



ARES-G2/ARES Sealed Fluid Bath Kit Installation Instructions

Parts Supplied

Table 1 Parts supplied in Sealed Fluid Bath kit, TA part number 401015.901

Description	Quantity
Sealed Fluid Bath Installation Instructions	1
Sealed Fluid Bath assembly	1
Plate PRT	1
Cup PRT	1
Cup PRT removal tool	1
Threaded collar wrench	1
Bath wrench	1
Lower fixture wrench	1
Humidity cover	1
Neoprene hosing, upper and lower	2
Bath accessory cable	1

Tools Required

- Tools supplied with Sealed Fluid Bath kit

Installation Procedure



Consult TRIOS online help for details on operation of this accessory and configuration of the Julabo circulator.



Refer to your circulator's documentation for specific filling and operating guidelines, as well as other bath fluid options for your application. Also, refer to the specific bath fluid's MSDS for guidelines regarding safe handling.

These procedures describe how to install the Sealed Fluid Bath Kit on the TA Instruments ARES-G2 or ARES Rheometers.

Prepare the Instrument



Refer to your instrument documentation for detailed procedures on removing and reassembling components.

- 1 Raise the stage to maximum height.
- 2 Remove all upper and lower test tools, and loosen the anvil tightening knob on the motor anvil.
- 3 Turn off the motor:
 - If using the ARES-G2, turn off the motor from the Instrument Control panel on the touch screen or in TRIOS software.
 - If using the ARES, turn off the motor from the Instrument Control panel in Orchestrator software.
- 4 Power off the instrument.
- 5 Thoroughly inspect the test tool mounting surfaces (i.e., the transducer anvil and the motor anvil) and clean off any material that may interfere with the mounting of the fluid bath. This is essential to ensure proper mechanical alignment between the bath and the instrument.

Install the Sealed Fluid Bath

The sealed fluid bath (assembly shown in [Figure 1](#) below) mounts onto the motor using a threaded collar. The motor anvil knob is used to fasten the rotating shaft of the fluid bath to the instrument, and the threaded collar secures it to the motor housing.

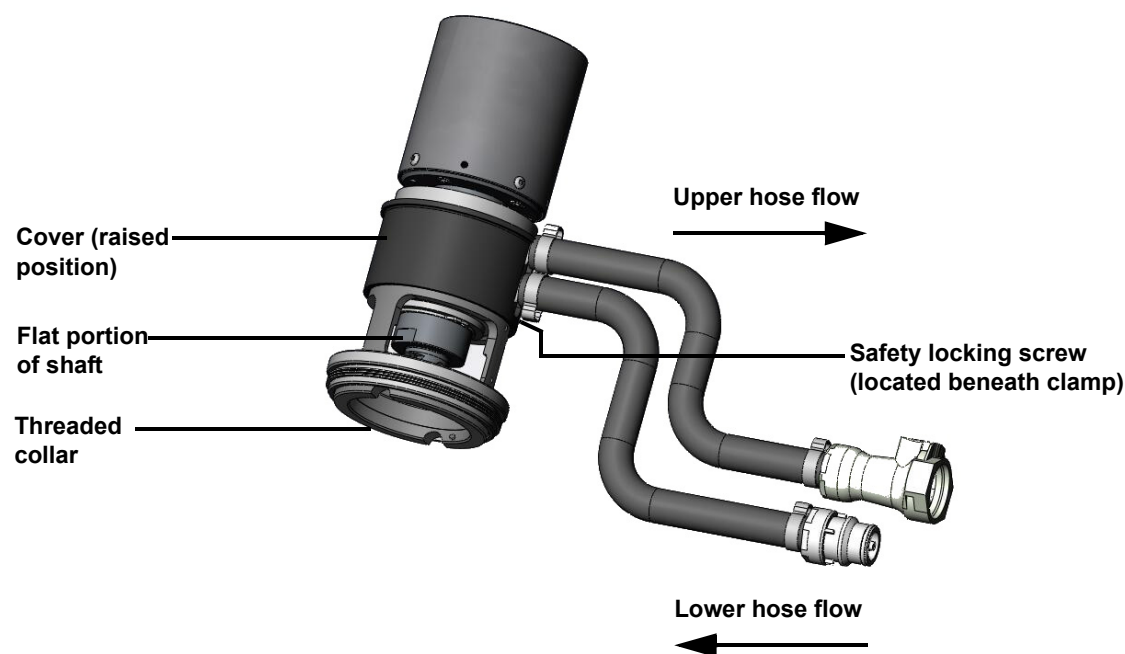


Figure 1 Sealed Fluid Bath (lower portion)

The two hoses shown in [Figure 1](#) supply fluid between the sealed fluid bath and the fluid source (typically a computer-controlled circulator).

Follow these instructions to install the Sealed Fluid Bath. Refer to [Figure 2](#) for an illustrated parts and assembly breakdown.

- 1 Place the two pins on the threaded collar spanner wrench (provided in kit) into two of the holes machined into the collar. Rotate the wrench counterclockwise to remove the protective plastic base.
- 2 Remove the safety locking screw (located beneath the lower hose clamp) from the fluid bath cover. Save this screw, as it will be reinstalled at the end of this installation procedure.
- 3 Slide the fluid bath cover fully upward.
- 4 Position the fluid bath so that the bath hoses are facing right as you face the instrument.

- 5 Rotate the fluid bath shaft to align the flat portion of the shaft with the flat portion of the motor anvil (both flats should be facing toward the right as you face the instrument).

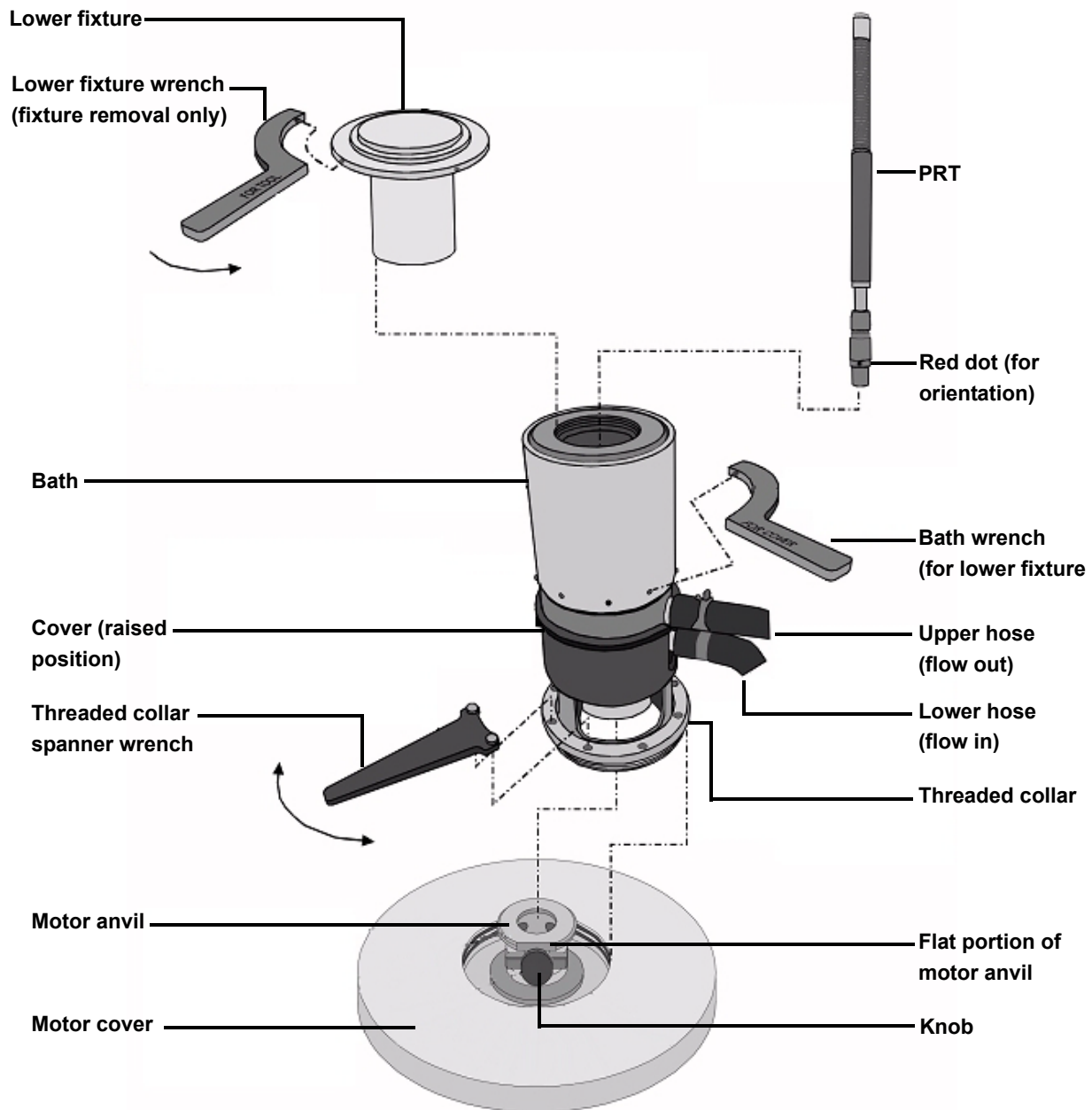


Figure 2 Overview of Sealed Fluid Bath assembly and installation

- 6 Slowly lower the bath onto the motor housing:
- Align the flat portion of the fluid bath's shaft with the flat portion of the motor anvil.
 - Push down on the top of the bath to seat the bath's shaft into the motor anvil.

- c Seat the pin machined into the bottom of the fluid bath (see [Figure 3](#)) into the notch in the motor housing (the pin and notch should be located toward the rear of the instrument). It may be necessary to rotate the bath back and forth until the pin falls into the notch.

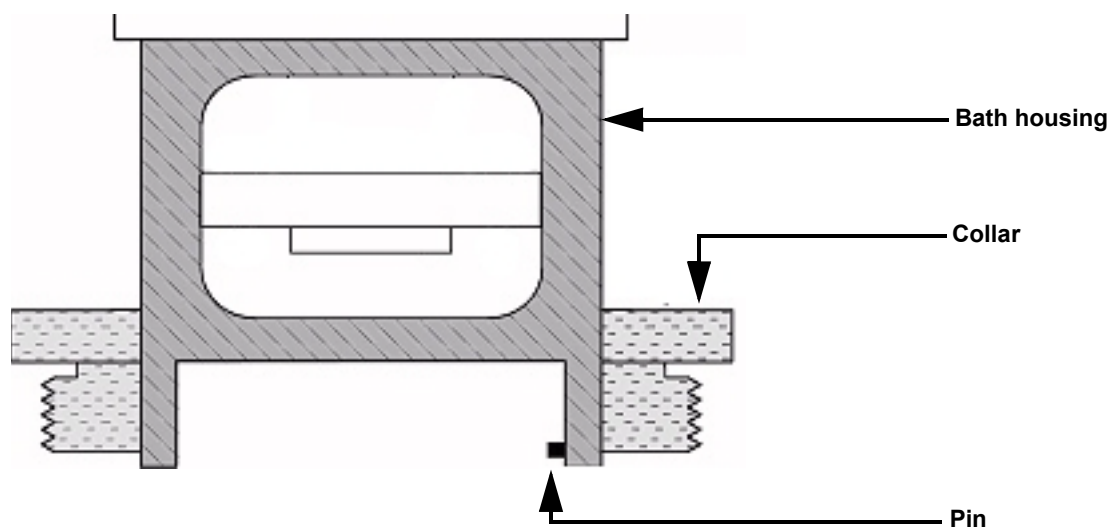


Figure 3 Fluid bath alignment pin configuration (cross section shown for visibility)

- d Verify that the threaded collar rests in the threaded portion of the motor housing. Tighten the threaded collar by hand, then place the two pins on the spanner wrench into two of the holes machined into the threaded collar. Rotate the wrench clockwise to tighten. Do not overtighten the collar.
 - e Tighten the motor anvil knob by hand, making sure that the flats of the motor anvil and bath shaft are in alignment. Continue to tighten using the flat end of the spanner wrench. Do not overtighten the anvil knob.
- 7 Insert the appropriate PRT into the bath, making sure to align the red dot on the PRT with the flat portion of the motor anvil. Refer to [Figure 2](#) for correct orientation. Rotate the PRT until it drops securely into the bath housing. The instrument will begin to read temperature.
 - 8 Install the appropriate lower geometry into the bath by placing it over the PRT, then install the upper geometry into the transducer.
 - 9 With the fluid bath cover in the down position, reinstall the previously-removed safety locking screw.

Connect the Circulator

Follow these steps to connect the circulator to the Sealed Fluid Bath:

- 1 Position the circulator on the floor below the ARES or ARES-G2 work area, allowing yourself ample room to work.
- 2 Power off both the instrument and the circulator before making any connections.
- 3 Obtain the supplied connectors from the kit (upper hose and lower Neoprene hose).
- 4 Connect the lower hose to the outward flow port of the circulator.
- 5 Connect the upper hose to the inward flow port of the circulator.
- 6 Ensure that all hoses are installed completely onto their respective hose barbs and that the hose clamps are tight.

- 7 Connect one end of the communication/serial cable (supplied with the circulator) to the circulator **RS232** connector, and connect the other end of the cable to the Test Station Signal Panel **COM1** connector in the case of the ARES-G2, or the **CIRCULATOR** connector in the case of the ARES.
- 8 If installing the bath onto an ARES-G2, connect the bath accessory cable (shown in [Figure 4](#)) into the lower accessory connector (shown in [Figure 5](#)) on the left side of the ARES-G2.

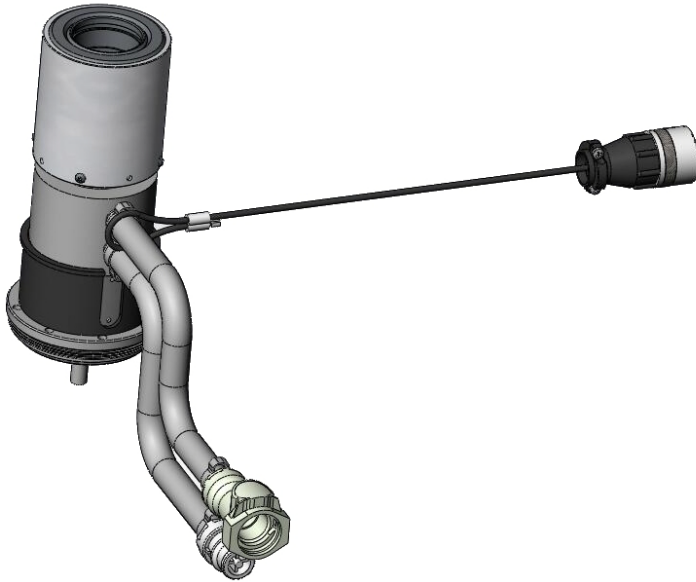


Figure 4 Sealed Fluid Bath with bath accessory cable

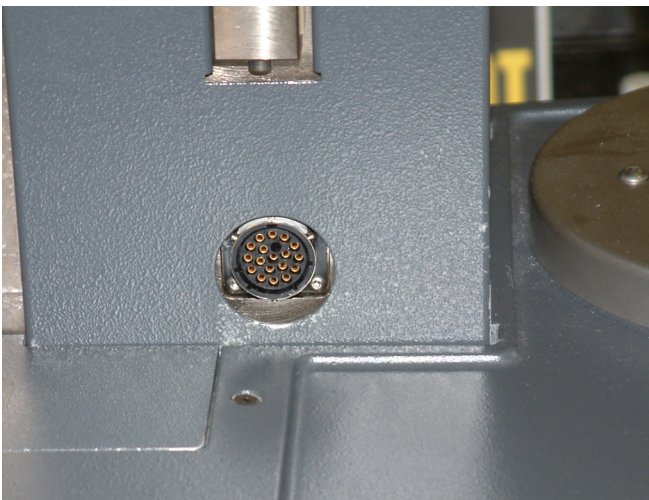


Figure 5 Lower accessory connector on ARES-G2

Fill the Circulator

Fill the circulator with fluid using the table below as a guide. The fluid to use depends on the type of circulator in use and the desired operating range of the circulator.

The Julabo FP35-MC circulator requires about 2 liters of fluid, and should be filled to within 20 mm from the top.

Because of the construction of the Sealed Fluid Bath, the seals are very delicate. Use an ethylene glycol / water solution with a minimum ethylene glycol concentration of 50%. Alternatively, use Julabo® Thermal H10S. **Using pure water is not recommended**, as it will significantly reduce the lifetime of the seals. In the event of a seal failure, the bath must be returned to TA Instruments for service and repair.

Table 2 Circulator Operating Ranges

Desired Operating Range of Circulator*	Fluid
–5 °C to +100 °C	50% Ethylene glycol / 50% water
+40 °C to +110 °C	100% Ethylene glycol
–20 °C to +150 °C	Julabo Thermal H10S

*Bath temperature range is slightly less.

Restore the Instrument to Operating Condition

- 1 Power on the instrument.
- 2 Turn on the motor:
 - If using the ARES-G2, turn on the motor from the Instrument Control panel on the touch screen or in TRIOS software.
 - If using the ARES, turn on the motor from the Instrument Control panel in Orchestrator software.
- 3 Configure the Julabo circulator for communication with ARES (consult TRIOS Help for details).
- 4 Establish communication between the Julabo circulator and the instrument.
 - If using the ARES-G2, ensure that the circulator is in Remote mode (the display will read **rOFF**). Communication will automatically be established with the circulator; no additional action is required. From within TRIOS, perform the Bath Friction Check.
 - If using the ARES, select the **Sealed Bath** in the Orchestrator Control Panel, then press **On/Off** on the Julabo circulator itself to establish communication.