

# Discovery DSC 25P



## Site Preparation Guide

# Table of Contents

Table of Contents .....	2
Ideal Setup .....	3
System Components.....	4
Instrument Measurements .....	5
Utility Requirements.....	6-8
Power .....	6
Gas .....	7-8
Computer Requirements .....	9-10
Hardware .....	9
Software.....	10
Site Preparation Checklist .....	11
TA Instrument Offices.....	12



Circulator



Power



Cooling



Gas



LN<sub>2</sub>



Fluid



Light



Hardware



Software



Temp



Lab



Customer

# 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.



Bench width: 183 cm (72 in)

Bench depth: 76 cm (30 in)

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

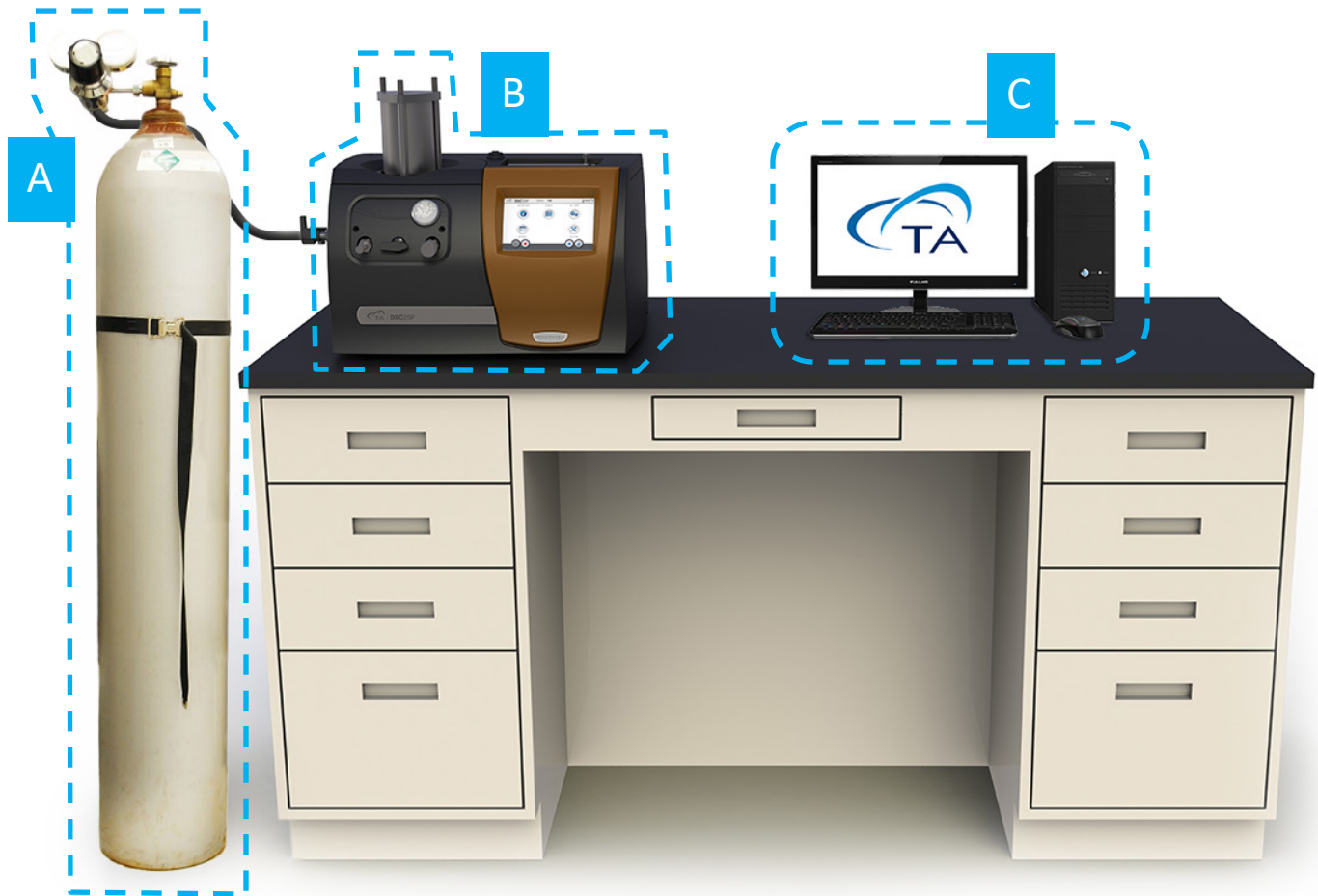


Allow free air to circulate around the instrument. Do not place equipment against walls or cabinets that might impede air flow. Leave at least 7.5 cm (3 in) clearance around the Discovery DSC 25P.

# System Components



## MAIN SYSTEM COMPONENTS



- A. Gas Tank
- B. Instrument
- C. Computer (Controller)

# Instrument Measurements



## MAIN INSTRUMENT



Height: 50 cm (19.5 in)

Width: 61 cm (24 in)

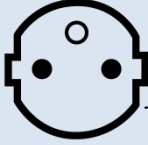

Depth: 66 cm (26 in)

Weight: 35 kg (77 lbs)

# Utility Requirements



## POWER

Item	Requirement
Power	<ul style="list-style-type: none"><li>• 100–240 VAC, 47–63 Hz, 600 W</li><li>• Safety ground per local regulation</li></ul>
Power cords provided	<ul style="list-style-type: none"><li>• NEMA 5-15 plug</li><li>• Type F plug</li></ul>  Type F  NEMA 5-15



**Use power cords with plugs appropriate for your circuit.**



Supply voltages lower than indicated may result in a degradation of performance.



Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.




An independent heavy GROUND wire must be provided through the power hookup. Improper grounding may cause severe damage for which the supplier will not accept responsibility. All power strips must be fully grounded and carry the ground through to the sockets into which the computer is plugged.

# Utility Requirements



## GAS

Item	Requirement
Purge gases	<ul style="list-style-type: none"><li>• Acceptable purge gases: nitrogen, air, oxygen, carbon monoxide, carbon dioxide, hydrogen, helium, argon.</li><li>• Pressure regulator required</li><li>• Conditions:<ul style="list-style-type: none"><li>• Must be dry</li><li>• Must be free from oil, dirt, and water</li></ul></li></ul> <p> If you are using samples that may emit harmful gases, attach a compatible tube to the purge gas exit to transfer the gas to an exhaust or other suitable protective device.</p>



**OXYGEN WARNING:** If excessive amounts of **hydrocarbons** are present in the DSC25P, energetic combustion could occur causing damage to the DSC25P cell and possible injury to the operator. Oxygen supply lines valves, gauges, and regulators must be free from hydrocarbons and rated for oxygen service. If the inside of the tubing smells oily or has liquid or black carbon residue in it, hydrocarbons may be present. Remove the pressure housing and visually inspect the DSC25P cell for oil or other organic contaminants. Immediately discontinue use if contamination (spilled samples, oily residue, oily smell, carbon black, etc) occurs. Check that all supply tubing connecting your DSC25P to other devices (oxygen cylinder, gauges, valves, regulators) are .125 in. OD, are rated for high pressure service to 21 MPa gauge, and are free of hydrocarbons.



**HYDROGEN WARNING:** Hydrogen gas should be used with extreme care. It is **highly flammable** when exposed to flame or oxidizing materials. [The Sax Safety Handbook, Dangerous Properties of Industrial Materials, indicates that the lower explosion limit (LEL) under ambient conditions for hydrogen is 4.1% in air. Care should be taken to keep the concentration below this value.] When using hydrogen in the Pressure DSC cell, the cell should be initially purged thoroughly with helium before introducing hydrogen.



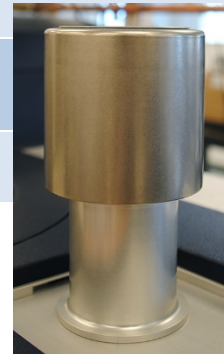
**LIQUID NITROGEN** will burn the skin because of its extremely low temperature. When handling liquid nitrogen, wear goggles or a face shield and gloves large enough to be removed easily.

# Utility Requirements



## GAS

Item	Requirement
Atmosphere	-100 kPa – 7 MPa (1 Pa to 7 MPa absolute), constant pressure or constant volume
Dynamic gas pressure	To 200 mL/min (cell flow rate)
Regulator	<ul style="list-style-type: none"> <li>• Customer-supplied</li> <li>• Two-stage regulator with output range 0 to 1000 psig</li> <li>• Oxygen-rated</li> </ul>
Supply tubing	<ul style="list-style-type: none"> <li>• Customer-supplied</li> <li>• 0.125-in OD</li> <li>• Must be rated for high pressure service to 21 mPa gauge (3000 psig)</li> <li>• Must be free of hydrocarbons</li> </ul>
Conditions	<ul style="list-style-type: none"> <li>• Must be dry</li> <li>• Must be free from oil and dirt</li> </ul>
Quench Cooler	To -130°C with liquid nitrogen



Quench Cooler  
(P/N 970316.000)



# Computer Requirements



## HARDWARE REQUIREMENTS

Description	Requirement
Processor	<ul style="list-style-type: none"><li>• Intel® Core™ i5 8400 or better</li><li>• 2.8 GHz with 9 MB L2 cache</li></ul>
Memory	≥ 16 GB RAM DDR4 2666 SDRAM
Hard drive	≥ 80 GB free space <ul style="list-style-type: none"><li>• 1.5 GB required for Full version of TRIOS</li><li>• 675 MB required for Lite version of TRIOS (without Online help)</li></ul>
DVD (optional)	≥ 48x CD-ROM or DVD. Optional for software installation.
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

# Computer Requirements



## SOFTWARE REQUIREMENTS

Item	Requirement
Operating System	<ul style="list-style-type: none"><li>• Windows 10 Ultimate &amp; Professional</li><li>• Home version not supported</li><li>• 64-bit version</li></ul>
Internet	<b>Internet connection is strongly recommended for ongoing support after installation</b>
Service Pack	Microsoft Operating System Service Pack
Updates	Windows Operating System and associated Microsoft updates must be up to date
Network	<i>A second network card for corporate connection is recommended. TA Instruments is not responsible for resolving issues associated with connections to your corporate network.</i>
Conflicts	<i>TA Instruments is not responsible for resolving hardware/software conflicts created by the addition of third-party hardware or software to the computer.</i>

# Site Preparation Checklist



## Discovery DSC 25P

	Enough space for instrument and computer: <ul style="list-style-type: none"> <li><input type="checkbox"/> Bench width: 183 cm (72 in)</li> <li><input type="checkbox"/> Bench depth: 76 cm (30 in)</li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Instrument power is 100–240 VAC, 47–63 Hz, 600 W</li> </ul>
	Purge gas– Nitrogen, air, oxygen, carbon monoxide, carbon dioxide, hydrogen, helium, argon. <ul style="list-style-type: none"> <li><input type="checkbox"/> Purge gas pressure: -100kPa gauge (-15 psig) to 7 MPa gauge (1000 psig) constant pressure or constant volume</li> <li><input type="checkbox"/> Customer-supplied two-stage regulator with output range 0 to 1000 psig, rated for oxygen</li> <li><input type="checkbox"/> Dynamic gas purge: to 200 mL/min (cell flow rate)</li> <li><input type="checkbox"/> I have read and understand the <b>OXYGEN</b> warning</li> <li><input type="checkbox"/> I have read and understand the <b>HYDROGEN</b> warning</li> <li><input type="checkbox"/> I have read and understand the <b>LIQUID NITROGEN</b> warning</li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Computer meets all hardware requirements</li> <li><input type="checkbox"/> Computer meets all software requirements</li> </ul>
	<ul style="list-style-type: none"> <li><input type="checkbox"/> The Customer assumes responsibility for any damage that occurs when the instrument is moved by someone other than a trained TA Instruments Service Representative.</li> </ul>

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.

# TA Instruments Offices

For information on our latest products, contact information, and more, see our website at:  
<http://www.tainstruments.com>.

To find your local TA Instruments office and contact information, visit  
<http://www.tainstruments.com/contact/ta-directory/>

TA Instruments – Waters LLC  
Corporate Headquarters  
159 Lukens Drive  
New Castle, DE 19720  
USA

Telephone: 302-427-4000  
Fax: 302-427-4001  
Email: [info@tainstruments.com](mailto:info@tainstruments.com)