

**OPERATION, SPARE PARTS
AND SERVICE MANUAL**



FSP SUBMERSIBLE ELECTRIC PUMP



FAIRPORT

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Foreword

Thank you for choosing a Fairport product.

Before using this machine please ensure you have read and understand the safety regulations and instructions given in this book.

Always ensure this machine is in good working condition to prevent any physical injury and further damage to the machine.

Worn out machine parts must be replaced as soon as possible you can find our parts section on pages 8-10 of this booklet.

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Safety

Read these operating and safety instructions before using the machine and operate the machine in accordance with these instructions.

Before use

- Always inspect the machine for damage or improper function.
- Always ensure that all fastenings are present and tight before operating the machine.
- Ensure that there is enough oil in the pump
- Always ensure that any cables are in good condition and are free from cuts, damaged wires or broken connectors.
- Always ensure that trailing cables are protected from damage and they do not present a tripping hazard.
- Always ensure that electrical cables are suited to the required power carrying capacity.
- Before use, visually examine the machine for cracks and other damage. Do not use if damage is suspected.
- Ensure that the ground cable is properly earthed

During use

- Always comply with site safety regulations.
- Do not touch the pump while it is running
- This machine must not be modified in any way without written permission of the manufacturer. Unauthorized modifications are likely to invalidate the warranty and also result in the machine not conforming to safety regulations.
- Do not attempt to carry out any maintenance while the machine is running.
- Always ensure that the motor is switched off and the machine is isolated from the mains power supply before carrying out any routine service, maintenance or repairs.

Important advice when using Extension Cables

- Always ensure that any extension cables are in good condition and are free from cuts, damaged wires or broken connectors.
- Always ensure that trailing extension cables are protected from damage and they do not present a tripping hazard.
- Always ensure that extension cables are protected from damage from sharp objects, are clear of any liquids and that they are away from the possibility of being driven over.
- Always ensure that extension cables are no longer than 30 meters (100 feet) in length.
- Always ensure that electrical cables are suited to the required power carrying capacity. Selection of the correct wire section is important to prevent overheating of the cable and possible fire.
 - Wire Section 115V = 2.5mm²
 - Wire Section 230V = 1.5mm²

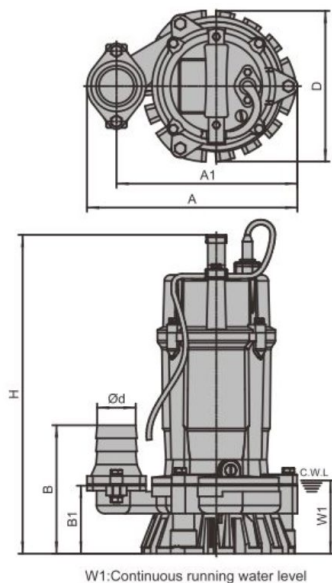
Conditions for Use

The Fairport submersible pump is designed to operate in the demanding conditions found in the Construction, Civil Engineering, Landscaping, Utilities and Flood Recovery industries. These environments demand a pump that is able to withstand the unknown subsurface conditions of mud, sludge, sand and other debris without blockage or breakdown.

This pump:

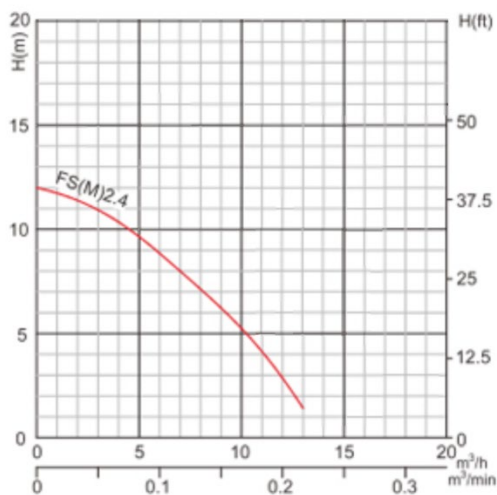
- Can operate in water temperature up to 40°C & PH of 6.5 to 8.5
- Can handle up to 6mm solids handling capacity
- Has insulation class F, IP68 specified for 10m max depth
- Has a flow rate up to 16m³/hr
- Has a robust design for the harshest environments.

Weight and Dimensions



d	50mm
A	237mm
A1	201mm
B	157mm
B1	84mm
D	185mm
H	365mm
W1	85mm
N.W	13.5kg
G.W	14.5kg
Packing Dimension	405mm x 255mm x 255mm

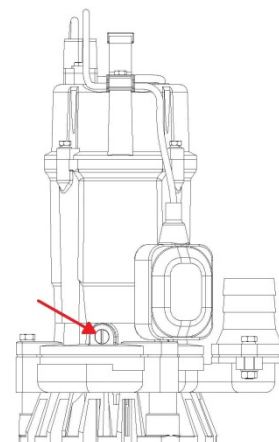
Technical Data



Outlet	mm	50
Motor Power	kW	0.4
	HP	0.55
Rated Current (A)	1~	3.0
	3~	1.3
Rated Capacity	m ³ /min	0.12
	m ³ /h	7
Rated Head	m	8
Max Capacity	m ³ /min	0.21
	m ³ /h	12.6
Max Head	m	12
Impeller Passage	mm	6

Routine Maintenance

1. Check The Insulation Resistance Between Motor Winding And Casing Which Should Not Be Lower Than 2 MΩ
2. After Every 2000 Hours Of Use You Should Do The Following:
 - Dismantle The Unit And Check Each Part For Damage or Wear And Replace Damaged Parts
 - Oil Change – unscrew the oil-screw (see image) fill around 80-90% with grade 10 mechanical oil.
 - Pressure Test – pressure should be tested after every Repair/reassembly. Pressure should be around 0.2Pa.
3. If The Pump Will Be Left Unused For A Long Time You Should Remove It From The Water And Run It Through Clean Water For Several Minutes, To Clean Its Inside And Outside, Dry And Use Anti-Rust Treatment.



Troubleshooting

Issue	Cause	Solution
Difficult To Start	<ol style="list-style-type: none"> 1. Voltage too low 2. Phase lost 3. Impeller stuck 4. Cable too thin 5. Stator winding burnt 	<ol style="list-style-type: none"> 1. Adjust voltage to 0.9~1.1 of the rated range 2. Check the wire in the switch and cable 3. Clean the impeller 4. Use appropriate cable 5. Rewind or replace stator winding
Low Capacity	<ol style="list-style-type: none"> 1. Head to high 2. Strainer or inlet clogged 3. Impeller worn out 4. Submersion too shallow 5. Impeller runs in reverse direction 	<ol style="list-style-type: none"> 1. Use in the head range 2. Clean the inlet or strainer 3. Replace the impeller 4. Keep submersion at an adequate depth 5. Swap any two of the phases
Unexpected Stop	<ol style="list-style-type: none"> 1. Protector works 2. Impeller stuck 3. Stator winding burnt 	<ol style="list-style-type: none"> 1. Check the protector 2. Clean the impeller 3. Rewind or replace
Stator Winding Burnt	<ol style="list-style-type: none"> 1. Short circuit in winding or between phases due to leakage 2. Impeller stuck 3. Over Frequent starts 4. Pump overloaded 	<ol style="list-style-type: none"> 1. Rewind or overhaul 2. Replace mechanical seal 3. Clean the impeller 4. Use the machine correctly 5. Use the machine correctly

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

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 hours, 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 as per the conditions stated above.

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.

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.

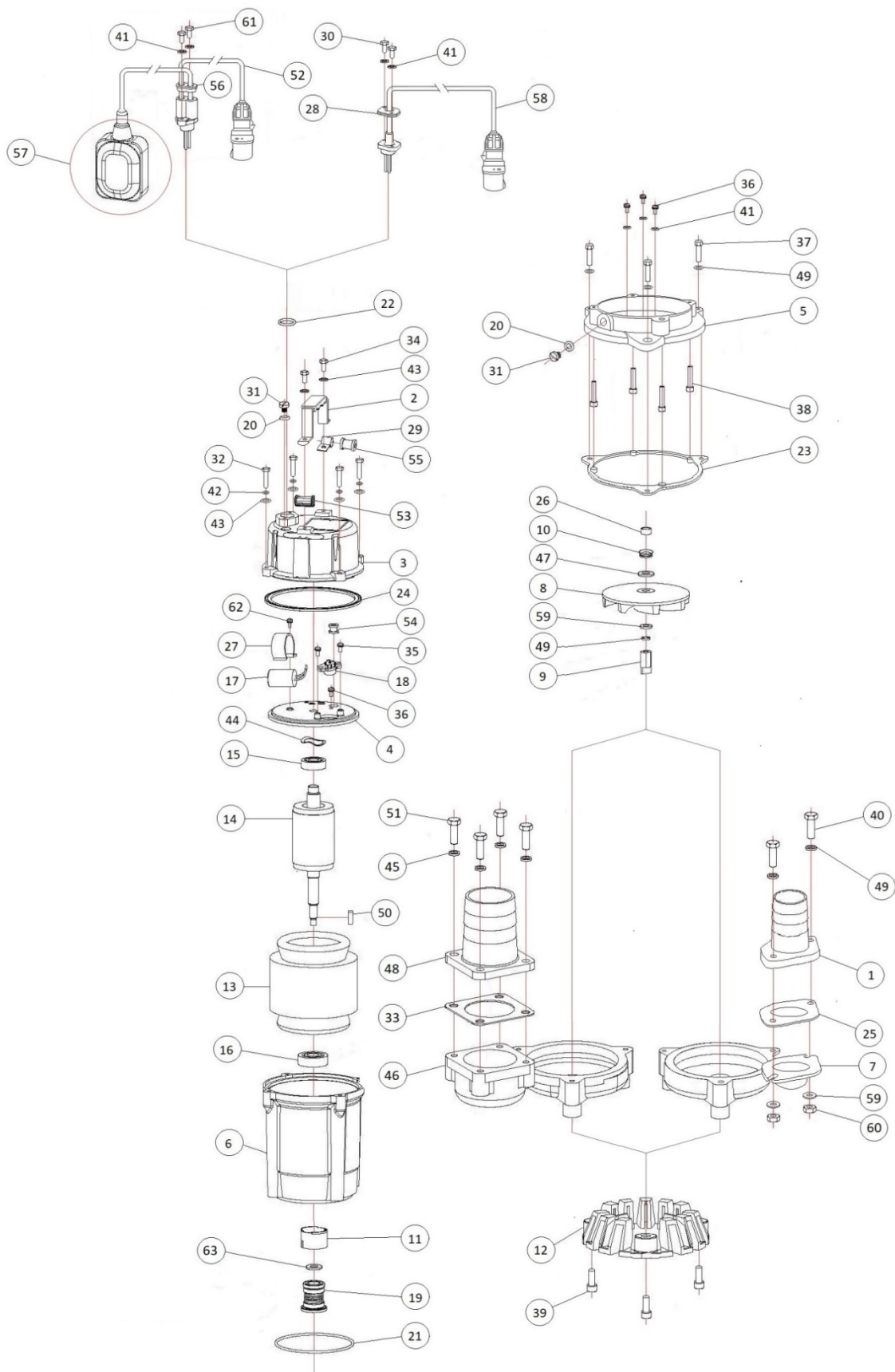
A purchase order must also be forwarded to FCE giving detailed instructions. No repair work can be carried out unless covered by a purchase order.

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 cover 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.

Parts List



Parts List

Item no.	Part no	Description	Notes	QTY
1	W168000	Hose Coupling	(For 2" Pumps Only)	1
2	W168001	Handle		1
3	W168002	Upper Cover		1
4	W168003	Capacitor Plate		1
5	W168004	Seal Bracket		1
6	W168005	Body		1
7	W168006	Pump Outlet	(For 2" Pumps Only)	1
8	W168007	Impeller		1
9	W168008	Agitator		1
10	W168009	Rubber Sand Guard		1
11	W168010	Oil Rise		1
12	W168011	Seat Assembly (Inlet)		1
13	W168012	Stator		1
14	W168013	Rotor		1
15	W168014	6202rs Bearing		1
16	W168015	6302rs Bearing		1
17	W168016	Capacitor		1
18	W168017	Motor Protector		1
19	W168018	Mechanical Seal		1
20	W168019	O Ring		2
21	W168020	O Ring		1
22	W168021	O Ring		1
23	W168022	Rubber Gasket		1
24	W168023	Rubber Gasket		1
25	W168024	Outlet Gasket	(For 2" Pumps Only)	1
26	W168025	Shaft Sleeve		1
27	W168026	Capacitor Clamp		1
28	W168027	Shim	(For Models Without Float Switch)	1
29	W168028	Float Cable Clamp	(For F/S Models Only)	1
30	W437/5/12	M5x12 Hex-Setscrew	(For Models Without Float Switch)	2
31	W168030	Cheese Head Slotted Screw		2
32	W437/6/25	M6x25 Hex-Setscrew		4
33	W168032	Outlet Gasket	(For 3" Pumps Only)	1
34	W437/6/12	M6x12 Hex-Setscrew		2
35	W444/4/10/WH	M4x10 Pan Washer Head Phillips Machine Screw		2
36	W444/4/4	M4x4 Pan Head Phillips Machine Screw		4
37	W437/8/25	M8x25 Hex-Setscrew		3
38	W455/6/30	M6x30 Socket-Head Cap Screw		4
39	W455/8/25	M8x25 Socket-Head Cap Screw		3
40	W437/8/35	M8x35 Hex-Setscrew	(For 2" Pumps Only)	2
41	W420/5	M5 Plain Washer		5
42	W432/6	M6 Split Spring Washer		4
43	W420/6	M6 Plain Washer		4

Parts List

44	W402/20	M20 Crinkle Washer		1
45	W432/10	M10 Split Spring Washer		4
46	W168045	Pump Outlet	(For 3" Pumps Only)	1
47	W168046	Impeller Washer		1
48	W168047	Hose Coupling	(For 3" Pumps Only)	1
49	W432/8	M8 Split Spring Washer	Only 3 Required For 3" Model	5
50	W168049	4x4x10 Radius Drive Key		1
51	W437/10/30	M10x30 Hex-Setscrew	(For 3" Pumps Only)	4
52	W168051	115V Complete Cable Assembly	(For F/S Models Only)	1
	W168029	220V Complete Cable Assembly	(For F/S Models Only)	1
53	W168052	Rubber Power Cable Holder		1
54	W168053	Rubber Wire Sleeve		1
55	W168054	Rubber Wire Sleeve	(For F/S Models Only)	1
56	W168055	Rubber Insert	(For F/S Models Only)	1
57	W168056	Floating Switch Assembly	(For F/S Models Only)	1
58	W168057	115V Complete Cable Assembly	(For Models Without Float Switch)	1
	W168031	220V Complete Cable Assembly	(For Models Without Float Switch)	1
59	W420/8	M8 Plain Washer	Only 1 Required For 3" Model	3
60	W440/8	M8 Hex-Nut	(For 2" Pumps Only)	2
61	W437/5/15	M5x15 Hex-Setscrew	(For F/S Models Only)	2
62	W444/4/6/WH	M4x10 Pan Washer Head Phillips Machine Screw		1
63	W168062	Mechanical Seal Washer		1

EC Declaration of Conformity

Manufacturer's Name: **Fairport Construction Equipment Ltd**
Manufacturer's Address: **Blagden Street**
Sheffield
South Yorkshire
S2 5QS

Declares that this product: **FSP50**
Description of Equipment: **Submersible Electric Pump**

Serial Number

Model

Conforms to the following Directive: Machinery Directive: 2006/42/EC
Electromagnetic Compatibility Directive:
2014/30/EU Low Voltage Directive: 2014/35/EC

Standards Conforming to: EN ISO 12100:2010
EN 809:1998+A1:2009+AC:2010
EN 60204-1:2006+A1:2009+AC2010
EN 60335-1:2012+A11:2014+AC:2014
EN 62233:2008+AC:2008
EN 60335-2-41:2003+A1:2004+A2:2010
EN 60034-1:2010+AC:2010
EN 55014-1:2006+A1:2009+A2:2011
EN 55014-2:2015
EN 61000-3-2:2014
EN 61000-3-3:2013

Motor Power 0.75 kW

Contact Details for Manufacturers
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Signature

Date: