

MODEL O CHRYSLER / WARD SEA KING SERIES
ASSEMBLY INSTRUCTIONS
70-90 HP, 1969 TO 1978
105-135 HP, 1966 TO 1976

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion.
2. Disconnect the shift rod coming up from the gearbox. Remove the trim tab, rear bolt and 6 remaining bolts holding the gearbox in place. Lower the gearbox.
3. Remove the complete water pump assembly from the gearbox including the stainless steel plate.
4. Install the jet driveshaft assembly in the spiral pump housing using four 5/16-18 x 1 hex head bolts. Use grease on the threads.
5. Next install the water pump. A stainless steel shim is placed around the driveshaft, inside the rubber impeller hub. Be sure the shaft key is in place. Install the water pump housing, while turning the driveshaft in the normal clockwise direction, so that the rubber impeller fingers will enter properly. Use a little grease on the pump housing bolt threads and tighten them.
6. The engine shift rod mechanism is not used to shift the reverse gate and must be locked in a dormant position to prevent its getting in the way of the throttle mechanism movement. Lock the shift rod downward using a 1/4-20 x 1 – 3/4 hex head bolt and fiber lock nut through the lower end of the shift rod and housing.
7. Mount the jet drive adapter plate to the engine exhaust housing using seven 5/16-18 x 1 hex head bolts and lockwashers. Use grease on the threads and lock firmly.
8. The jet is held in place by four 3/8 bolts and lockwashers from below and one 3/8-16 x 1 – 1/2 bolt and lockwasher above rear. A rubber disc 3/8 diameter x 1/8 thick is pushed to the top of each of the 4 – 3/8 threaded holes in the exhaust housing mounting flange. Grease the driveshaft spline generously, the bolt threads, water pump tube and rubber socket lightly and guide the jet into place, being sure the water tube engages the pump properly. Tighten the five bolts.
9. 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 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 inch between the impeller edge and the water intake casing wall, one or more of the brass 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. Insufficient blade clearance will do more harm than good from any performance gains it might provide.

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

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Using a light finger pressure on the reverse 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. Secure hardware.

Shift to forward. The roller must be at the end of the forward slot in 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 position giving less importance to the roller position in neutral.

12. When converting to jet drive, your motor will have to be raised to the 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.

The motor has three 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 three sets of motor holes, the motor can be moved in 5/16 increments over almost one inch. The transom height should be about +6 inches measured vertically from the boat bottom.

If you raise it too much it will suck air and cavitate, either on start up 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

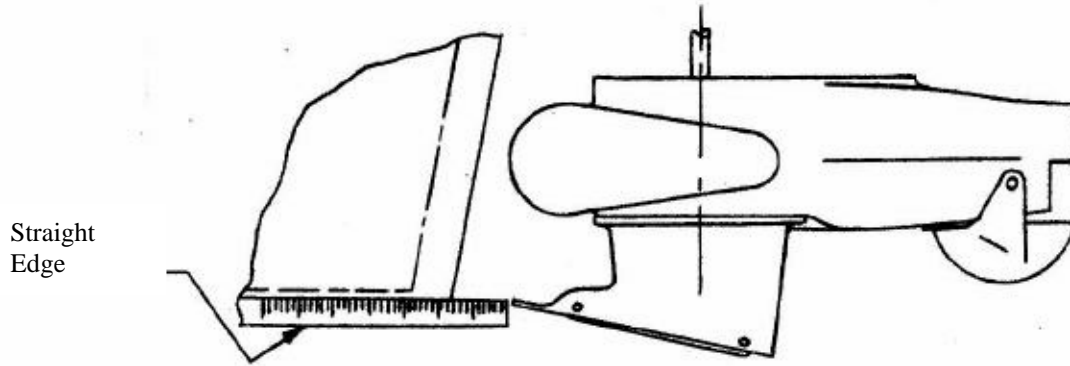
When starting the engine for the first time, watch to see that the cooling water comes out of the small hole at the rear side of the engine just below the power head. This is to check your assembly of the cooling water pump and its connections.

The cooling system can be flushed by removing the slotted screw next to the grease fitting. A hose coupling No. 24789A1 is available from a Mercury dealer. Turn on the water gently, start the motor, set to idle and watch for cooling water at the tell tale. Replace the screw after flushing.

Good boating and have fun!

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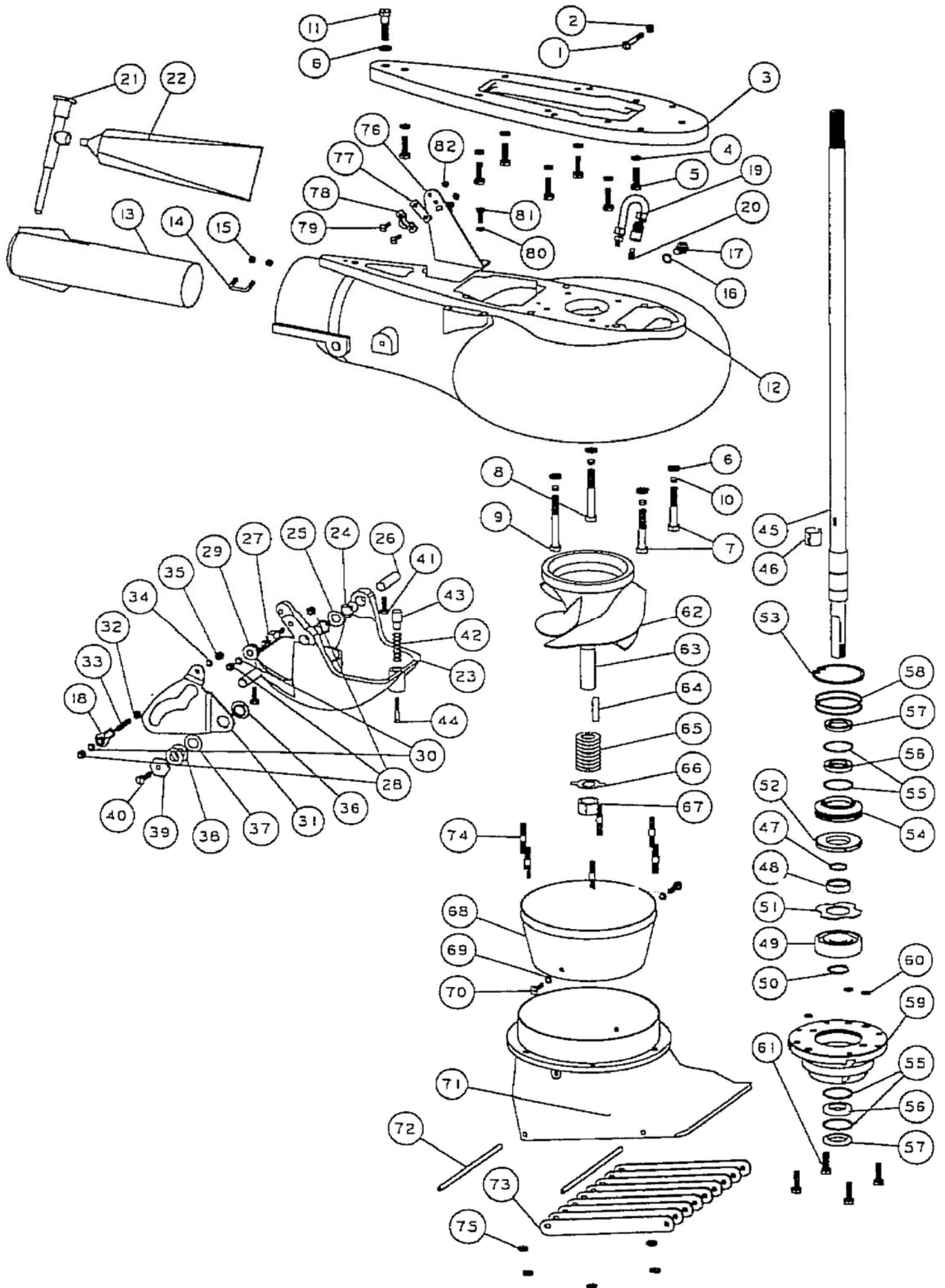
PROPER ENGINE HEIGHT



MAINTENANCE AND LUBRICATION

See last page.

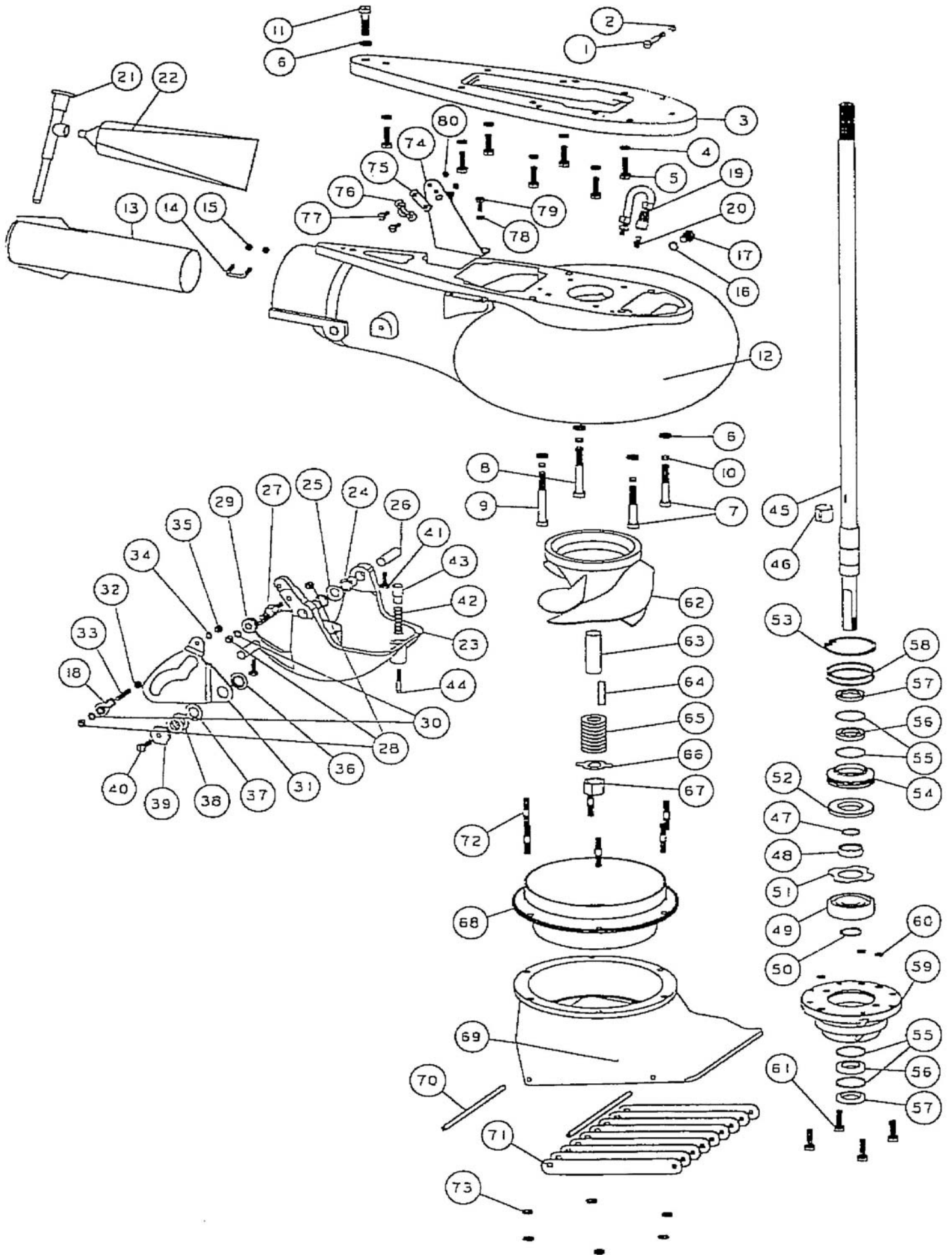
Specialty Manufacturing Company
OUTBOARD JETS
2035 Edison Avenue
San Leandro, CA 94577



MODEL 085 CHRYSLER / FORCE

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	578	BOLT HEX HD 1/4-20 X 1 3/4	54	1	432	SEAL RING ASSY LARGE
2	1	623	NYLOC 1/4-20	55	4	517	SPIROLOX RR-150S
3	1	313	ADAPTER PLATE O	56	2	506	SEAL INNER 0857
4	7	640	WASHER SPRING LOCK 5/16	57	2	507	SEAL OUTER 1317 REV B
5	7	602	BOLT HEX HD 5/16-18 X 1	58	2	527	O RING 568-141
6	5	636	WASHER SPRING LOCK M10	59	1	108.5	BRG CARR SEALS LARGE - 5/16
7	2	608	BOLT HEX HD 3/8-16 X 2 1/4	60	3	521	O RING 568-011 1/16X5/16X7/16
8	1	609	BOLT HEX HD 3/8-16 X 2 3/4	61	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
9	1	610	BOLT HEX HD 3/8-16 X 3	62	1	106.24	IMPELLER 7 3/16 136, 1706(2)
10	4	412	RUBBER DISC 3/8X1/8	63	1	136	SHAFT SLEEVE PLASTIC LARGE
11	1	607	BOLT HEX HD 3/8-16 X 1 1/2	64	1	434	KEY, TEE IMPELLER LARGE 3/16
		34300	RECOUP GATE O CAM	65	9	121	SHIM WASHER LARGE
12	1	343	RECOUP TUBE O	66	1	781	NUT KEEPER FOLDED LARGE
13	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	67	1	122.1	SHAFT NUT 3/4-16 BRASS
14	1	847	CLIP EXHAUST TUBE 3/4			141.3	INTAKE ASSY 7 3/16
15	2	621	NYLOC 10-32	68	1	137	LINER 7 3/16 W/HARDWARE
16	1	1023	WASHER FIBER 3/8	69	2	638	WASHER SPRING LOCK 1/4
17	1	1022	BOLT HEX HD 3/8-16 X 1/2	70	2	575	BOLT HEX HD 1/4-20 X 7/8
18	1	553.2	BALL END 1/4X10-32 CABLE	71	1	104	INTAKE PAINTED LARGE
19	1	975	LUBE HOSE ASSY	72	2	14	GRILL ROD
20	1	539	1/4-28 THREAD HYDRAULIC ZIRC	73	9	117	GRILL BAR LARGE
21	1	550	GREASE GUN 30195	74	6	1319	STUD - INTAKE LARGE
22	1	552	GREASE 10 OZ TUBE NO.630-AA	75	6	625	NYLOC 5/16-18
23	1	1172	GATE PAINTED LARGE 1/2 CAM			171	BRACKET ASSY MORSE
24	2	536	NYLINER 4217A 1/2ID X .82	76	1	156	BRACKET CABLE SUPT OMC, MORSE
25	1	1178	SPRING GATE PIVOT 1/2	77	1	542	SHIM MORSE A035777
26	2	823	PIN GATE PIVOT 1/2 LARGE	78	1	543	CLAMP CHRYS 154317
27	1	1043	SHAFT ROLLER	79	2	561	FIL HD SLOTTED 10-24 X 5/8
28	3	624	NYLOC 1/4-28	80	2	635	1/4 WASHER AN960C416
29	1	1042	ROLLER ASSY	81	2	572	BOLT HEX HD 1/4-20 X 5/8
30	2	635	1/4 WASHER AN960C416	82	2	619	NYLOC 10-24
31	1	1034	SHIFT CAM LARGE				
32	1	62	NUT HEX JAM 1/4-28				
33	1	1199	PIVOT - CABLE END				
34	1	638	WASHER SPRING LOCK 1/4				
35	1	622	NUT HEX 1/4-28				
36	1	1037	BUSHING CAM				
37	1	1038	WASHER CAM				
38	2	1039	SHIM - CAM				
39	1	1036	CAM ECCENTRIC DRILLED				
40	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH				
41	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
42	1	1170	SPRING GATE BUMPER				
43	1	1497	GATE BUMPER - LONG				
44	1	559.2	FIL HD SLOT 10-32X 1 1/4 PATCH				
		316.1	DSHAFT ASSY OS - 5/16				
45	1	315	DRIVESHAFT & SLV OS				
		319.1	DSHAFT ASSY OL - 5/16				
45	1	318	DRIVESHAFT & SLV OL				
46	1	320	SHIM PUMP IMPELLER O				
47	1	41	SHAFT BEARING THRUST RING				
48	1	467	COLLAR BACKFIT 7305				
49	1	502	BEARING 7305B-UA				
50	1	511	TRUARC 5100-98SPP				
51	1	830	THRUST WASHER LARGE				
52	1	831	SPACER 7305 MILLED				
53	1	513	TRUARC N5002-250ZDL				

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



MODEL O120 CHRYSLER/FORCE

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	578	BOLT HEX HD 1/4-20 X 1 3/4	54	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS
2	1	623	NYLOC 1/4-20	55	4	517	SPIROLOX RR-150S
3	1	313	ADAPTER PLATE O	56	2	506	SEAL INNER
4	7	640	WASHER SPRING LOCK 5/16	57	2	507	SEAL OUTER 6324-5
5	7	602	BOLT HEX HD 5/16-18 X 1	58	2	527	O RING 568-141 3/32X2 5/16X2 1/2
6	5	636	WASHER SPRING LOCK M10	59	1	108.5	BEARING CARRIER W/SEALS & O RINGS - 5/16
7	2	608	BOLT HEX HD 3/8-16 X 2 1/4	60	3	521	O RING 568-011 1/16X5/16X7/16
8	1	609	BOLT HEX HD 3/8-16 X 2 3/4	61	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
9	1	610	BOLT HEX HD 3/8-16 X 3	62	1	948	IMPELLER 7 3/80 W/136 SLEEVE 105 - 135 HP
10	4	412	RUBBER DISC 3/8X1/8	63	1	136	SHAFT SLEEVE PLASTIC LARGE
11	1	607	BOLT HEX HD 3/8-16 X 1 1/2	64	1	434	IMPELLER TEE KEY
		34300	VOLUTE WITH GATE O	65	9	121	SHIM WASHER LARGE
12	1	343	VOLUTE WITH EXHAUST TUBE O	66	1	781	NUT KEEPER LARGE/PKG 2 PER BAG
13	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	67	1	122.1	SHAFT NUT 3/4-16 BRASS
14	1	847	CLIP EXHAUST TUBE 3/4			1333	INTAKE ASSY FLANGED WITH GRILL & LINER
15	2	621	NYLOC 10-32	68	1	1431	LINER 7 3.8 FLANGED
16	1	1023	WASHER FIBER 3/8	69	1	1332	INTAKE PAINTED ONLY
17	1	1022	BOLT HEX HD 3/8-16 X 1/2	70	2	14	GRILL ROD
18	1	553.2	BALL END 1/4X10-32 CABLE	71	9	117	GRILL BAR LARGE
19	1	975	LUBE HOSE ASSY	72	6	1319	STUD - INTAKE LARGE
20	1	539	ZIRC FITTING 1/4-28	73	6	525	NYLOC 5/16-18
21	1	550	GREASE GUN 30195			171	BRACKET ASSY HORSE W/CLAMP & HARDWARE
22	1	552	GREASE 10 OZ TUBE NO.630-AA	74	1	156	BRACKET CABLE SUPPORT
23	1	1172	REVERSE GATE LARGE	75	1	542	SHIM HORSE AO35777
24	2	536	NYLINER 1/2 ID X 13/16	76	1	543	CLAMP CHRYS 154317
25	1	1178	SPRING GATE PIVOT 1/2	77	2	561	FIL HD SLOTTED 10-24 X 5/8
26	2	823	PIN GATE PIVOT 1/2 LARGE	78	2	635	1/4 WASHER AN960C416
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44	1	559.2	FIL HD SLOT 10-32X 1 1/4 PATCH				
		316.1	SHAFT ASSY COMPLETE, OS, 15T 5/16				
45	1	315	SHAFT ONLY, OL. 15T 28 9/32 LG				
		316.1	SHAFT ASSY COMPLETE, OS, 15T 5/16				
45	1	318	SHAFT ONLY, OL. 15T 32 1/2 LG				
46	1	320	SHIM PUMP IMPELLER O				
47	1	41	SHAFT BEARING THRUST RING				
48	1	467	COLLAR BACKFIT 7305				
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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