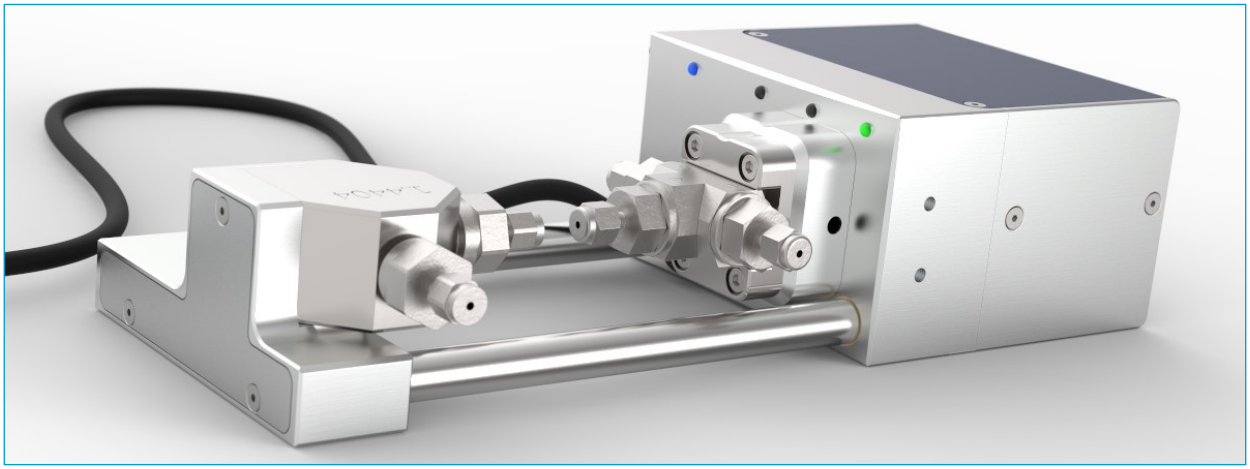
CETONI

CETONI Contiflow Ball Valve

Hardware Manual



ORIGINAL INSTRUCTIONS 1.04 – SEPTEMBER 2024

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If you control the products with CETONI Elements (hereinafter referred to as software), you agree to the applicable license agreement, which can be read in the corresponding software manual. This and all other current product manuals can be found in the download area of our homepage.

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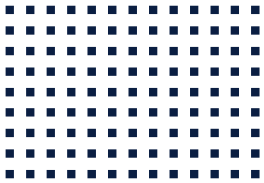


1 Overviews & Directories

1.1 Table of Contents

1.2 Revision History

REV	DATE	CHANGE	VALID FOR
1.00	05.07.2021	Creation	Type NEM-A146-01 A NEM-A146-02 A
1.01	27.08.2021	Pressure sensor seal changed from PTFE to FFKM	Type NEM-A146-01 B NEM-A146-02 A
1.02	17.08.2022	Connection ground line CETONI Contiflow ball valve adapted to terminal KL3162	
1.03	21.12.2022	Disposal instructions updated	
1.04	25.09.2024	Update disassembly ball valve	

IMPORTANT. In its current revision, this manual applies only to the product types listed in the last line. Should you require a manual from a previous revision, please do not hesitate to contact us. Please let us know your device type and email address and we will send you the appropriate manual as a pdf file.

The type of your product can be found on the label behind "Type:", according to the marked number in the following example:

2 Introduction

2.1 Preface

Thank you for purchasing a product from CETONI. With this user manual we would like to support you as well as possible when handling the device. If you have any questions or suggestions, please do not hesitate to contact us.

This manual is valid for the CETONI Contiflow Ball Valve as well as for the CETONI Ball Valve. The CETONI Ball Valve corresponds to a CETONI Contiflow Ball Valve without pressure sensor. Accordingly, many passages of this manual apply to both devices. In these cases, the text uses the name **CETONI (Contiflow) Ball Valve** and pictures mostly show the version with pressure sensor. For device-specific passages, either the designation **CETONI Contiflow Ball Valve** or **CETONI Ball Valve** is used.

2.2 Symbols and Keywords Used

The following symbols are used throughout this manual to help you navigate through this document:

HINT. Indicates application tips and useful hints to facilitate operation.

IMPORTANT. Indicates important information and other particularly useful information that does not describe dangerous or harmful situations.

ATTENTION. Indicates a potentially harmful situation. If it is not avoided, the product or something in its environment may be damaged.

CAUTION. Indicates a potentially dangerous situation. If it is not avoided, slight or minor injuries and property damage may result.

2.3 Norms and directives

CETONI GmbH declares under its sole responsibility, that the CETONI (Contiflow) Ball Valve complies with the health and safety requirements of the relevant European directives.

2.4 Application Purpose

2.4.1 General Description of the Device

The use of two syringe pumps equipped with CETONI Contiflow Ball Valves enables uninterrupted fluid dispensing. The integrated pressure sensor minimizes the pressure drop between emptying and refilling the syringes.

The CETONI Ball Valve is a motorized ball valve, which allows to switch automatically between emptying and refilling a syringe pump.

2.4.2 Intended Use

The CETONI Contiflow Ball Valve is used to generate an uninterrupted fluid flow with syringe pumps, the CETONI Ball Valve for automatic switching. It is intended for use in a laboratory.

2.4.3 Reasonably Foreseeable Faulty Application

A use for applications distinct from the intended purpose can lead to dangerous situations and is to be omitted.

CAUTION. The CETONI (Contiflow) Ball Valve must not be used as a medical device or for medical purposes.

CAUTION. It is not allowed to use the CETONI (Contiflow) Ball Valve in an explosive atmosphere or with potentially explosive substances.

2.4.4 Safety measures

The safety of the user and a failure-free operation of the CETONI (Contiflow) Ball Valve are assured only if original parts are used. Only original accessories may be used. Warranty claims will not be accepted for damage due to the use of alien accessories or expendables.

The CETONI (Contiflow) Ball Valve has been developed and constructed in such a way as to largely rule out hazards due to its intended use. Nevertheless, you must observe the following security measures in order to exclude any remaining hazards:

- CETONI GmbH points out the responsibilities of the operator for the operation of the devices. The laws and regulations of the place of installation must be observed while operating the devices! To ensure a safe work routine, operators and users must assume responsibility for adhering to regulations.
- Before operating the unit, the user must at all times ensure the operational reliability and the adequate and orderly condition of the unit.
- The user must be familiar with the operation of the devices and the software.
- The devices and pipes must be checked for damage before operation. Damaged pipes and plug devices must be replaced immediately.
- Cables must be laid in a way that avoids any risk of stumbling.
- Relieve the pressure in the system before loosening connections.
- Check the leak tightness of all fluidic connections after connection and at regular intervals.
- Only use connection material that is specified for the expected pressures.
- The device is designed and approved to work in fluidic systems, which fall within the scope of Article 4 Paragraph 3 of the Pressure Equipment Directive 2014/68/EU. This means that the system may not exceed a maximum volume of 1 liter. With the use of fluids from Group 1 according to Article 13 of the Pressure Equipment Directive 2014/68/EU, the maximum allowable system pressure is 200 bar. For fluids from Group 2 it is 1000 bar. If different, product-specific values for the maximum pressure are given in the section "Technical Data", these values must be complied with. Regarding the maximum operating temperature, the specification from the section "Technical Data" must be observed.

  CETONI GmbH is not liable for consequences that may arise if the user expands the system by peripheral devices, such that one of the values or both values are exceeded.

  It is the user's responsibility to become familiar with the mentioned Pressure Equipment Directive and to comply with the prevailing requirements.

- Wear protective glasses and, if necessary, additional personal protective equipment when working with corrosive, hot or otherwise dangerous substances during assembly work on the device. In these cases, use a safety cabinet.
- Transportation, storage or operation of the devices below 0°C with water in the fluid passages may cause damage to the modules.

2.4.5 Measures for Safe Operation

2.4.5.1 ELECTROMAGNETIC EMISSIONS

The CETONI (Contiflow) Ball Valve is intended for use in any type of facility, connected directly to the public power supply network that supplies buildings used for domestic purposes.

2.4.5.2 ELECTROSTATIC DISCHARGE

Floors should be made of wood, concrete, or ceramic tiles. If the flooring is made of a synthetic material; the relative humidity must be at least 30%.

2.4.5.3 ELECTRIC DISTURBANCES

The quality of the supply voltage should be to the standard of a typical business or hospital environment.

2.4.5.4 MAGNETIC DISTURBANCES

Do not place power connector cables, even of other appliances, in close proximity of the devices and their cables. Mobile communication devices may not be used in closer proximity of the devices or their cables than the recommended safety distance!

2.4.5.5 SAFETY DEVICES ON THE SYSTEM

The system can be switched off at any time in an emergency using the mains switch on the Base Module (toggle switch on the side of the housing); this will cause no damage to the unit.

2.4.5.6 CONDITION OF THE DEVICES

Irrespective of the faultless manufacture of the devices, damage can occur whilst the unit is in operation. With this in mind, always carry out a visual check of the components mentioned before use. Pay particular attention to crushed cables, damaged tubing, and deformed plugs. If you should notice any damage, please do not use the devices and inform CETONI GmbH without delay. CETONI will put your devices back to an operational condition at the earliest. Do not attempt to repair the devices yourself.

2.5 Warranty and Liability

The devices left our company in perfect condition. Only the manufacturer is permitted to open the devices. All warranty and liability entitlements, particularly damage entitlements due to personal injuries, are void if the devices are opened by an unauthorized person.

The duration of the warranty is 1 year of technical equipment (expect wear parts) from the day of delivery. It is not extended or renewed due to work carried out under warranty.

CETONI GmbH considers itself responsible for the devices with regard to safety, reliability and function only if assembly, new settings, changes, extensions and repairs (if not described in this manual) are carried out by CETONI GmbH or an authorized center, and if the devices have been used in accordance with the instruction manual.

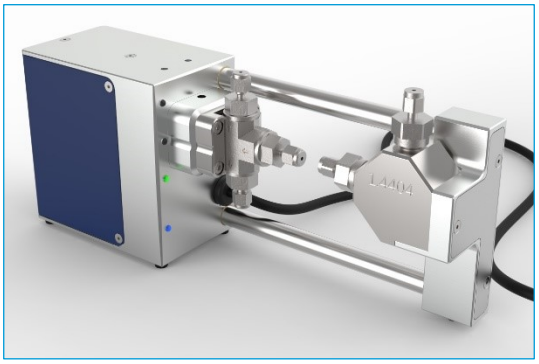
The product conforms to the basic safety regulation standards. Industrial property rights are reserved on the circuits, methods, names, software programs, and units.

3 Scope of Delivery

The following items should be included:

CETONI CONTIFLOW BALL VALVE

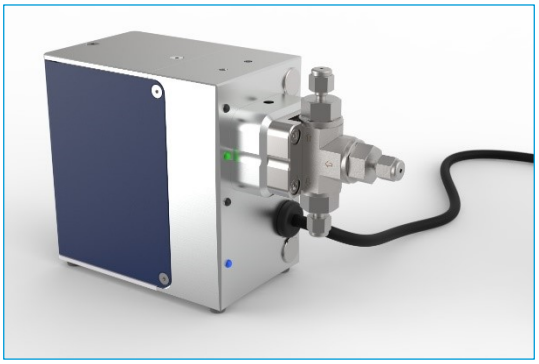
in the ordered version



OR

CETONI BALL VALVE

in the ordered version



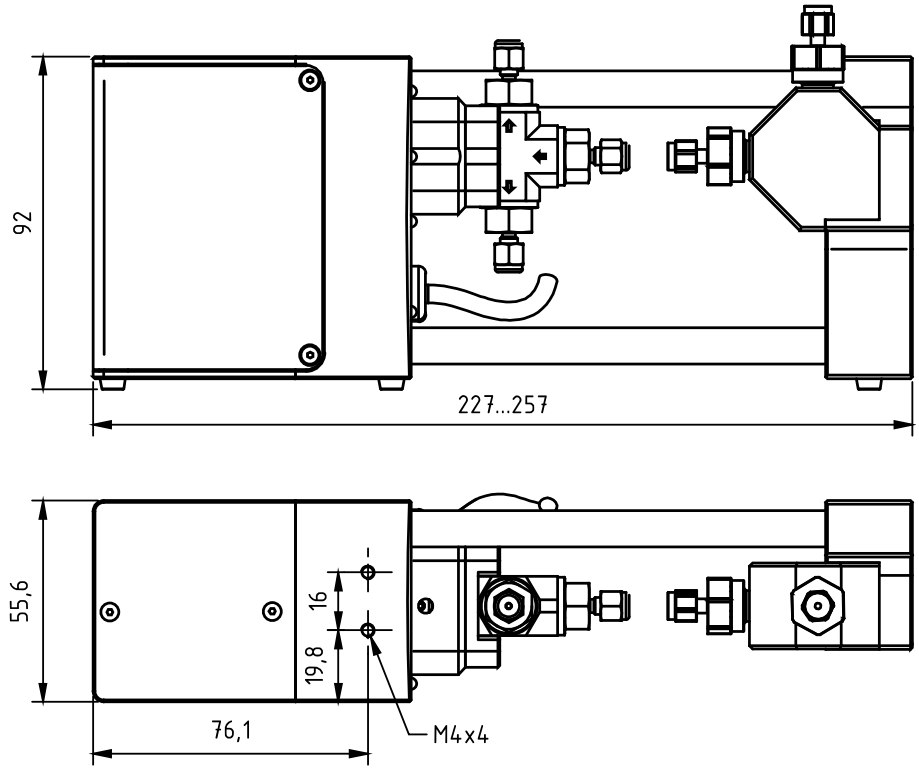
4 Technical Data

TEMPERATURE (OPERATION)	-5 – 50 °C	
TEMPERATURE (STORAGE)	-40 – 75 °C	
AIR HUMIDITY	10% to 90%, non-condensing	
DIMENSIONS	See 4.1	
WEIGHT	CETONI Contiflow Ball Valve	CETONI Ball Valve
	1,4 kg	1 kg
SUPPLY VOLTAGE (POWER SUPPLY UNIT)	24 V DC	
POWER CONSUMPTION	20 W	

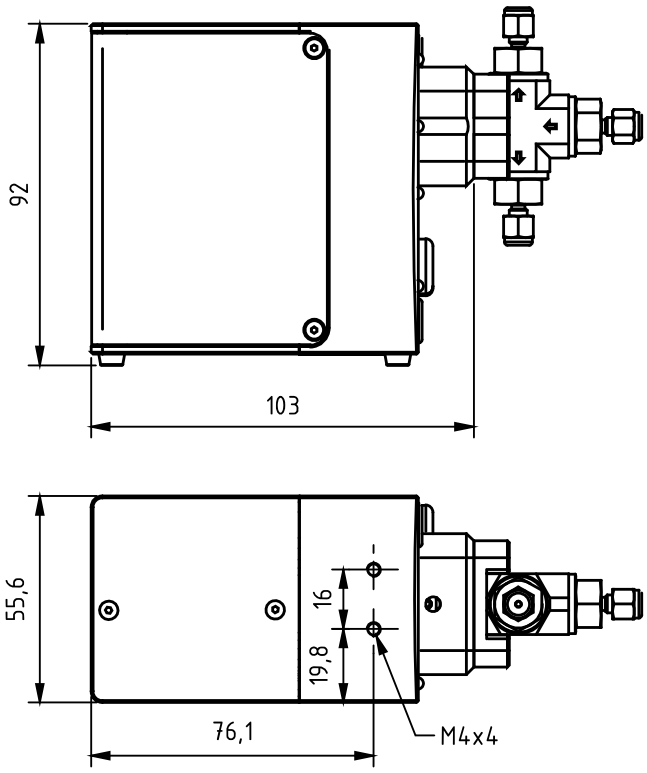
ATTENTION. Transportation, storage or operation of the CETONI (Contiflow) Ball Valve below 0°C with water in the fluid passages may cause damage.

4.1 Dimensional Drawing

4.1.1 CETONI Contiflow Ball Valve



4.1.2 CETONI Ball Valve



4.2 Configuration Options

The CETONI Contiflow Ball Valve can be configured in several aspects. The pressure range of the pressure sensor and the material of the pressure sensor housing can only be modified by CETONI GmbH. Fittings and ball valve can be exchanged by yourself if necessary. The interchangeability of the ball valve is also given with the CETONI Contiflow ball valve.

You can use fittings with cylindrical ISO G1/8 thread.

The ball valve should be from the same series as the one originally installed in your device. If you want to use a different type of ball valve, please contact us before to clarify the compatibility.

4.3 Materials

The parts of the CETONI (Contiflow) Ball Valve in contact with the medium are made of the following materials in the standard version:

BALL VALVE, FITTINGS, SEALING DISCS, TUBING, PRESSURE SENSOR HOUSING	Stainless steel 1.4404 (316L)
BALL VALVE SEAL SWAGELOK 41G / 42G; FITOK BO	PTFE
BALL VALVE SEAL FITOK BV	PEEK
PRESSURE SENSOR	Al2O3 (Aluminiumoxidkeramik)
PRESSURE SENSOR SEAL	FFKM

The supplied connection materials are suitable for the pressure range for which the CETONI (Contiflow) Ball Valve is configured. If you want to change connection materials, check the suitability for the expected pressure before use.

The stainless steel parts are alternatively also available in Hastelloy.

ATTENTION. Before using the CETONI (Contiflow) Ball Valve, please check the compatibility of the materials used with your medium.

5 Operating the Hardware

5.1 Pressure Range/Configuration

Before use, the CETONI (Contiflow) Ball Valve must be selected and configured in the software. For the CETONI Ball Valve you have to specify the set pressure range of the ball valve, and for the CETONI Contiflow Ball Valve also the pressure sensor. The procedure is described in the software manual.

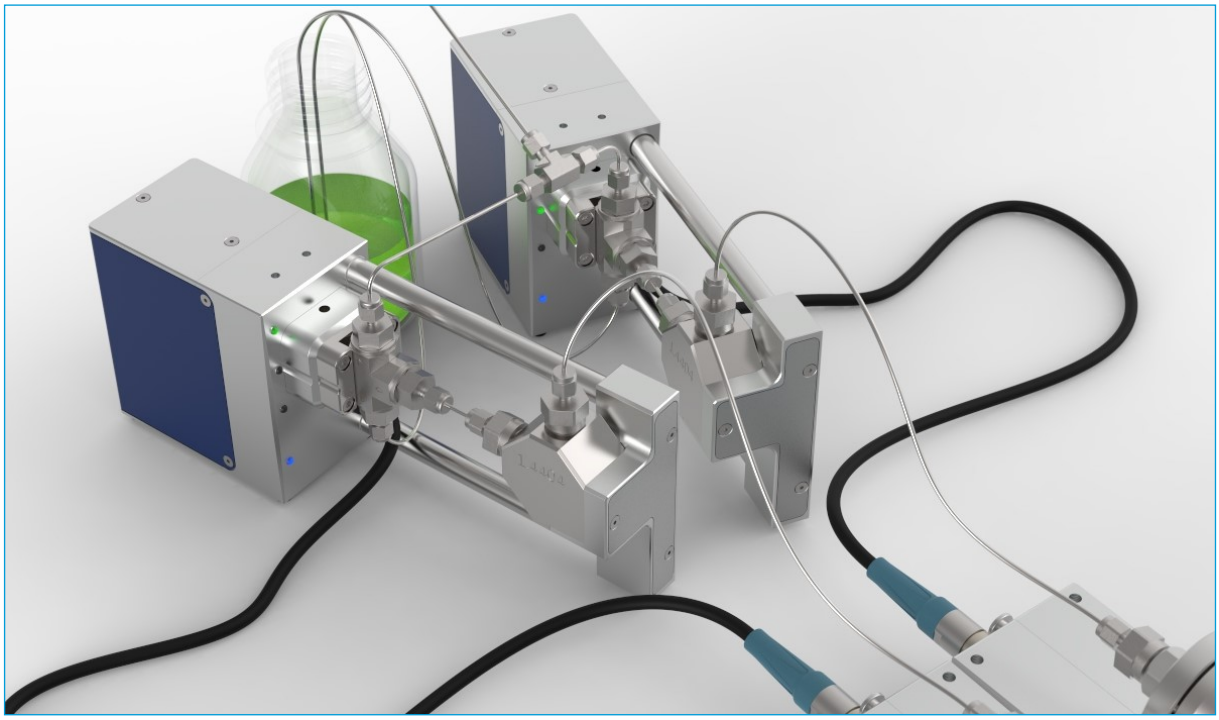
The data required for configuration can be found on the type plate on the bottom of the device under *Valve* and *Sensor*.

ATTENTION. Do not exceed the pressure range of the valves printed on the type plate to avoid damaging the valves. For this purpose, use the pressure monitoring function of the control software.

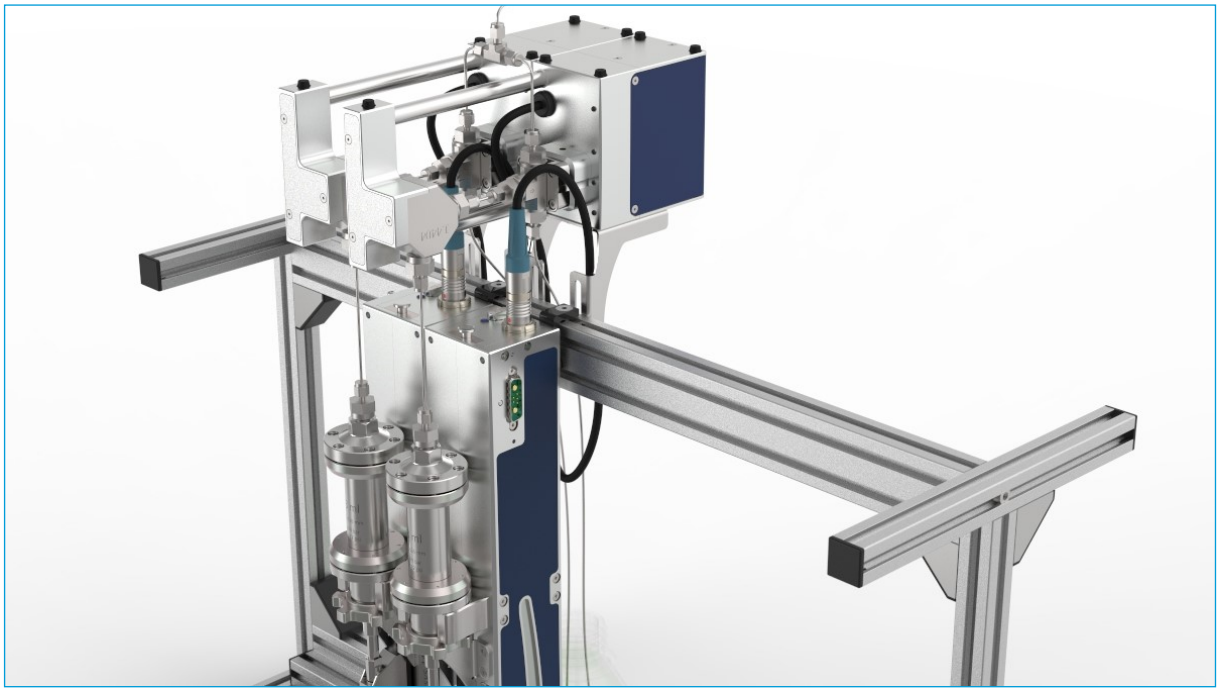
ATTENTION. Configure the pressure sensor before use to prevent damage to the device and your application.

5.2 Setting up

The CETONI (Contiflow) Ball Valve can be operated standing on a table. Therefore, it is equipped with rubber feet on one side.

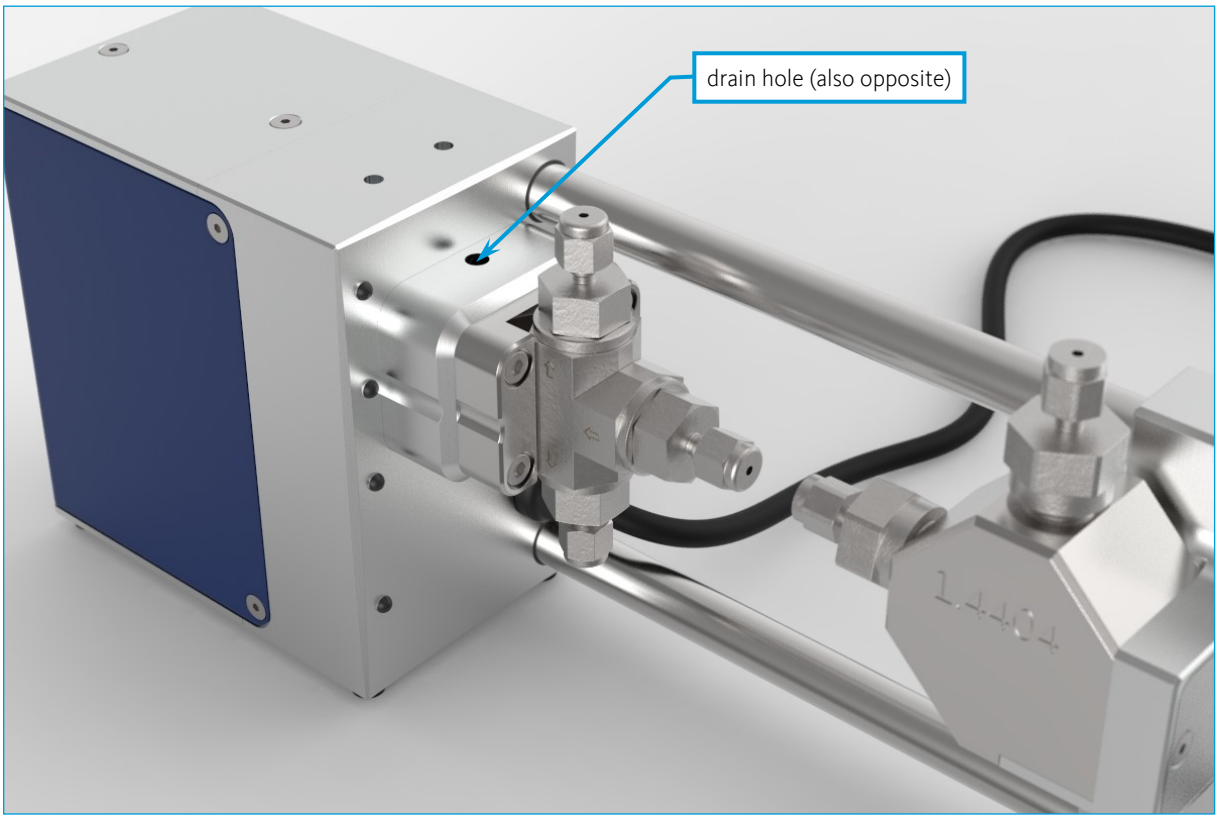


On the opposite side, the housing provides two threaded holes (see 4.1), which allow screw mounting in your application or on the CETONI module holder.



Please note that the CETONI (Contiflow) Ball Valve may only be operated in the two orientations described above. If the seal of the ball valve should become leaky, two holes in the housing allow the leaking liquid to drain off. If the orientation is different, there is a risk that the liquid will penetrate deeper into the housing and damage the electronics.

Even if the alignment is correct, you should stop operation immediately if a leakage occurs and readjust or replace the ball valve as described under 5.4.4.



ATTENTION. Operate the CETONI (Contiflow) Ball Valve only so that one of the two drain holes is facing downwards. Stop operation immediately if a leakage occurs.

ATTENTION. Wear protective glasses and, if necessary, additional personal protective equipment when working with corrosive, hot or otherwise dangerous substances during assembly work on the device.

5.3 Fluidic System

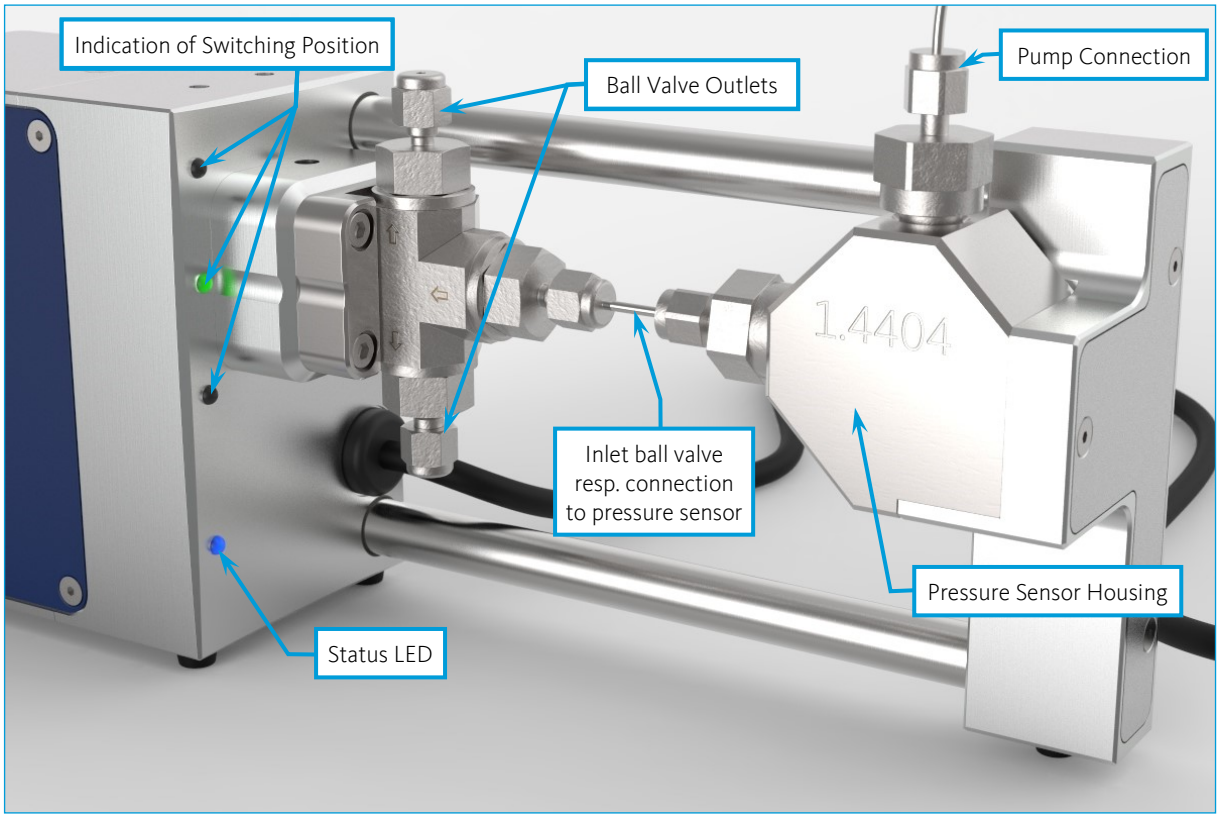
The CETONI Contiflow Ball Valve consists of a pressure sensor and a motorized ball valve with one inlet, two outlets and a closed mid-position. The three switching positions are indicated by green LEDs on the device and in the software.

For automatic filling of a syringe pump, connect it to the inlet of the CETONI Ball Valve while connecting the outlets to a reservoir and your application.

Two syringe pumps equipped with CETONI Contiflow Ball Valves are required for uninterrupted dosing of fluids. While one pump doses into the application, the second one is filled from the reservoir. The ball valve of the newly filled pump is then automatically switched to the closed mid-position and the same pressure as in the application is built up in the syringe. In this way it is possible to switch between the two syringes almost without changing the pressure as soon as the first syringe is empty.

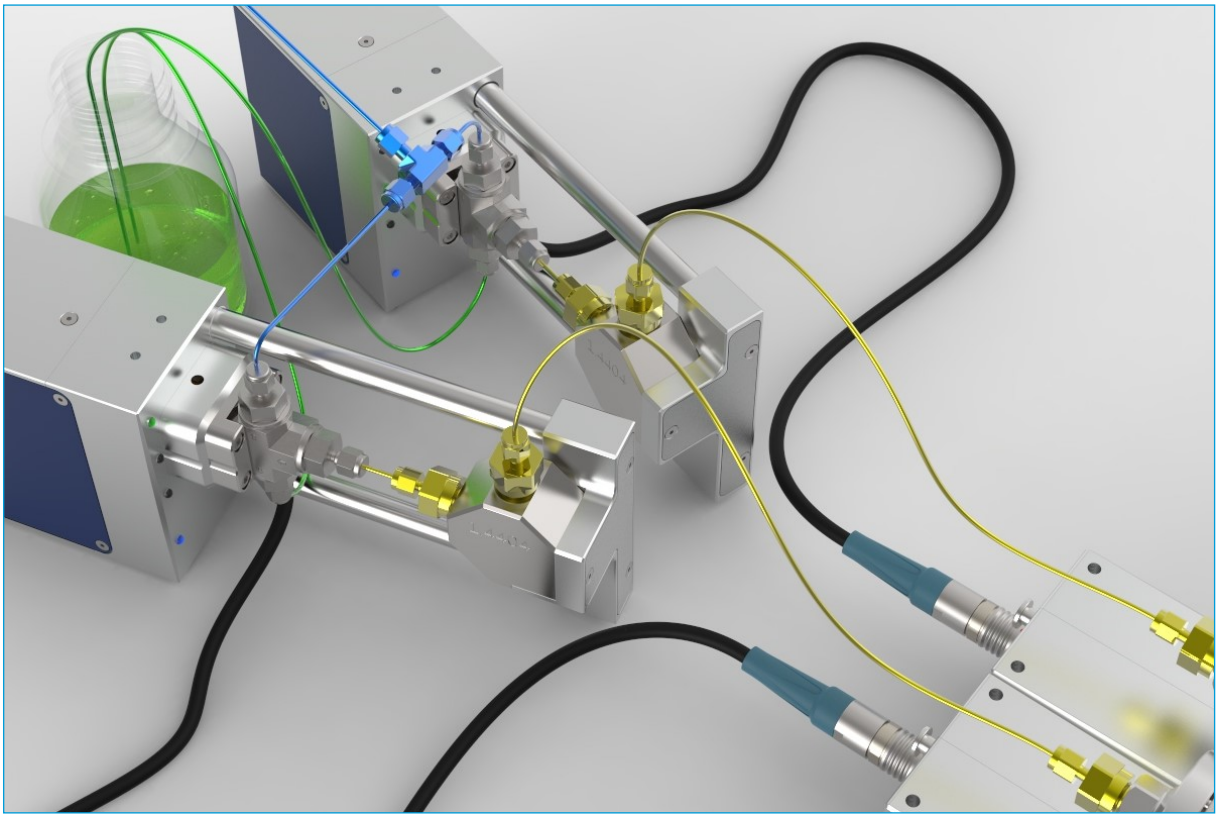
In the following picture the most important elements of the CETONI (Contiflow) ball valve are named.

The status LED lights up blue when the CETONI (Contiflow) ball valve is ready for operation and red when the fuse is blown.



You can select the assignment of the outlets of the ball valve to the reservoir (filling the syringe) and application (emptying the syringe) on the device according to your requirements and configure them in the software.

Connect the syringe pumps to the side connections on the pressure sensor housing (yellow in the picture). Connect the pressure sensors to the inlet connections of the ball valves. Also connect the outlets of the ball valves with reservoir (green in the picture) and application (blue in the picture). The use of a T-piece can be helpful here. (also blue in the picture).



5.4 Fluidic Connection

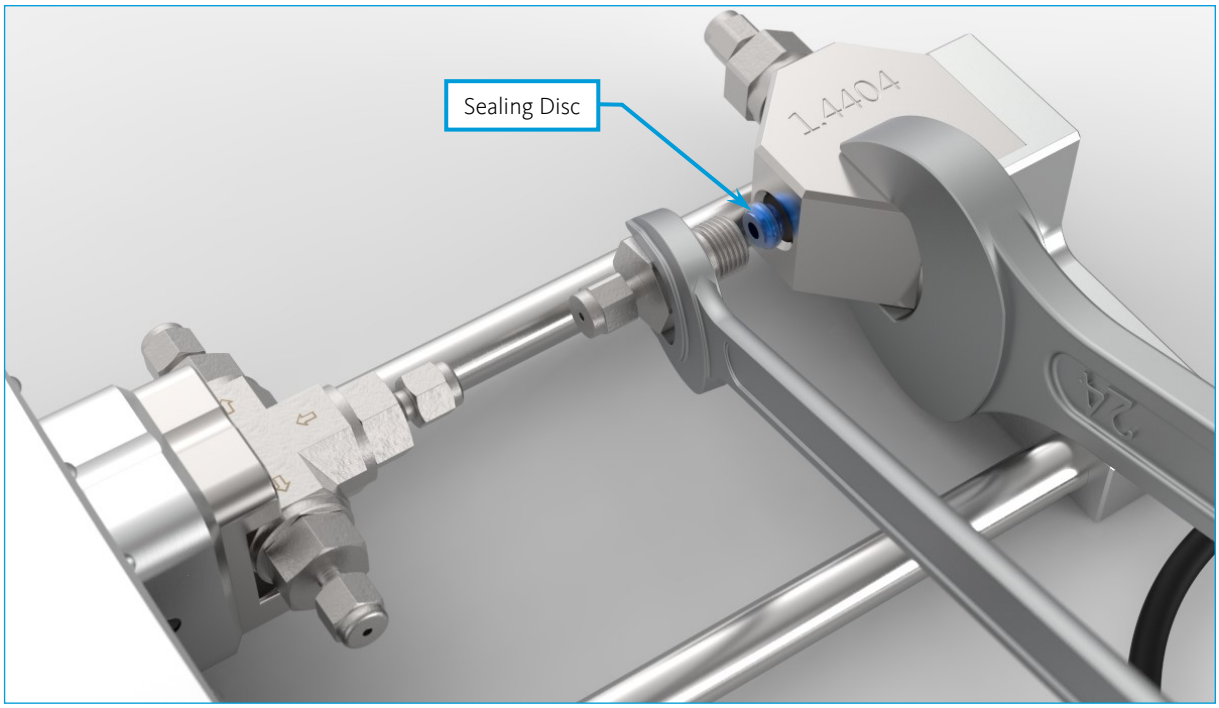
5.4.1 Mounting of the Compression Fittings (CETONI Contiflow Ball Valve only)

CETONI Contiflow Ball Valve has G1/8" connection holes into which compression fittings can be screwed. For a tight connection, a metal sealing disc is inserted into the hole before screwing in the compression fitting. The compression fittings you ordered are already assembled. The connection to the ball valve is also made using compression fittings.

If you want to replace the compression fittings, hold the pressure sensor housing in place with a 24 mm open-end wrench and loosen or fasten the compression fitting with one of the open-end wrenches of the following size. The required tightening torque is 40 Nm (corresponds to about 20 kg hand force when using an open-end wrench).

- 9/16" for compression fittings for 1/16", 1/8" and 1/4" pipes
- 14 mm for compression fittings for 2, 3, 4 and 6 mm pipes

Do not forget to insert the metal sealing disc (blue in the picture) into the bore before screwing in. You can also obtain this from us as a spare part.



5.4.2 Pipe length Determination Pressure Sensor - Ball Valve (CETONI Contiflow Ball Valve only)

In order to enable the mounting of the tube section between the pressure sensor and the ball valve, the pressure sensor housing is mounted slidably. Since the insertion depth of the tube varies depending on the ball valve and the size of the compression fitting, no specification can be made regarding the length of the tube section. Proceed as follows to determine the required length:

(1) Mount the ball valve (see 5.4.4) and the compression fitting (see5.4.1).

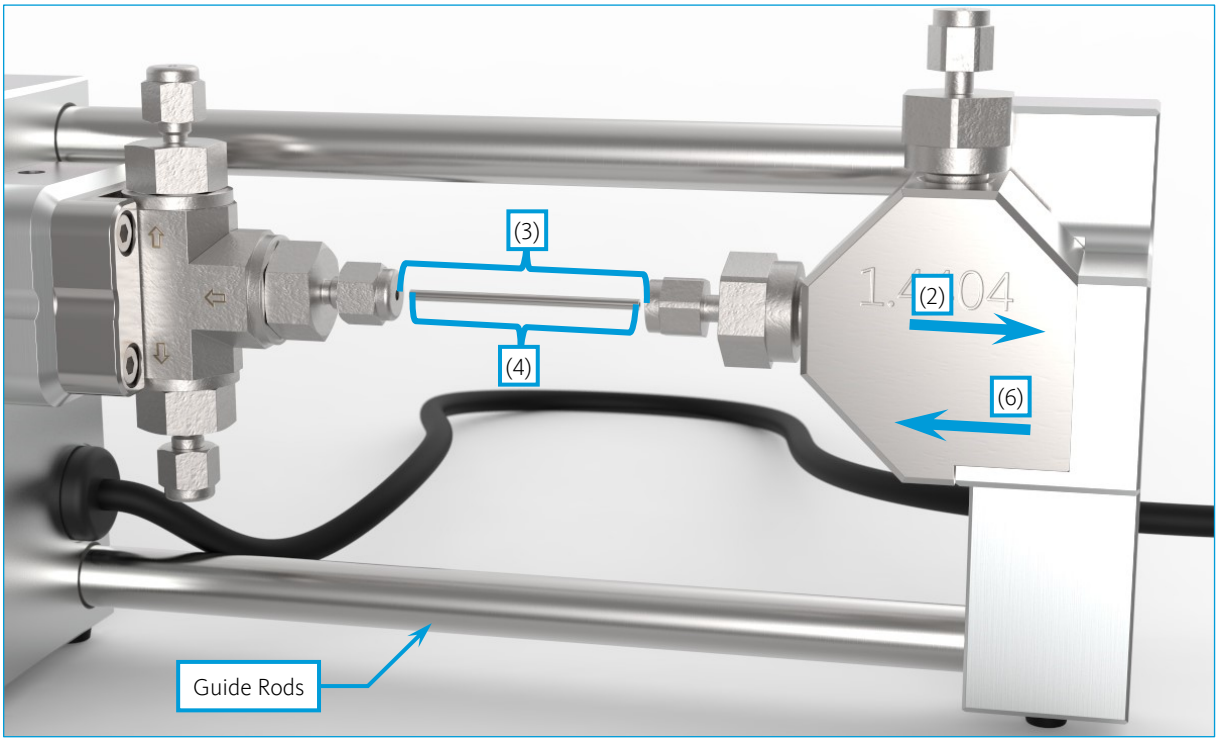
(2) Pull the pressure sensor housing with the guide rods out completely.

(3) Measure the distance between ball valve and compression fitting.

(4) Shorten the tube piece so that it is about 1 to 3 mm shorter than the determined distance.

(5) Insert the tube piece into the ball valve and fasten it as described in 5.4.3.

(6) Push the pressure sensor housing back so that the compression fitting slips onto the tube until it reaches the stop and fasten it (see 5.4.3).



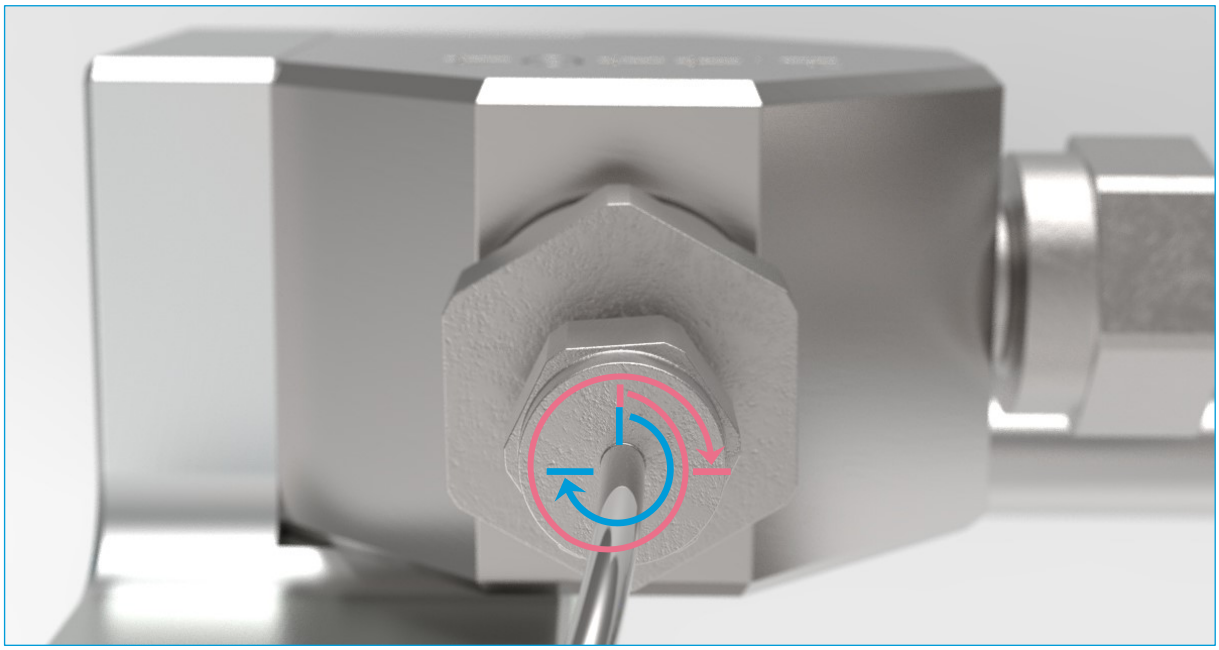
5.4.3 Tube Installation

5.4.3.1 FIRST-TIME TUBE INSTALLATION

(1) Fully insert the tube into the fitting and against the shoulder; rotate the cap nut finger-tight.

(2) Mark the cap nut at the 12 o'clock position.

(3) Tighten the cap nut three-quarters turn to with an open-end wrench. With fittings for 6 mm and ¼" pipes, 1-¼ turns are necessary. Hold the body of the compression fitting with one of the wrenches mentioned in section 5.4.1.



HINT. The following wrench sizes are required to operate the cap nut:

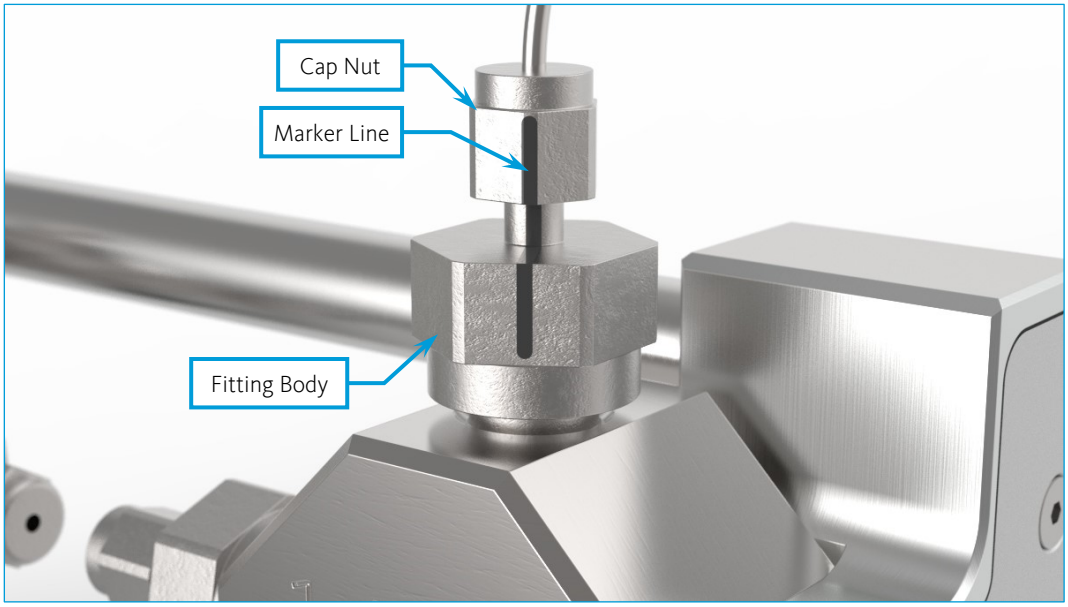
- 5/16" for compression fittings for 1/16" tubes
- 7/16" for compression fittings for 1/8" tubes
- 9/16" for compression fittings for 1/8" tubes
- 12 mm for compression fittings for 2, 3 and 4 mm tubes
- 14 mm for compression fittings for 6 mm tubes

CAUTION. Only use fittings and capillaries specified for the anticipated pressure levels. After connecting, check the tightness of all fluidic connections on a regular basis.

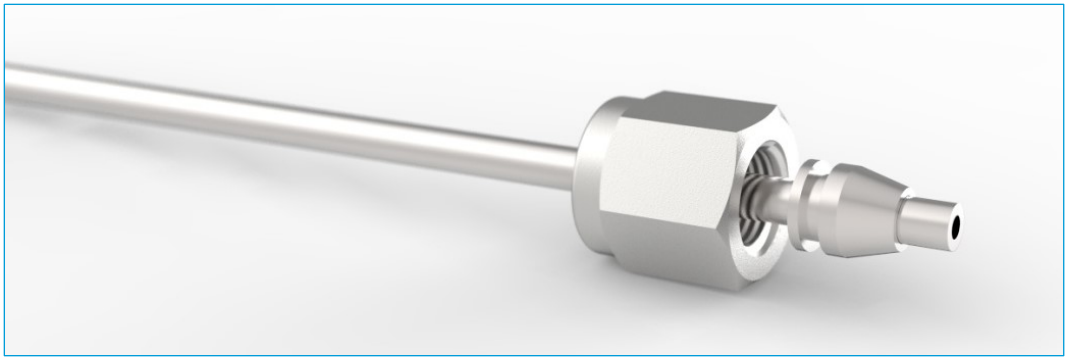
5.4.3.2 TUBE DISASSEMBLY

CAUTION. Release pressure from the system before loosening the fittings.

(1) Before disassembly, draw a marker line across the nut and the fitting body. In this way you create a reference for retightening the cap nut to exactly the same position it was in before.



(2) Pull out the tube. The cap nut and the ferrules remain on the tube.



5.4.3.3 TUBE REASSEMBLY

(1) To reassemble, insert the tube with preassembled ferrules into the fitting body until the front ferrule seats against the fitting body.

(2) Rotate the cap nut with an open-end wrench to the previously pulled-up position as indicated by the marks you made before; at this point you will feel a significant increase in resistance.

(3) Retighten the nut slightly.

5.4.4 Ball Valve Disassembly/Assembly

IMPORTANT. The ball valve is a wearing part. Check it regularly for leak tightness and readjust or replace if necessary.

To readjust the seal or to replace a worn ball valve, you must remove it from the unit. Disassembly and assembly are described below:

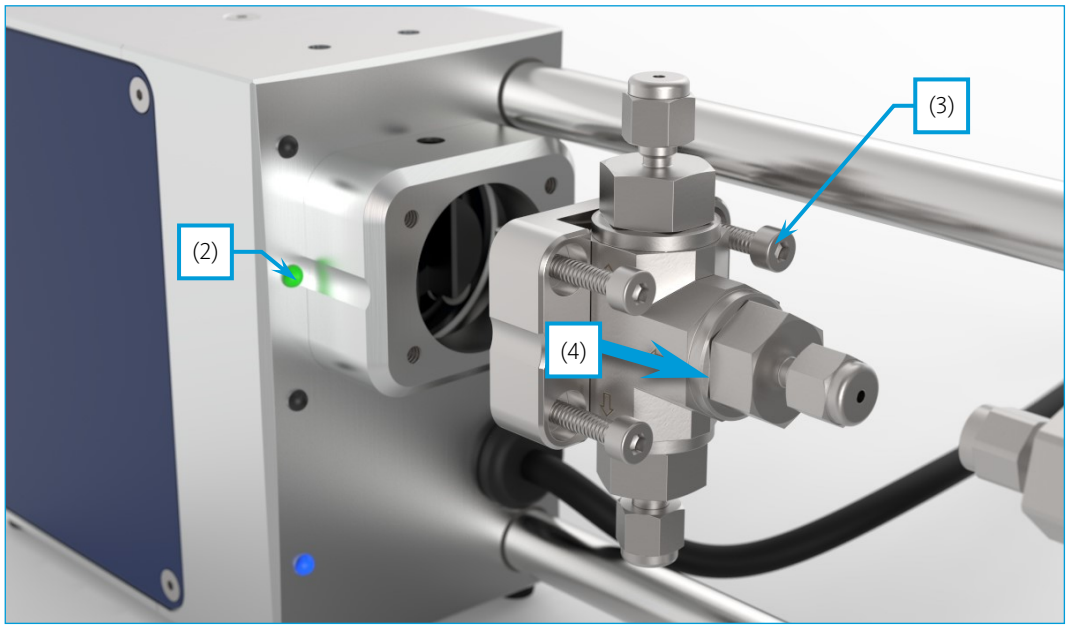
5.4.4.1 BALL VALVE DISASSEMBLY

(1) Remove the tube connection to the pressure sensor (see 5.4.3.2).

(2) Move the ball valve to the closed middle position via the software.

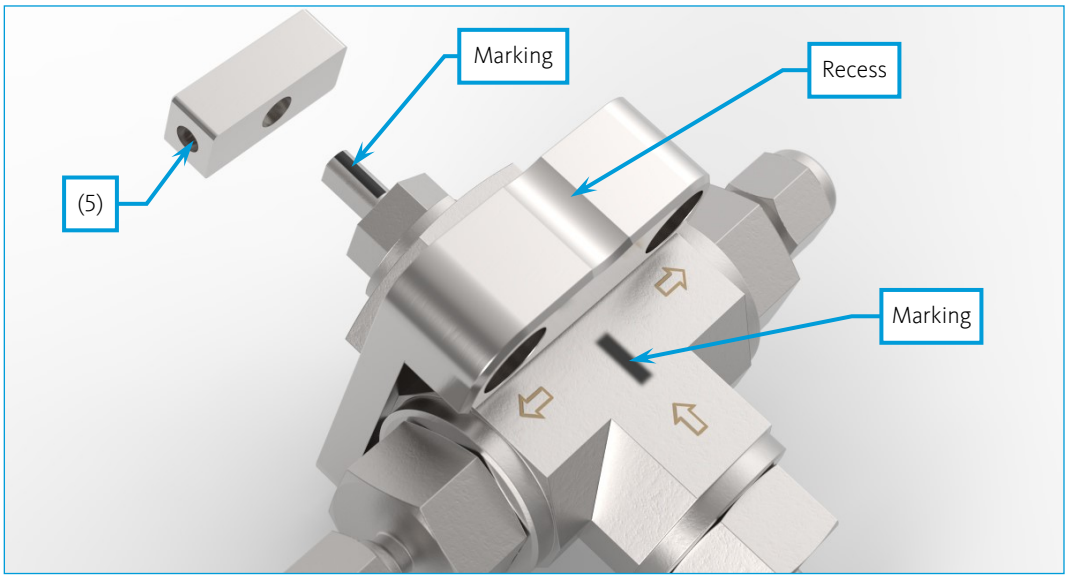
(3) Loosen and remove the 4 screws with a 2.5 mm Allen wrench.

(4) Pull the ball valve with its mounting plate off the device.



(5) Remove the driver by loosening the grub screws on the sides with a 2 mm Allen wrench. If the production date of your ball valve is before calendar week 39 in 2024, you will need a 1.5 mm Allen wrench. The production date can be read from the last 4 digits of the serial number (xxxx<2439).

(6) Mark the body and stem of the ball valve on the side where the recess in the mounting plate is.



(7) Now you can readjust the seal (packing) of the ball valve. (See 5.4.4.4)

(8) If you want to replace the ball valve, remove it from the mounting plate by unscrewing the large union nut.

5.4.4.2 BALL VALVE REASSEMBLY

If you have removed the existing ball valve as described above and wish to reinstall it, follow these steps:

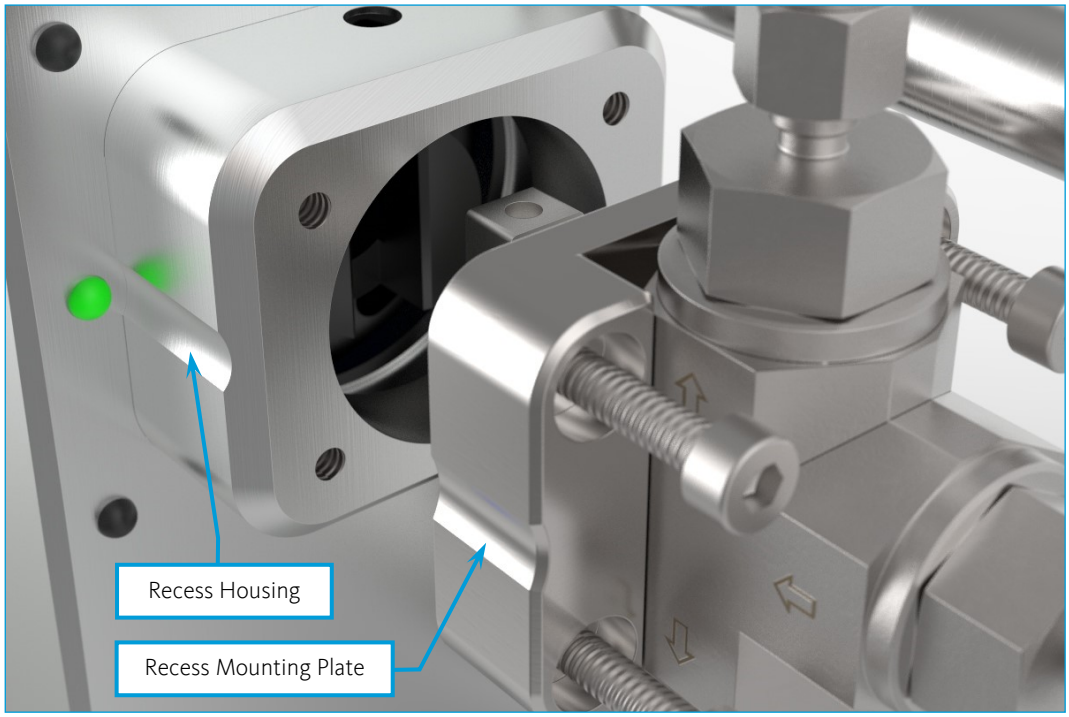
(1) Attach the ball valve to the mounting plate. Make sure that the marking on the body of the ball valve is on the side of the mounting plate that has the recess.

(2) Align the marking on the stem of the ball valve so that it is on the side of the mounting plate that has the recess. Place the driver on the stem so that it is flush with the end of the stem and fasten it with the grub screws. These must press on the flats of the stem.

(3) Make sure that the device is set to the closed middle position.

(4) Connect the pre-assembled ball valve unit to the device. The driver must be inserted into the groove of the actuator disc in the device. Make sure that the recesses on the mounting plate and on the housing are on the same side.

(5) Fasten the unit with the four screws.



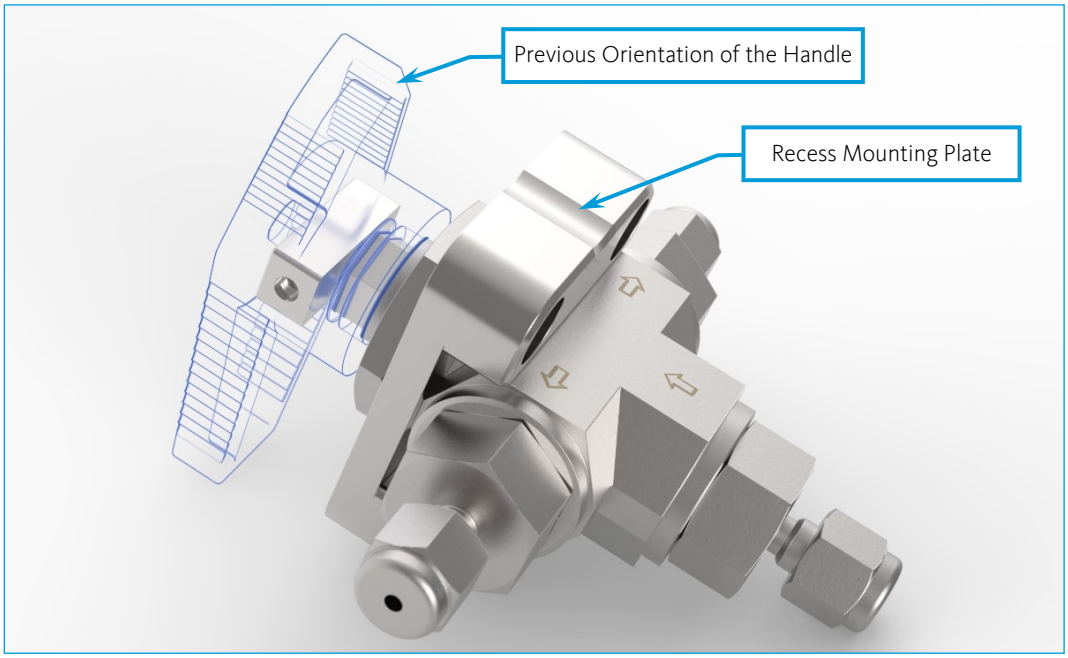
(6) Finally, check (e.g. with compressed air) whether the valve switching positions correspond to the indicator LEDs. If this is not the case, disassemble the ball valve unit again, turn the driver 180° and reassemble the unit.

5.4.4.3 MOUNTING OF A NEW BALL BALVE

A new ball valve is usually equipped with a handle for manual operation. Disassemble the existing ball valve as described above and then follow these assembly steps:

(1) Turn the ball valve to the closed middle position by using the handle and mark the side to which the tip of the handle points. Remove the handle and also mark the stem on this side.

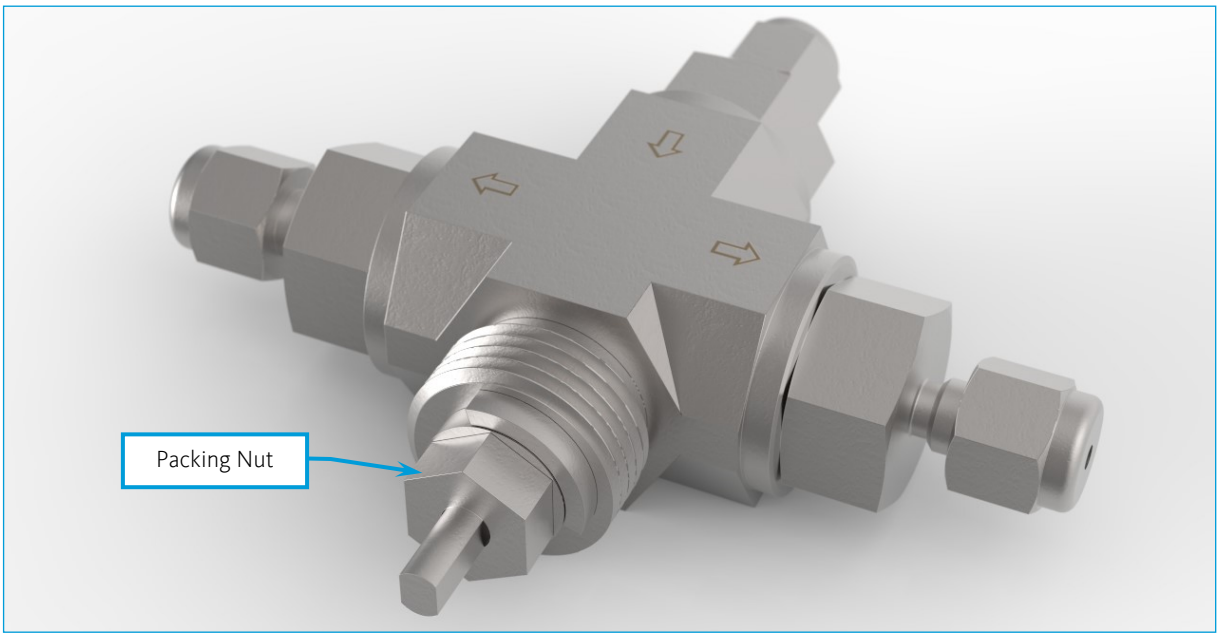
(2) Screw the ball valve to the mounting plate with the corresponding union nut. Make sure that the markings on the ball valve are on the side of the mounting plate that has the recess. From here on, the further procedure corresponds to the procedure described in 5.4.4.2 from point (2) onwards.



IMPORTANT. If you do not have the confidence to install a new ball valve, contact us - we will be happy to do it for you.

5.4.4.4 ADJUSTING THE BALL VALVE SEAL

To prevent leakage, the seal (packing) of the ball valve should be readjusted from time to time according to the specifications of the ball valve manufacturer (Swagelok or Fitok). To do this, the packing nut is screwed in clockwise in steps of about 1/16 turn until leak tightness is achieved.



5.5 Electrical Connection

IMPORTANT. Please read and observe the respective section of the associated software manual before connecting the CETONI (Contiflow) Ball Valve.

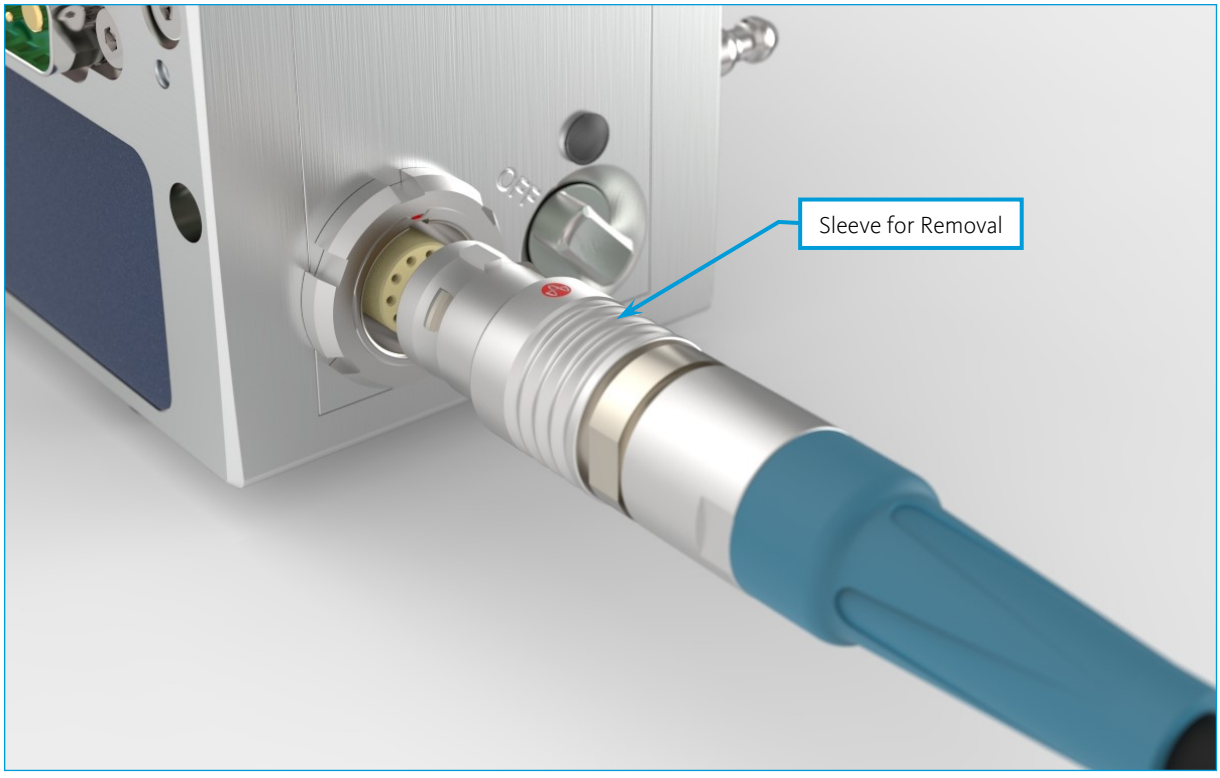
CAUTION. Danger of stumbling due to connecting cables! Place cables and tubing in such way as to avoid any danger of stumbling!

5.5.1 Connection to Nemesys I/O-interface

The CETONI (Contiflow) Ball Valve is available with connectors for the 12-pin and the 14-pin I/O interface. The connection procedure is the same for both connectors.

Insert the cable connector into the socket of the CETONI syringe pump until it engages. Note that the plug can only be mounted in one orientation!

For removal, pull on the metal sleeve of the connector. This releases the lock and the connector can be removed easily.

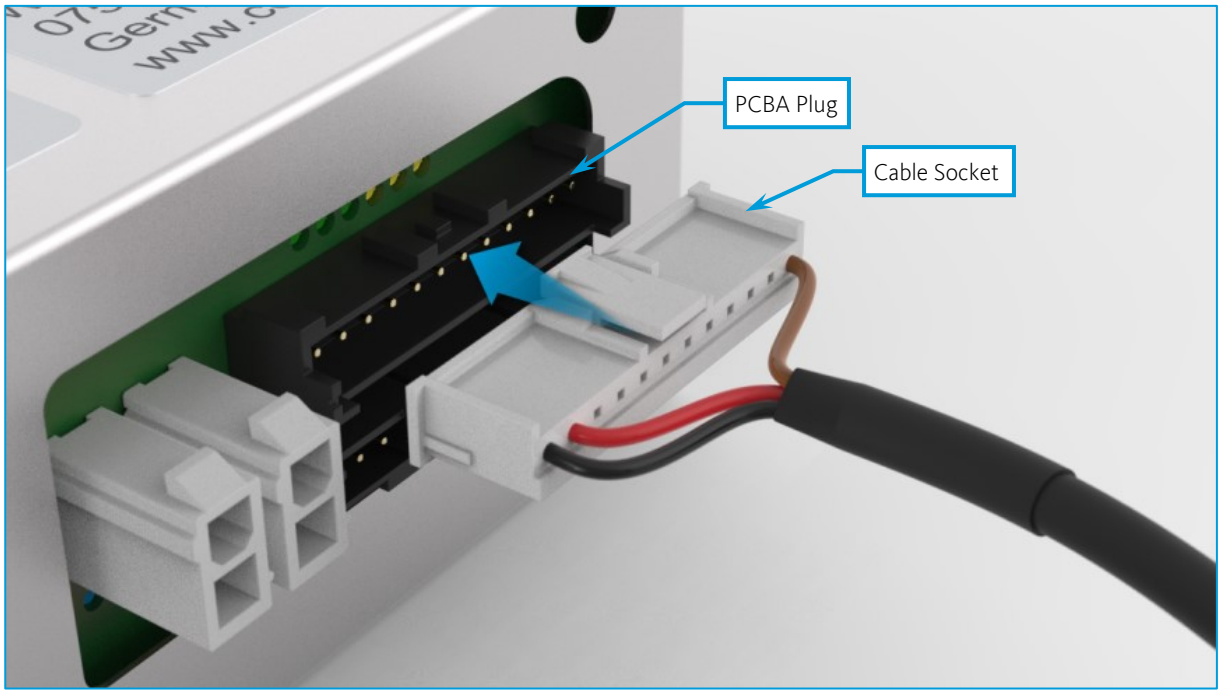


5.5.2 Connection to Nemesys OEM I/O-interface

The CETONI (Contiflow) Ball Valve with the 12-pin JST cable socket can be connected to all Nemesys OEM devices that are fitted with the corresponding 12-pin JST PCBA plug.

Plug the cable socket of the pressure sensor into the plug of the module until it snaps noticeable into place. Please note that the connection will fit only one way!

To remove it, pull on the snap-fit rocker of the cable socket. Thus, the lock is released and the cable can be removed easily.



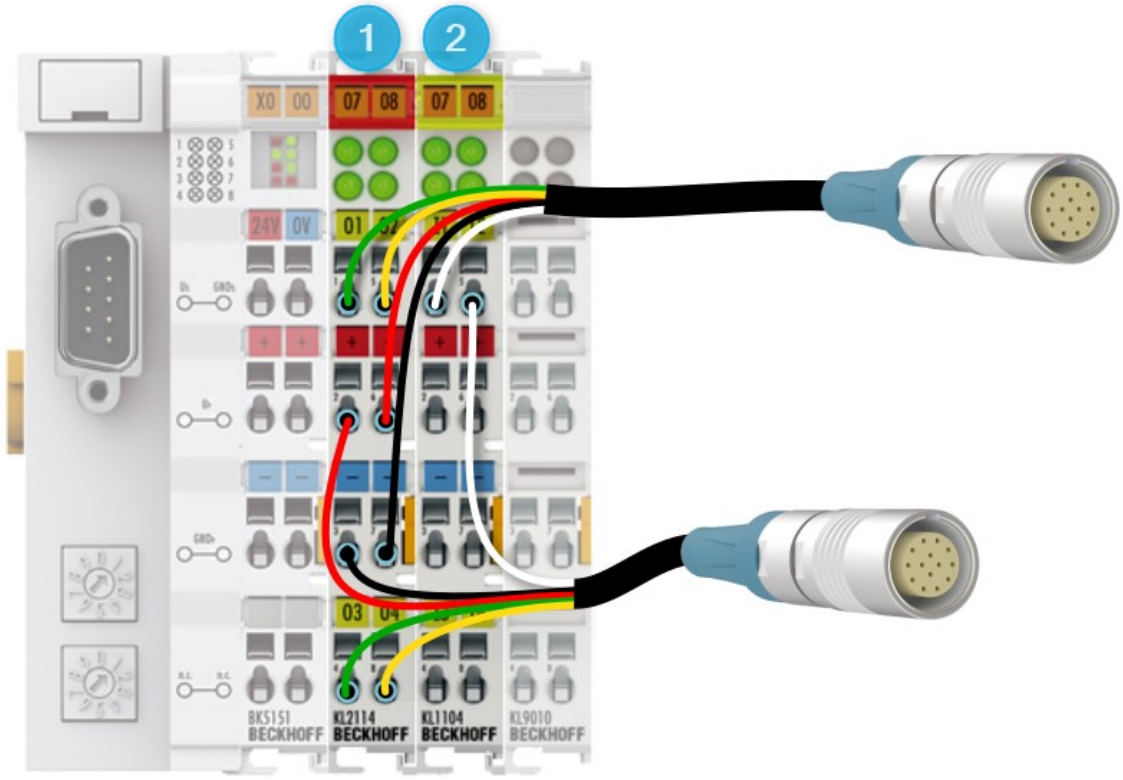
5.5.3 Connection to a CETONI I/O Module

5.5.3.1 CONNECTION OF CETONI BALL VALVE TO CETONI I/O MODULE

The CETONI Ball Valve can be connected to the CETONI I/O Module via an adapter cable. The following table shows the assignment of the wires of the adapter cable according to their color:

WIRE COLOR	ASSIGNMENT
BLACK	Ground
RED	Supply Voltage 24 VDC
GREEN	Valve switching signal 1 - 0 ... 24 V
YELLOW	Valve switching signal 2 - 0 ... 24 V
WHITE	Valve status 0 ... 24 V

The recommended connection of the adapter cable to the CETONI I/O Module is to use the KL2114 output terminal (4-channel digital output terminal 24 V DC) 1 together with the KL1104 input terminal (4-channel digital input terminal 24 V DC) 2. Two valves can be connected directly to these terminals.



The two switching signals of the CETONI Ball Valve are controlled via the output terminal. The status output of the CETONI Ball Valve is connected to the input terminal. When the adapter cable is connected to the terminals as shown in the figure above, you can simply connect your CETONI Ball Valve to the socket of the adapter cable.

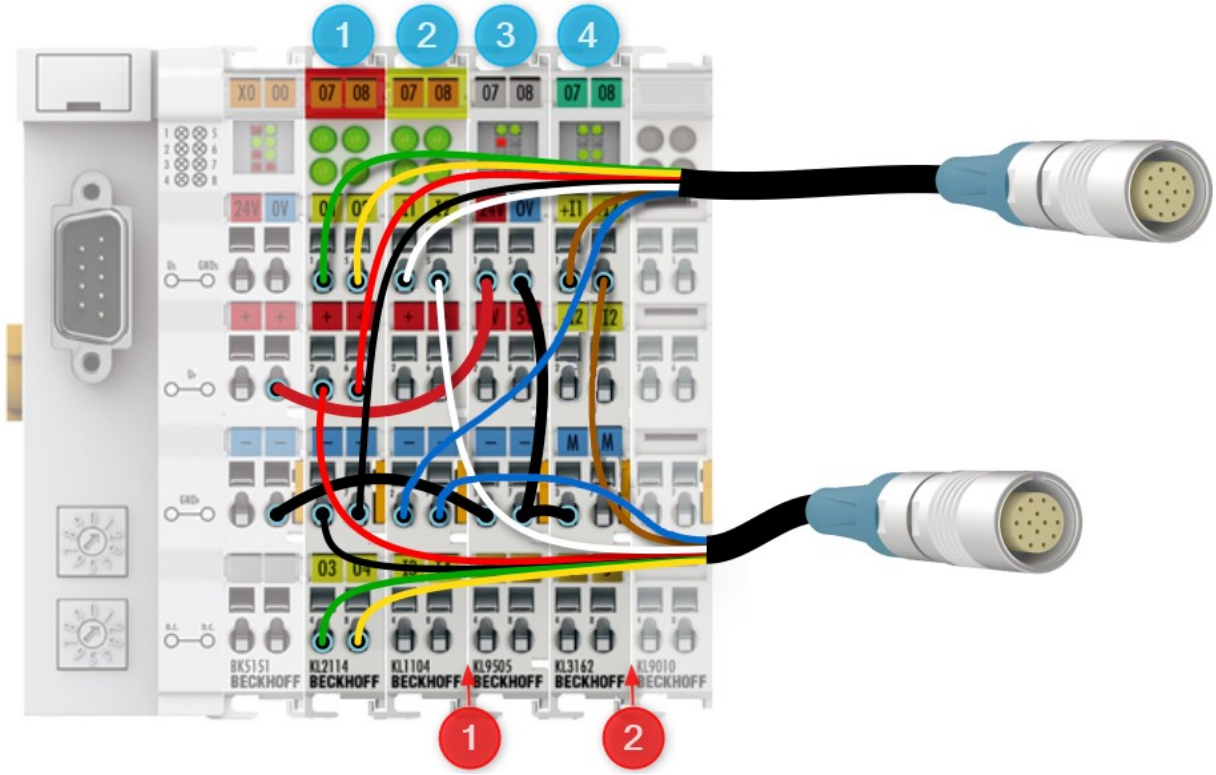
5.5.3.2 CONNECTION OF CETONI CONTIFLOW BALL VALVE TO A CETONI I/O MODULE

The CETONI Contiflow Ball Valve can be connected to the CETONI I/O Module via an adapter cable. The following table shows the assignment of the wires of the adapter cable according to their color:

WIRE COLOR	ASSIGNMENT
BLACK	Ground
RED	Supply Voltage 24 VDC
GREEN	Valve switching signal 1 - 0 ... 24 V
YELLOW	Valve switching signal 2 - 0 ... 24 V
WHITE	Valve status 0 ... 24 V
BROWN	Pressure sensor analog signal 0,5 ... 4,5 V
BLUE	Pressure sensor analog ground

The recommended connection for the CETONI I/O Module is to use the KL3162 analog input terminal (2-channel analog input terminal 0...10 V, 16 bit) 4 together with the KL9505 5V power supply terminal 3 to connect the pressure sensor of the Contiflow valves. The KL2114 output terminal (4-channel digital output terminal 24 V DC) 1 together with the KL1104 input terminal (4-channel digital input terminal 24 V DC) 2 are required to connect the valve switching signals.

The following connection diagram shows how the valves are connected to the terminals. Via the power supply terminal **KL9505** 3 the 5V for the voltage supply of the pressure sensors are generated. The brown signal lines of the pressure sensors can be connected directly to the 2 inputs (+I1 and +I2) of the analog input terminal **KL3162** 4. The analog ground (blue wires) is connected to terminal KL1104 (-) 2 or an equivalent free ground terminal. The 2 inputs (-I1 and -I2) of terminal KL3162 4 must not be used, because the terminal is not set and operated in differential mode after delivery.



Connect the other strands of the adapter cable to the digital input and output terminals as shown in the figure. Up to 2 CETONI Contiflow Ball Valves can be connected with this terminal configuration. When the adapter cable is connected to the terminals as shown in the figure, you can simply connect your CETONI Contiflow Ball Valve to the socket of the adapter cable.

If you want to connect more CETONI Contiflow Ball Valves, simply add more analog and digital terminals to the system. Insert the additional digital terminals into the system at position 1 and the additional analog terminals at position 2.

IMPORTANT. Depending on the terminals used, the wiring actually required may differ from the illustration.

6 Transport and Storage

It is recommended to use the original packaging for any returns as this ensures optimal protection of the equipment during transport. If this is no longer available, please ensure that the equipment is safely stored within a stable box. Please also take care of enough cushion material to protect the equipment for mechanical shocks. You may also contact us so that we can send you the original packaging.

For storage, observe the information given in the "Technical data" chapter.

7 Maintenance and Care

Except for the ball valve, the device is maintenance-free when used as intended. Should there be any problems that you cannot solve yourself, or should the installation work be necessary that goes beyond those described in this manual, please contact CETONI GmbH to coordinate further actions. The device may only be opened by CETONI GmbH or thereby authorized service staff. Otherwise, the warranty claims are void.

Software-related troubles are dealt with in the Software Manual.

For cleaning it, please rub the surface gently with a soft, damp cloth. The cloth must not be wet, so that no fluency can trickle into the device. In case of a heavier soiling, you can also use a little bit of detergent or alcohol.

For information on disassembly, assembly and maintenance of the ball valve, refer to section 5.4.4.

8 Disposal

This device is an electrical resp. electronic device.

The symbol of a crossed-out wheeled bin indicates that the respective device must be collected separately from unsorted municipal waste at the end of its service life.

If you wish to dispose of your device, please contact us as the manufacturer of the devices via the known contact channels. We will contact you immediately and provide you with all important information on how to return the equipment to our company site.

Please decontaminate the equipment before returning it, if necessary, and enclose the completed decontamination declaration.

Upon receipt of the returned equipment, we will take care of its proper disposal.