Discovery Hybrid Rheometer

Site Preparation Guide

Revision A Issued February 2017

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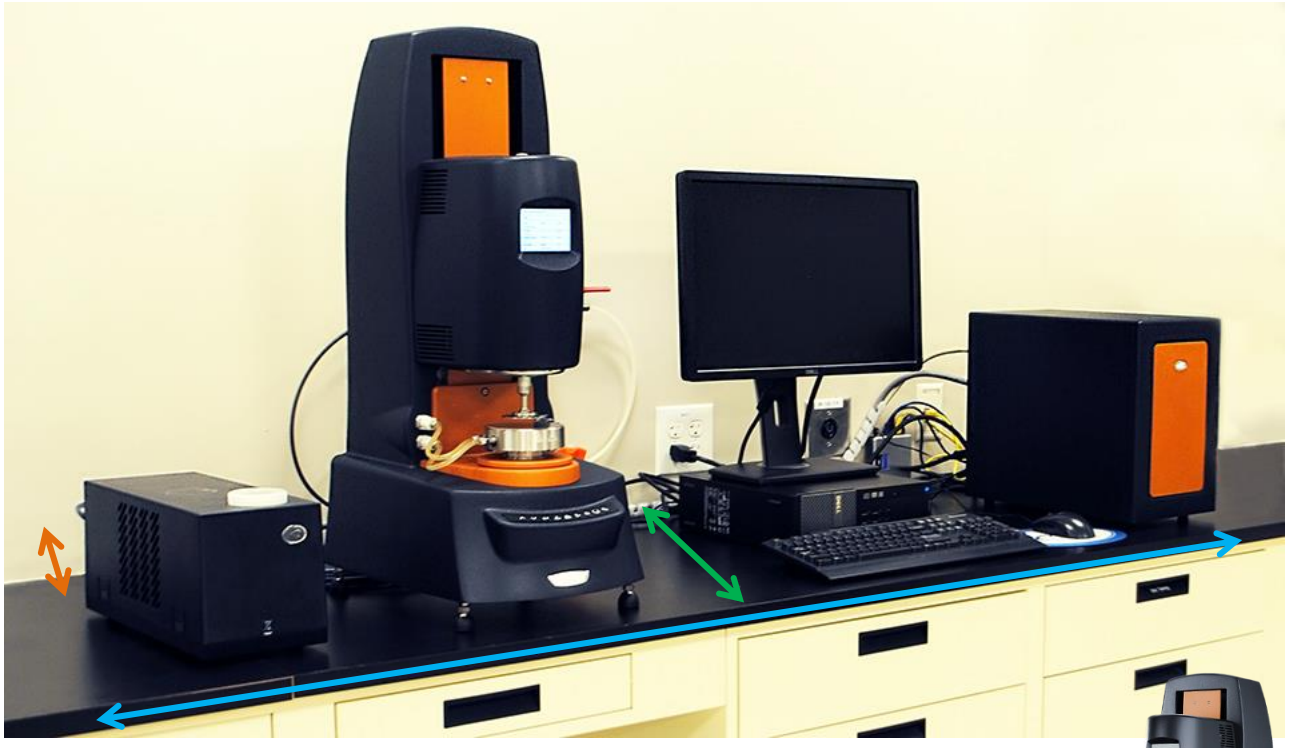
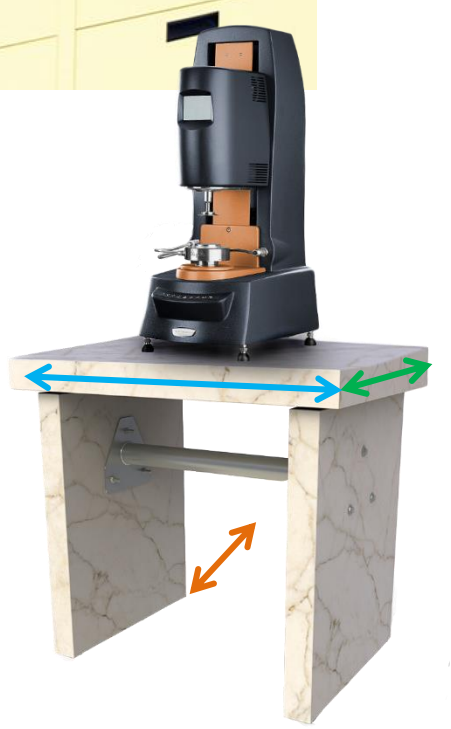
Ideal Setup

IDEAL PLACEMENT AND BENCH MEASUREMENTS

Select a location with adequate floor space and a rigid laboratory bench that is level and is in a vibration-free environment. A marble table is recommended.





Bench length: 127 cm (50 in)

Marble table length: 60 cm (24 in)

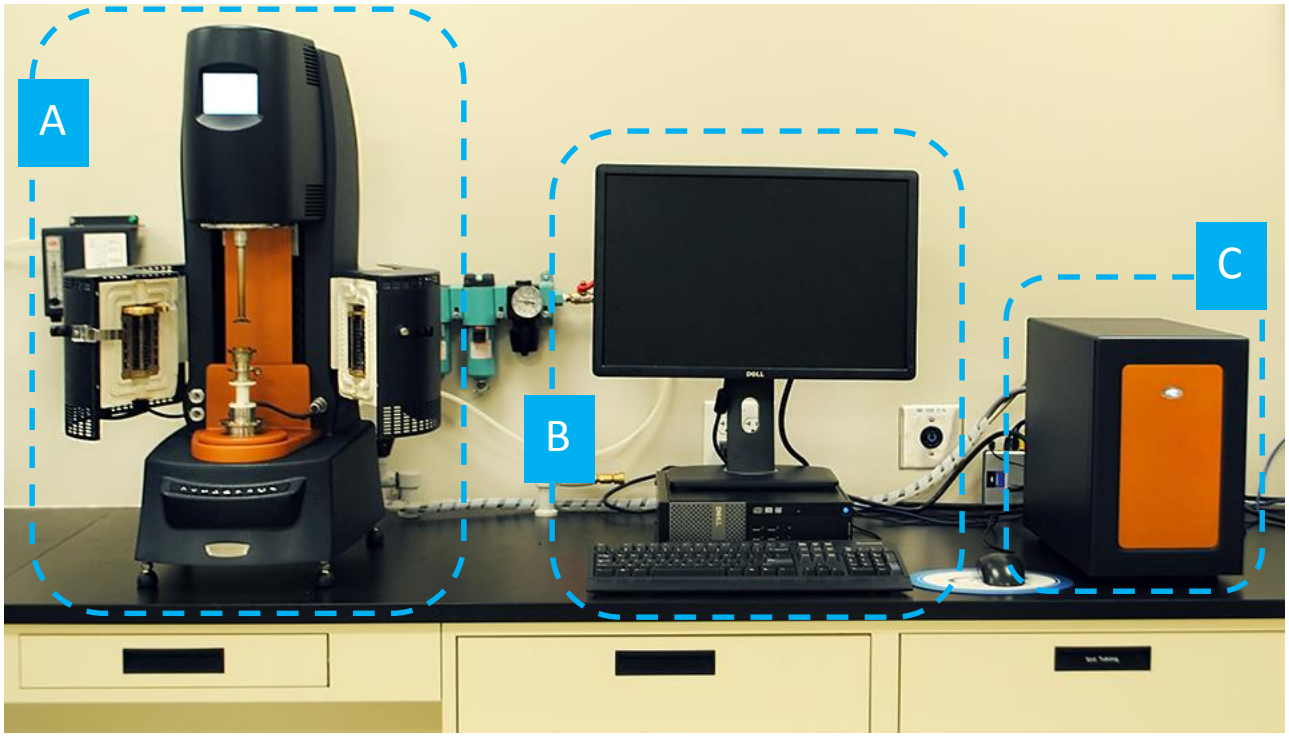
Bench depth: 76 cm (30 in)

Marble table depth: 76 cm (30 in)

Distance from the wall: 30.5 cm (12 in) min.

System Components

MAIN SYSTEM COMPONENTS



A. Instrument

B. Computer

C. Electronics Control Module

Instrument Measurements

MAIN INSTRUMENT

Height: 76 cm (30 in)

Width: 32 cm (12.5 in)

Depth: 42 cm (16.5 in)

Weight: 32 kg (70.5 lbs)

ELECTRONICS CONTROL MODULE

Height: 48 cm (19 in)

Width: 26 cm (10 in)

Depth: 44 cm (17 in)

Weight: 14 kg (31 lbs)

Utility Requirements

POWER

110–230 VAC, 50/60 Hz, 1.4 kW

GAS

	Air Bearing (Air or Nitrogen):
Gas Pressure	Compressed at 345–690 kPa gauge (50–100 psig)
Flow Rate	2 L/min
Dew point	-20°C or better
Conditions	• Must be dry • Must be free from oil and dirt[1]
Other	• ¼ NPT female connection required for DHR main air supply (not provided)

[1]Compressed Air Quality Requirements	
Dew point	Ideal: -40°C Minimum: -20°C
Dirt particle	5µm
Oil including vapor	0.01 mg/m^3

WATER

Fluid circulator with cooling ability for Peltier and UHP temperature systems

Computer Requirements

HARDWARE REQUIREMENTS

Description	Requirement
Processor	• Intel® Core™ 2 Duo or better • 2.93 GHz with 3 MB L2 cache
Memory	Required: ≥ 4 GB RAM Recommended: ≥ 8 GB RAM
Hard drive	≥ 80 GB free space • 1 GB required for Full version of TRIOS • 600 MB required for Lite version of TRIOS (without Online help)
DVD	≥ 48x CD-ROM or DVD
Screen resolution	Required: 1280 x 1024 with 24-bit colors Recommended: 1920 x 1080 with 24-bit colors
Graphic memory	128 MB
Screen (LCD) size	Required: 19” or greater Recommended: 24” wide screen
USB II port	Required with ETC and Peltier Camera Viewer options, SALS accessory, and Automatic Asphalt calibration kit
Network card	Ethernet 10Base T/100 Base TX
Additional Ethernet card(s)	Necessary if connecting the instrument directly and access is needed to the Corporate LAN. Also required for Modular Microscope Accessory.
Ethernet Cabling	10/100BaseTX Ethernet hub/switch. Must be EIA-568B Category 5+ UTP
Client-Server Protocol	DHCP
Image Capture (Camera Option)	DirectX 9.0 or higher
Support for Custom Reporting	Rheology Advantage Navigator software only: Microsoft Word 97 or higher
Second Monitor	Recommended for SALS Accessory image viewing and Modular Microscope Accessory
TCP/IP ports used	• TCP: 20010, 20011 • UDP: 5050, 5056

Computer Requirements

SOFTWARE REQUIREMENTS

Item	TRIOS	Rheology Advantage
Operating System	• Windows 7, 8, 10 Ultimate, Enterprise & Professional • Windows Vista Business & Ultimate • Home version not supported	• Windows 7, 8 Ultimate, Enterprise & Professional • Windows Vista Business & Ultimate • Home version not supported
	Required: 32-bit or 64-bit version Recommended: 64-bit version	Required: 32-bit or 64-bit version
Browser	Internet Explorer	
Service Pack	Microsoft Operating System Service Pack	
Updates	Must be up-to-date	
Network	*TA Instruments is not responsible for resolving issues associated with connections to your corporate network.*	
Conflicts	*TA Instruments is not responsible for resolving hardware/software conflicts created by the addition of third party hardware or software to the computer.*	

Temperature Systems

The cooling rate and minimum temperature will depend on the source of cooling.

For accessory requirements not listed, refer to the DHR Accessory Requirements guide.

Accessory	Smart Swap Requirements
Electrically Heated Plates (EHP)	• Purge flow of 5 L/min (305 in^3/min) inert gas • Motor cooling gas flow of 10 L/min for temperatures above 250°C. Air pressure of 50–100 psig.
	• Optional controlled cooling with GCA. Refer to the DHR Accessories Requirement guide for GCA requirements. • Crash cooling pressure of 50–100 psig and a flow of ~2.5 scfm (70 L/min)
Environmental Test Chamber (ETC)	Purge gas flow rate should be 10 L/min (610 in^3/min) at 206–690 kPa (30–100 psig)
Peltier Plate/ Peltier Concentric Cylinder	• Recirculating water bath (not supplied) at 0.5 L/min (30.5 in^3/min)

Circulator Power Cooling Gas LN_2 Fluid Light Hardware Software Temp Lab Customer

Temperature Systems

Accessory	Smart Swap Requirements	
Upper Heated Plate (UHP)		**Option 1: Standard Cooling (temps above 10°C)** • Circulation fluid: Requires continuous supply from mains tap or supplied fluid circulator • Fluid cooling: Supply should be 5°C below the minimum required temperature at minimum required flow rate through the system of 0.5 L/min
		Option 2: Standard Cooling Accessory • TA-supplied Air Cooled Circulator (PN 403209.901)  • Recommended fluid: 100% distilled water with 1 oz. of TA conditioner added
		Option 3: Low Temperature Cooling Accessory–ThermoCube • TA-supplied ThermoCube model 10-300 (PN 201786.001)  CAUTION Filling with 100% distilled water will damage the heat exchanger at 10°C and lower. • Recommended fluid for UHP temp control set points *above* 10°C: 25% ethylene glycol, 75% distilled water with 1 oz. TA conditioner added • Recommended fluid for UHP temp control set points *below* 10°C: 25% ethanol, 75% distilled water with 1 oz. TA conditioner added

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Temperature Systems

Accessory	Smart Swap Requirements	
Upper Heated Plate (UHP)		**<u>Option 4: Low Temperature Cooling Accessory–Customer-supplied</u>** • Customer-supplied refrigerated and heating circulator and appropriate fluid (ie. silicone fluid) WARNING DO NOT USE WATER AS CIRCULATION FLUID • Supply: 5°C below the minimum required temperature at a minimum flow rate through the system of 0.5 L/min (12.2 in^3/min)
		<u>Option 5: Low Temperature Cooling Accessory–Vortex</u> • TA-supplied Vortex Cooler (PN 545809.901) • Air: Clean, dry, oil-free, compressed air 200L/min at 552–690 kPa gauge (80–100 psig) • Dew point: -30°C or better

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Site Preparation Checklist

Discovery Hybrid Rheometer

	Sufficient bench space for instrument, computer, and Electronics Control Box ☐ Length: 127 cm (50 in) ☐ Depth: 76 cm (30 in)
	Instrument power is 110–230 VAC, 50/60 Hz, 1.4 kW
	Air Bearing Gas Pressure (air or nitrogen) ☐ Pressure is 345–690 kPa (50–100 psig) ☐ Flow rate is 2 L/min ☐ Dew point is -20°C or better ☐ ¼ NPT female connection to the main compressed air source
	Accessories used: ☐ EHP ☐ ETC ☐ Peltier Place/Peltier Concentric Cylinder ☐ Upper Heated Plate

I hereby acknowledge that all utility requirements have been met per the checklist above and that they will be ready at the agreed time of installation.

If all utility requirements are not met at the agreed time of installation, additional charges may be incurred for a return Service trip.

_____ ___/___/___

Customer *DD* *MM* *YYYY*

_____ _____ _____

Company *City* *State* *Country*

Please send a signed copy of the completed checklist to your local Service representative.

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