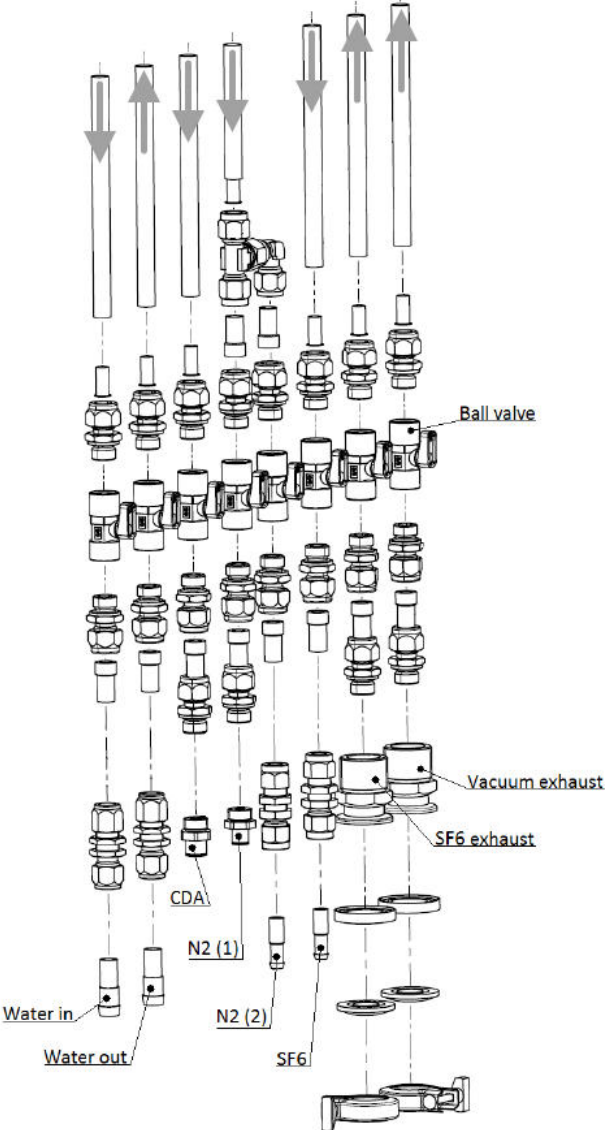


Connections to chilled water, compressed air, and gases



Connections to the microscope system

The connections towards the microscope must meet the following requirements:

Category	Requirement	Remarks
Connections	<p>The following connections must be installed, preferably in the same left-to-right order as listed below:</p> <ul style="list-style-type: none"> <li>• Cooling water IN (from the chiller to the microscope). Pressure: &lt; 6 bar</li> <li>• Cooling water OUT (from the microscope to the chiller).</li> <li>• Compressed dry air (CDA). Pressure: &lt; 8.5 bar</li> <li>• N2 for regular system operation. Pressure: &lt; 3 bar</li> <li>• <i>Optional</i>: N2 for service purposes. Pressure: &lt; 3 bar</li> <li>• <i>Optional</i>: SF6 IN Pressure: &lt; 10 bar</li> <li>• <i>Optional</i>: SF6 exhaust (<i>check local laws and regulations</i>).</li> <li>• Vacuum exhaust</li> </ul>	SF6 is typically supplied and disposed in gas cylinders, not via a facility connection.
Location	The connections must be installed at the location that is specified by the floor plan for the Microscope Room.	
	Distance between neighboring connections (center-to-center): > 60 mm	
	Distance to the wall (center-to-wall): > 59 mm	
	Distance to the floor: 500 - 1500 mm	
Orientation	The connectors towards the microscope face downward.	
Identification	<p>Each connection has a label that shows:</p> <ul style="list-style-type: none"> <li>• An identification of the material that flows through it.</li> <li>• An arrow that specifies the flow direction.</li> </ul>	
Operation	Each connection can be opened and closed with a valve.	A ball valve is preferred to ensure instantaneous closing.
Safety	The valves are easily accessible, so that they can be operated quickly in case of a malfunction or emergency.	If the valves are covered by a panel or door, then there must be <i>no</i> lock.

**Note** Before installing an *SF6 exhaust* connection, check the local laws and regulations regarding the disposal of SF6 to the environment.

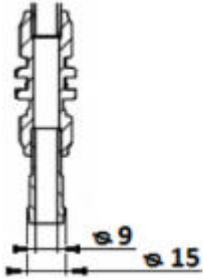
*SF6 is a strong greenhouse gas. Even if local laws and regulations allow for the disposal of SF6 to the environment, Thermo Fisher Scientific strongly recommends to recycle SF6 to protect the environment.*

To prevent damage or delay during installation and maintenance, it is strongly recommended to install couplings as specified in the table below.

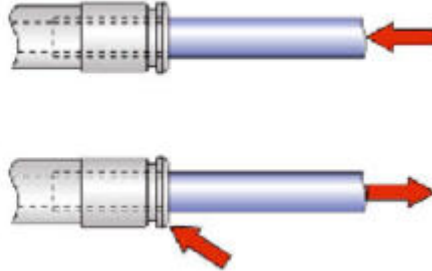
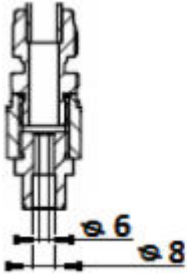
The hose dimensions are specified for reference only. Hoses for the connection with the microscope system will be supplied with the system.

Connection towards the microscope	Remark	Recommended coupling type	Hose		
			Outer diameter	Inner diameter	Wall thickness
Water IN	Chiller to microscope	Serto hose nozzle inner diameter: 9.2 mm outer diameter: 15.0 mm	21 mm	13 mm	4 mm
Water OUT	Microscope to chiller	Serto hose nozzle inner diameter: 9.2 mm outer diameter: 15.0 mm	21 mm	13 mm	4 mm
CDA		Press-in	8 mm	6 mm	1 mm
N2 (1)	Regular operation <i>Venting &amp; flushing</i>	Press-in	6 mm	4 mm	1 mm
N2 (2) <i>Optional</i>	Service purposes	Serto hose nozzle inner diameter: 7.0 mm outer diameter: 9.5 mm	—	—	—
SF6 IN <i>Optional</i>		Serto hose nozzle inner diameter: 7.0 mm outer diameter: 9.5 mm	13 mm	8 mm	2.5 mm
SF6 exhaust <i>Optional</i>	Check local laws and regulations	NW25 coupling with a hose nozzle inner diameter: 10.0 mm outer diameter: 15.0 mm	23 mm	16 mm	3.5 mm
Vacuum exhaust		NW25 coupling with a hose nozzle inner diameter: 10.0 mm outer diameter: 15.0 mm	23 mm	16 mm	3.5 mm

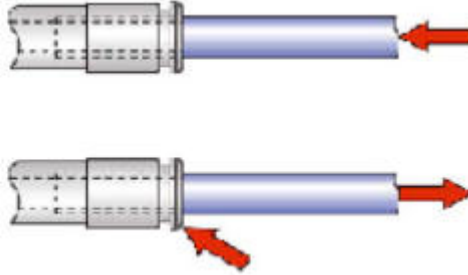
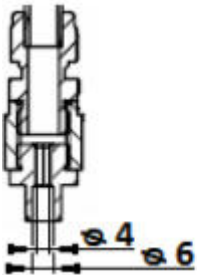
- *Water IN* and *Water OUT*: pillar / bared / hose nozzle connector



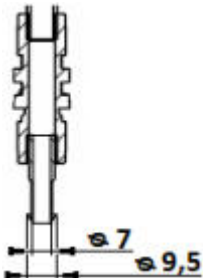
- *CDA*: press-in connector



- *N2 (1)*: press-in connector



- *N2 (2)*: pillar / bared / hose nozzle connector for hoze with inner diameter: 8 mm.
- *SF6 IN*: pillar / bared / hose nozzle connector



- *SF6 exhaust* and *Vacuum exhaust*:
  - NW25 coupling