

**OPERATOR'S MANUAL**



# Centrifugal Pumps Models 303 & 404 Operator's Manual

**FAIRPORT**  
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### 1. INTRODUCTION

Fairport Self Priming Centrifugal Pumps are petrol; diesel or electric powered and are capable of operating with suction lifts up to approximately 7.5 metres (25ft)

This manual contains the operating and servicing instructions for the diesel engine powered 75mm (3") and 100mm (4") pumps models 303 series and 404 series. A more comprehensive manual suitable for workshop use is available from Fairport Construction Equipment Ltd. For operating and servicing details applicable to the engine, reference should be made to the manufacturer's operating instructions supplied with the pump.

### 2. TECHNICAL DATA

	303P		404L
Engine make	Lister Petter	Hatz	Lister Petter
Engine model	AC1	1B30	TS1
Net BHP:	6.3	6.5	8.1
At operating RPM:	3300	3300	3300
Max. output, m <sup>3</sup> /hr:	60.0	60.0	90.9
Max. total hd, m:	27.4	27.4	27.4
Max. dia solids, mm:	10	10	12
Length cm:	950	950	1390
Breadth cm:	520	520	800
Height cm:	730	730	950
Weight kg:	90	TBA	275

Guaranteed Sound Power, 108 Lwa  
dB(A)

Materials – all pumps

Pump body: Aluminium LM25  
Impeller: Manganese bronze  
Seal faces: Carbon/ceramic.

### **3. SAFETY**

Always operate pump on level surface.

Do not run petrol or diesel engine driven pumps in confined spaces.

Never attempt to carry out any maintenance with engine or motor running.

Never top up fuel tank with engine running.

Always comply with site and plant safety regulations.

Turn fuel tap to off after use.

Always chock wheels of trolley mounted pumps.

Never attempt to carry out maintenance with engine running.

Disconnect spark plug on all petrol engines before carrying out any repairs or maintenance.

Do not smoke when refueling.

Wipe up spilt fuel and dispose of fuel contaminated wipes safely.

Do not use equipment in areas that have a hazardous or explosive atmosphere.

Always comply with engine manufacturer's recommendations.

Pump only water or mildly contaminated water, DO NOT attempt to pump acids, alkalis, solvents, flammable or volatile Liquids.

### **4. INSTALLATION**

Site the pump in a level position, as close as possible to the surface of the liquid to the

pumped.

Suction hoses must always be wire reinforced, whilst delivery hoses may be of the collapsible type. Hose couplings should have sealing washers in good condition. It is essential that when screwed on the branch, the suction line is absolutely airtight.

All pumps will prime without the use of a foot valve, but the strainer supplied with the pumps must always be fitted to the suction hose.

For maximum efficiency, the suction hose should be as short as possible and neither the suction or delivery hose should have any kinks or sharp bends.

With the suction hose strainer fully immersed, discharge at low suction lifts should commence in 30/50 seconds from starting the engine. At high suction lifts (5 metres or more) priming time will extend to 2 to 3 minutes.

**Important:** In freezing weather conditions it is necessary to drain the pump body when not in use, unless the pump is stored in a heated building. This is achieved by removing drain plugs or drain plates at sides of pump body.

## 5. OPERATION

Before installing or operating the pump read the section entitled SAFETY.

It is necessary to "INITIAL PRIME" the pump by filling the pump body with clean water. This can be done through the discharge branch, or if hose is attached, by removing the priming plug.

Before starting the pump check the engine oil, fuel etc., in accordance with the manufacturer's instruction.

Start engine in accordance with the engine manufacturer's instructions supplied with the pump

The maximum speed of the engine should be set at 3300 rpm.

## 6. LUBRICANTS

The grade of lubricant depends on ambient temperature according to the following table:

<u>Temperature</u>	<u>Grease NLGI No.</u>
Below 5°C	1
5°C to 43°C	2

When refilling the grease feeder fitted to model 404 pumps with a push type grease gun support it with your free hand to avoid putting undue strain on the coupler. Never allow the piston to go beyond the red line. Always replace the nipple cap.

When refilling a 'dry' housing, first remove the plug on the underside of the seal housing. Fill with grease until the grease is seen to emerge from the plughole. Replace the plug and refill the grease feeder as described above, or grease cup as applicable.

During running in and in operation the seal may leak a few drops of water past the seal. This is not detrimental to the operation of the seal and there is no need to flush the grease out of the seal housing and replace it with new grease.

## 7. FAULT FINDING

### PUMP FAILS TO PUMP WATER

#### POSSIBLE CAUSE

#### REMEDY

Pump not "initial primed"

Fill pump body with clean water.

Note: after initial prime and starting engine, commencement of discharge may vary from 30 seconds to 3 minutes depending on suction lift. See section 4.

Suction hose coupling not tight or seal damaged.

Check tightness of coupling and conditions of threads. Replace sealing washer if suspect.

Suction hose damaged or hose clip

Replace hose. Tighten hose clip. Check suction hose is not porous.

Note: suction hose and connections must be absolutely airtight.

Seal worn allowing air to leak past

Replace seal

Suction hose strainer not completely submerged.

Submerge totally.

Suction hose collapsing or incorrect type.

Fit reinforced hose.

Pump height above water level exceeds 7.5 metres.

Move pump to lower position.

Note: if pump is worn, maximum operating height will be reduced.

Discharge head too high.	Reduce.
Clack valve malfunction causing loss of priming water.	Examine and rectify fault. Valve must seat correctly.
Priming holes blocked.	Remove drain plugs and clear blockage. See also section 5.
Pump badly worn, seals worn.	Complete overhaul required.
Excessive impeller clearance.	Check and adjust.

#### PUMP OUTPUT DROPS AFTER OPERATING SATISFACTORILY

POSSIBLE CAUSE	REMEDY
Suction hose strainer blocked.	Clear blockage.
Water level receded, pump operating at maximum suction lift.	Move pump to lower position.

Check engine operating instructions. Set to 3300 rpm.

Air leak developed on suction side.	Check and rectify, i.e. loose connections, damaged or porous hose etc.
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Check also factors listed in section 'Pump Fails to Pump Water'.

## 8. WARRANTY CONDITIONS AND CLAIMS PROCEDURE

All products supplied by Fairport Construction Equipment Ltd (hereafter referred to as FCE) are warranted to be free of defects due to faulty materials or workmanship for a period of 12 months from the date of original despatch from FCE or as specified below:

Hydraulic hoses and hydraulic couplings – 3 months.

Hydraulic accumulators – 6 months.

Flexible drives – 6 months.

All spare parts used in repairs carried out by FCE or an authorised dealer or repairer – 3 months.

If the goods have been purchased through a stockist the above warranty periods also apply from receipt of the goods by the user of the equipment up to a total of a further 6 months from date of despatch from FCE whichever is earlier.

Filter elements, gauges and oils are specifically excluded from this warranty.

FCE shall at their option repair or replace during normal working hour's goods accepted as faulty free of charge to the user.

For proprietary items such as engines, the original manufacturer's warranty and conditions shall apply.

## CONDITIONS

The goods shall be returned at the purchaser's expense to FCE or to a destination FCE may reasonably direct. Carriage costs will be refunded if warranty is accepted.

Warranty claims will not be considered where there is evidence that failure has been caused by carelessness, improper use, negligence, inadequate servicing, incorrect engine speeds, fair wear and tear or non-compliance with instructions issued by the manufacturer.

To the extent permitted by law, the liability of FCE under this section is confined only to providing a remedy for defective goods and does not extend to any consequential loss, loss of profit, injury or damage suffered.

Warranty will not be accepted on dismantled goods unless dismantling was carried out with the written permission of FCE.

No claim shall be considered if other than genuine parts supplied by FCE have been used.

Products are only covered by this warranty in the country to where they were supplied by FCE.

Warranty on products applies only to the original user of the equipment.

This warranty shall not apply if the serial number or other identifying numbers or marks applied by FCE have been removed, defaced or are otherwise illegible.

## CLAIMS PROCEDURE

Check that the goods are still under warranty before returning them to FCE (see above for warranty periods).

Return the goods to FCE with an order number for the work to proceed. If warranty is accepted no charge will be made. If warranty is not accepted a quotation will be given for the repair and the conditions under the section headed REPAIRS AND ESTIMATES will apply.

In the customer's interest, goods must be accompanied by documentation detailing the nature of the fault or its symptoms. Phrases such as 'Faulty' are unacceptable and will result in delays and possible charges to defray costs incurred in identifying the fault.

In the case of hydraulic breakers and power packs, both the breaker and the pack should be returned

## **9. REPAIRS AND ESTIMATES**

When returning a machine, or an assembly for repair, always include an Advice Note quoting model and serial number of the machine.

An official order must also be forwarded to FCE giving detailed instructions. No repair work can be carried out unless covered by an official order.

An estimate will be submitted before proceeding with any repair. To partly cover the cost in dismantling, cleaning and inspection, a small charge will be made; this however will be waived upon receipt of your official instructions to proceed with the repair.

In the event of the estimate not being accepted, a further charge will be made to defray the rebuilding of the machine.

Estimates must be treated as approximate only as it may be found necessary to use additional parts on further examination.

**EC Declaration of Conformity**

**We Fairport Construction Equipment Limited**

Blagden Street

Sheffield

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**Declare that the product Centrifugal Pumps Models 303 & 404**

Manufactured from 1 Sept 2004

**conforms to the following Directives:**

89/336/EEC, 89/392/EEC, 91/368/EEC, 2000/14/EC

**uses the following standards:**

BS EN 292-1, BS EN 292-2, BS EN 60204-1, BS EN 294

**complies with the relevant essential health and safety requirements of the Machinery Directive, and is in conformity with the protection requirements of Council Directive 89/336/EEC**

Technical Construction File no.95195

Competent Body (name, address) N/A



Technical Manager

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Signature	Position
Robert Castle G.C.G.I. I I.Eng M.I.Mech.E.	12/12/2005
Signed by	Date

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