

Thermo Scientific

# **HAAKE Viscotester iQ**

## **Instruction Manual**

Addendum for pressure cell stand

(Original instructions)

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Release history:

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## Preface

This manual is an addendum to Thermo Scientific™ HAAKE™ Viscotester™ iQ Instruction Manual and *only* describes the specific properties of the HAAKE Viscotester iQ lab pressure cell stand version. For all other properties of the HAAKE Viscotester iQ refer to the HAAKE Viscotester iQ Instruction Manual.

For a detailed description of how to operate the touch screen user interface, the optional RheoApp software and the specific parts of the Thermo Scientific HAAKE RheoWin™ software, see the HAAKE Viscotester iQ Reference Manual.

## About this document

This manual is part of the product. It must be kept in the immediate vicinity of the instrument and accessible to all personnel at all times.

This manual provides important information on how to use the instrument.

This manual must be read completely and the contents fully understood before working with the instrument is started.

Strict compliance with all safety instructions and operating guidelines in this manual is the prerequisite for safe and proper operation of the instrument.

If this operating manual contains documentation of another supplier (in an appendix), Thermo Fisher Scientific does not ensure the correctness of their content, individual statements or technical data.

## Related documentation

In addition to this manual, Thermo Fisher Scientific provides the following documents for use with the HAAKE Viscotester iQ:

- HAAKE Viscotester iQ Instruction Manual.
- HAAKE Viscotester iQ Reference Manual.
- HAAKE RheoWin Installation and 21 CFR Part 11 Configuration User Guide.
- HAAKE RheoWin Instruction Manual.

All manuals are available (in PDF format) on the HAAKE Viscotester iQ RheoApp USB flash drive, which is part of the delivery of any HAAKE Viscotester iQ and Viscotester iQ Air rheometer.

The following documents are provided for use with the HAAKE Viscotester iQ with Pressure Cell stand:

- HAAKE Pressure Cell Dxxx/yyy Instruction Manual.
- Instruction Manual UTM Box.

## Safety and special notices

Make sure that you follow the caution and special notices presented in this manual. Caution and special notices appear in boxes; those concerning safety or possible damage also have corresponding caution symbols.

This manual uses the following types of caution and special notices.



**DANGER** is used to indicate a hazardous situation which, if not avoided, *will* result in death or serious injury. Each DANGER notice is accompanied by an appropriate DANGER symbol.



**WARNING** is used to indicate a hazardous situation which, if not avoided, *could* result in death or serious injury. Each WARNING notice is accompanied by an appropriate WARNING symbol.



**CAUTION** is used to indicate a hazardous situation which, if not avoided, could result in minor or moderate injury and/or damage to property, or the environment. Each CAUTION notice is accompanied by an appropriate CAUTION symbol.

**IMPORTANT** Highlights information necessary to prevent damage to software, loss of data, or invalid test results; or may contain information that is critical for optimal performance of the system.







**Note** Highlights information of general interest.

The following table lists the caution-specific symbols used in this manual together with the involved danger and remaining risks.

**Table 1.** Caution-specific symbols and their meanings (Sheet 1 of 2)

Symbol	Meaning
	<b>General warning:</b> Consult the instructions in the manual
	<b>Chemical hazard:</b> Wear gloves and other protective equipment, as appropriate, when handling toxic, carcinogenic, mutagenic, corrosive, or irritant chemicals. Use approved containers and proper procedures to dispose of waste oil and when handling wetted parts of the instrument.

**Table 1.** Caution-specific symbols and their meanings (Sheet 2 of 2)

Symbol	Meaning
	<b>Hot surface:</b> Before touching any TM-xx-x module allow heated components to cool down.
	<b>Pinch point:</b> The instrument head must be manually moved up and down as part of a measurement. There is a risk that body parts may be pinched between the instrument head and the instrument base or a temperature module. Keep away any body parts (specifically hands) from these parts when they are moving.
	<b>Risk of electric shock:</b> This instrument uses voltages that can cause electric shock and/or personal injury. Before servicing, shut down the instrument and disconnect it from line power.
	<b>Risk of eye injury:</b> Splattering chemicals or airborne particles may cause eye injury. Wear safety glasses when handling chemicals or servicing the instrument.
	<b>Risk of hand injuries:</b> Splattering chemicals or touching hot parts may cause hand injuries. Always wear protective gloves when using/operating the instrument.
	<b>Risk of foot injuries:</b> Always wear safety shoes.

## Safety Notes and Warnings

### IMPORTANT

- The HAAKE Viscotester iQ corresponds to the relevant safety regulations.
- The operator is solely responsible for the correct handling and proper usage of the instrument.
- The manufacturer is not liable for damages that arise due to non-intended use.



## WARNING

- In case of a technical failure or an accident the instrument must be put out of service immediately by switching it off using the mains power switch *and* pulling the mains plug.
- A continuous acoustic signal and an instructional message on the instruments touchscreen may indicate an unforeseen safety issue - follow the instructional message *and* switch off the mains power switch *and* pull the mains plug immediately.
- An unforeseen safety issue can for example be the uncontrolled heating of a temperature module due to a hardware failure.
- Explosive, combustible and toxic materials must not be measured with the HAAKE Viscotester iQ.



## CAUTION

- The instrument must be operated in such a way that it will not endanger anyone.
- The instrument must not be operated unattended.
- The instrument may not be operated if there are any doubts regarding safe operation because of its outer appearance (e.g. damages).
- The instrument and its external power supply *must* be positioned such that the socket for the mains power cable (on the external power supply), and thus the mains power cable itself, can be reached for at any moment.
- A safe operation of the instrument cannot be guaranteed if the user does not comply with this instruction manual.
- This instruction manual must be readily available at all times for all operators.
- Every operator must read this instruction manual before working with the instrument.
- This instrument is registered for one-man operation.
- The operator must have an uninterrupted view of the instrument and its surroundings.
- The rheometer must be fully visible from the PC control stand (if applicable).
- The ventilation grid at the rear side of the instrument head must not be obstructed.
- This instrument and all of its accessories must only be used for the applications it was designed for.



**CAUTION**

- The instrument must be switched off before connecting or disconnecting any cables. This is to avoid electrostatic charging resulting in a defect of the electronic circuit boards.
- To disconnect the instrument from the mains, first switch the instrument off *and* then unplug the power supplies mains cable from the wall socket.
- Do not operate the instrument with wet or oily hands.
- Do not immerse the instrument in water or expose it to spray water.
- Do not bend connection and/or mains cable, do not subject cables to stress or high temperatures (higher than 70 °C).
- Check all cables visually at regular intervals.
- Do not operate the instrument with damaged cables. When replacing a damaged cable, make sure to use an equivalent cable, see [Table 2 on page 4](#) for order numbers.
- Only operate the instrument using the power supply which was part of the original delivery (Type: GST220A24-R7B).

**CAUTION**

- Repairs, alterations or any work involving opening up the instrument should only be carried out by specialized personnel. Considerable damage can be caused by incorrect repair work. The Thermo Fisher Scientific-service department is at your disposal for any repairs you may require.
- After a repair the instruments safety must be inspected thoroughly by qualified personnel.
- Have the instrument serviced by specialists at regular intervals.
- The pressure of the air supply for the HAAKE Viscotester iQ Air must not exceed 3 bar. A higher pressure will damage the air bearing permanently.

**CAUTION**

- Depending on the temperature module used, temperatures from -20 °C up to 200 °C may be reached. This can result in parts of the Viscotester iQ cooling down to or heating up to such an extent, that even when taking the cooling and insulation into account, serious burns can result if they come into contact with the skin.
- Thermo Fisher Scientific recommends shielding the HAAKE Viscotester iQ when operating at very low or high temperatures and handling it only with high or low temperature proof gloves and safety glasses.

**CAUTION**

- Do not clean the instrument using solvents (fire danger!), a damp cloth applied with a household cleaning substance is often sufficient.
- Consult Thermo Fisher Scientific or your local if there is any doubt about the compatibility of decontamination or cleaning agents.



### CAUTION

- The HAAKE Viscotester iQ is designed for the determination of the rheological behavior of fluid and semi-solid materials. These materials must *not* be measured with the HAAKE Viscotester iQ in case the operator (or other people) can be injured or the device can be damaged. Especially explosive, combustible and toxic materials must *not* be measured with the HAAKE Viscotester iQ.
- Suitable personal protective gear, consisting of lab coat, protective eye wear and safety gloves, must be worn at all times when working with the instrument.
- At higher angular velocities of the rotor sample material may be thrown out of the gap due to centrifugal forces. Wearing personal protective gear, see above, is recommended.

## Contacting us

Please always first address any questions to the local Thermo Fisher Scientific office, see the following web-page for a list of addresses,

<https://www.rheowin.com/contact>

or the general agent or partner company who delivered your instrument.

## International Helpdesk

You can also contact our international helpdesk directly. In that case we kindly ask you to use the contact form to which a link is provided below.

### ❖ To contact the international helpdesk

Contact form <https://tfs-3.secure.force.com/materialcharacterization/>

## Quality assurance

Dear customer,

Thermo Fisher Scientific Karlsruhe has implemented a Quality Management System certified according to ISO 9001 ff. This guarantees the presence of organizational structures which are necessary to ensure that our products are developed, manufactured and managed according to our customers expectations. Internal and external audits are carried out on a regular basis to ensure that our QMS is fully functional. We also check our products during the manufacturing process to certify that they are produced according to the specifications as well as to monitor correct functioning and to confirm that they are safe. The results are recorded for future reference.

The “Final Test” label on the product is a sign that this instrument has fulfilled all requirements at the time of final manufacturing.

Please inform us if, despite our precautionary measures, you should find any product defects. You can thus help us to avoid such faults in future.

## Warranty and service

For the warranty and any potential additional warranty, the user must ensure that the device is serviced by a Thermo Fisher Scientific approved service engineer at the following intervals:

The maintenance is required after approx. 2000 operating hours, at the latest, however, twelve months after the initial operation or the last maintenance, respectively.

Two thousand operating hours are achieved:

- At an operating period of eight hours daily (five days a week) about once a year.
- At an operating period of more than eight to sixteen hours daily about every six months.
- At an operating period of more than sixteen hours daily about every three months.

We recommend to have the maintenance carried out by Thermo Fisher Scientific or by staff authorised by Thermo Fisher Scientific as special knowledge and tools are required.

The maintenance and calibration work carried out has to be recorded by certificates in conformity with ISO 9001 ff.



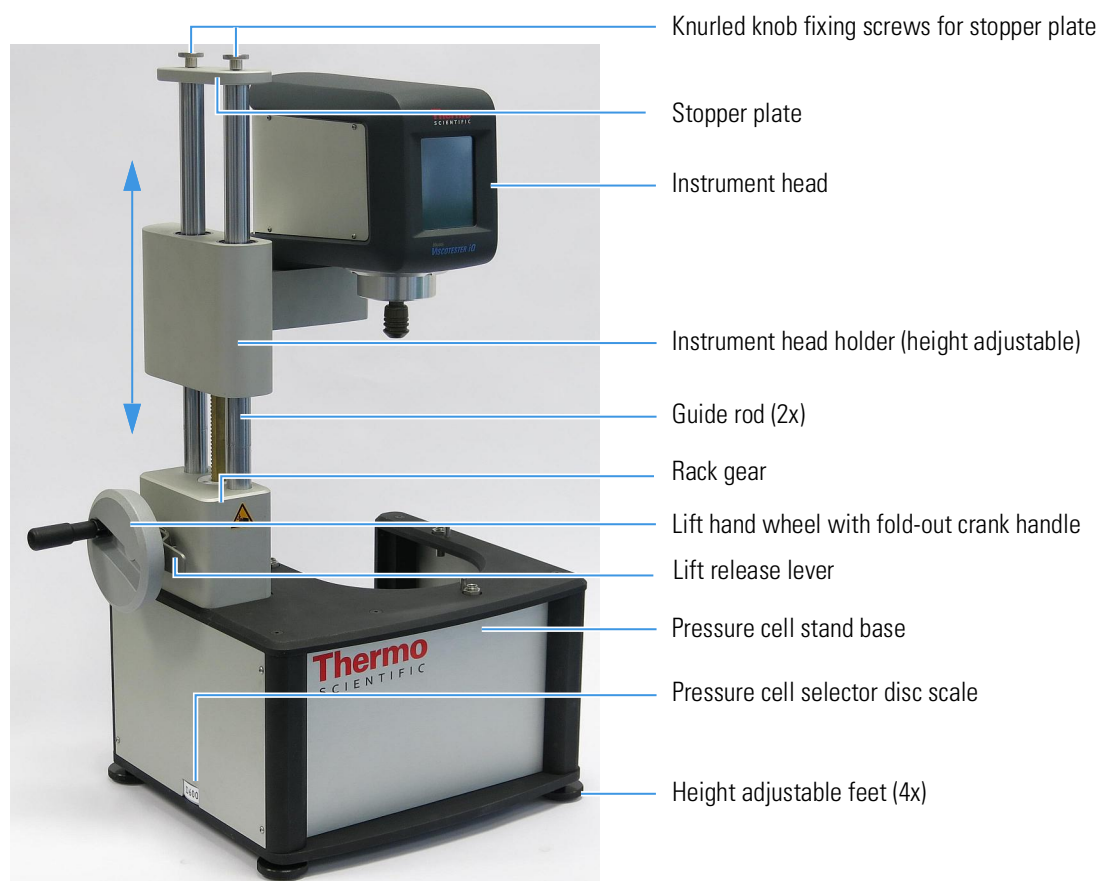
## Functional Elements

The HAAKE Viscotester iQ pressure cell stand version consists of the instrument head and an especially designed pressure cell stand base. The instrument head contains the touchscreen panel, the rheometer drive motor and the control electronics. The pressure cell stand base contains the lift mechanics and functions as the holder for a MARS temperature module.

### Pressure cell stand

The pressure cell stand consists of the box shaped stand base, the guide rods, a lift mechanism and the instrument head holder (see [Figure 1](#)). The stand base contains the lift mechanics and functions as the holder for a TM-EL-C48 or a TM-LI-C48 temperature module (which were originally designed for the HAAKE MARS rheometer system). The stand is equipped with four height adjustable support feet for leveling the instrument.

**Figure 1.** Viscotester iQ instrument head with pressure cell stand



The hand wheel with its fold-out crank handle and release lever allows for a quick up and down movement of the instrument head identical to that of the standard Viscotester iQ.

## Instrument head

Apart from the instrument head holder (see [Figure 1](#)), this special version of the Viscotester iQ instrument head is identical to the standard instrument head (with the attached instrument head column) that is mounted on the instrument base.

For a description of the functional elements of the instrument head see the HAAKE Viscotester iQ Instruction Manual.

**Note** The instrument head holder can *not* be removed from the instrument head. This means that the pressure cell stand version of the Viscotester iQ instrument head can *not* be used on the instrument base and vice versa.

# Installation

This chapter describes how to unpack the instrument and setup the instrument for the first time. It also describes how to mount and dismount temperature modules. Detailed information and how to set up a network connection for the communication between the HAAKE Viscotester iQ and a computer can be found in the HAAKE Viscotester iQ, Instruction Manual, Addendum for Pressure Cell Stand Reference Manual.

**IMPORTANT** Read this chapter completely before starting the installation.

## Installation Requirements / Ambient Conditions

This paragraph lists the specific requirements to the laboratory environment and other ambient conditions that must be fulfilled for operating the HAAKE Viscotester iQ pressure cell version *only*.

### Space Requirements

For good working conditions an area with a width of 1.5 m and a depth of 0.6 m on a (laboratory) bench is needed. The (laboratory) bench must be sufficiently stable to support the instrument weight, up to 50 kg for Viscotester iQ with pressure cell stand, and must be level.

The bench surface must be easy to clean. When a circulator is used for temperature control it must be placed on the floor (under the bench) or on a separate bench to avoid mechanical interference when running sensitive experiments.

### Unpacking

Before unpacking the instrument always carefully check the outside of the packaging for damage. In case of any visible damage make a photo of the damaged area and take a note. Damage to the packaging may, but must not, indicate damage to the instrument.

### Transportation damage

When the instrument is damaged proceed as described below:

- Compile a damage report.
- Notify the carrier (i.e. forwarding merchant, railroad company, post office, etc.).

Before returning the delivery in case of problems:

- Always first inform the dealer or the manufacturer (small problems can often be dealt with locally).

## Contents of the delivery

Check the contents of the delivery carefully. The standard content of the delivery of the HAAKE Viscotester iQ with pressure cell stand (without any accessories) is shown in [Table 2](#).

The HAAKE Viscotester iQ pressure cell stand version is not available in a version with air-bearing drive motor.

**Table 2.** HAAKE Viscotester iQ stand for pressure cells (262-0052) contents of delivery

Item	Part number
HAAKE Viscotester iQ (instrument head + instrument head holder)	006-4004 <sup>a</sup>
Stand for pressure cells	006-2768
Power supply, 220 W, 24 V	006-1545
Mains cable, 230 V (EU)	000-0724
or	
Mains cable, 115 V (US)	000-0725
or	
Mains cable, 230 V (UK)	082-2548
or	
Mains cable, 250 V (CN)	082-2546
Ethernet TCP/IP network cable	082-2526
HAAKE Viscotester iQ, Instruction Manual (English)	006-2021
and	
HAAKE Viscotester iQ, Reference Manual (English)	006-2452
Spirit level	002-4696
Screen protector film (1 piece + 1 piece applied to the screen)	006-2373
Knurled screw M6 (3 pcs.)	006-1490
Adapter cable	222-2555
HAAKE Viscotester iQ RheoApp flash drive	098-5065

<sup>a</sup> This part number can be found on the type plate on the right hand side of the instrument head (see the VTiQ manual).

## Setting up the rheometer

This section describes how to setup the HAAKE Viscotester iQ pressure cell stand version.

### ❖ To setup the HAAKE Viscotester iQ with pressure cell stand

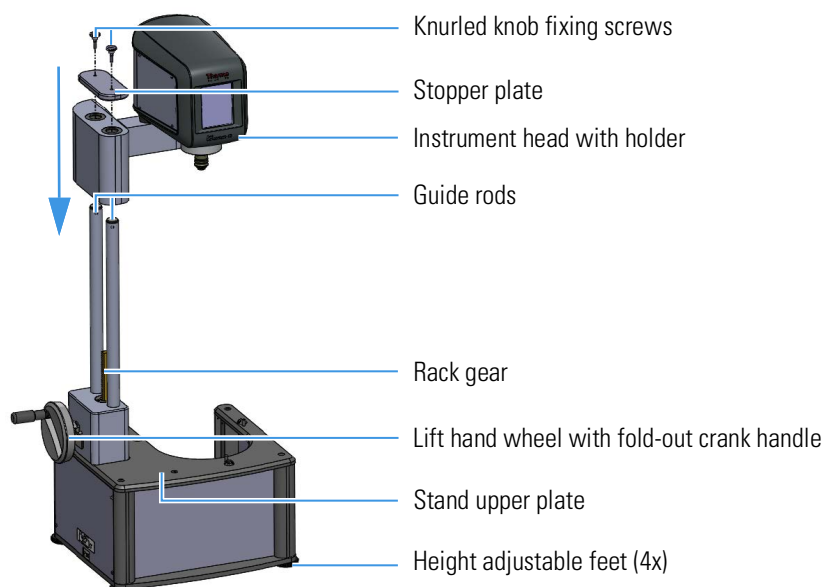
1. Place the stand on a suitable (laboratory) bench, see [“Installation Requirements / Ambient Conditions.”](#)

**IMPORTANT** The instrument must be positioned such that the operating switch on the right side of the instrument head can be reached for at any moment.



- Place the spirit level on the pressure cell stand upper plate and level the stand by adjusting the four height adjustable feet (see [Figure 2](#)).

**Figure 2.** Mounting the instrument head with holder to the guide rods



- Slide the instrument head holder downward on the two guide rods until a stop (see [Figure 2](#)).



**IMPORTANT** Slide the instrument holder downward on the guide rods very carefully. Take care not to damage the ball bearings in the instrument holder.

- Mount the stopper plate on the guide rods and fix it with the two knurled knob fixing screws.
- Place the power supply on the bench.

**IMPORTANT** The power supply must be positioned such that it

- can be reached for at any moment, to be able to separate it from the mains wall socket (by pulling the mains plug from the mains socket).
- is protected for coming into contact with liquids, this includes the pouring of fluid onto it.

- Make sure that the operating switch on the right side of the instrument head is in the *off* position.
- Connect the power supply cable plug to the power supply socket on the back of the instrument head.
- Connect one end of the power supply mains cable to the power supply.
- Connect the other end of the power supply cable into a wall socket.

**IMPORTANT** Only use a mains cable that is suitable for the required voltage and the power consumption of the instrument. The mains cable supplied with the instrument fulfills these requirements.

The (axial) measurement position of the instrument head, that is the height of the instrument head relative to the stand upper plate, is different for each of the three different pressure cell models (that is the D100, the D75 or D170 or D400 and the D600) which can be used with the pressure cell stand.

The measurement position defines the relative (axial) positioning of the inner and outer magnet of the magnetic coupling between the rheometer drive shaft and the rotor in the pressure cell. The correct relative axial positioning is essential for a correct operation of the pressure cell, as a consequence before mounting the TM-xx-C to the pressure cell stand and mounting the pressure cell to TM-xx-C the correct measurement position must be set.

**Note** For setting the measurement position:

- There must be no TM-xx-C temperature module mounted on the stand.
- The instrument head must be in the upper position.



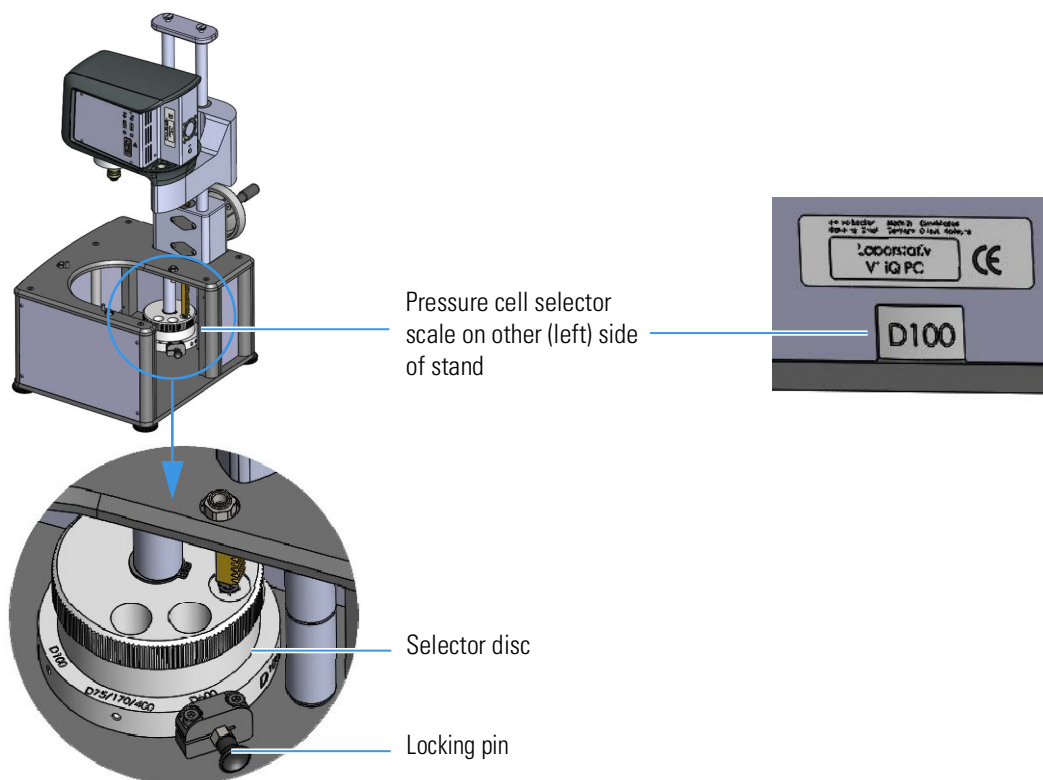
**CAUTION** Risk of injury

- When setting the measurement position, the lift must be locked.
- Do not touch the gear rack when operating the lift hand wheel.

### ❖ to set the measurement position for a specific pressure cell model

1. Place the stand in such a position that the selector disc/locking pin unit inside the stand is easily accessible (see [Figure 3](#)).
2. Unlock the locking pin (by it pulling radially outward).

**Figure 3.** Setting the measuring position



3. Select the correct measurement position by rotating the selector disc.

The name of the selected pressure cell model must face the locking pin.

The selected pressure cell model name is also displayed on the selector disc scale on the left hand side of the stand (just below the type plate) see [Figure 3](#).

4. Release the locking pin to fix the selector disc.

## Installing a temperature module

The HAAKE Viscotester iQ with pressure cell stand is designed to be used with a TM-LI-C48 (MARS version) or a TM-EL-C48 (MARS version) plus UTMTC control box in combination with a pressure cell and using RheoWin, only. The following sections describe how to install, mount/dismount and connect these modules.

**Note** The HAAKE Viscotester iQ with pressure cell stand must not be used with the TM-PE-C (222-2020), TM-LI-C32 (222-2019), TM-LIC48 (222-2173), TM-PE-P (222-2234), TM-LI-P (222-) or the universal container holder (222-2049).

Depending on which temperature module is used, the hoses and the electrical cable(s) of the temperature module must be connected to the HAAKE Viscotester iQ and the UTMTC control box and/or a circulator before the module can be used.



**CAUTION** Severe skin burns can be caused by touching a hot area of a temperature module.

**IMPORTANT** Make sure that the HAAKE Viscotester iQ and, if applicable, the UTMTC control box have been switched off before you connect or disconnect the cables.

The TM-LI-C48 and TM-EL-C48 are delivered with the hoses and hose connectors not yet mounted. To be able to use the temperature modules, the hoses and hose connectors must be mounted to the temperature modules, see the VTiQ manual.

## Installing the temperature module TM-EL-C48 (MARS version)

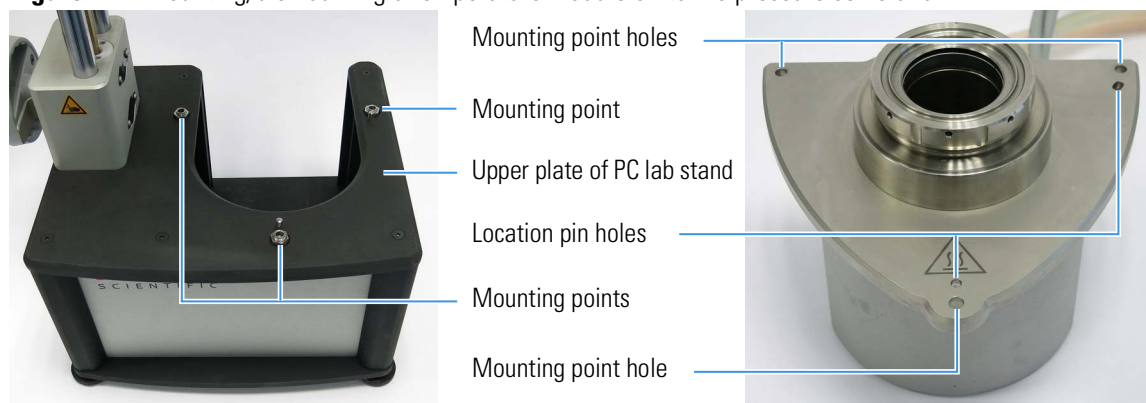
Since the TM-EL-C48 (MARS version) can only be controlled by the UTMTC control box which can only be controlled by RheoWin, installing the Viscotester iQ + TM-EL-C48 (MARS version) + pressure cell setup requires to mount the TM-ELC48 in the Viscotester iQ with pressure cell stand, connecting the TM-EL-C48 with the UTMTC box, connecting the UTMTC box with a circulator or a compressed air supply, connecting the pressure cell temperature sensor with the Viscotester iQ and connecting the Viscotester iQ with a PC running RheoWin. See [Figure 5](#) and [Figure 6](#) for a schematic overview of the setup.

See the separate instruction manual for the UTMTC box (part number 006-1785) for detailed information on the UTMTC box.

## 2 Installation

### Installing a temperature module

**Figure 4.** Mounting/dismounting a temperature module on to the pressure cell stand



❖ **To mount a TM-EL-C 48 (MARS version) temperature module:**

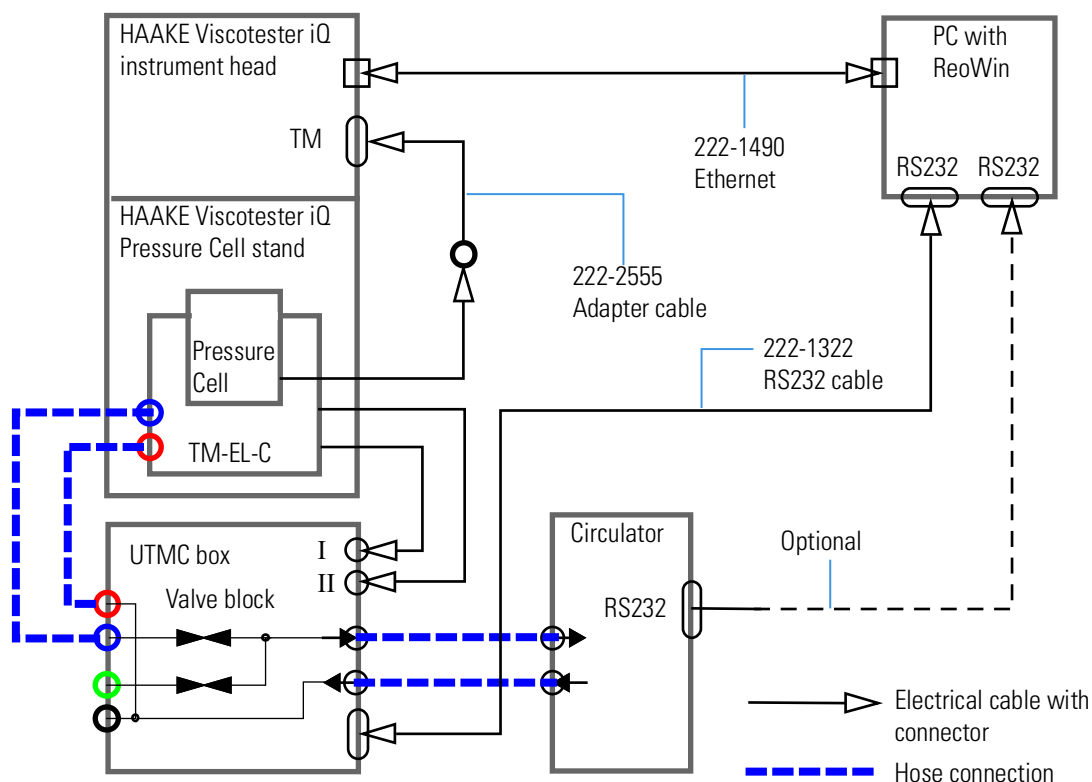
1. Check that the rotor of the magnetic coupling is not fitted to the drive motor shaft.
2. Check that the instrument head is in its highest position.
3. Place the temperature module in/on the upper plate of the PC lab stand.
4. Make sure that the module is correctly placed on its three mounting points at the three corners of the triangular shaped plate and that the two location pins fit into the corresponding location pin holes (see [Figure 4](#)) of the plate. The location pins are situated close to the front and right mounting point.
5. Bolt the module down to the upper plate of the PC lab stand by inserting the three knurled thumb screws in the mounting point (holes) and tightening them.
6. Connect the cables and hoses according to [Figure 5](#) in case a circulator is used for cooling:
  - a. Connect the two TM-EL-C48 hoses to the red and blue marked quick connectors on the UMTC valve block.
  - b. Connect the two TM-EL-C48 electrical cable to the UTMC connector sockets I and II.
  - c. Connect the R232 cable (25-pin D-sub male to 9-pin D-sub female, part number 222-1322) between the UTMC box and the PC.
  - d. Connect the circulator hoses to the UMTC valve block.
- or
7. Connect the cables and hoses according to [Figure 6](#) in case compressed air is used for cooling:
  - a. Connect one TM-EL-C48 hose to the blue marked quick connectors on the UMTC valve block.
  - b. Connect a blow-off muffler to the other TM-EL-C48 hose connector.
  - c. Connect the two TM-EL-C48 electrical cable to the UTMC connector sockets I and II.
  - d. Connect the R232 cable (25-pin D-sub male to 9-pin D-sub female, part number 222-1322) between the UTMC box and the PC.
  - e. Connect the compressed air hose to the UMTC valve block.

For more information, see the separate instruction manual for the UTMC box (part number 006-1785).

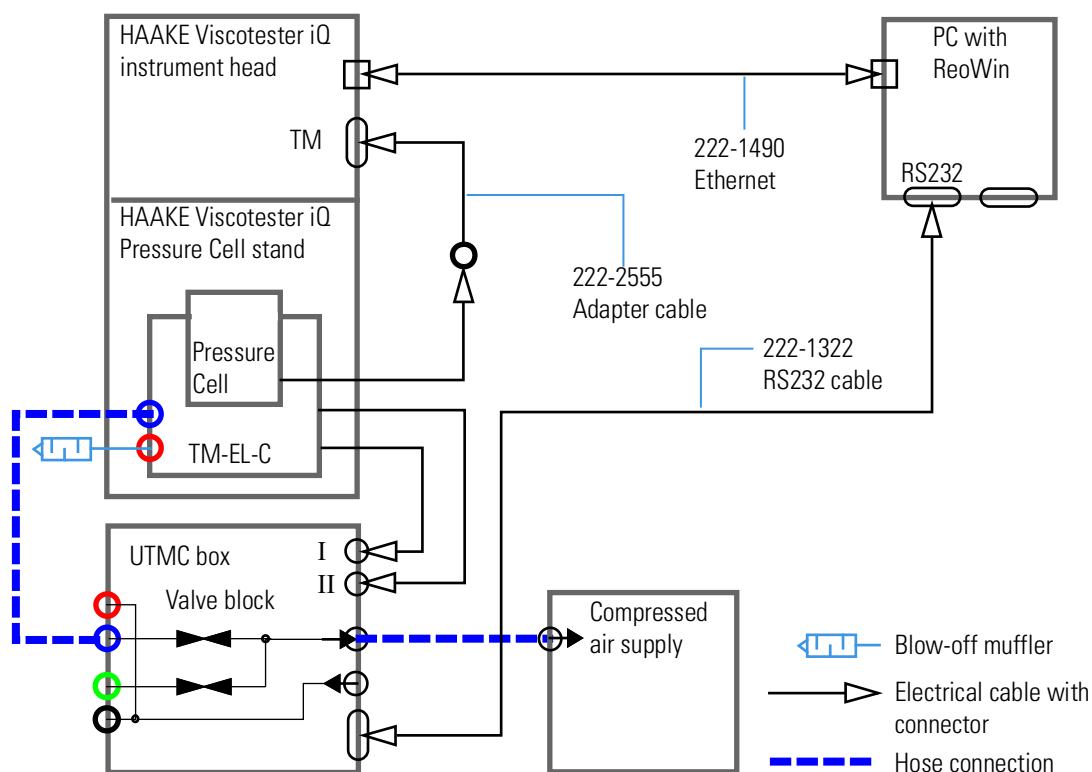
## Installing a temperature module

8. Check the horizontal orientation of the module using the spirit level.

**Figure 5.** Schematic connection diagram for TM-EL-C with liquid cooling



**Figure 6.** Schematic connection diagram for TM-EL-C with air cooling



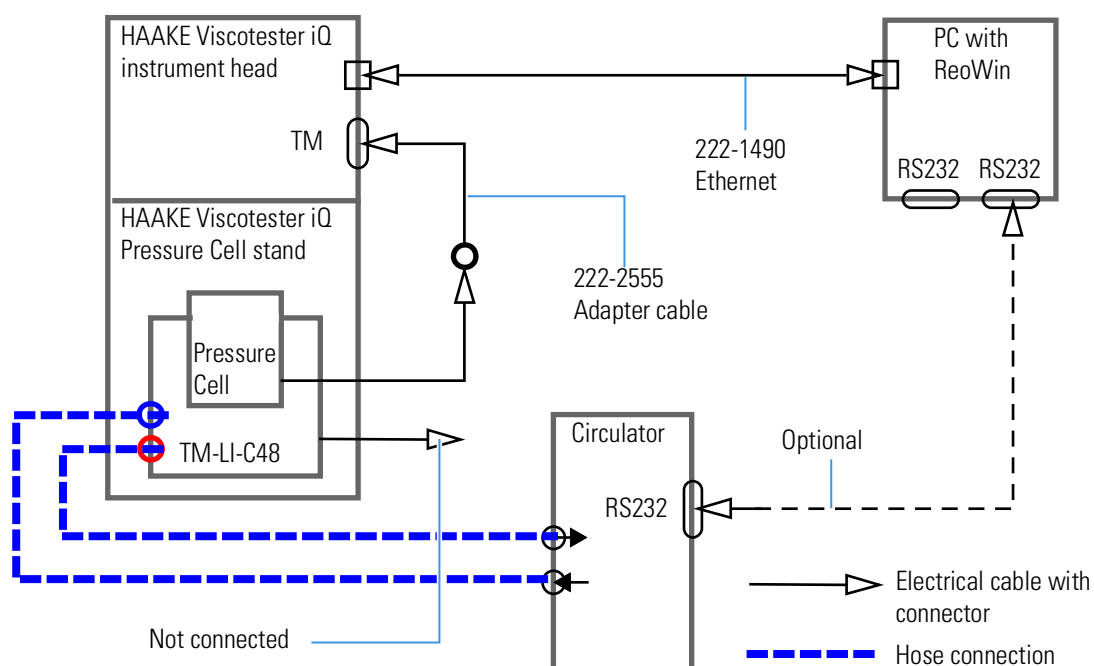
**Note** When using compressed air as the cooling media, the output port of the TM-EL-C should NOT be connected to the valve block. Instead a blow-off muffler should be connected directly to the output port of the temperature module.

### Installing the temperature module TM-LI-C48 (MARS version)

Installing the Viscotester iQ + TM-LI-C48 (MARS version) + pressure cell setup requires to mount the TM-LI-C48 in the Viscotester iQ with pressure cell stand, connecting the TM-LI-C48 with a circulator, connecting the pressure cell temperature sensor with the Viscotester iQ and connecting the Viscotester iQ with a PC running RheoWin. For the TM-LI-C48 the UMTC control box is not needed. RheoWin is needed to run measurements with the pressure cell and to control the circulator if desired. See [Figure 7](#) for a schematic overview of this setup.

#### ❖ To mount a TM-LI-C 48 (MARS version) temperature module

1. Check that the rotor of the magnetic coupling is not fitted to the drive motor shaft.
2. Check that the instrument head is in its highest position.
3. Place the temperature module in/on the upper plate of the PC lab stand.
4. Make sure that the module is correctly placed on its three mounting points at the three corners of the triangular shaped plate and that the two location pins fit into the corresponding location pin holes (see [Figure 4](#)) of the plate. The location pins are situated close to the front and right mounting point.
5. Bolt the module down to the upper plate of the PC lab stand by inserting the three knurled thumb screws in the mounting point (holes) and tightening them (see [Figure 4](#)).
6. Connect the cables and hoses according to [Figure 7](#).
7. Check the horizontal orientation of the module using the spirit level.

**Figure 7.** Schematic connection diagram for TM-LI-C48 MARS version

## Installation of a pressure cell

See the separate instruction manual that comes with the pressure cell for instruction on how to install that specific pressure cell model.





## Operation

This chapter describes how to operate the pressure cell stand *only*. That is, how to use the lift and how to mount a pressure cell.

Information on how to setup the instrument and on how to install temperature modules can be found in [Chapter 2, “Installation.”](#)

**IMPORTANT** Read this chapter and the corresponding chapter in HAAKE Viscotester iQ Instruction Manual the before operating the instrument for the first time.

### Instrument head

For information on how to switch the instrument on and how to operate the touchscreen user interface see the corresponding chapter in the HAAKE Viscotester iQ Instruction Manual.

The operation of the touchscreen control panel user interface is described in detail in the HAAKE Viscotester iQ Reference Manual. The operation of the and RheoWin PC software is also described in detail in the HAAKE Viscotester iQ Reference Manual.



#### WARNING

- The instrument must not be operated unattended.
- In case of a technical failure or an accident the instrument must be put out of service immediately by switching it off using the mains power switch *and* pulling the mains plug.
- A continuous acoustic signal and an instructional message on the instruments touchscreen may indicate an unforeseen safety issue - follow the instructional message *and* switch off the mains power switch *and* pull the mains plug immediately.
- An unforeseen safety issue can for example be the uncontrolled heating of a temperature module due to a hardware failure.
- Explosive, combustible and toxic materials must not be measured with the HAAKE Viscotester iQ.

### Pressure cell stand

The pressure cell stand is especially designed to use the HAAKE Viscotester iQ (instrument head) for measurements using a pressure cell (D75, D100, D170, D400, D600) in a TM-EL-C48 (MARS version) with an UMTC box or in a TM-LI-C48 (MARS version).

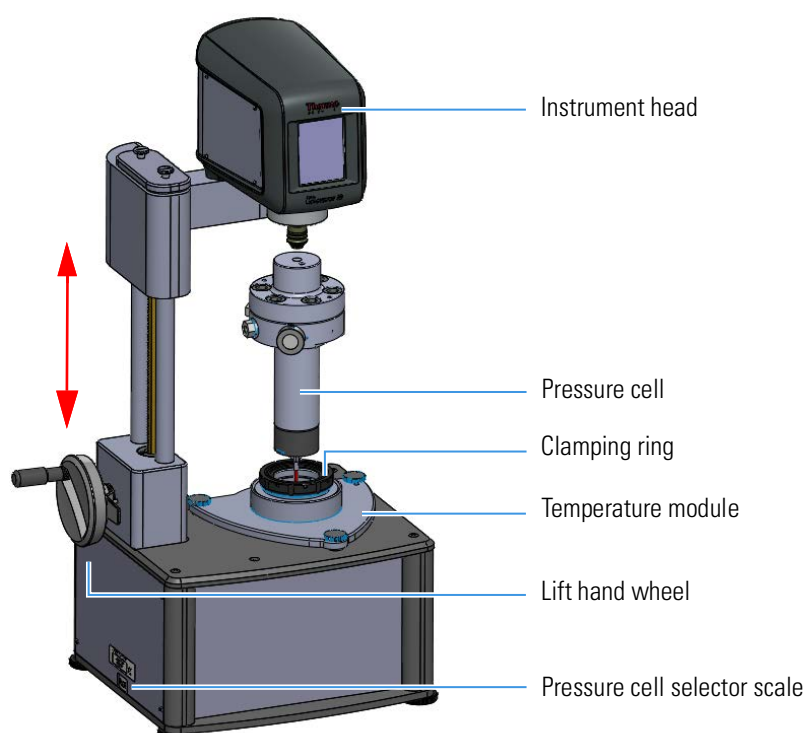
An especially designed set of trolley cases is available to transport the complete measurement setup from one location to another.



#### CAUTION

- The pressure cell stand is designed for use with a pressure cell only, that means that it is not designed to be used with any other measuring geometry. All safety provisions that are included in the instrument by design, rely on the correct installation and operation of the instrument.
- Do not reach in to the lift gear rack when operating the lift.
- The hand or a finger of a person or any other object in the lift travel area may be pinched between the upper and lower part of the measuring geometry.

**Figure 8.** Mounting a pressure cell



#### ❖ To mount a pressure cell in a TM-xx-C48 in the pressure cell lab stand

1. Prepare the pressure cell with the sample and the rotor according to the instructions in the pressure cell manual.
2. Raise the instrument head in the top position using the lift hand wheel.

The pressure cell stand is equipped with the same lift mechanism as the standard Viscotester iQ, see the VTiQ manual on how to operate the lift.

3. Check the measurement position of the used pressure cell.

The selected pressure cell name is visible from the pressure cell selector scale on the left side of the pressure cell stand.

If needed, see [“to set the measurement position for a specific pressure cell model”](#) on [page 6](#) for setting the measurement position of the pressure cell.

4. Insert the pressure cell into the temperature module, thereby guiding the pressure cell temperature sensor cable through the TM-xx-C48 to the back of the instrument.
5. Clamp the pressure cell by turning the clamping ring counterclockwise.
6. Connect the temperature sensor cable of the pressure cell to the socket on the back of the Viscotester iQ instrument head using the adapter cable 222-2555, see [Figure 5 on page 9](#) or [Figure 6 on page 9](#) or [Figure 7 on page 11](#).
7. Mount the rotor of the magnetic coupling to the Viscotester iQ drive motor shaft.
8. Lower the instrument head in the measurement position (see the VTiQ manual).



## Temperature Modules

This chapter describes the TM-xx-x temperature modules that are available for the HAAKE Viscotester iQ.

### Temperature module TM-EL-C48 (MARS version)

The temperature module TM-EL-C48 (MARS version) and its working principle and performance is described in detail in the separate UTM box manual (part number 006-1785).

### Temperature module TM-LI-C48 (MARS version)

The temperature module TM-LI-C48 (MARS version) and its working principle and performance is described in detail in the separate UTM box manual (part number 006-1785).



## Technical Specifications

This appendix contains the technical specifications which are specific for the HAAKE Viscotester iQ, Instruction Manual, Addendum for Pressure Cell Stand pressure cell stand version *only*. For all other technical specifications see the HAAKE Viscotester iQ Instruction Manual.

For more detailed information contact your local sales representative or Thermo Scientific directly.

[Table 3](#) lists the mechanical properties of the special pressure cell (PC) stand for the HAAKE Viscotester iQ instrument head.

**Table 3.** HAAKE Viscotester iQ pressure cell (PC) stand version mechanical properties

Property	Value	
Height (with instrument head in upper position)	720 mm	28.4 inch
Height (with instrument head in measurement position)	630 mm	24.8 inch
Width (of base unit)	320 mm	12.6 inch
Width (with lift hand wheel crank handle folded out)	420 mm	16.5 inch
Depth	290 mm	11.4 inch
Weight of PC stand + instrument head	16.5 kg	36.4 lbs



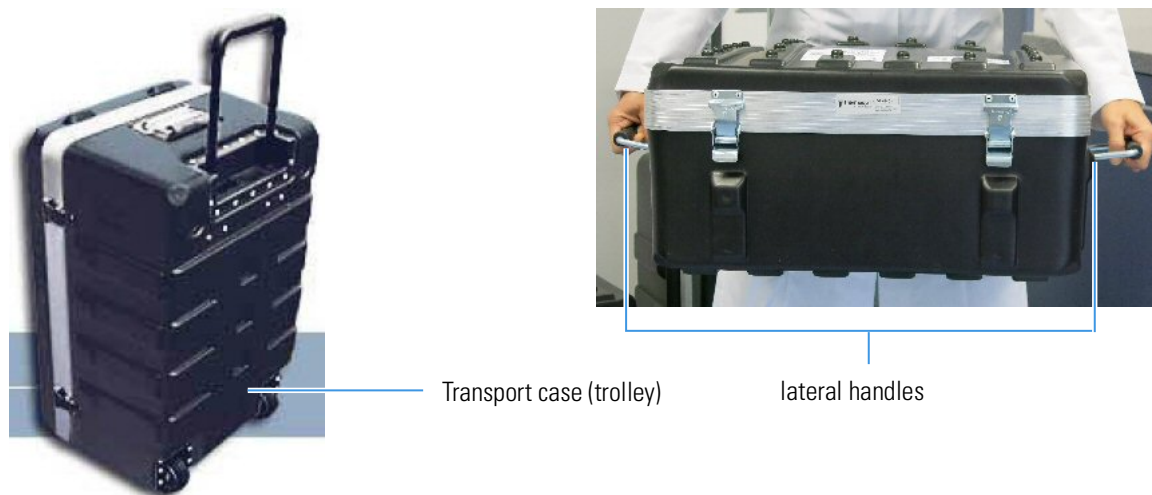


## Transport cases for pressure cell stand setup

This appendix contains information on the set of (four) trolleys like transport cases that were especially configured for the HAAKEViscotester iQ with pressure cell stand setup.

All cases can be used as trolley cases and can be lifted using the two lateral handles, see [Figure 9](#).

**Figure 9.** Transport cases



### Transport case for pressure cell stand

The transport case for the pressure cell stand is equipped with pockets for the various parts of the instrument, see [Figure 10](#).

The dimensions of this transport case are (W x D x H) 700 mm x 450 mm x 410 mm. The weight of the empty transport case is 8.4 kg, the maximum weight of the completely packed transport case is 19.9 kg.

**Figure 10.** Transport case for pressure cell stand



Stand with rack gear

## Transport case for instrument head and temperature module

The transport case for the instrument head and temperature module is equipped with pockets for the various parts of the instrument head, the temperature module and some smaller parts of the pressure cell stand.

The dimensions of this transport case are (W x D x H) 560 mm x 480 mm x 260 mm. The weight of the empty transport case is 4.6 kg, the maximum weight of the completely packed transport case is 19 kg.

**Figure 11.** Transport case for instrument head, temperature module and accessories



Knurled screws for temperature module

Measuring head with holder

Temperature module

Stopper top

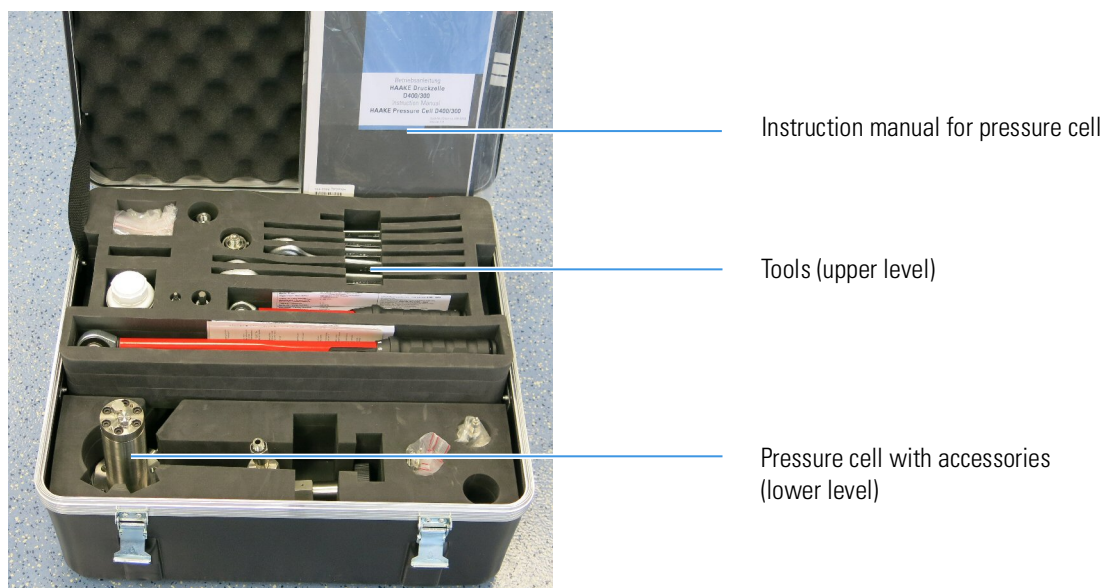
Knurled screws for stopper top

## Transport case for pressure cell

The transport case for the pressure cell and the tools for the pressure cell is equipped with pockets for all of the various parts (see [Figure 12](#)).

The dimensions of this transport case are (W x D x H) 560 mm x 480 mm x 260 mm. The total weight the transport case of the pressure cell is 19.6 kg.

**Figure 12.** Transport case for the pressure cell and accessories



## Transport case for UTMC box

The transport case for the UTMC box is equipped with pockets for all of the various parts (see [Figure 13](#)).

The dimensions of this transport case are (W x D x H) 560 mm x 480 mm x 260 mm. The total weight the transport case of the UTMC box is 14.6 kg.

**Figure 13.** Transport case for the UTMC box





# Declaration of Conformity / Compliance

## WEEE Compliance / WEEE Konformität / Conformité DEEE

### WEEE Compliance

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2012/19/EU. It is marked with the following symbol:



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# EC Declaration of Conformity

**ThermoFisher**  
SCIENTIFIC

**EG-Konformitätserklärung**  
**EC Declaration of Conformity**  
**Déclaration CE de conformité**



075-5055

**Produktbezeichnung**  
**Product name**  
**Nom du produit**

**Identifikation**  
**Identification**  
**Identification**

HAAKE Viscotester iQ Laboratory Stand for Pressure Cells In combination with : TM-LI-C48, TM-EL-C48 D60/200, D75/300, D100/200, D100/300, D170/300, D400/300, D600/250	262-0052  222-1862, 222-1857 222-2284, 222-2076 & 222-2560, 222-2272, 222-2363, 222-2179 & 222-2499, 222-2261, 222-2075
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gilt nur für die oben aufgeführten Typen mit einer beginnenden Seriennummer

only valid for the types listed above with a starting serial number

ne s'applique qu'aux types mentionnés ci-dessus dont le numéro de série commence par

≥ 1 240019XX XXX

**Hersteller**  
**Manufacturer**  
**Fabricant**

**Thermo Electron (Karlsruhe) GmbH**  
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**76185 Karlsruhe**  
**Germany**

**Dokumentationsbevollmächtigte Person**  
**Authorised person for technical file**  
**Personne autorisée à constituer le dossier technique**

**Henry Eisenlohr**  
**Thermo Electron (Karlsruhe) GmbH**  
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**76185 Karlsruhe**  
**Germany**

**Richtlinie**  
**Directive**  
**Directive**

2006/42/EG

Maschinenrichtlinie  
Machinery directive  
Directive des machines

2014/30/EU

Richtlinie für elektromagnetische Verträglichkeit  
Electromagnetic Compatibility Directive  
Directive relative à la compatibilité électromagnétique

2011/65/EU

RoHS  
RoHS  
RoHS

D06184

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**Folgende harmonisierte Normen wurden angewandt:**

**Following harmonized standards are used:**

**On a appliqué les normes harmonisées suivantes:**

EN ISO 12100:2010	Sicherheit von Maschinen - Grundbegriffe, allgemeine Gestaltungsleitsätze Safety of machinery – basic concepts, general principles for design Sécurité des machines – Termes de base, principes généraux de conception
EN 61010-1:2010	Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel-, und Laborgeräte - allgemeine Anforderungen Safety requirements for electrical equipment for measurement, control and laboratory use - general requirements Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire – Partie 1: Prescriptions generals
EN 61010-2-010:2014	Besondere Anforderungen an Laborgeräte für das Erhitzen von Stoffen Particular requirements for laboratory equipment for the heating of materials Exigences particulières pour appareils de laboratoire utilisés pour l'échauffement des matières
EN 61326-1:2021	Elektrische Mess-, Steuer-, Regel- und Laborgeräte – EMV Anforderungen Electrical equipment for measurement, control and laboratory use – EMC requirements Matériel électrique de mesure, de commande et de laboratoire – Exigences CEM

Wir erklären in unserer ausschließlichen Verantwortung, dass das Produkt, auf das sich diese Erklärung bezieht, mit den oben genannten Normen, normativen Dokumenten und den Bestimmungen der genannten Richtlinien übereinstimmt.

We declare under our sole responsibility, that this product to which this declaration relates is in conformity with the a.m. standards or other normative documents and is following the provisions of the a.m. directives.

Nous déclarons, sous notre seule responsabilité, que le produit auquel cette déclaration fait référence est conforme aux normes susmentionnées, aux autres documents normatifs et aux dispositions des directives citées.

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Unterschrift Signature Signature Produktlinienleiter Product Line Manager Chef de ligne de produits	Ort und Datum Place and Date Lieu et date	Hersteller Manufacturer Fabricant

D06184

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China RoHS Declaration



China RoHS Declaration

Identification 标识	Product name 产品名称					Declaration ID
262-0052	HAAKE Viscotester iQ Laboratory Stand for Pressure Cells					075-5055
Part name 零件号	Toxic or Hazardous substances and elements 有毒或危险物质或元素					
	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 镉 (Cd)	Hexavalent Chromium 六价铬 (Cr <sup>6+</sup> )	Polybrominated biphenyls 多溴联苯 (PBB)	Polybrominated diphenyl ethers 多溴联苯醚 (PBDE)
Mechanics 机械类	o	o	o	o	o	o
Electronics 电子类	o	o	o	o	o	x

o: Indicates that this toxic or hazardous substance contained in all of the homogenous materials for this part is below the limit requirement in SJ/T 11363-2006

表明该产品中，无任何一种有毒或危险物含量高于限量标准 SJ/T 11363-2006

x: Indicates that this toxic or hazardous substance contained in at least one of the homogenous materials for this part is above the limit requirement in SJ/T 11363-2006

表明该产品中，至少有一种有毒或危险物含量高于限量标准 SJ/T 11363-2006







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