thermo scientific

HyPerforma Single-Use Mixer (S.U.M.) with Touchscreen Console Unpacking Guide

DOC0061 • Revision B

August 2020

ThermoFisher SCIENTIFIC

Contents

Warnings, safety, and warranty information

WARNING: Read and understand this guide before unpacking a S.U.M. unit. Failure to do so could result in personal injury, death, or damage to the equipment. Always follow your company's approved safety procedures.

WARNING: Use the following safety equipment while unpacking the S.U.M. system:

- Protective eye wear
- Gloves
- Steel-toed shoes
- Lab coat, where appropriate or required

WARNING: Tipping hazard. The vessel should only be moved by pushing using the provided handles or at the mid-point of the vessel. If pulled or moved too quickly, the vessel can tip, potentially leading to damage to equipment or injury to personnel. To reduce the risk of tipping, the vessel should only be moved slowly over smooth, flat surfaces by at least two qualified personnel. During movement, any locking feet should be retracted, and casters should be in the unlocked position. The vessel should not be moved by pulling of any kind.

Warranty information

Any warranties, if applicable, covering this equipment exclude: (a) normal wear and tear; (b) accident, disaster or event of force majeure; (c) your misuse, fault or negligence; (d) use of the equipment in a manner for which it was not designed; (e) causes external to the equipment such as, but not limited to, external puncturing, power failure or electrical power surges; (f) improper storage and handling of the equipment; (g) use of the equipment in combination with equipment or software that we did not supply; (h) equipment sold to you as 'used' products; (i) contact with improperly used or unapproved chemicals or samples; (j) installation, removal, use, maintenance, storage, or handling in an improper, inadequate, or unapproved manner, such as, but not limited to, failure to follow the documentation or instructions in the deliverables or related to the equipment, operation outside of stated environmental or other operational specifications, or operation with unapproved software, materials or other products; (k) manufacture in accordance with requirements you gave us; (l) installation of software or interfacing or use of the equipment in combination with software

or products we have not approved; (m) use of the deliverables or any documentation to support regulatory approvals; (n) the performance, efficacy or compatibility of specified components; and (o) the performance of custom equipment or products or specified components or achievement of any results from the equipment, specified components or services within ranges desired by you even if those ranges are communicated to us and are described in specifications, a quote, or a statement of work. **ADDITIONALLY, ANY INSTALLATION, MAINTENANCE, REPAIR, SERVICE, RELOCATION OR ALTERATION TO OR OF, OR OTHER TAMPERING WITH, THE EQUIPMENT PERFORMED BY ANY PERSON OR ENTITY OTHER THAN US WITHOUT OUR PRIOR WRITTEN APPROVAL, OR ANY USE OF REPLACEMENT PARTS WE HAVE NOT SUPPLIED, WILL IMMEDIATELY VOID AND CANCEL ALL WARRANTIES WITH RESPECT TO THE AFFECTED EQUIPMENT. IF THE EQUIPMENT IS TO BE USED IN THE UNITED STATES, WE MAY VOID YOUR WARRANTY IF YOU SHIP THE EQUIPMENT OUTSIDE OF THE UNITED STATES.**

Use restrictions

You must use this equipment in accordance with our documentation and if applicable, with our other associated instructions, including without limitation, a “research use only” product label or “limited use” label license. This equipment is intended for research use or further manufacturing in bioprocessing applications and not for diagnostic use or direct administration into humans or animals, we do not submit the equipment for regulatory review by any governmental body or other organization, and we do not validate the equipment for clinical or diagnostic use, for safety and effectiveness, or for any other specific use or application.

Seismic guidance

The buyer of the equipment is responsible for ensuring that country-specific codes and seismic values are assessed for suitability of equipment installation and safety at the designated site. In addition, it is the buyer’s responsibility to assess the building structure for the designated equipment to ensure correct seismic anchoring and tethering designs for both the equipment and facility. It is highly recommended that the buyer consult with a local, licensed third party architecture and engineering firm to provide the buyer with correct engineering analysis and stamped documentation prior to equipment

installation at the facility. In addition, the buyer will be responsible for rigging and anchoring of the equipment to a specified, fixed location. Upon request, Thermo Fisher Scientific can assist with establishing compliant seismic anchoring and tethering designs for purchased equipment based on building and country codes, at an agreed upon fee.

It is also noted that movable equipment (i.e. non-fixed or caster mount) is exempt from seismic design requirements according to ASCE 7-16, Chapter 13, section 1.4. Although these units are exempt from the seismic design requirements of ASCE 7, it should be noted that such equipment is susceptible to overturning during a seismic event. Therefore, it is the responsibility of the buyer to address seismic safety for movable equipment at the designated facility.

How to use this guide

Scope of this publication

This document covers the unpacking of Thermo Scientific™ HyPerforma™ 50 L, 100 L, 200 L, 500 L, 1,000 L, and 2,000 L Single-Use Mixers (S.U.M.s) with Touchscreen Consoles.

Document change information

A summary of the changes that have been made to this document are listed below.

Revision	Date	Section	Change made	Author
A	10/2018	--	Initial release	E. Hale
B	08/2018	Warnings, safety, and warranty information	Updated warning symbols and added “tipping hazard” warning	C. Jones
B	08/2018	--	Reformatted according to current style guide	C. Jones

Questions about this publication

If you have any questions or concerns about the content of this publication, please contact **technicaldocumentation@thermofisher.com** and your Thermo Fisher Scientific sales team.

Related publications

Other publications about the S.U.M. with Touchscreen Console are listed below.

Publication	Doc. number
Thermo Scientific HyPerforma Single-Use Mixer (S.U.M.) with Touchscreen Console User’s Guide	DOC0042
Thermo Scientific BioProcess Container Unpacking and Inspection Guide	DOC0021

1

Unpacking 50–1,000 L S.U.M.s

1.1 Required tools, materials, and resources

The following tools, materials, and resources must be available prior to unpacking your 50 L, 100 L, 200 L, 500 L, or 1,000 L S.U.M.:

- Carpenter's blade knife, safety cutter, or similar tool
- Phillips head screwdriver (#2) or electric drill
- 8 mm (5/16 in.) Allen wrench
- 4 mm (5/32 in.) Allen wrench (if optional pump shelves have been ordered)
- Container for storing loose parts
- Two people

1.2 Recommended space

Before beginning to unpack your S.U.M., ensure that there is adequate space available—up to twice the length of the crate door—to unpack and assemble the unit. This will allow the unit to easily roll down the length of the ramp with room for assembly.

1.3 Overview

Figure 1.1 displays the interior of a 500 L S.U.M. shipping crate.

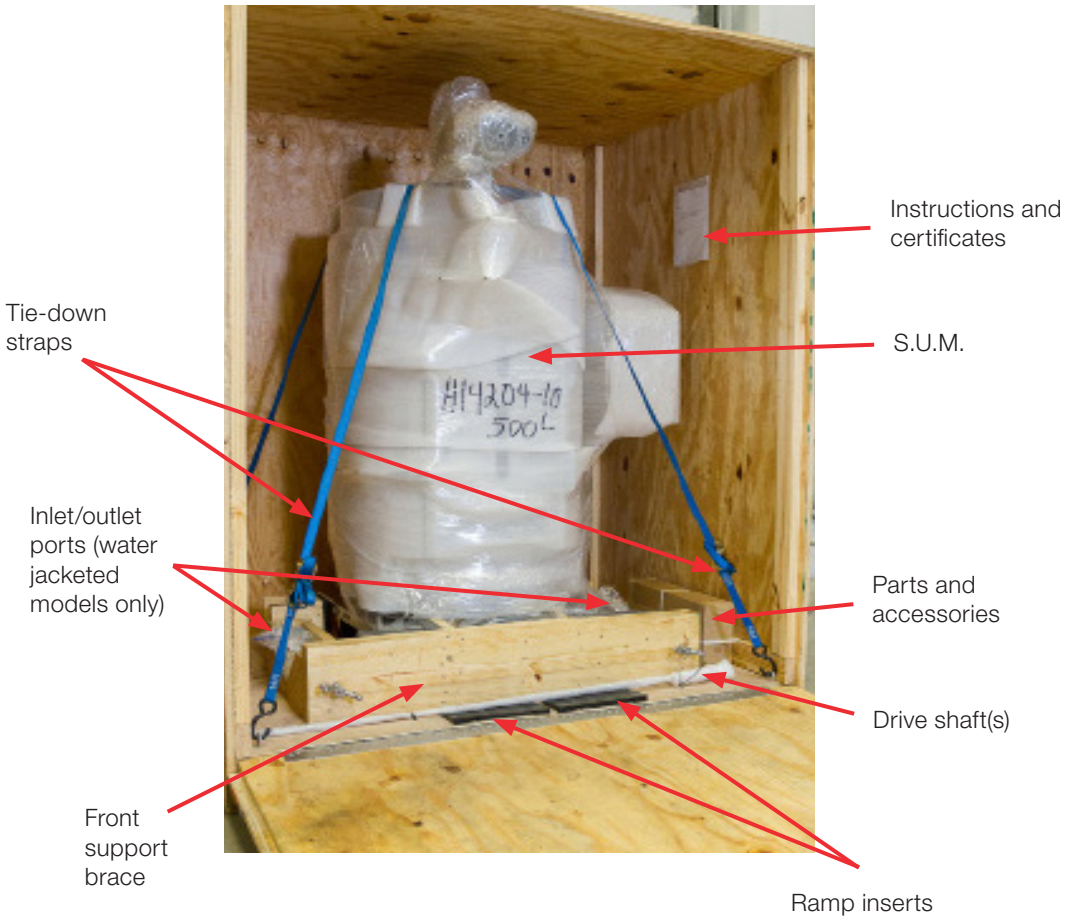

Figure 1.1. Interior of a 500 L S.U.M. crate.

Notes:

- Contents may be configured inside the crate differently than pictured, depending on the S.U.M. unit's size and options selected.
- Drive shafts may either be secured at the base of the crate (as shown in Figure 1.1), or may be secured in an upright position in the front corner of the crate.

1.4 Parts and accessories

Figures 1.2–1.7 show the parts and accessories that arrive in the S.U.M. crate. 50 and 100 L systems only use one-piece drive shafts. 200, 1,000, and 2,000 L systems only use two-piece drive shafts. Both drive shafts can be used for 500 L systems.

Note: Multiple communication cables will be included. Pinch clamps (optional) will also be included, if ordered. If the pump shelves and basket (optional) have been ordered, the shelves will arrive in the S.U.M. crate, and will need to be attached. The basket will be pre-attached to the S.U.M. unit.

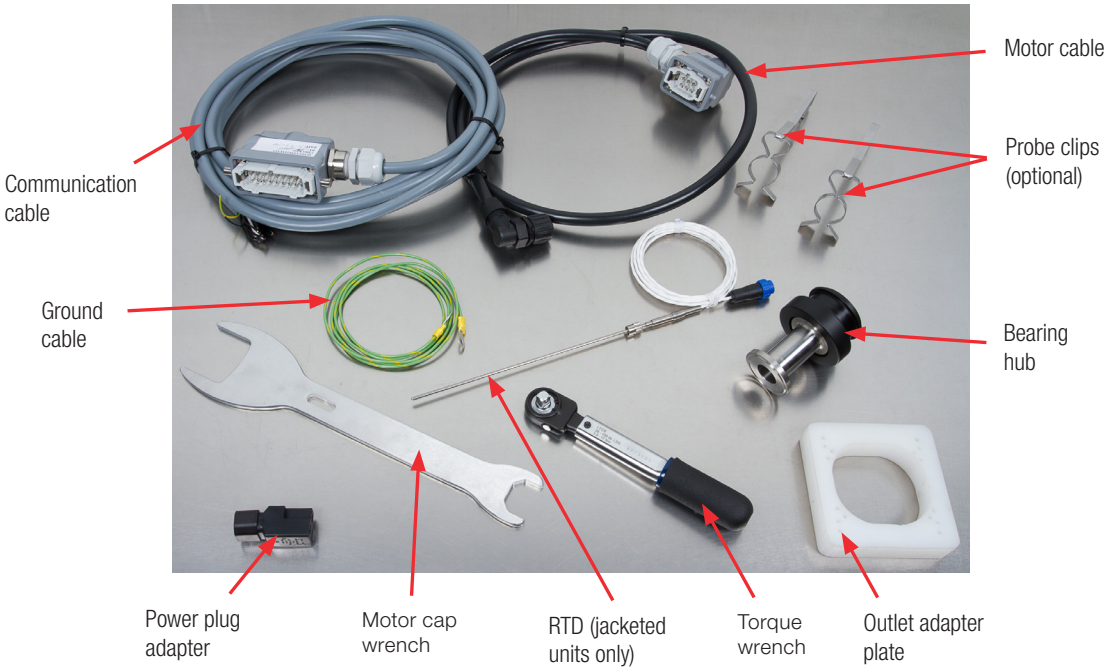

Figure 1.2. Parts and accessories for the S.U.M.

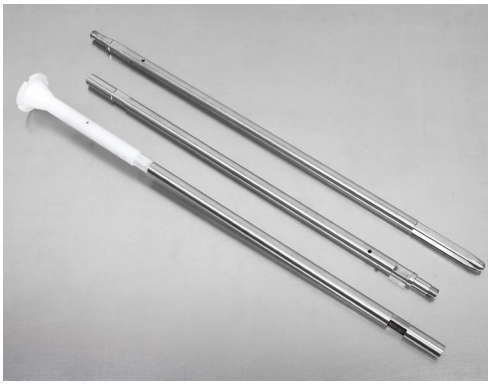

Figure 1.3. (Left) Multiple-segment drive shaft.

Figure 1.4. (Right) One-piece drive shaft.

Figure 1.5. Wrench for multiple-segment drive shafts (crate will include 2).

Figure 1.6. Inlet/outlet ports, for water jacketed models only.

Figure 1.7. Pump shelves and basket (optional); note that the shelves will not arrive attached.

1.5 Unpacking instructions

Please note that the packaging material is specially designed to ship the HyPerforma S.U.M. Please keep the packaging material for possible future use. Follow the instructions below to unpack your 50 L, 100 L, 200 L, 500 L, or 1,000 L S.U.M.

1. Ensure that the crate has not tipped during shipping. Review the tip indicator that is located on the outside wall of the crate. If there are no blue beads in the arrowhead (Figure 1.8), continue unpacking. If there are blue beads in the arrowhead, this means that the crate has been tipped, and should not be unpacked. Call your sales representative before proceeding.

Figure 1.8. Tip indicator.

2. Unlock the latches on either side of the crate door. If the latches are locked with cable ties (Figure 1.9), cut and remove the cable ties that secure each of the latches. If they are locked with screws (Figure 1.10), remove the screws using a #2 Phillips head driver (either a screwdriver or drill).

Figure 1.9. Latch secured with cable ties.

Figure 1.10. Latch secured with screws.

3. To release the latches, lift and turn each one (Figure 1.11).

Figure 1.11. Releasing a latch.

4. Use two people to carefully lower the hinged front door of the crate to create a ramp (Figures 1.12 and 1.13).

Figure 1.12. Two people preparing to lower the crate door.

Figure 1.13. Crate door lowered to create a ramp.

5. Remove the certificates and instructions from the plastic sleeve located on the inside wall of the crate (Figure 1.14).

Figure 1.14. Removing documentation.

6. Locate the ramp inserts in the crate (Figure 1.15). If the inserts are strapped down, cut or remove the straps. Remove the ramp inserts and place both at the bottom of the ramp (Figure 1.16).

Figure 1.15. Ramp inserts in the crate.

Figure 1.16. Ramp inserts at the bottom of the ramp.

7. Locate the drive shaft(s). Depending on the length of the drive shaft(s), they are either secured at the base of the crate or in an upright position in the front corner of the crate. Cut and remove any straps that are securing the drive shaft(s) (Figure 1.17). Remove the drive shaft(s) and set aside.

Figure 1.17. Cutting the straps that secure the drive shaft.

8. Use the ratchet mechanism (Figure 1.18) to loosen the tie-down straps around the S.U.M. **Note:** The ratchet mechanism may be secured with cable ties, which must be removed before use.
   - Lift the handle and pull the locking mechanism at the same time. Pull the strap through until loose.
   - Remove the hooks that secure the straps to the eye bolts, which are screwed into the bottom of the crate.
   - Repeat on the other side, and place the straps in the back of the crate so that they are out of the way.

Figure 1.18. Ratchet mechanism.

9. Locate the box(es) containing the parts and accessories (Figure 1.19). **Note:** The location and position of the box(es) may vary, depending on the size of your unit. If present, remove the straps securing the box(es). Unwrap the parts and accessories in the box(es) and set aside. Retain all packaging for further use.

Figure 1.19. Parts and accessories box located in the crate.

10. Remove the front support brace by first removing the two large wing nuts and washers from the brace (Figure 1.20). Place the wing nuts and washers in a designated container for storing loose parts. Pull both sides of the front support brace straight out at the same time to keep the bolts from binding inside the brace (Figure 1.21).

Figure 1.20. Removing wing nuts and washers.

Figure 1.21. Removing the front support brace.

11. Ensure that the S.U.M. is clear of all packaging, and can roll freely.

12. Use two people to remove the S.U.M. from the crate by rolling it slowly down the ramp (Figure 1.22).

Figure 1.22. Two people rolling the S.U.M. down the ramp.

13. Carefully remove all packaging (Figure 1.23), taking care not to scratch the S.U.M., and retain the packaging for further use. After removal, packaging can be stored in the crate (Figure 1.24).

Figure 1.23. Using a cutter to remove packaging.

Figure 1.24. Packaging stored in the crate for future use.

14. Using an 8 mm (5/16 in.) Allen wrench, tighten all bolts on the unit (Figure 1.25).

Figure 1.25. Tightening bolts on the S.U.M. unit.

15. If the pump shelves and basket (optional) are included with your system, use a 4 mm (5/32 in.) Allen wrench and four bolts per shelf to attach the shelves to the post below the basket. The S.U.M. will arrive with the basket attached.

16. Ensure that all packaging has been placed back into the crate for future use. Inspect the unit and parts to ensure that no damage occurred during shipping. If damage has occurred, or you are missing parts, contact your sales representative immediately. For more information on S.U.M. setup and use, refer to the HyPerforma S.U.M. with Touchscreen Console User's Guide.

2

Unpacking 2,000 L S.U.M.s

2.1 Required tools, materials, and resources

The following tools, materials, and resources must be available prior to unpacking your 2,000 L S.U.M.:

- Carpenter's blade knife, safety cutter, or similar tool
- Phillips head screwdriver (#2) or electric drill
- 8 mm (5/16 in.) and 6 mm (1/4 in.) Allen wrenches
- 4 mm (5/32 in.) Allen wrench (if optional pump shelves have been ordered)
- Ratchet or retention drill
- Container for storing loose parts
- Forklift, fork extensions, and a qualified forklift operator
- Two people

2.2 Recommended space

Before uncrating, ensure that there is enough space to remove both the front and back panels of the 2,000 L S.U.M. crate. Orient the crate so that the forklift can easily access the front panel.

2.3 Overview

Figures 2.1 and 2.2 display the exterior of a 2,000 L S.U.M. shipping crate. **Note:** The front panel can be distinguished from the back panel by its lack of corner covers.

Figure 2.3 displays the interior of a 2,000 L S.U.M. crate. Contents may be configured differently than pictured, depending on the S.U.M. options selected.

Figure 2.1. Front exterior panel of the 2,000 L S.U.M. crate.

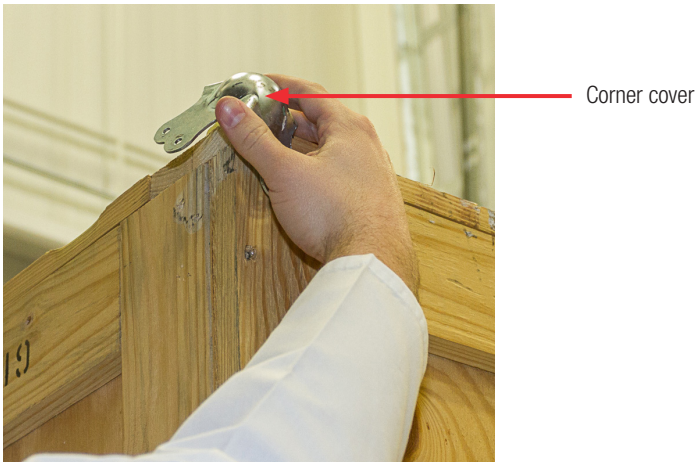

Figure 2.2. Covered corner on the back exterior panel of a 2,000 L S.U.M. crate.

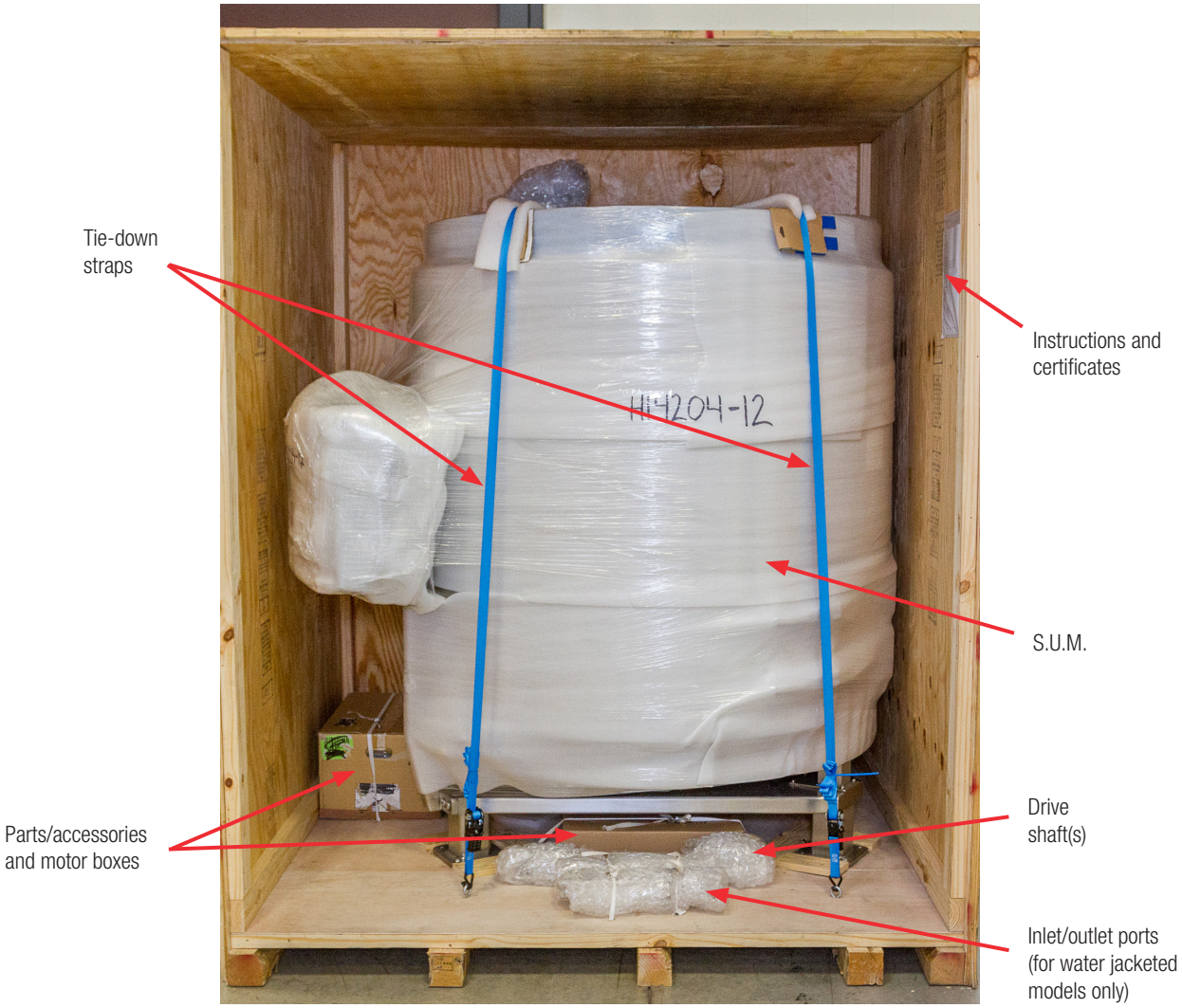

Figure 2.3. Interior of a 2,000 L S.U.M. crate.

2.4 Parts and accessories

Figures 2.4–2.8 on the following page show the parts and accessories that arrive in the 2,000 L S.U.M. crate. 2,000 L systems only use two-piece drive shafts.

Note: Multiple communication cables will be included. Pinch clamps (optional) will also be included, if ordered. If the pump shelves and basket (optional) have been ordered, the shelves will arrive in the S.U.M. crate, and will need to be attached. The basket will be pre-attached to the S.U.M. unit.

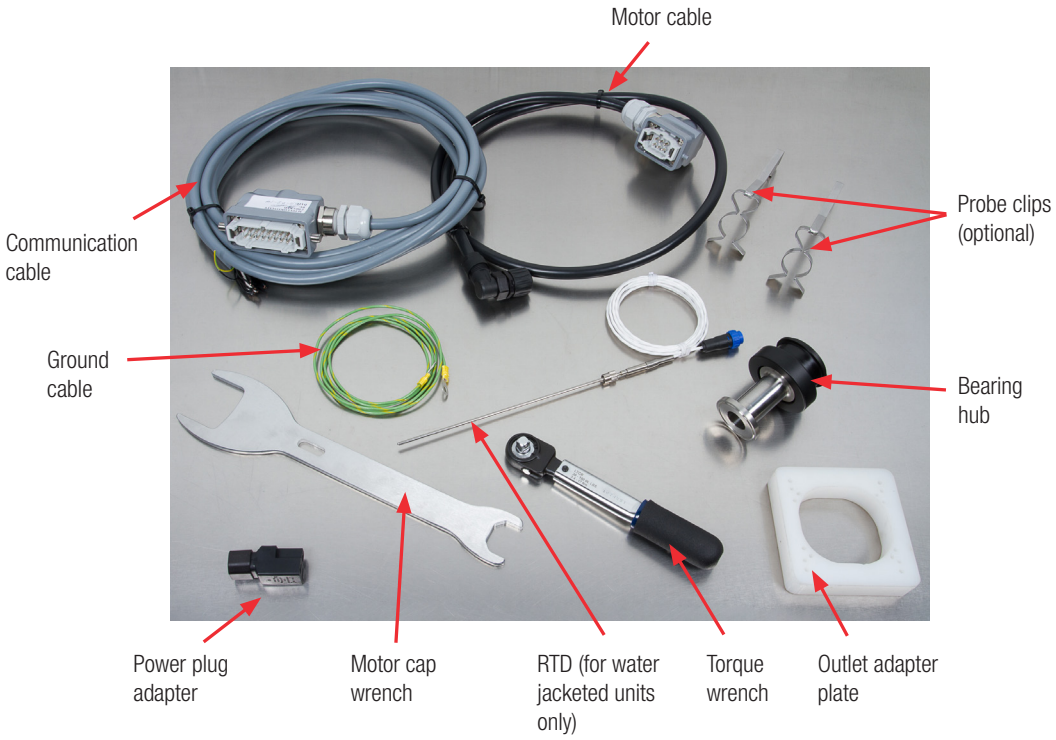

Figure 2.4. Parts and accessories for the S.U.M.

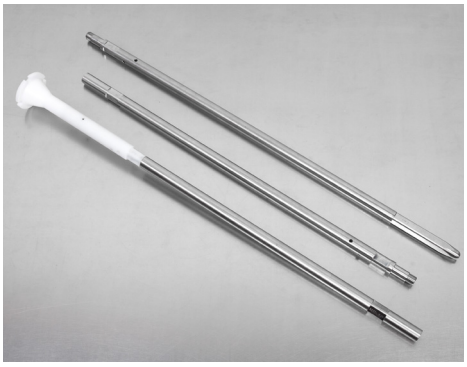

Figure 2.5. Multiple-segment drive shaft.

Figure 2.7. Inlet/outlet ports, for water jacketed models only.

Figure 2.6. Wrench for multiple-segment drive shafts (crate will include 2).

Figure 2.8. Pump shelves and basket (optional); shelves will not arrive attached.

2.5 Unpacking instructions

Please note that the packaging material is specially designed to ship the HyPerforma S.U.M. Please keep the packaging material for possible future use. Follow the instructions below to unpack your 2,000 L S.U.M.

1. Ensure that the crate has not tipped during shipping. Review the tip indicator that is located on the outside wall of the crate. If there are no blue beads in the arrowhead (Figure 2.8), continue unpacking. If there are blue beads in the arrowhead, this means that the crate has been tipped, and should not be unpacked. Call your sales representative before proceeding.

Figure 2.9. Tip indicator.

2. Using a #2 Phillips head driver (either a screwdriver or drill), remove the screws around the perimeter of the crate panel (Figures 2.10 and 2.11). Use two people to move the front panel away from the crate, and set it aside.

Figure 2.10. Unscrewing the side of the front panel.

Figure 2.11. Unscrewing the top of the front panel.

3. Remove the certificates and instructions from the plastic sleeve on the inside wall of the S.U.M. crate (Figure 2.12).

Figure 2.12. Removing documentation from the crate.

4. Using a #2 Phillips head driver (either a screwdriver or drill), remove the screws around the perimeter of the back panel of the crate, as well as the corner covers (Figure 2.13). Use two people to move the back panel away from the crate, and set it aside (Figure 2.14).

Figure 2.13. Unscrewing a corner cover on the back panel.

Figure 2.14. Removing the back panel.

5. Cut and remove any straps that are securing the parts and accessories, motor, drive shaft(s), and optional items, such as a cable management system or Powdertainer holder (Figures 2.15 and 2.16). Set the items aside.

Figure 2.15. Removing the straps around the boxes.

Figure 2.16. Removing the straps around the drive shaft(s) and inlet/ outlet ports.

6. Use the ratchet mechanism (Figure 2.17) to loosen the tie-down straps around the S.U.M. **Note:** The ratchet mechanism may be secured with cable ties, which must be removed before use.
   - Lift the handle and pull the locking mechanism at the same time. Pull the strap through until loose.
   - Remove the hooks that secure the straps to the eye bolts, which are screwed into the bottom of the crate.
   - Repeat on the other side, and place the straps in the back of the crate so that they are out of the way.

Figure 2.17. Ratchet mechanism.

7. Remove the hex bolts that are securing the S.U.M. unit to the crate, using either a ratchet (Figure 2.18) or a retention drill (Figure 2.19).

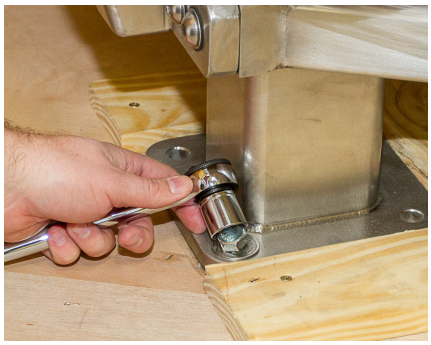

Figure 2.18. Removing the hex bolt with a ratchet.

Figure 2.19. Removing the hex bolt with a retention drill.

8. Ensure that the S.U.M. is clear of all packaging.

9. Use the following instructions to remove the S.U.M. tank from the crate.

   CAUTION: Use caution when moving the 2,000 L S.U.M. to ensure the unit does not tip or fall, which could cause injury to personnel or damage to equipment.

   - A qualified forklift operator should determine whether or not a forklift extender is required.
   - Using a spotter, the forklift operator should slowly position the forklift under the S.U.M. unit (Figure 2.20), until it is centered and all the way through to ensure two points of contact on the forks (Figure 2.21).
   - Lift the S.U.M. unit and remove it from the crate.

Figure 2.20. Figure 2.19. Positioning the forklift under the S.U.M.

Figure 2.21. Forks positioned all the way through the crate.

10. Use a safety cutter to carefully remove all foam and plastic wrap from the S.U.M. unit (Figures 2.22 and 2.23), taking care not to scratch the unit.

Figure 2.22. Cutting plastic wrap on the S.U.M.

Figure 2.23. Cutting and removing foam from the S.U.M.

11. Locate the motor box. Remove the packaging around the motor (Figure 2.24). Retain the packaging for future use.

Figure 2.24. Removing packaging from the motor.

12. Locate the motor mount on the S.U.M. tank (Figure 2.25). Align the motor with the mount (Figure 2.26). After they have been properly aligned, set the motor onto the mount.

Figure 2.25. Motor mount.

Figure 2.26. Aligning the motor with the motor mount.

13. Ensure that the motor cap cover has all four bolts (Figure 2.27) before aligning it with the motor on the motor mount. Hand-tighten the bolts (Figure 2.28), and then use a 6 mm (1/4 in.) Allen wrench to finish tightening them.

Figure 2.27. Placing the motor cap cover and bolts onto the motor and mount.

Figure 2.28. Hand-tightening the bolts into the motor and mount.

14. Check that all bolts on the S.U.M. have been secured. Prior to use, check that all bolts are secure (using appropriately-sized Allen wrenches), and have not loosened during shipment.

15. Place all packaging, straps, and fasteners back into the crate for future use.

16. If the pump shelves and basket (optional) are included with your system, use a 4 mm (5/32 in.) Allen wrench and four bolts per shelf to attach the shelves to the stationary post below the basket. The S.U.M. will arrive with the basket attached.

17. Inspect the S.U.M. and its parts to ensure that no damage has occurred during shipping. In the case of damaged or missing parts, contact your sales representative immediately. For more information on setup, accessory assembly, and system use, refer to the HyPerforma S.U.M. with Touchscreen Console User's Guide.

thermo scientific

Find out more at **thermofisher.com/sut**

ThermoFisher SCIENTIFIC