



FINISH THOMPSON INC.

# **TM SERIES MIXER**

## **TMS 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 TM Series stainless steel drum mixer. 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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**Technical Service Hotline:** 1-800-888-3743 or email [techservice@finishthompson.com](mailto: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](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

**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.

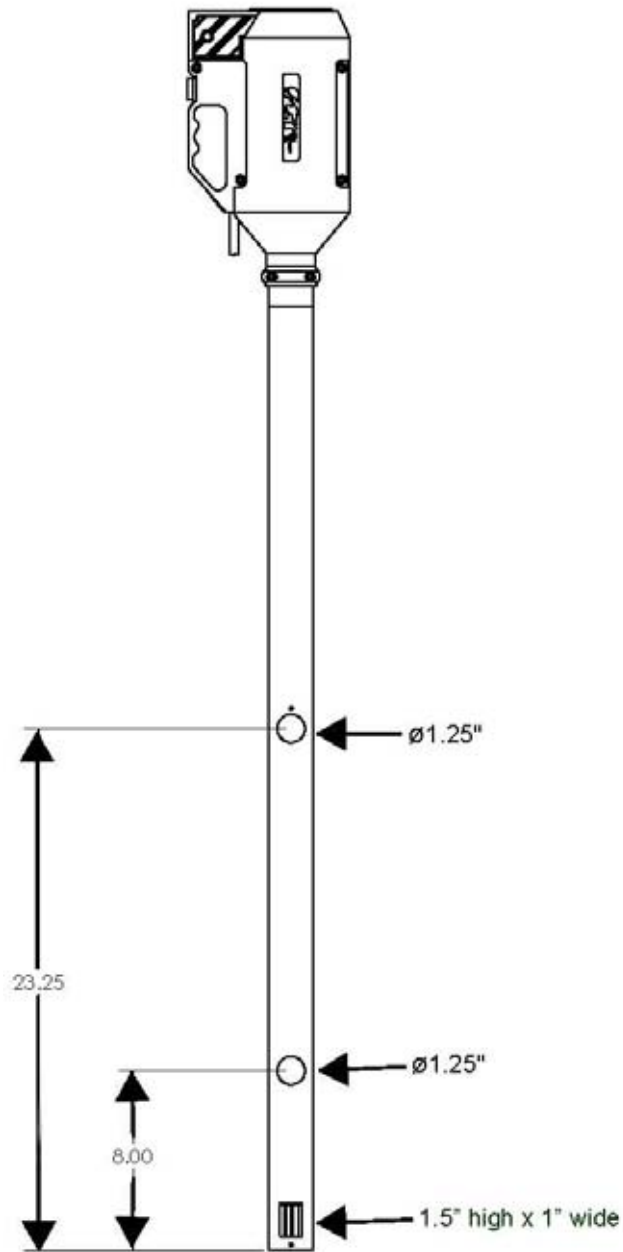
## 5. Modifications and Spare Parts

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 TMS
Outer Tube Diameter	2" (5.1 cm)
Max. Viscosity	1000 cP
Min./ Max. Fluid Temperature	-20°F Min. to 200°F Max.
	(-29°C Min. to 93°C Max.)
Wetted Materials	316 Stainless Steel, PTFE



# Installation & Maintenance Instructions

## Installation

1. Remove the mixer and motor from the packaging and inspect for shipping damage.
2. Turn the shaft coupling and the motor coupling to verify there is no binding.
3. Adjust the mixer coupling so that the empty slots in the insert are at 3 and 9 o'clock.
4. Install the motor according to instructions in the appropriate motor manual.
5. Install into the container.

## Maintenance

### Disassembly

1. Loosen the set screw and remove the coupling half (item 2) from the top of the mixer shaft.
2. Gently hold the mixer tube (item 7) so as not to crush it, and use a 3/8" punch and hammer to drive the mixer shaft up from the bottom until the bearing assembly (item 3) is exposed.
3. Use a 1/8" punch to remove the roll pin and slide the bearing assembly off the top of the shaft.
4. Remove the bottom bearing setscrew (item 13) and remove the bottom bearing (item 12).
5. Slide the shaft assembly down through the mixer tube and remove it out the bottom.
6. Remove the center bearing set screw (item 13) and remove the center bearing (item 10).
7. Remove and discard the seal assembly (item 4). Never re-use the seal assembly.

### Inspection

1. Measure the inside diameter of the shaft hole on the bottom bearing (item 12) and the center bearing (item 10). If it is more than .425 it should be replaced.
2. Visually inspect the turbine assembly (item 11) for wear and replace if needed.
3. Inspect the shaft for wear in the center and bottom bearing areas, and inspect the shaft condition in the seal (item 4) area.
4. Inspect the bearing assembly for rust, corrosion, or tightness and replace if needed.

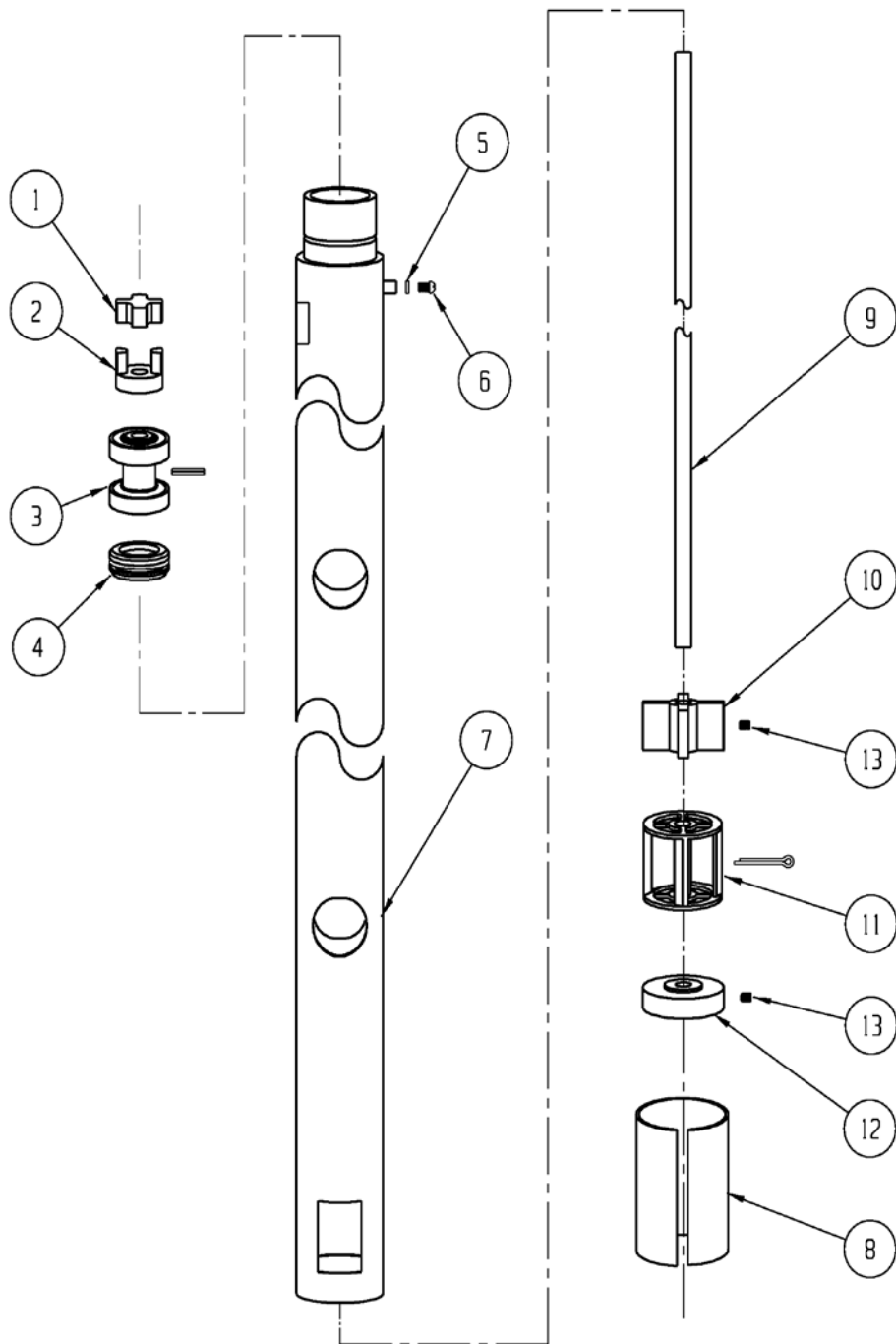
## Reassembly

1. Insert the center bearing (item 10) up through the bottom of the tube and match up the setscrew hole in the tube and the center bearing. Install the setscrew.
2. Insert the shaft assembly up through the bottom, and through the center bearing until the shaft sticks out above the mixer tube top.
3. Warm up the seal assembly (item 4) prior to installation by using a heat lamp or socking 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.
4. 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.
5. 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.
6. Line up the bearing assembly with the top of the pump head and press the bearing in. Use a block of wood and a mallet if needed.
7. Insert the bottom bearing (item 12) into the bottom of the tube and install the setscrew (item 13) to hold it in place.
8. Install the coupling half and tighten the setscrew into the dimple in the shaft. Spin the shaft coupling half to verify there is no binding.

**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.



# TMS SPARE PARTS EXPLODED VIEW



## SPARE PARTS LIST

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	<b>COUPLING INSERT</b>	
			J100014
2	1	<b>COUPLING HALF</b>	
			J100013
3*	1	<b>BEARING ASSEMBLY</b>	
		W/ ROLL PIN	A101672
4*	1	<b>SEAL ASSEMBLY</b>	
		TFE	A100284
5	1	<b>LOCK WASHER</b>	
		#8 BRASS	J100823
6	1	<b>SCREW</b>	
		#8-32 X 1/4 BRASS PAN HEAD M/S	J100822
7	1	<b>TUBE ASSEMBLY</b>	
		40" - 316 STAINLESS STEEL	A101192-1
8	1	<b>SLEEVE</b>	
		316 STAINLESS STEEL	M100070
9*	1	<b>SHAFT</b>	
		316 STAINLESS STEEL	M100970-1
10	1	<b>CENTER BEARING</b>	
		PTFE	M100073
11	1	<b>TURBINE ASSEMBLY</b>	
		WITH STAINLESS STEEL PIN	A100070
12*	1	<b>BOTTOM BEARING</b>	
		PTFE	M100071
13*	2	<b>SET SCREW</b>	
		#8-32 X 3/8 STAINLESS STEEL	J100072

\*Recommended Spare Parts



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Service 1-800-888-3743  
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