



FINISH THOMPSON INC.

TT SERIES PUMPS

TTS, TTC, & STTS OPERATION & PARTS MANUAL





FINISH THOMPSON INC.
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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/EPSS 15/27/40
HVDP HR-27/40/28
PFS-27/40/48/60/72
TBS-40
TMS-40

EFP/EFV/EFS-16/27/40/48
PFM-27/40/48/60
PFV-27/40/48/60/72
TTC/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

January 7, 2013

Person(s) Authorized to Compile Technical File: Michael Smith Engineers Limited
Oaks Road, Woking, Surrey
GU21 6PH, UK
Telephone: 01483 771871

Introduction

This manual pertains to the TT 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
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Technical Service Hotline: 1-800-888-3743 or email techservice@finishthompson.com

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 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

ALWAYS use a stainless steel pump tube with an explosion proof electric motor or air motor and static protection kit with grounded discharge hose when pumping or mixing flammable or combustible material.

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

DANGER: POWER SUPPLY

Refer to instructions in the appropriate motor Operation & Installation Manual.

4. Noise Level

Refer to specifications in the appropriate motor Operation & Installation Manual.

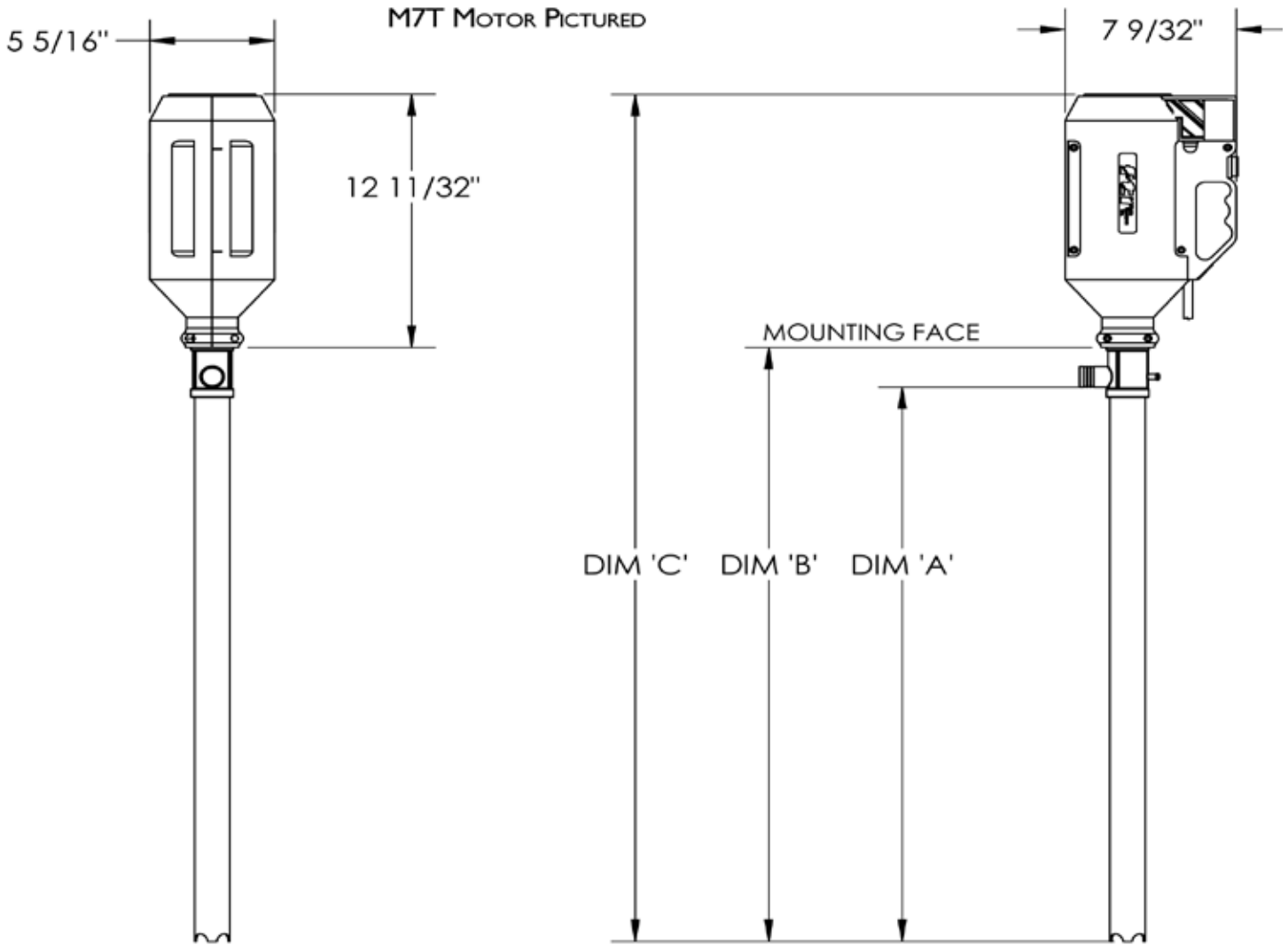
5. Modifications and Spare Parts

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.

6. Cleaning

It is highly recommended to flush pumps with clean water or some other neutralizing fluid compatible with pump materials when done pumping or when switching chemicals.

PUMP SPECIFICATIONS			
	MODEL TTS	MODEL TTC	MODEL STTS
Outer Tube Diameter	1-1/2" (3.8 cm)	1-5/8" (4.1 cm)	1-1/2" (3.8 cm)
Discharge Thread	1" hose barb	1" hose barb	1" hose barb
Max. Specific Gravity	1.8	1.8	1.8
Max. Viscosity	2000 cP	2000 cP	2000 cP
Min./ Max. Fluid Temperature	-20°F Min. to 150°F Max.	34°F Min. to 150°F Max.	-10°F Min. to 150°F Max.
	(-29°C Min. to 66°C Max.)	(1.1°C Min. to 66°C Max.)	(-23°C Min. to 66°C Max.)
Wetted Materials	316 Stainless Steel, PTFE	CPVC, Alloy 625, PTFE	316 Stainless Steel, PTFE



MODEL	DIM A (in)	DIM B (in)	DIM C (in)	DIM A (mm)	DIM B (mm)	DIM C (mm)
TTS/TTC-27	27-1/16	29	41-3/8	687.3	736.6	1050.9
TTS/TTC-40	40-1/16	42	54-3/8	1017.5	1066.8	1381.1
TTS/TTC-48	48-1/16	50	62-3/8	1220.3	1270	1584.3
STTS-40	40	44-1/5	56-7/8	1016.0	1122.7	1444.6

Installation & Maintenance Instructions

Installation

1. Remove the drum pump and motor from the packaging and inspect for shipping damage. Turn the pump coupling the mating motor coupling to verify there is no binding.
2. Adjust the drum pump coupling so that the empty slots in the insert are at 3 and 9 o'clock with the drum pump discharge at 12 o'clock.
4. Install the motor according to instructions in the appropriate motor manual.
5. Attach discharge hose and secure with hose clamp.
6. Install into the container.

Cleaning (STTS only)

The STTS model is designed to come apart easily to aid in cleaning.

1. Remove the union nut (item 5) and, grabbing the bearing housing, pull the shaft assembly from the intake tube (item 10). The shaft assembly and intake tube internals can now be cleaned and flushed.
2. Always inspect the union nut gasket (item 7) for cuts or damage.
3. Reverse the process to reassemble this model.

Maintenance

Disassembly

1. Loosen the setscrew and remove the half coupling (item 2) from the end of the pump shaft.
2. Carefully hold the intake tube (the bearing housing on the STTS model after the cleaning disassembly step) so as not to crush the tube, use a 3/8" punch and hammer to drive the bottom of the shaft toward the top. This will drive the bearing assembly up out of the TTS/TTC head or STTS bearing housing.
3. When the bearing is completely out, use a pair of needle nose pliers and carefully straighten the four slightly bent "feet" at the bottom of the intake tube on the TTS model. This will allow you to use the pliers to remove the bottom bearing (item 13).
4. Then use a 1/8" punch to drive out the roll pin that holds the bearing onto the top of the pump shaft. Remove the bearing from the pump shaft, and remove shaft assembly down through the bottom of the intake tube. On STTS models, pull the shaft assembly down out of the bearing housing.
5. Remove the seal assembly from the pump head on the TTS/TTC or the bearing housing on the STTS and discard it.

Inspection

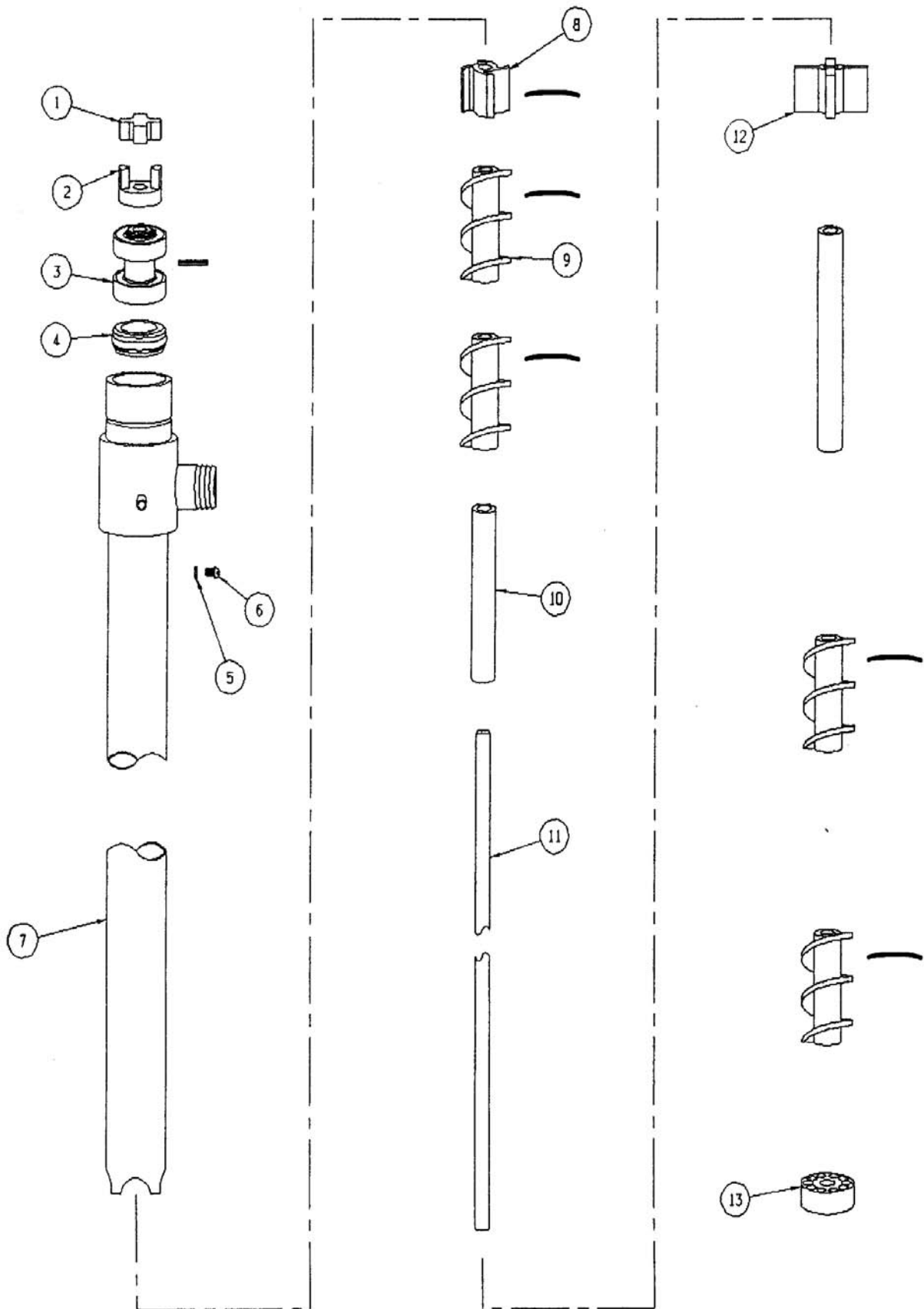
1. Inspect the shaft locating hole in the center of the bottom bearing (item 13 on the TTS/TTC and 16 on the STTS). If the inside diameter is .400 or larger than replace it.
2. Visually check the all the compressors (item 9 on TTS/TTC and item 12 on STTS) for damage. If they need replaced, you must remove the pin first.
3. Visually inspect the center bearings (item 12 on TTS/TTC or item 15 on STTS), the spacers (item 10 on TTS/TTC or item 13 on STTS), and the impellers (item 8 on TTS/TTC or item 11 on STTS). Replace as needed.
4. Never reuse the seal assembly (item 4). Always install a new seal during reassembly.
5. Inspect the bearing assembly (item 3), and replace if needed.
6. Inspect the pump shaft for wear in the seal area, the center bearing area, and the bottom bearing area. Replace if needed.

Reassembly

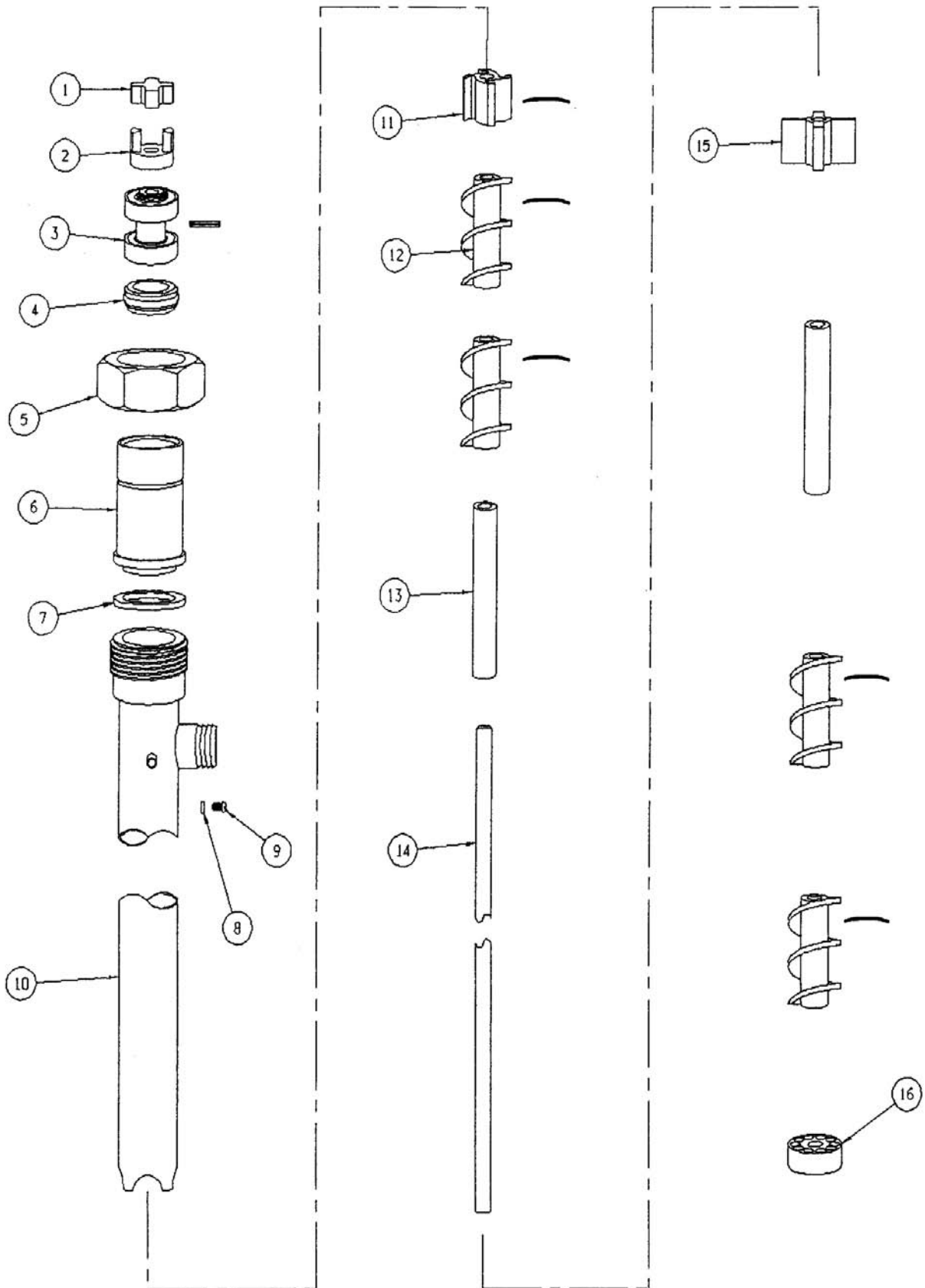
1. With the center bearings, compressors, spacers, and impellers in place on the shaft, insert the shaft up through the bottom of the TTS/TTC intake tube (up through the bottom of the bearing housing on the STTS).
2. Warm up the seal assembly (item 4) prior to installation by using a heat lamp or soaking them in hot water. This will aid in the ease of proper seal installation. Make sure there are no metal burrs on the pump shaft in the bearing hole location or the coupling half setscrew location that could “cut” the seal during installation.
3. Lubricate the end of the shaft with Vaseline to aid in the seal installation. Carefully install the seal down over the shaft with the two “slots” facing up toward the bearing assembly. The raised lip in the center of the seal (that faces the bottom of the pump) must go on straight and not buckle on one side.
4. After the seal is on the shaft correctly, install the bearing assembly (item 3) onto the shaft. Use the bearing assembly to push the seal further down the shaft until the hole in the center of the bearing assembly matches up to the hole in the shaft. Install the roll pin through the bearing assembly and shaft.
5. Turn pump intake tube (bearing housing on the STTS) upside down and press on the shaft end to slide the bearing assembly into the pump head (bearing housing on the STTS). Use a block of wood and a mallet if needed to drive the assembly into the pump head.
6. Install the coupling (item 2) on the end of the shaft and tighten the set screw into the dimple on the shaft.
7. On STTS models insert the shaft assembly into the intake tube from the top, making sure to install the union nut gasket (item 7) and tighten the union nut (item 5).
8. Reinstall the bottom bearing (item 13 on TTS/TTC and item 16 on STTS), and gently bend the four “feet” in slightly to keep the bottom bearing in place on the TTS and STTS models.
9. Turn the pump coupling to insure there is no binding.

Note: Repair instructions can be downloaded from our web site at www.finishthompson.com or contact Technical Service at 1-800-888-3743.

TTC/TTS SPARE PARTS EXPLODED VIEW



STTS SPARE PARTS EXPLODED VIEW



TTS/TTC SPARE PARTS LIST

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	COUPLING INSERT	
			J100014
2	1	COUPLING HALF	
			J100013
3*	1	BEARING ASSEMBLY	
		W/ ROLL PIN	A101672
4*	1	SEAL ASSEMBLY	
		PTFE (TTS)	A100284
5	1	LOCK WASHER	
		#8 BRASS (TTS)	J100823
6	1	SCREW	
		#8-32 X 1/4 BRASS PAN HEAD M/S	J100822
7	1	INTAKE TUBE ASSEMBLY	
		27" 316 STAINLESS STEEL (TTS)	A100927-1
		40" 316 STAINLESS STEEL (TTS)	A100927-4
		48" 316 STAINLESS STEEL (TTS)	A100927-3
		27" CPVC (TTC)	A100926-1
		40" CPVC (TTC)	A100926-4
8	1	IMPELLER ASSEMBLY	
		PTFE WITH STAINLESS STEEL PIN (TTS)	A100030
9*	4	PTFE WITH ALLOY 625 PIN (TTC)	A100039
		COMPRESSOR	
		PTFE WITH STAINLESS STEEL PIN (TTS)	A100044
10	2	PTFE WITH ALLOY 625 PIN (TTC)	A100325
		SPACER SET	
11	1	FEP (TTS/TTC-40)	A100043-1
		FEP (TTS/TTC-48)	A100043-2
		SHAFT	
		27" 316 STAINLESS STEEL (TTS)	M100972-1
		40" 316 STAINLESS STEEL (TTS)	M100972-7
		48" 316 STAINLESS STEEL (TTS)	M100972-3
12*	1	27" ALLOY 625 (TTC)	M100972-4
		40" ALLOY 625 (TTC)	M100972-8
		48" ALLOY 625 (TTC)	M100972-6
13*	1	CENTER BEARING	
		PTFE	M100039
13*	1	BOTTOM BEARING	
		PTFE	M100047

*Recommended Spare Parts

STTS SPARE PARTS LIST

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	COUPLING INSERT	
			J100014
2	1	COUPLING HALF	
			J100013
3*	1	BEARING ASSEMBLY	
		WITH ROLL PIN	A101672
4*	1	SEAL ASSEMBLY	
		PTFE	A100284
5	1	UNION NUT	
		316 STAINLESS STEEL	J100083
6	1	BEARING HOUSING	
		316 STAINLESS STEEL	M100078
7	1	UNION NUT GASKET	
		FDA APPROVED NEOPRENE	J100084
8	1	LOCK WASHER	
		#8 BRASS	J100823
9	1	SCREW	
		#8-32 X 1/4 BRASS PAN HEAD M/S	J100822
10	1	INTAKE TUBE ASSEMBLY	
		316 STAINLESS STEEL	A100080-1
11	1	IMPELLER ASSEMBLY WITH STAINLESS STEEL PIN	
		PTFE	A101674
12*	1	COMPRESSOR	
		PTFE WITH STAINLESS STEEL PIN	A101673
13	1	SPACER SET	
		FEP	A100043-1
14	1	SHAFT	
		316 STAINLESS STEEL	M100974-1
15*	1	CENTER BEARING	
		PTFE	M100039
16*	1	BOTTOM BEARING	
		PTFE	M100047

*Recommended Spare Parts



FINISH THOMPSON INC.

Service 1-800-888-3743
P/N 108102 Rev. 2, 3-5-13