7 3/16 Z27
66	2	638	WASHER SPRING LOCK 1/4
67	2	575	BOLT HEX HD 1/4-20 X 7/8
68	1	104	INTAKE PAINTED LARGE
69	2	14	GRILL ROD
70	2	117	GRILL BAR LARGE
71	6	625	NYLOC 5/16-18
72	6	???	BRACKET ASSY OMC
		170	BRACKET ASSY OMC
73	1	156	BRACKET CABLE SUPT OMC, MORSE
74	1	546	CLIP OMC 305736
75	2	562	PAN HD PHILLIPS 10-32 X 1/2
76	4	640	WASHER SPRING LOCK 5/16
77	2	572	BOLT HEX HD 1/4-20 X 5/8
78	2	621	NYLOC 10-32

NOTE: 115-135 HP IMPELLER & INTAKE SHOWN ON MODEL M73 VIEW

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

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