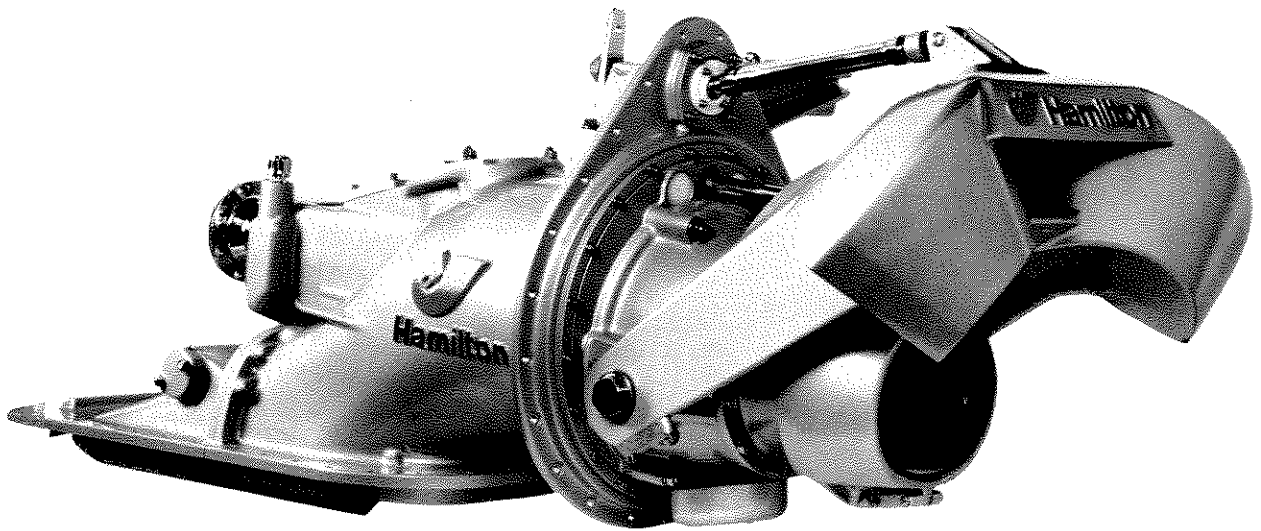
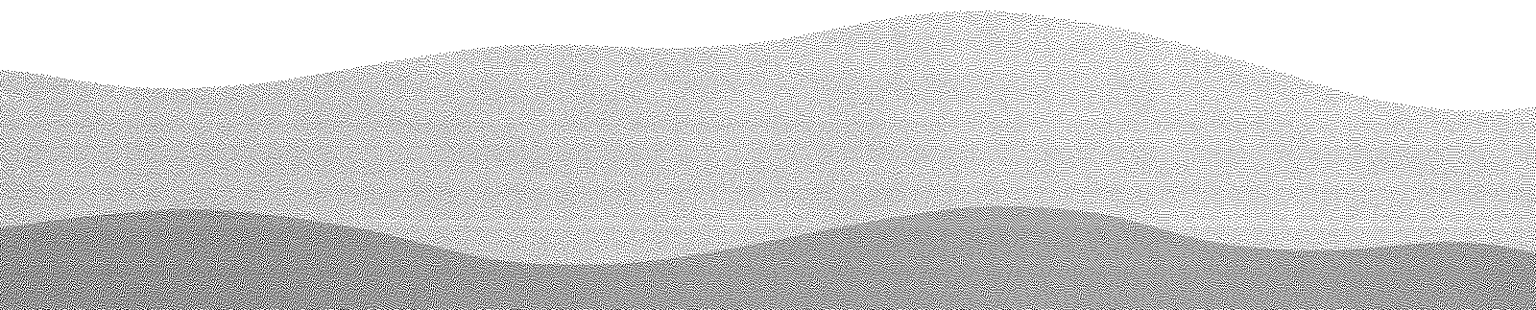




**Hamilton** jet



**Waterjet Propulsion Systems**



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Edition for models with T3 steering (identified  
by T3 cast on the sides of the steering deflector  
Part No 63386  
Printed March 1991

## 1. Introduction

This manual contains important information regarding the operation, care and maintenance of your Hamilton 770 series jet unit. Its new features include a single deflector for light, positive steering, a removable inspection cover to allow easy access for removing any debris which may find its way into the intake and a new two position nozzle which allows a trim change for a boat. In order to obtain maximum benefit from your jet unit, we suggest that you familiarise yourself with the contents of this manual and follow the recommendations laid down.

All information, illustrations and specifications contained in this manual are based on the latest production information available at the time of publication. The right is reserved to make changes at any time without notice, so always quote model and serial numbers in any correspondence regarding your jet unit.

We would like you to obtain the utmost performance and satisfaction from your 770 jet unit, so if you intend to install it into a boat yourself, we strongly recommend that you obtain a copy of the 770 Series Workshop Manual from your HamiltonJet dealer.

The information includes the selection and matching of a suitable hull, engine, coupling and control systems, installation etc.

## 2. Scope of Use

The 770 series marine jets are designed for the efficient propulsion of small and medium high speed (over 20 knots) planing craft, and to be driven by conventional gasoline inboard engines. If used as recommended, they will give brisk acceleration, excellent power for water skiing, and economical load carrying for family, sporting and utility purposes of all descriptions.

These units can be used in heavier and larger boats, displacement craft and a variety of special purpose vessels, with approximately equal efficiency to a direct drive propeller. However at these low speeds, efficiency is reduced. If the units are to be used outside their design range, the manufacturers should be consulted for guidance.

### **IMPORTANT**

*Generally therefore it is recommended that the 770 series jet units be confined to the lighter, fast class of craft that are usually trailered or slipped when not in use. The units are built from lightweight materials for high performance. They can be used freely in the sea but to avoid problems with fouling and excessive corrosion, it is recommended that they are slipped or trailered when not in use.*

### 3. Specification

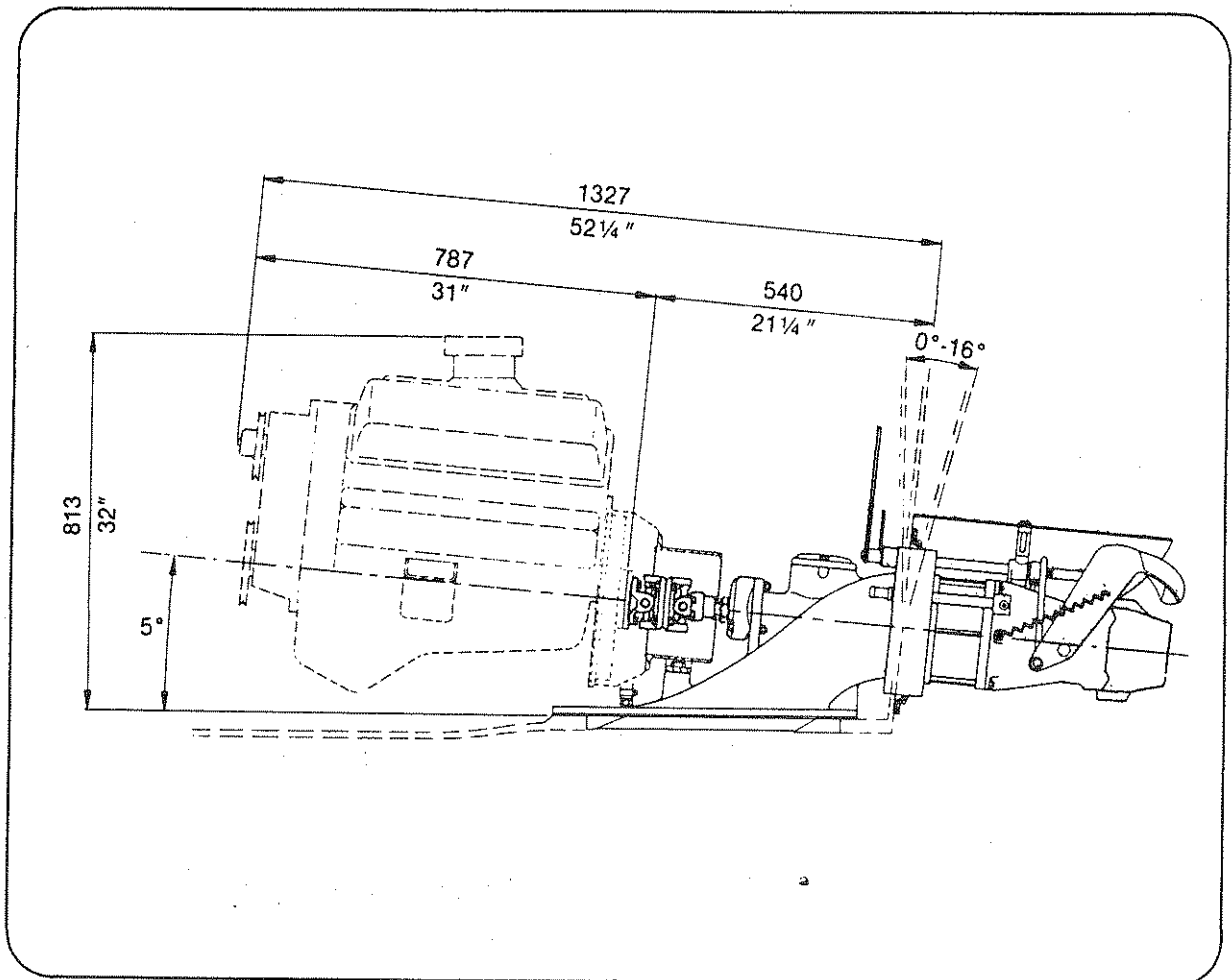
Model	772	773
Number of stages	2	3
Impeller diameter	190 mm (7 <sup>1</sup> / <sub>2</sub> " )	190 mm (7 <sup>1</sup> / <sub>2</sub> " )
Nozzle numbers (std)	106 mm	96 mm
Nozzle options	96 mm	106 mm
Engine size	3 - 5.7 litres	4 - 8 litres
	180 - 350 c.i.d.	250 - 500 c.i.d.
Horsepower range	100 - 240	130 - 300*
Drive adaption	← 1 <sup>3</sup> / <sub>8</sub> " - 10 SAE spline →	
Jet unit weight	55 kg (120 lbs)	59 kg (130 lbs)
Boat size	4.3 - 7 metres	4.9 - 8 metres
	14' - 23'	16' - 26'
Unladen boat weight	1200 kg	1600 kg
Maximum	(2650 lbs)	(3500 lbs)
Rotation	Left hand	Left hand
Impeller options	Standard	Standard
	Coarse	Coarse

\* For applications over 300 h.p. a racing version is available.

**NOTE:** Only use high h.p. and high r.p.m. (over 4500 r.p.m.) on light high performance pleasure craft. Use lower r.p.m. and move up one stage for heavier craft and commercial operation. For heavy duty and commercial work requiring over 200 h.p., use a racing version.

Standard nozzles are fitted unless options are requested. Standard pitch impellers are fitted unless optional fine or coarse impeller options are requested.

## 4. Typical Assembly



Typical assembly showing a 302 c.i.d Ford V8, short H bar drive shaft, rear engine mount kit and Hamilton 772 jet unit.

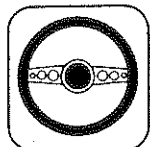
## 5. Pre Start Check

Although most of the settings are done at the factory, the following points should be checked after the unit has been installed in the boat. It is also advisable to go through all the checks listed in the owners manual of the engine you are using.



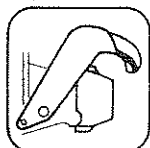
### LEAKS:

With the boat well laden at the back, check for leakage at the transom seal and intake joint. Well prepared surfaces and proper use of sealing cement provide leakproof joints.



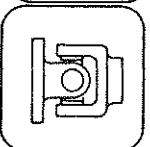
### STEERING:

The steering wheel should have no undue slack, if it has check that the steering wires are taut and adjust if necessary.



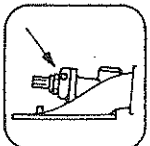
### REVERSE BUCKET:

Make sure that the reverse bucket operates freely. Check spring position. Refer Page 5.



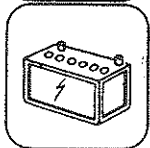
### DRIVE SHAFT:

The driveshaft universals should be greased sparingly. (See Section 7 - Maintenance)



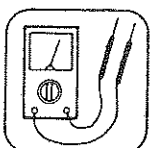
### BEARING:

The thrust bearing should be greased with a water repellent lithium based grease, using an ordinary grease gun on the nipple provided. DO NOT OVERGREASE. (See Section 7 Maintenance)



### ELECTRICAL AUXILLIARIES:

Batteries, radio transmitters, or other electrical equipment should not be earthed to the jet unit. It is safer to use an independent grounding plate which is electrically isolated from the jet casing and from the engine.



### INSULATION:

The rotating parts of the jet unit are electrically insulated from the aluminium casing to prevent electrolytic corrosion in sea water. Insulation is by tufnol washers, insulating film on the front bearing housing, and rubber in the rear bearing.

When a new boat is being fitted out, it is most important that the insulation should not be short - circuited by external fittings such as control links, fuel lines, steering cables or engine mountings which could provide an electrical circuit from the rotating shaft, through the engine and back to the aluminium jet casing. The use of rubber couplings insulates the engine from the jet shaft. To check the insulation, use an ohm - meter or a bulb and battery (3 - 12 volts) between the casing and the mainshaft of the jet unit while it is out of the water and the engine is stationary. The resistance under these conditions should not be less than 1000 ohms (or if you are using a bulb, it should not light.) A rear bearing, damp with sea water, may show a slightly lower resistance (under 10 ohms) and a test light will glow. If there is a short - circuit, find the cause and remove it.

To test the jet unit alone, remove the coupling shaft and repeat the test, revolving the shaft slowly by hand.

## 6. Operation

### LOADING:

Do not carry more weight aboard than is absolutely necessary. Remember, a high speed hull is very sensitive to weight.

### STARTING OFF AND STOPPING:

Find a suitable place to launch the boat. Drive the trailer back enough to submerge the jet intake into the water. (If there is a proper launching ramp there is nothing to worry about but if you are launching at a lake shore or a river bed, make sure you can drive the trailer out with the boat on it).

Start the engine, engage reverse and open the throttle slowly to get the boat in the water. If you are in shallow water with a shingle bed, do not open full throttle to take off as this will suck the shingle into the unit damaging the impeller blades.

With the engine idling or with a small throttle opening, manoeuvre into deep water. Now open the throttle fully until the craft is planing clear then ease the throttle back to economical cruising revolutions (generally 75% of maximum) and maintain planing speed. Avoid driving in the 10 - 15 m.p.h. range as at these speeds, draught and drag are at maximum.

### STEERING:

Try your steering and make sure you get the feel of it. Steering is achieved by deflecting the jet stream, so the engine must always be running to get any steering. The larger the throttle opening, the greater the steering effect.

**NEVER** stop the engine when approaching a mooring, or any situation where steering is required. *With the engine stopped, there will be no steering available.*

### REVERSING:

Reverse thrust is obtained by directing the jet stream forward under the boat. Again, reverse is only available when the engine is running. The boat can be brought to a stop from speed by engaging reverse with the throttle closed and then opening the throttle slowly. **Full throttle opening could be dangerous** in this condition as instant reverse thrust is obtained.

It is possible to creep forward or backward by moving the reverse lever to forward or reverse. The boat will also steer in reverse and neutral (zero speed). It should be noted that steering in reverse is opposite to that of a car steering, a feature that can be used to advantage when manoeuvring. An easy way to remember this is the bow will always go the way the wheel is turned.

It is possible to rotate the boat when neutral is engaged.

These manoeuvres require some practice but with experience they will enable you to handle the boat in extremely difficult conditions which would prove almost impossible in a conventional propeller driven boat.

The bracket for the reverse duct spring has two anchor holes for the spring:-

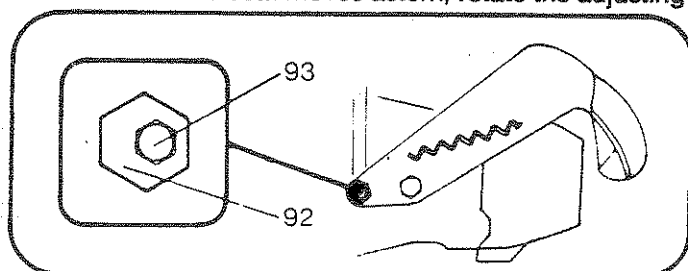
Upper hole - This is for normal two lever (separate throttle and reverse lever) controls.

Lower hole - This is for use with single lever (combined throttle and reverse on one lever control).

**NOTE:** The lower hole should not be used with two lever control as the reverse bucket will drop down in rough water (the single lever control system holds the reverse bucket up without the aid of a spring).

After the boat is launched, the neutral position should be checked as follows:

- a. Select the neutral position on the reverse lever.
- b. Run the boat at a fast idle in open water with no current or wind, with the steering straight ahead.
- c. If the boat moves forward, rotate the adjusting sleeves to lower the reverse duct a little.
- d. If the boat moves astern, rotate the adjusting sleeves to raise the duct.



- a. Loosen bolt (93)
- b. Rotate both adjusting sleeves (92) to raise or lower the reverse bucket.

**Important:** Take care that the concentric sleeves are set in identical positions on either side.

- c. Hold adjusting sleeve in position and tighten bolt.

**BLOCKED INTAKE SCREEN:**

During operation in debris laden water, the intake screen of the of the jet unit may become clogged. Floating sticks, weeds and leaves are the worst offenders. The effect is a falling off in thrust and speed and in extreme cases, increased noise from the jet unit. Close the throttle momentarily and switch off the engine for a few seconds. In most cases debris will fall from the screen bars. If this fails, stop the engine and remove the blockage manually with the rake provided or by removing the inspection cover to gain access to the intake.

**CAUTION:** *Before removing the cover, make sure that it is above the waterline and if not shift ballast to the bow of the boat.*

In shallow waters over shingle beds, full throttle will suck shingle and block the screen. Again the engine should be stopped for a short time so that it can fall from the intake screen. However, this problem will not occur while boating at planing speed over shallows and weeds.

**Two types of intake screens are available:-**

- a. Solid bar screen for stoney conditions and where the bottom may be encountered frequently.
- b. Free finger "comb" intake screens for weedy conditions. **NOTE:** this screen should not be used if a stoney bottom is to be encountered, as stones can pass the flexible bars and can seriously damage the interior of the unit.

**BLOCKED WATER DELIVERY TUBE:**

Lack of cooling water flow is sometimes caused by a blocked water delivery tube, and can often be noticed by an increase in exhaust noise even before it shows on the temperature gauge. Switch off the engine and clear the debris from the water delivery tubes (58).



## 7. Maintenance

This unit has been designed to require the absolute minimum of maintenance. The main moving parts which may require occasional attention are described below. Routine checks at regular intervals will ensure a long trouble free life.

### **THRUST BEARING:**

This is a special high thrust capacity duplex ball bearing with separate grease seals. The bearing should be lubricated after every 30 hours use with a water repellent lithium based grease (Shell Alvania R2 or equivalent).

### **REAR BEARING:**

This is a water lubricated cutless rubber bearing. It requires no attention. **DO NOT RUN THE JET UNIT OUT OF WATER** as this will damage the bearing. Because there will be no cooling water, the engine could also be damaged.

### **DRIVE SHAFT UNIVERSALS:**

Grease the joints sparingly after every 30 hours use, as for the thrust bearing. *Do not overgrease.*

### **MAINSHAFT SPLINE:**

This should be smeared with water repellent lithium based grease prior to assembly with mating spline on driveshaft or companion flange. Inspect every 30 hours use that the spline is not dry of grease. Strip and repack with grease as necessary or annually.

### **REVERSE AND STEERING MECHANISMS:**

After every 30 hours use check all bolts for tightness. Make sure the cotter pins are tight when reassembled. Check bushes for wear.

### **ROMET SEAL SHAFT:**

This is a carbon face seal with a bronze counterface and needs no attention. If a leak appears below the bearing housing, this is an indication of a cracked or chipped carbon face. Replace it with another seal. *For details see Service Information - section 8.*

### **TRANSOM SEAL:**

After every 30 hours use check the rubber to see that it is sealing effectively and is in sound condition.

### **SALT WATER OPERATION:**

This unit is designed for high speed planing craft where light weight is important. Therefore aluminium alloy components have been used. Use freely in the sea but the boat should be trailered or slipped and flushed with fresh water or given a short run in fresh water before extended storage.

If it is used extensively in salt water, it is recommended that all casings and seals be inspected after every 30 hours use. Annually dismantle and inspect all internal and external surfaces for corrosion. Rubber seals should be replaced where required. Protective spray on machinery, fittings, wirings and instruments etc. is recommended.

### **STORAGE:**

Always clean down the whole boat washing inside and out with fresh water (and detergent if desired). Hose out the interior of the jet unit through the intake and the nozzle. Allow to dry completely and spray with a suitable corrosion protection liquid. Lubricate all moving parts, including the steering gear and deflector pins and pivots. Keep well aired in storage to avoid condensation.

**CORROSION PROTECTION:**

For all salt water operation, the protective sacrificial zinc anode (136) is provided. Check it after every 30 hours use and replace when it is approximately half its original size.

**NOZZLE TRIM:**

**Nozzle down** - (standard position) - tips jet stream downwards. This gives best all round boat performance.

**Nozzle up** - tips jetstream up. This normally gives maximum boat speed. To assemble with nozzle up, remove the cotter pin (79) from the steering crank (84) pushing the steering shaft forward to remove the crank.

Remove the nozzle (68) and steering deflector (90) assembly by removing 4 nuts (63)

Remove split pins (89) and pivot pins (88) to separate the nozzle and deflector. Turn the nozzle upside down and reassemble into steering deflector. Reverse above procedure to reassemble unit. When refitting cotter pins (79) refer to "note" Page 8.

The adjustment of the reverse bucket now has to be altered by adjusting the eccentric bushes (92) (On early model 770 units the reverse bucket adjustment was achieved by refitting the two bolts (93) into the alternative holes in the reverse yoke (91) Later models have only one hole).

**Warning** - with the nozzle up the jetstream may cause annoyance to other boats nearby. *The up position is not recommended for water skiing.*

## 8. Service Information

### THRUST BEARING, GREASE SEAL & CARBON SEAL:

#### Removal

Undo the two nuts and remove the inspection cover (9) to withdraw the split pin (135) inside the intake. Remove the drive shaft. Back off the set screw (130) and unscrew the retaining nut (129). The retaining nut can now be removed by engaging it on the spline on the shaft and sliding it forward. Carefully remove the front bearing spacer (127). Undo the three nuts and bolts (22 & 24) and carefully remove the bearing housing (120) with the bearing inside. One half of the bearing race will probably stay on the shaft. Remove this and keep with the bearing. **DO NOT EXCHANGE THE BEARING INNER RACE HALVES. KEEP THE BEARING CLEAN.**

Remember with this type of thrust bearing, even a new one will have considerable slack. Therefore excessive noise, obvious water damage or wear on the inner races and balls should be the only reason to replace the bearing. The bearing is locked tight into the housing for insulation purposes and if it needs replacing it can be bought as a unit from the factory or your Hamilton dealer.

To remove the grease seals, continue by removing the O - ring (125), locating ring (126) and the rear bearing spacer (127). Check the bearing spacers for wear caused by the seals (124). Check the bearing housing and locating ring and replace if necessary.

A worn or damaged carbon seal is indicated by water leakage from the hole beneath the bearing housing. To remove the carbon seal continue by removing the shaft slinger (132). The seal face (133) and carbon seal assembly (134) can now be removed by reaching into the intake and pushing them off the shaft. If the seal face is difficult to remove, two bolts (22) may be screwed into the tapped holes in the seal face to allow it to be pulled out. Inspect the sealing faces carefully and if they are scored or chipped they should be replaced. The seal can be bought from the factory or dealer as a unit.

#### Assembly

Assembly is the reverse of removal. Oil or grease the shaft surface before sliding the shaft seal assembly on the shaft with spring retainer, spring, flat washer, O - ring and carbon seal in that order. When replacing the bearing housing, some difficulty may be experienced with one inner race half which may need to be pushed on with the retaining nut. Tighten the retaining nut to 95 - 105 Nm (70 - 80 lbs ft) torque. Retighten the set screw. Refit the split pin and inspection cover. Check that the shaft turns freely, regrease the shaft spline and the bearing with lithium based water repellent grease, then refit the driveshaft.

### IMPELLER:

#### Removal

Remove the two nuts and bolts (111 & 109). Then remove bolt (107), splash guard (113) and support (106). Remove bucket spring (86). Remove nuts and cotter pins (79) from the reverse and steering cranks (77 & 84) and remove both cranks by pushing the shafts slightly forward. Remove the six stud nuts (13) and withdraw the tailpipe (62). The two water delivery tubes (58) will now be free and care should be taken of the four O - rings (61). Prevent the mainshaft from rotating and undo the mainshaft nut (49) and remove the washer (44), bearing sleeve (128), impeller (41) and key (48). Continue with the stator casing (59) and next the bearing sleeve, impeller and key etc. Take care not to damage the large O - ring in the tailpipe and stator casing recesses.

Blunt leading edges on impellers can reduce performance considerably, so the edges should be kept reasonably sharp, but take care to sharpen only as shown in the diagram on the next page. Tip clearance of impeller blades should not be more than .060" (about  $\frac{1}{16}$ " ) for best performance.

### Assembly

**Important:** Clean all traces of grease from the bearing sleeves. It is often helpful to dust the sleeve with French chalk to act as a lubricant for the bearings during assembly. When the sleeve measures about .007" under 1 1/2" diameter by micrometer, replacement is advised. The cutless rubber bearing should be replaced if wear is visible on the fluted surfaces and the new sleeve is excessively slack. Make sure all parts are clean and grease all mating surfaces. Fit keys in the shaft and slide impeller over the shaft and key(s). Slide on bearing sleeves and when tightening the nut, ensure the washer is central otherwise it can prevent the tailpipe from fitting on.

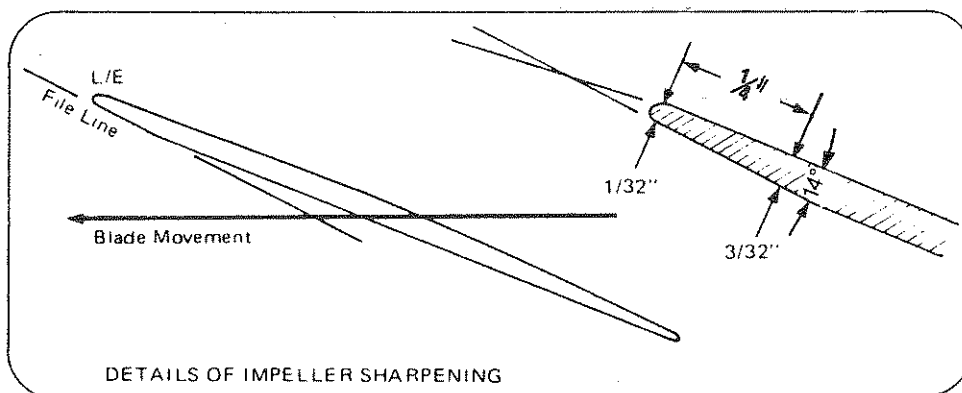
Tightening torque for the mainshaft is 95 - 105 Nm (70 lbs ft.)

**Notes:** Both the steering and reverse crank cotter pins are fitted from left to right looking forward i.e. from port to starboard (nut on starboard side). Fit cotters firmly by hand and drive home with one firm hammer blow. Fit flat washer, lock washer and nut. Torque nut to 24 Nm (18 lbs ft).

- If removed, reverse bucket pivot bolts (95) should be cleaned, thread locking fluid (e.g. Loctite or equivalent) applied and torqued to 35 Nm (25 lbs ft minimum)

- General torques (minimum)

Bolt size		Torque	
Metric	Imperial	Nm	(Lbs ft)
M6	1/4"	5	(4)
M8	5/16"	12	(9)
M10	3/8"	24	(18)
M12	1/2"	40	(30)



### GENERAL:

If you dismantle the jet unit, it is generally worthwhile examining the seals, bearings, grease seals and impeller at the same time. A complete check just before the start of the season usually pays dividends in terms of assured reliability and peak performance.

### OPTIONAL EQUIPMENT:

The following parts are available extras for your 770 series jet unit:

Hatch extension. - Use where the waterline is above the inspection hatch level.

Free finger intake screen. - Use in weedy conditions. They are not suitable in stony conditions.

## PARTS LIST

## INTAKE ASSEMBLY

NOTE: Always supply the serial number(s) of your jet unit when ordering parts.

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
1	Intake housing	102319	1	102319	1
2	Male hose connector	63370	1	63370	1
3	Hose	63373	1	63373	1
4	Bolt	HZJC ABQ	2	HZJC ABQ	2
5	Washer	JEOZ XAM	2	JEOZ XAM	2
6	Name plate	63097	1	63097	1
7	Patent plate	63135	1	63135	1
8	O - ring	HMHR ADF	1	HMHR ADF	1
9	Inspection cover	102320	1	102320	1
10	Inspection cover stud	102321	2	102321	2
11	Lock nut	JDQS AAD	6	JDQS AAD	6
12	Intake tailpipe stud	102324	6	102325	6
13	Nut	JDJC AAC	6	JDJC AAC	6
14	Bolt	HYJC AAR	4	HYJC AAR	4
16	Washer	JELK AAD	4	JELK AAD	4
17	Fibre washer	61213	4	61213	4
18	Intake screen*	103113	1	103113	1
19	Wear ring	JE 185	1	JE 185	1
20	Wear ring insulator	JE 147	1	JE 147	1
21	O - ring	HMHR ACB	1	HMHR ACB	1
22	Bolt	HYJC ABE	3	HYJC ABE	3
23	Flat washer	JELK AAE	3	JELK AAE	3
24	Nut	JDJC AAD	3	JDJC AAD	3
25	Intake gasket	103149	1	103149	1
26	M/C screw	HZJW AAX	14	HZJW AAX	14
27	Washer	JELK AAD	14	JELK AAD	14
28	Fibre washer	61213	14	61213	14
29	Nut	JDJC AAC	14	JDJC AAC	14
76	Bush (reverse shaft)	103230	1 + 1	103230	1 + 1
	* Optional screens				
	Free finger	JE 292	1	JE 292	1
	Aluminium bar	103112	1	103112	1

## SPARES KIT

Part No	Description	Consists of items
105032 SY	Intake assembly	1, 2, 10, 19, 20

## SHAFT AND BEARING HOUSING ASSEMBLY

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
120	Bearing assembly Consists of:	103377 SY	1	103377 SY	1
	121 - Housing	106051	1	106051	1
	122 - Tufnol washer	JH 209	1	JH 209	1
	123 - Bearing	JNOD ACG	1	JNOD ACG	1
	35 - Grease nipple	HEID AAA	1	HEID AAA	1
	124 - Seal	61315	1	61315	1
125	O - ring	HMHR ABJ	1	HMHR ABJ	1
126	Locating ring	JH 252	1	JH 252	1
124	Oil seal	61315	1	61615	1
127	Bearing spacer	JH 204	2	JH 204	2
40	Thrust collar / fairing	JH 107	1	JH 107	2
41	Impeller (standard)*	JH 106	2	JH 106	3
128	Bearing sleeve	JH 159	2	JH 159	2
129	Retaining nut	103848	1	103848	1
130	Set screw	JAJM PAK	1	JAJM PAK	1
131	Shaft	103374	1	103375	1
48	Impeller key	JH 239	2	JH 239	3
44	Washer	JH 117	1	JH 117	1
49	Nut	JDLA AAG	1	JDLA AAG	1
132	Shaft slinger	JH 251	1	JH 251	1
133	Seal face†	JH 250	1	JH 250	1
52	O - ring	HMHR ABF	1	HMHR ABF	1
134	Carbon seal	61318	1	61318	1
153	Split pin	HUIL AAZ	1	HUIL AAZ	1
	<b>*Optional impellers</b>	Refer Page N3 of Workshop Manual for impeller identification			
	Coarse pitch Stainless steel	103348	2	103348	3
	Standard	80656	2	80656	3
	Coarse	102716	2	102716	1
	†With optional dry run kit				
133	Counterface	104758	1	104758	1

## BOOSTER ASSEMBLY

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
55	Water offtake	JMNG AAE	1	JMNG AAE	1
56	Male hose connector	63370	1	63370	1
57	Seal plate	102603	1	102603	1
58	Water delivery tube	102333	2	102334	2
59	Stator <sup>⊗</sup> outboard	102326)	1	102326)	2
	inboard	102327)		102327)	
60	Screen spring	JE 309	2	JE 309	2
61	O - ring	HMHO XDL	6	HMHO XDL	6
62	Tailpipe	103358	1	103358	1
63	Nut	JDJC AAC	4	JDJC AAC	4
64	Stud (tailpipe to nozzle)	103250	4	103250	4
136	Anode	103359	1	103359	1
137	Bolt	HYIU PAD	2	HYIU PAW	2
138	Washer	JELH PAD	2	JELH PAD	2
139	Nut	JDKB PAD	2	JDKB PAD	2
68	Nozzle (standard)†*	104708	1	104707	1
69	Cutless bearing <sup>⊗</sup>	JH 160	2	JH 160	2
70	Wear ring	JE 185	1	JE 185	2
71	Wear ring insulator	JE 147	1	JE 147	2
72	O - ring	HMHO BEH	1	JMHO BEH	2
73	Plug	102560	1	102560	1
	<sup>⊗</sup> Optional bearing				
	Dry run bearing	104757	1	104757	2
	*Optional nozzles				
	Smaller	104707	1	-	-
	Larger	104709	1	104708	1
	For units prior to T3 steering:				
	Nozzle (standard)	103159 - 088	1	103159 - 074	1
	Nozzle (small)	103159 - 074	1		
	Nozzle (large)	103159 - 103	1	103159 - 088	1
	† Refer Page B2 of Workshop Manual for nozzle identification.				

### SPARES KITS

Part No	Description	Consists of items:
105033 SY	Stator assembly 772, 773	59, 69, 70, 71
105037 SY	Tailpipe assembly 772	62, 64, 69, 76, 136, 137, 138, 139.
105038 SY	Tailpipe assembly 773	62, 64, 76, 136, 137, 138, 139
⊗105010	Stator assembly - dry run kit "outboard" 772, 773	59, 69(dry run option), 70, 71.
⊗105011	Stator assembly dry run kit "inboard" 772, 773	59, 69 (dry run option), 70, 71

## CONTROL ASSEMBLY

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
74	Steering shaft assembly	103223	1	103222	1
75	Reverse shaft	103229	1	103228	1
76	Bush (control shaft)	JE 248	1 + 1	JE 248	1 + 1
77	Reverse crank assembly	103476 SY	1	103476 SY	1
	Consists of				
	78 - Reverse crank & pin	103177	1	103177	1
	79 - Cotter pin assembly	103171 SY	1 + 1	103171 SY	1 + 1
	Flat washer 103637				
	Nut JDQH XAC †				
	Cotter pin 103170 †				
	Spring washer				
	JEQK XAC †				
81	Split pin	HUIL AAC	1	HUIL AAC	1
82	Roller	102876	1	102876	1
83	Washer	63368	2	63368	2
84	Steering crank	103169	1	103169	1
85	Deflector bush*	104719	2	104719	2
86	Spring	102364	1	102364	1
88	Deflector pivot pin*	104713	2	104713	2
89	Split pin*	HUIL AAZ	2	HUIL AAZ	2
90	Steering deflector*	104711	1	104710	1
91	Reverse yoke	103175	1	103175	1
92	Yoke eccentric bush	103176	2	103176	2
93	Screw	HZJC AAV	2	HZJC AAV	2
94	Pivot sleeve	103181	2	103181	2
95	Bolt	HZJC ABR	2	HZJC ABR	2
96	Flat washer	JELK AAH	2	JELK AAH	2
97	Reverse bucket T3	105906	1	105906	1
140	Bracket (N.I.)	105908	1	105908	1
141	Stud (N.I.)	30702	2	30702	2
142	Nyloc nut (N.I.)	JDQS AAC	2	JDQS AAC	2

\*For units prior to T3 steering

85	Deflector bush	103146	2	103146	2
88	Deflector pivot pin	103165	2	103165	2
89	Split pin	HUIL AAJ	2	HUIL AAJ	2
90	Steering deflector	103163	1	103163	1

Note: N.I. = Not Illustrated

† In March 1986, the cotter pin thread was changed from  $5/16$  UNC to M8. - When replacing the cotter pin, to ensure a tight fit, order nut and spring washer as well as the pin.

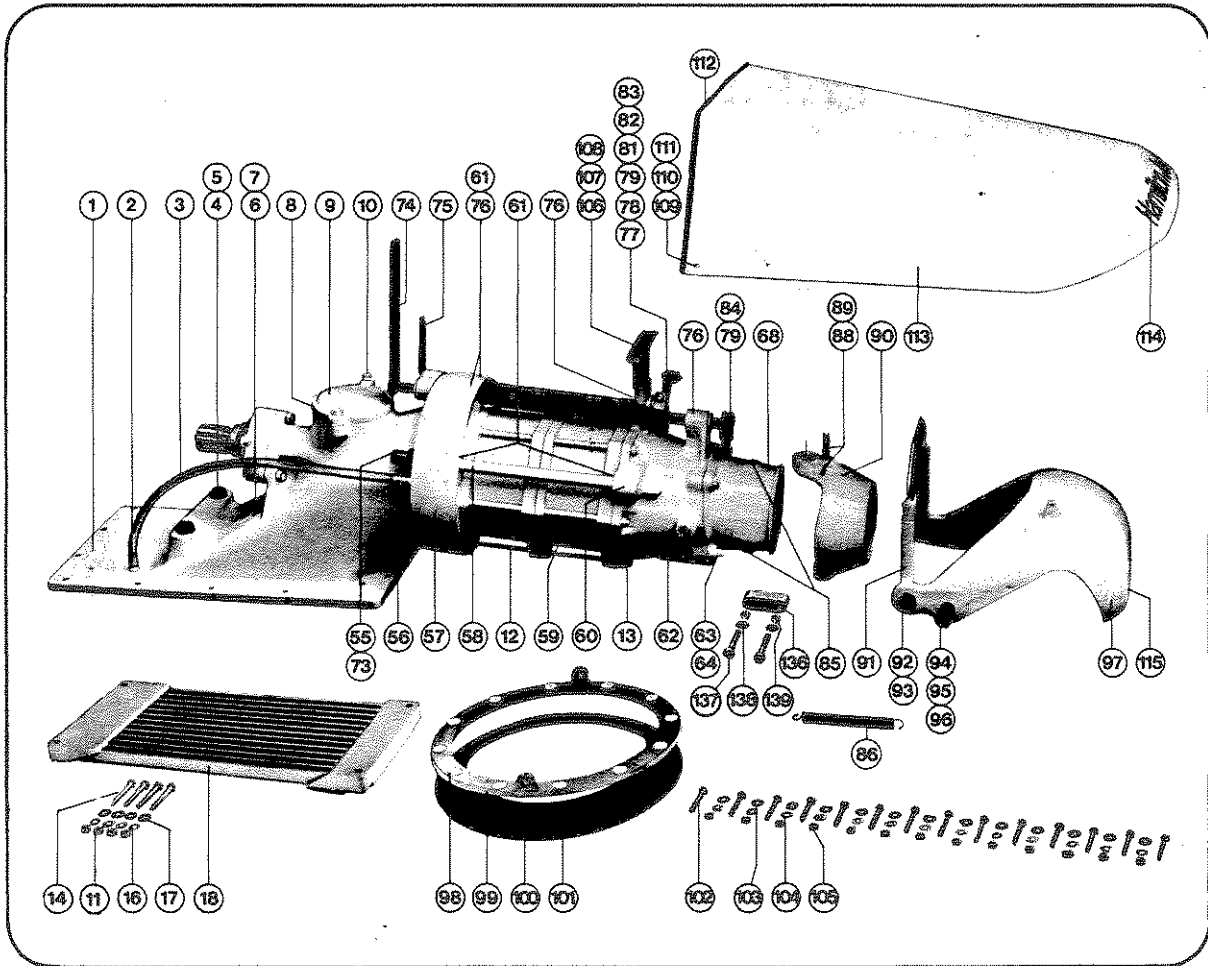
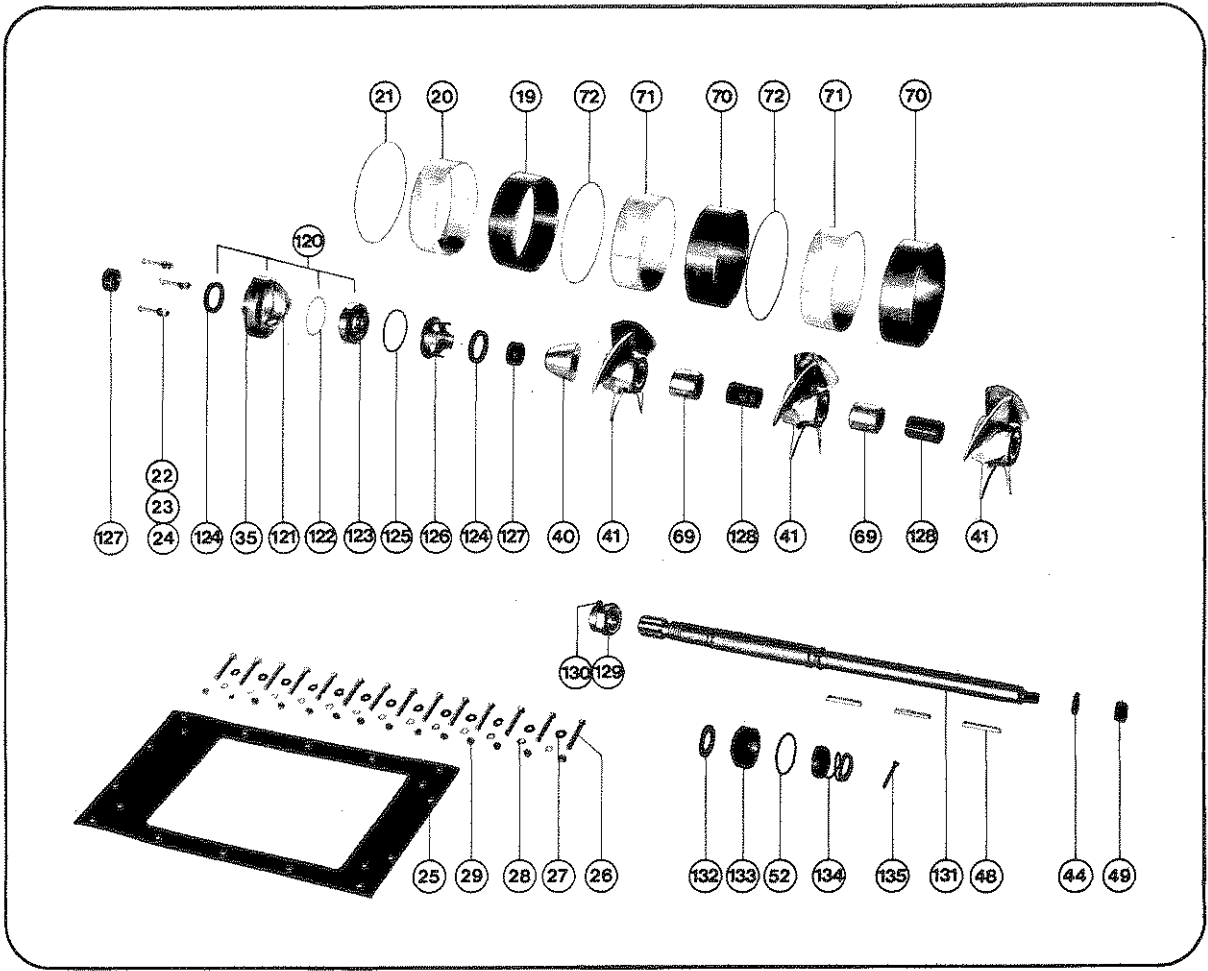


## TRANSOM SEAL ASSEMBLY

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
98	Insulating bush	JE 262	12	JE 262	12
99	Transom plate	102331	1	102331	1
100	Transom seal	102330	1	1023301	1
101	Seal spring	102336	1	102336	1
102	M/c screw	HZJX AAT	12	HZJX AAT	12
103	Flat washer	JELK AAD	12	JELK AAD	12
104	Fibre washer	61213	12	61213	12
105	Nut	JDJC AAC	12	JDJC AAC	12
106	Splash guard support	103182	1	103182	1
107	Bolt	HYJC ABI	1	HYJC ABI	1
108	Flat washer	JELK AAE	1	JELK AAE	1

## MISCELLANEOUS PARTS

Item	Description	772 with splined shaft		773 with splined shaft	
		Part No	Qty	Part No	Qty
109	Bolt	HYJC AAL	2	HYJC AAL	2
110	Flat washer	JELK AAD	2	JELK AAD	2
111	Lock nut	JDQR AAC	2	JDQR AAC	2
112	Sealing strip	102543	1	102543	1
113	Splash guard	102978	1	102979	1
114	Transom sticker	63349	1	63349	1
115	770 jet sticker	63383	1	63383	1
116	Foil sticker*	63234	2	63234	2
117	Screen rake	J 656 SY	1	J 656 SY	1
	* Not illustrated				



# WARRANTY

The Company warrants each new Hamilton product to be free from defects in materials and workmanship under normal use and service, its obligations under this Warranty being limited to make good at its factory or at the factory of any subsidiary or branch of the Company the product or any part or parts thereof which shall be returned to it with transportation charges prepaid and which its examination shall disclose to its satisfaction to have been defective provided that the product or such part or parts thereof shall be so returned to it not later than 24 months from the date of the original purchase from the Company or its authorised distributor, or 12 months from commissioning date, whichever occurs first. No allowance shall be granted for any repairs or alterations made by the purchaser or its agent without the written consent of the Company. This Warranty is expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, including any liability under the Sale of Goods Act, 1908, and no other person or agent or dealer is authorised to give any other condition or warranty to assume for the Company any other liability in connection with the sale of its products whether new or second hand. Any obligation on the part of the Company under this Warranty does not apply to any Hamilton product which may have been repaired or altered in any way outside the factory of the Company or to damages caused in the opinion of the Company by overloading, misuse, mis-application, improper storage, abnormal wear and tear due to exposure to the elements, negligence, accident, or whilst being operated in any other way other than in accordance with the operating and maintenance instructions of the Company nor does it apply to repairs made necessary by the use of parts or accessories not recommended by the Company. There is no liability on the part of the Company with respect to any items incorporated in any Hamilton product when such items have been manufactured by others and are warranted by their respective manufacturers in favour of the purchaser or when they are supplied by the Company on special order. The Company shall not be liable for any consequential loss or damage resulting directly or indirectly from any defect in the product the subject of this agreement. No liability on the part of the Company with respect to this Warranty shall extend to second - hand and reconditioned goods and the Warranty does not cover the cost of labour involved in the replacement of defective parts. No liability on the part of the Company with respect to this Warranty shall exist if the Hamilton product is not, in the opinion of the Company, installed as per the "Installation and Service Manual", "Designer's Manual" and / or "Owner's Manual" supplied with each product. For some models of Hamilton product, as specified in the respective model manual, warranty conditions will not apply unless a negative earth bonding system has been installed in the vessel and a mainshaft critical speed check has been carried out to the Company's satisfaction.

**C.W.F. HAMILTON & Co Ltd.**

This portion must be completed in every detail and returned immediately to:  
**C.W.F. HAMILTON & CO LTD, PO BOX 709, CHRISTCHURCH, NEW ZEALAND.**

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Purchaser .....

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Signed ..... Date .....

Dealer .....

Delivery date ..... Dealer's signature .....