



FINISH THOMPSON INC.

# **EF SERIES PUMPS**

## **OPERATION & PARTS MANUAL**





**FINISH THOMPSON INC.**

921 Greengarden Road • Erie, PA 16501-1591 U.S.A.  
Ph 814-455-4478 • Fax 814-455-8518  
Email [fti@finishthompson.com](mailto:fti@finishthompson.com) • [www.finishthompson.com](http://www.finishthompson.com)

**EU Declaration of Conformity**



Finish Thompson Inc. hereby declares that the following machine(s) fully comply with the applicable health and safety requirements as specified by the EC Directives listed.

The product may not be taken into service until it has been established that the drive motor for the drum and Container Pump complies with the provisions of all relevant EC Directives. The complete product complies with the provisions of the EC Directive on machinery safety provided motors manufactured by Finish Thompson Inc. are used.

This declaration is valid provided that the devices are fully assembled and no modifications are made to these devices.

**Type of Device:**

Drum and Container Pump Tubes

**Models:**

BTS-40  
HVDP LR-27/40/48  
PFP-15/27/40/48/60/72  
TBP-27/40/48  
STTS-40

EPPI/EPPS-15/27/40  
HVDP-HR-27/40/48  
PFS-27/40/48/60/72  
TBS-40  
TMS-40

EFV/EFV/EFV-16/27/40/48  
PFM-27/40/48/60  
PFV-27/40/48/60/72  
TTS/TTS-27/40/48

**EC Directives:**

Machinery Safety (2006/42/EC)

**Applied Harmonized Standards:**

EN ISO 12100 Part 1  
EN ISO 12100 Part 2  
EN 809

**Manufacturer:**

Finish Thompson Inc.  
921 Greengarden Road  
Erie, Pennsylvania 16501-1591 U.S.A.

Signed,

President

December 29, 2009

## Introduction

This manual pertains to the EF Series drum pumps. Finish Thompson Inc. thanks you for choosing our products. We believe the use of our products will be fully satisfactory. When properly installed and operated, your Finish Thompson motor and pump will provide long, trouble-free service; therefore, please read this manual carefully before carrying out any operations on the pump/motor unit. Any use other than that described herein is considered incorrect; and, consequently, Finish Thompson Inc. shall not be held responsible for any damages to people or property. In case of doubt or enquiries, please reply to our Technical Service department directly at the following address:

Finish Thompson, Inc.  
921 Greengarden Rd.  
Erie, PA 16501 U.S.A.  
Tel. 1-814-455-4478  
Fax 1-814-455-8518  
[www.finishthompson.com](http://www.finishthompson.com)  
[fti@finishthompson.com](mailto:fti@finishthompson.com)

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**Note:** Repair instructions can be downloaded from our web site at [www.finishthompson.com](http://www.finishthompson.com) or contact Technical Service at 1-800-888-3743.

## Warranty, General Terms & Conditions

1. The following terms and conditions apply to the sale of machinery, components and related services and products, of Finish Thompson Inc. (hereinafter “the products”)
2. Finish Thompson Inc. (the manufacturer) warrants only that:
  - a) its products are free of defects in material, design and workmanship at the time of original purchase;
  - b) its products will function in accordance with Finish Thompson Inc. operation manuals; Finish Thompson Inc. does not guarantee that the product will meet the precise needs of the Customer, except for those purposes set out in any invitation to render documents or other documents specifically made available to Finish Thompson Inc. before entering into this agreement;
  - c) high quality materials are used in the construction of the pumps and that machining and assembly are carried out to the highest standards. Except as expressly stated above, Finish Thompson Inc. makes no warranties, express or implied, concerning the products, including all warranties of fitness for a particular purpose.

This warranty shall not be applicable in circumstances other than defects in material, design, and workmanship. In particular warranty shall not cover the following:

- d) Periodic checks, maintenance, repair and replacement of parts due to normal wear and tear;
- e) Damage to the product resulting from:
  - i. Tampering with, abuse or misuse, including but not limited to failure to use the product for its normal purposes as stated at the time of purchase or in accordance with Finish Thompson, Inc. instructions for use and maintenance of the product, or the installation or improper ventilation or use of the product in a manner inconsistent with the technical or safety standard in force;
  - ii. Repairs performed by non-authorized service workshop, or opening of the unit by non-authorized personnel, or use of non genuine Finish Thompson Inc. parts;
  - iii. Accidents, force majeure or any cause beyond the control of Finish Thompson Inc., including but not limited to lightning, water, fire, earthquake, and public disturbances, etc.
3. The warranty shall cover the replacement or repair of any part, which is documented to be faulty due to construction or assembling, with new or repaired parts free of charge delivered by Finish Thompson, Inc. Parts subjected to normal wear and tear shall not be covered by the warranty. Finish Thompson, Inc. shall decide as to whether the defective or faulty part shall be replaced or repaired. Transportation charges are prepaid to Finish Thompson.
4. The warranty of the products shall be valid for a period of **12 months** from the date of delivery, under the condition that notice of the alleged defect to the products or parts thereof be given to Finish Thompson, Inc. within the term of 8 days from the discovery.
5. Repair or replacement under the terms of this warranty shall not give a right to an extension to, or a new commencement of, the period of warranty. Repair or replacement under the terms of this warranty may be fulfilled with functionally equivalent re-conditioned units. Finish Thompson Inc. qualified personnel shall be solely entitled to carry out repair or replacement of faulty parts after careful examination of the motor. Faulty parts or components when replaced by Finish Thompson Inc. will become the property of Finish Thompson Inc. If this warranty does not apply, the purchaser shall bear all cost for labor, material and transportation.
6. Finish Thompson Inc. will not be liable on any claim, whether in contract, tort, or otherwise, for any indirect, special, incidental, or consequential damages, caused to the customer or to third parties, including loss of profits, process down time, transportation costs, costs associated with replacement or substitution products, labor costs, installation or removal costs. In any and all events, manufacturer’s liability shall not exceed the purchase price of the product and/or accessories.
7. **Return Policy.** Should you have any problems with this product, please contact the distributor in your area. The distributor will determine if a return to the factory is necessary and will contact the factory for a Return Authorization Number. Otherwise, contact our Technical Service Hotline (1-800-888-3743) or e-mail [techservice@finishthompson.com](mailto:techservice@finishthompson.com) if you have any questions regarding product operation or repair.

## Safety

### 1. Introduction

This manual contains all the information needed for the correct installation, use and maintenance of your new Finish Thompson pump. It should be read and understood by all the personnel involved in installation, operating and servicing of the pump before it is started.

### 2. Operator Qualification and Training

The personnel in charge of the installation, the operation, and the maintenance of the pump must be qualified and able to perform the operations described in this manual. Finish Thompson, Inc. shall not be held responsible for the training level of personnel and for the fact that they are not fully aware of the contents of this manual.

### 3. Safety Instructions

#### **FOR YOUR OWN SAFETY**

BEFORE using or servicing your pump, please make sure to wear the proper clothing, eye protection and follow standard safety procedures when handling corrosive or personally harmful materials.

#### **GENERAL DANGER**

**NEVER** use a plastic pump or an open, splash-proof, TEFC or non-ATEX motor when pumping or mixing flammable or combustible material.

**ALWAYS** use a Model EFS 316SS pump tube with Model S4 air motor and static protection kit with grounded discharge hose, P/N 107429, when pumping or mixing flammable or combustible material. Follow Assembly, Installation & Operating Instructions from manual, P/N J102721, included with the static protection kit or it can be accessed online at [www.finishthompson.com/downloads](http://www.finishthompson.com/downloads).

**ALWAYS** use and store the pump and motor in an upright position.

#### **DANGER: POWER SUPPLY**

**NEVER** perform any maintenance operation on the motor while it is running or before it has been disconnected from the power supply. Avoid any possible hazard that might be caused by electric power.

**ALWAYS** check the electrical specifications on the motor data plate and make sure they correspond to the power supply to which it will be connected.

**ALWAYS** place motor in the OFF position prior to connecting the power source.

**NEVER** immerse the motor in liquid.

### 4. Noise Level

S1, S2, and S3 electric motors in normal operating conditions produce a sound level equal to or less than 74 dBA at a distance of three feet (~ one meter). S4 Air motor produces a sound level equal to or less than 78 dBA at a distance of three feet (~ one meter).

### 5. Modifications and Spare Parts

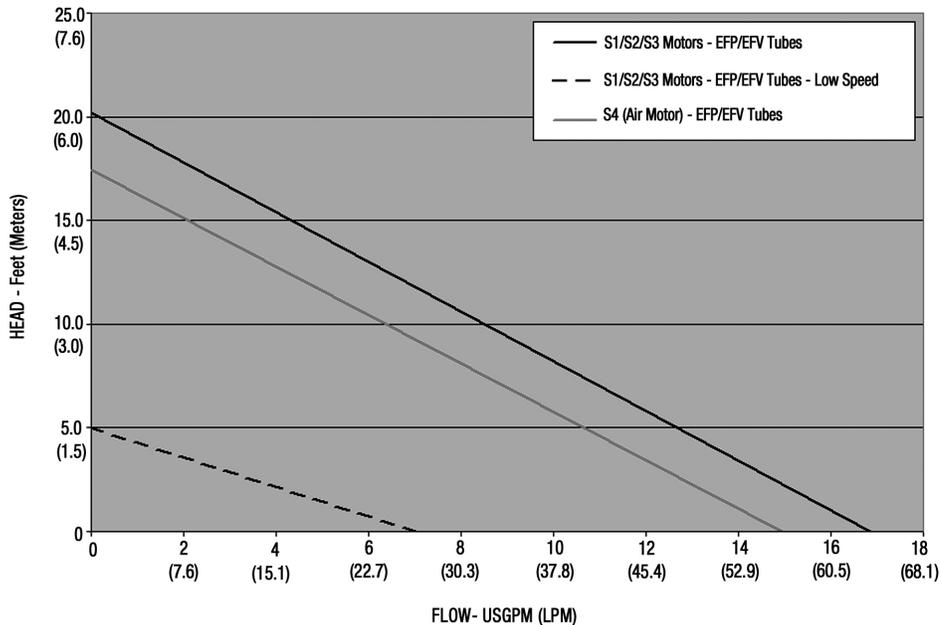
Any changes concerning the service of the pump as originally purchased can be executed only after written approval from Finish Thompson Inc. It is recommended to use only genuine Finish Thompson Inc. spare parts and approved accessories. The use of non-original spare parts or non-approved accessories will void warranty and removes any responsibility on the manufacturer's behalf for any damage caused to people or things.

## Installation and Operation

Please refer to the EF Series motors manual, PN 107318, for installation and operation instructions.

<b>PUMP SPECIFICATIONS</b>			
	<b>MODEL EFP</b>	<b>MODEL EFV</b>	<b>MODEL EFS</b>
Outer Tube Diameter	1.27" (32 mm)	1.27" (32 mm)	1.25" (32 mm)
Discharge Spout	3/4" Barb	3/4" Barb	3/4" Barb
Discharge Thread	1" NPT	1" NPT	Optional
Max. Specific Gravity	1.2	1.2	1.2
Max. Viscosity	300 cP	300 cP	300 cP
Min./ Max. Fluid Temperature	0°F Min. to 150°F Max.	0°F Min. to 160°F Max.	0°F Min. to 212°F Max.
	(-18°C Min. to 66°C Max.)	(-18°C Min. to 71°C Max.)	(-18°C Min. to 100°C Max.)
Wetted Materials	Polypropylene, FKM, PTFE, ETFE, 316 SS	Pure Polypropylene, PVDF, FKM, PTFE, ETFE, Alloy 625	316 SS, FKM, PTFE, ETFE

### EF Performance with Electric and Air Motors

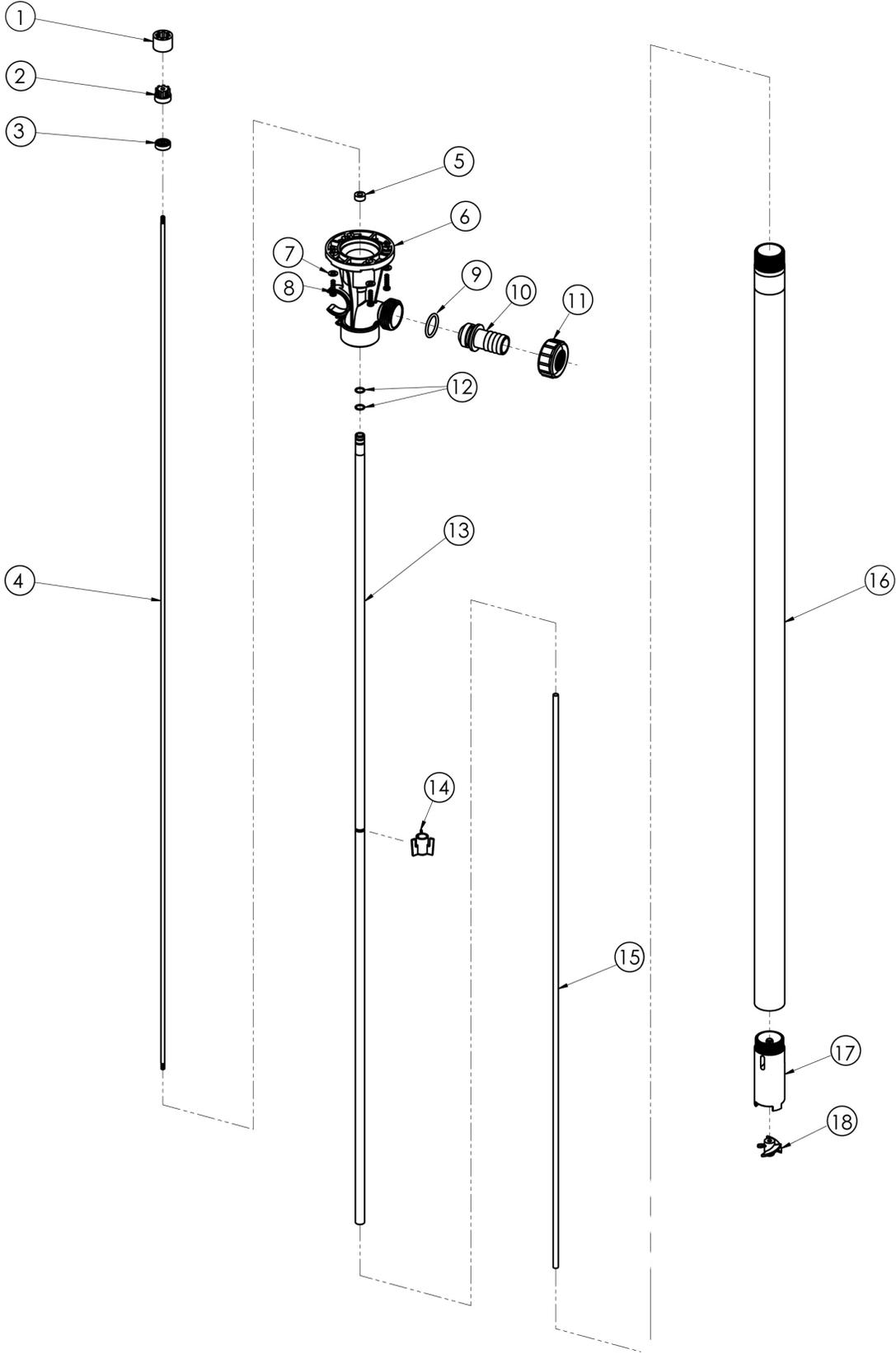


Viscosity	100 cP		200 cP		300 cP	
Max. Flow	7 gpm	27 lpm	5 gpm	19 lpm	3.7 gpm	14 lpm
Max. Head	16 feet (4.9 m)					

Note: All testing was performed with water at 68°F. Actual performance can vary by +/- 10%. Actual performance will decrease with increased fluid viscosity and specific gravity. Viscosity and performance are based on electric motor at high speed.

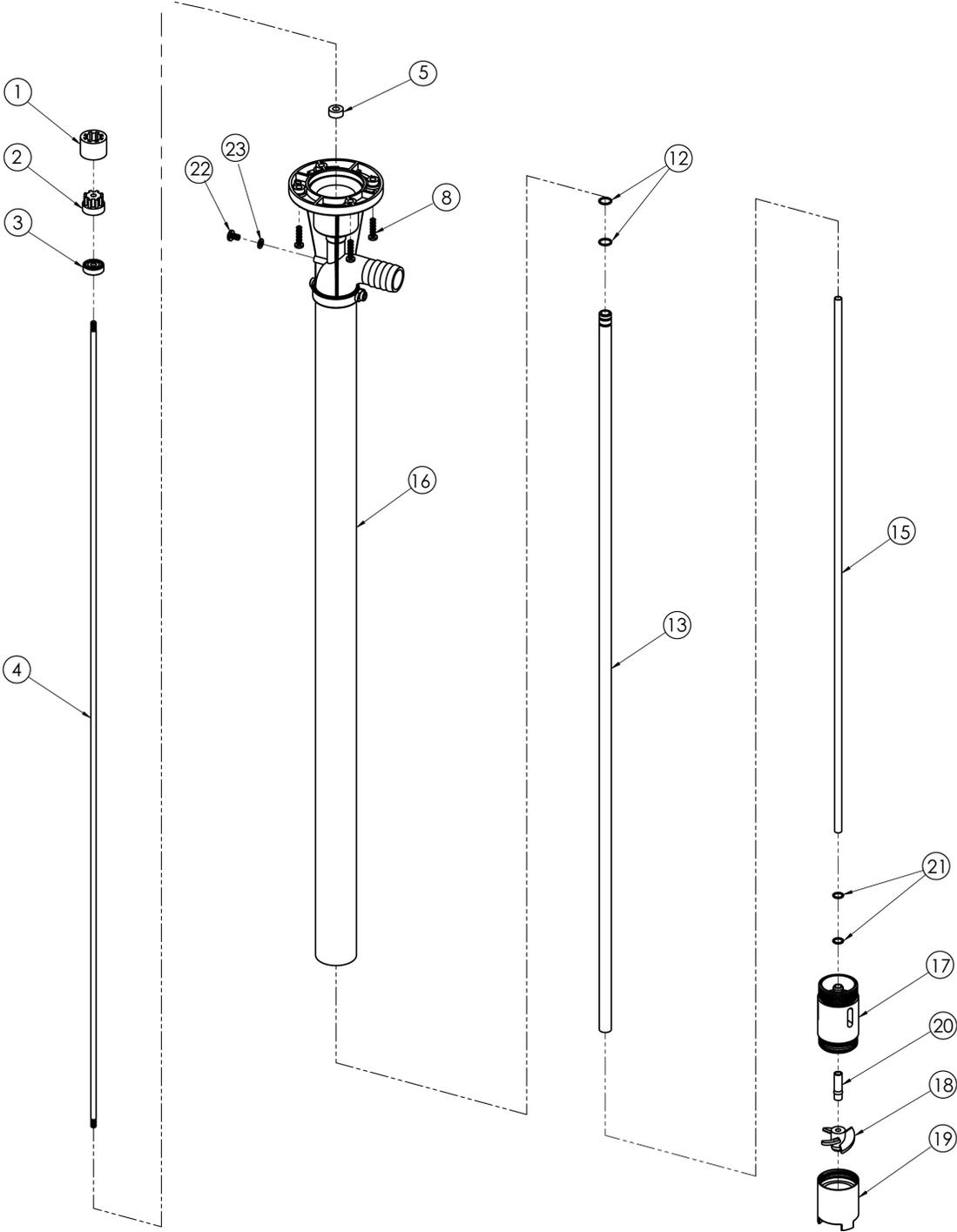
# EFP & EFV SERIES PUMP

## EXPLODED VIEW



# EFS SERIES PUMP

## EXPLODED VIEW



## PUMP SPARE PARTS LIST

ITEM	QTY	DESCRIPTION	PART NUMBER		
			MODEL EFP	MODEL EFV	MODEL EFS
*1	1	COUPLING INSERT	J103422	J103422	J103422
2	1	COUPLING HALF	107300	107300	107300
3	1	BEARING	<b>SEE NOTE BELOW.</b>		
*2,3,4	1	COUPLING HALF, BEARING & SHAFT - 16"	107589-1	107590-1	107589-1
*2,3,4	1	COUPLING HALF, BEARING & SHAFT - 27"	107589-2	107590-2	107589-2
*2,3,4	1	COUPLING HALF, BEARING & SHAFT - 40"	107589-3	107590-3	107589-3
*2,3,4	1	COUPLING HALF, BEARING & SHAFT - 48"	107589-4	107590-4	107589-4
*5	1	SEAL - FKM	107297	107297	107297
6	1	HEAD - PP	107071-1	N/A	N/A
6	1	HEAD - PVDF	N/A	107071-2	N/A
7	4	FLAT WASHER - SS	J103601	J103601	N/A
8	4	HI-LOW SCREW - SS	J101020	J101020	J101020
*9	1	SPOUT O-RING - standard FKM / optional EPDM	106155 / 106154	106155 / 106154	N/A
10	1	SPOUT - PP	107072-1	N/A	N/A
10	1	SPOUT - PVDF	N/A	107072-2	N/A
11	1	NUT - PP	107069-1	N/A	N/A
11	1	NUT - PVDF	N/A	107069-2	N/A
*12	2	INNER TUBE O-RING - standard FKM / optional EPDM	107299 / 107729	107299 / 107729	107299 / 107729
13	1	INNER TUBE - PURE PP or 316SS - 16"	107294-1	107294-1	107578-1
13	1	INNER TUBE - PURE PP or 316SS - 27"	107294-2	107294-2	107578-2
13	1	INNER TUBE - PURE PP or 316SS - 40"	107294-3	107294-3	107578-3
13	1	INNER TUBE - PURE PP or 316SS - 48"	107294-4	107294-4	107578-4
*14	1	CENTER SUPPORT - Tefzel® (ETFE) - 40" & 48" LENGTHS ONLY	107068	107068	N/A
*15	1	SHAFT SLEEVE - PTFE - 16"	107293-1	107293-1	107293-1
*15	1	SHAFT SLEEVE - PTFE - 27"	107293-2	107293-2	107293-2
*15	1	SHAFT SLEEVE - PTFE - 40"	107293-3	107293-3	107293-3
*15	1	SHAFT SLEEVE - PTFE - 48"	107293-4	107293-4	107293-4
16	1	OUTER TUBE - EFP - 16"	107295-1	N/A	N/A
16	1	OUTER TUBE - EFV - 16"	N/A	107295-2	N/A
16	1	OUTER TUBE w / HEAD - EFS - 16"	N/A	N/A	107580-1
16	1	OUTER TUBE - EFP - 27"	107295-3	N/A	N/A
16	1	OUTER TUBE - EFV - 27"	N/A	107295-4	N/A
16	1	OUTER TUBE w / HEAD - EFS - 27"	N/A	N/A	107580-2
16	1	OUTER TUBE - EFP - 40"	107295-5	N/A	N/A
16	1	OUTER TUBE - EFV - 40"	N/A	107295-6	N/A
16	1	OUTER TUBE w / HEAD - EFS - 40"	N/A	N/A	107580-3
16	1	OUTER TUBE - EFP - 48"	107295-7	N/A	N/A
16	1	OUTER TUBE - EFV - 48"	N/A	107295-8	N/A
16	1	OUTER TUBE w / HEAD - EFS - 48"	N/A	N/A	107580-4
*17	1	DIFFUSER - PP	107070-1	N/A	N/A
*17	1	DIFFUSER - PVDF	N/A	107070-2	N/A
*17	1	DIFFUSER - 316SS	N/A	N/A	107583
*18	1	IMPELLER - PP	107067-1	N/A	N/A
*18	1	IMPELLER - TEFZEL® (ETFE)	N/A	107067-2	107067-2
19	1	DIFFUSER COVER - 316SS	N/A	N/A	107584
20	1	DIFFUSER BUSHING - PTFE	N/A	N/A	107585
*21	1	DIFFUSER O-RING - FKM standard / Optional EPDM	N/A	N/A	107586 / 107766
22	1	GROUNDING SCREW - BRASS	N/A	N/A	J100822
23	1	GROUNDING SCREW LOCKWASHER - BRASS	N/A	N/A	J100823
			N/A = Not Applicable		

\* Recommended Spare Parts

Note: Items 3 and 4, Bearing and Shaft, are only available as kits.

Tefzel® is a registered trademark of the DuPont Company.



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Service 1-800-888-3743

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