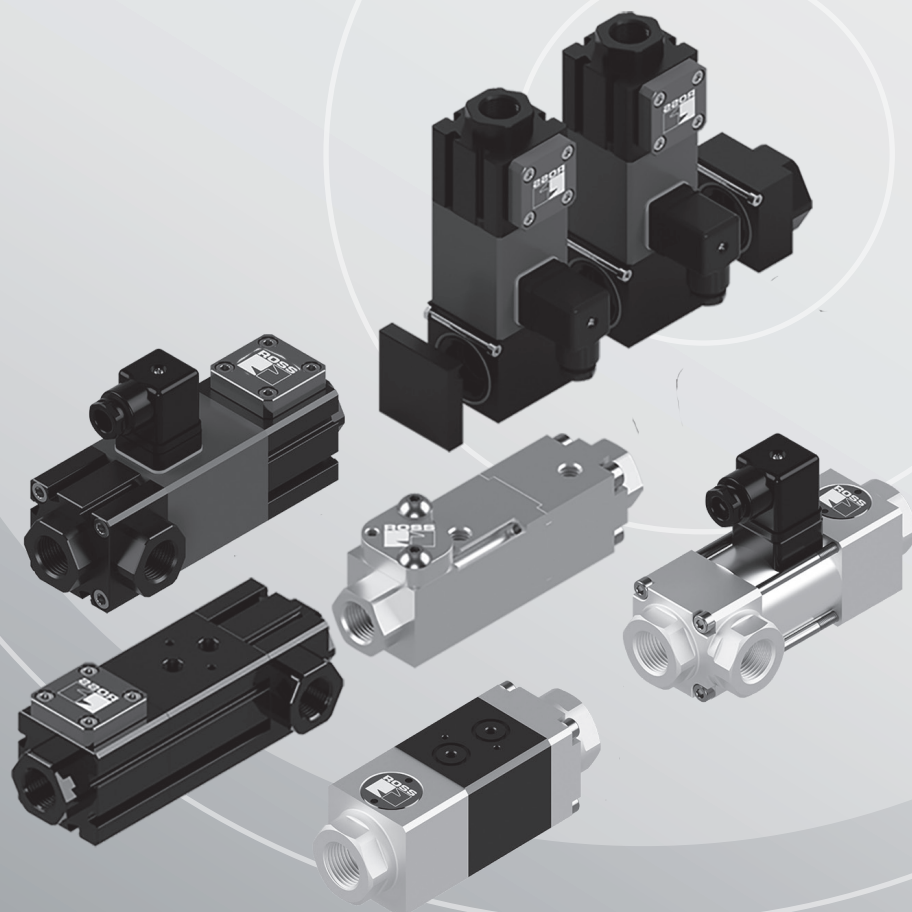


ROSS[®] Coaxial Valve

CV10/CV20



1 About this documentation

These operating instructions contain important information for the safe installation, commissioning, use and maintenance of ROSS coaxial valves. It is intended for specialist personnel and must be read and observed in full before installation and use. It is assumed that these personnel have the necessary qualifications and knowledge of the relevant standards and regulations.

- ▶ Read these instructions completely before using the product.
- ▶ Observe all applicable national regulations on accident prevention and environmental protection.
- ▶ These instructions are part of the product and must be kept for future maintenance or service work.

1.1 Warning notice

In these operating instructions, the warning notices appear at the beginning of the section that contain handling requirements that pose a risk of personal injury or property damage.

Warning notices are structured as follows:

 SIGNAL WORD	
Type or source of danger!	Consequences
▶ Measures to avert danger	

- **Warning triangle:** Indicates the risk of death or serious injury.
- **Signal word:** Indicates the severity of the danger.
- **Type or source of danger:** Shows the type or source of danger.
- **Consequences:** Describes the possible consequences or ignoring the warning
- **Measures to avert danger:** Shows how the danger can be avoided. It is imperative that the security measures are taken.

 WARNING	Indicates a potential hazard which, if not avoided, could result in death or serious injury.
 ATTENTION	Indicates a hazard which, if not avoided, could result in minor to moderate injury.
DANGER	Indicates the risk of possible property damage to the product or its environment if these hazard are not avoided.

2 Content of the package

Items included:

- **Coaxial Valve** or **Modular Coaxial Valve Block**
- **Accessories** (if ordered)

3 Product identification

You can either find the identification of your valve in the corresponding product catalogue or via the QR code attached to the valve.

4 Safety instructions

The product was manufactured in accordance with the generally recognised rules of technology. Nevertheless, there is a risk of personal injury and damage to property.

- ▶ Always observe the following safety instructions and warnings in these operating instructions.

4.1 Intended use

ROSS coaxial valves can be used as individual valves or as modular multiple valve blocks (valve manifolds) for controlling gaseous (neutral gases), liquid, highly viscous and contaminated media. (see 4.2).

- ▶ The coaxial valves may only be used in industrial areas. Unauthorized changes to the valves are not permitted.
- ▶ Comply with the technical data and the limit values specified on the nameplate.

4.2 Use of media

Liquid media – emulsions, oil, water, process water

Highly viscous media – lubricating oils (ISO VG 2 – ISO VG 320), Lubricating greases (NLGI 0 – NLGI 000)

Contaminated media – cooling lubricant, water, process water

Gaseous (neutral gases) media – compressed air

Gases - nitrogen, neon, argon, krypton, xenon, radon, helium, CO₂

Abrasive media – on request

Other media – on request

If the coaxial valve is operated outside of these media, please contact ROSS Europa GmbH.

4.3 Foreseeable misuse

 WARNING	
In the event of incorrect use, personal injury and property damage are possible. The foreseeable misuse include:	
▶ Use in non-industrial areas, e.g. living areas	
▶ Use outside of the limits of the products defined by the technical data	
▶ Unauthorized changes	
▶ Vacuum operation (see data sheet)	

4.4 Unauthorized applications

- ▶ Use outside the intended operating limits (see product catalogue).
- ▶ Unauthorised modifications and reconstructions.
- ▶ Operation with unsuitable media.

5 Prerequisite for using the product

- ▶ Make these operating instructions available to the designer and installer of the machine or system on which this product is used.
- ▶ Keep these operating instructions in a safe place for the entire product life cycle.

5.1 Qualification of personnel

Assembly, installation, commissioning, maintenance and decommissioning may only be carried out by qualified specialist personnel with knowledge and experience in handling electrical and pneumatic control technology

5.2 Safety instructions

- ▶ Observe the safety rules and regulations of the country in which the product is used.
- ▶ Avoid overvoltages, this can lead to damage to electrical and other components of the valve.
- ▶ When using protective measures against switch-off overvoltages, check whether this extends the switch-off time of the valve.
- ▶ If the machine vibrates heavily, use a suitable vibration-damping attachment for the valve.
- ▶ Avoid unnecessary connections and mechanical tension.
- ▶ Protect the device from falling objects.

5.3 Electrical installation

Please ensure that the valve is operated with the correct voltage and frequency. ROSS solenoids are designed for continuous operation at 90% - 110% of the voltage specified on the solenoid coil. Multi-range solenoids (e.g. 110-120V) are designed for continuous operation at 85% - 90% of the highest specified voltage. Voltages outside this range can cause the valve to operate incorrectly. With the directly controlled coaxial valve, it must be ensured that the solenoids are DC solenoids. When used with AC voltage, an appliance connection box with a built-in rectifier must be used!

6 Assembly and installation



ATTENTION

Risk of injury during installation under pressure or with live parts!

Risk of injury during installation under pressure or with live parts!

- ▶ Disconnect the system from the power supply before installing the valve and depressurize it before installing the valves!
- ▶ Secure the system against unexpected start-up!

CAUTION

Damage to components!

Chemical substances can damage the surface, markings and seals of the device.

- ▶ Install the valve in such a way that it is protected from the effects of chemical substances!

Damage to the device due to storage at incorrect temperatures!

The storage temperature corresponds to the permissible ambient temperature and depends on the valve type.

- ▶ Observe the temperatures in the data sheet for the corresponding valve type.

6.1 Mechanical installation

The valves described in this operating manual may only be installed by competent, appropriately trained personnel. They may only be used within the scope of the „intended use“ described in these operating instructions. The lines and line connections as well as the electrical control of the coaxial valves must comply with the applicable safety regulations.

- ▶ Take the dimensions of your valve from the corresponding data sheet for the valve.

6.2 Pneumatic installation / externally controlled valves

- ▶ Connect the lines to the appropriate ports on the valve.
- ▶ Make sure that all ports are closed.
- ▶ Close all unused connections.
- ▶ Leakage holes must not be closed.
- ▶ Ensure that the operating pressure for the corresponding coaxial valve (see technical data sheet) is not exceeded.

6.3 Electrical installation / direct acting valves

Ensure that the valve is operated at the correct voltage and frequency. ROSS solenoids are designed for continuous operation at 90% - 110% of the voltage specified on the solenoid coil. Multi-range solenoids (e.g. 110-120V) are designed for continuous operation at 85% - 90% of the highest specified voltage. Voltages outside this range can cause the valve to malfunction. With the directly controlled coaxial valve, it must be ensured that the solenoids are DC solenoids. If AC voltage is used, an appliance connection box with built-in rectifier must be used! Appliance connection boxes are not included in the scope of delivery.

7 Commissioning and operating

Before commissioning, the installation must be carefully checked by knowledgeable, trained personnel.

- ▶ Make sure that the technical data of the valve match the operating criteria of the machine or system.
- ▶ Clean the device regularly as dust deposits on heated surfaces can ignite.

7.1 Perform a function test

- ▶ Check the valve for leaks at all ports and screw connections
- ▶ When searching for leaks, only use tools that do not alter the valve or leave any residue behind.
- ▶ Check whether the desired switching position change has occurred after actuation; a new leakage test may be necessary.

Valve type	Direct acting		Passage
2/2-Way	Normally closed (NC)	not actuated actuated	X P → A
	Normally open (NO)	not actuated actuated	P → A X
3/2-Way	Normally closed (NC)	not actuated actuated	P → R P → A
	Normally open (NO)	not actuated actuated	P → A P → R
Valve type	Externally controlled		Passage
2/2-Way	Normally closed (NC)	not actuated actuated	X P → A
	Normally open (NO)	not actuated actuated	P → A X
3/2-Way	Normally closed (NC)	not actuated actuated	P → R P → A
	Normally open (NO)	not actuated actuated	P → A P → R

7.2 Working pressures and temperatures

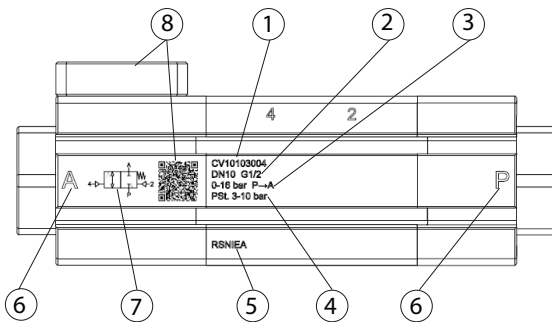
The minimum and maximum pressure and operating temperature are specified for each coaxial valve (see our product catalog or data sheet). Operating the valve within the specified ranges will help increase valve life. If you need to use the valve outside of these limits, you should contact ROSS. The valves should preferably be controlled with 5/2-way pilot valves.

7.3 Pilot pressure

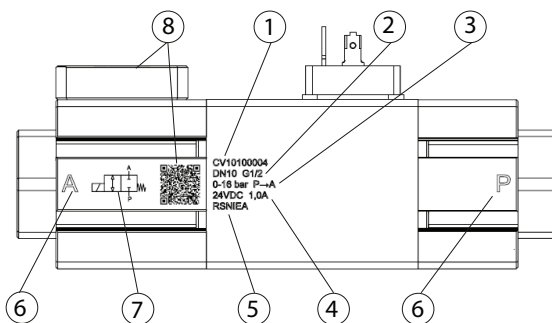
Fremdgesteuerte Coaxial Ventile werden standardmäßig extern mit Vorsteuerluft versorgt. Um eine einwandfreie Ventilfunktion zu gewährleisten, muss der Vorsteuerdruck den Angaben auf dem Typenschild entsprechen.

8 Explanation of the rating plate

Externally controlled coaxial valve



Direct acting coaxial valve



1. Article and Order Number

Position 1-2

- ▶ Product series CV = Coaxial valve

Position 3-4

- ▶ Product version 10 = 1.0
- ▶ Product version 20 = 2.0

Position 5-6

Orifice size in DN

Position 7

- ▶ 0 - 1 = 2/2-way direct acting
- ▶ 2 = 3/2-way direct acting
- ▶ 3 - 4 = 2/2-way externally controlled
- ▶ 5 = 3/2-way externally controlled
- ▶ 6 - 7 = 2/2-way module direct acting
- ▶ 8 - 9 = 2/2-way module externally controlled

Position 8-10

- ▶ Serial number, internal design parts list
- ▶ Work plan, test instructions

2. Orifice size in DN, connections type and size

3. Max. Max. operating pressure with specified flow direction

4. Control

- ▶ Direct acting: Voltage and power consumption
- ▶ External control: Control pressure range

5. Manufacturer code: Date of manufacture (coded)

6. Labelling of connections

7. Switching symbol

8. Manufacturer's labelling & QR code for further information

9. Labelling of control connections of externally controlled valve

9 Service, repair, maintenance

In the event of technical problems or repairs, contact your local ROSS service. When used as intended, maintenance of the coaxial valves is only required after the valve seat is worn down.

- ▶ Only ROSS spare parts may be used to repair ROSS products. Failure to comply may impair the function of the products and lead to the risk of accidents.
- ▶ All ROSS products, including repair kits and spare parts, may only be installed and / or serviced by trained, experienced specialists.
- ▶ All switches and relays that are part of the valves external electrical system must be in good working order to avoid malfunctions of the solenoids.

9.1 Maintenance of the valve seat

Maintenance of the valve seat ball is only possible in consultation with ROSS.

CAUTION

For authorized maintenance, please note the following information:

- ▶ Media, tightness requirements, temperature, special designs and in the event of danger to people and the environment.

9.1 Disassembly and dismantling



ATTENTION

Risk of injury from dismantling under pressure or tension!

Dismantling under pressure or with electrical voltage applied can lead to injuries due to sudden pressure build-up or electric shock.

- ▶ De-pressurize and de-energize the relevant part of the system before you dismantle the valve.
- ▶ Secure the system against unexpected startup!

10 Disposal

Dispose of the coaxial valve in accordance with the applicable legal regulations in your country.

**ROSS EUROPA GmbH**

Germany

Tel: +49-6103-7597-100

sales@rosseuropa.com

www.rosseuropa.com

manufactIS GmbH

Germany

Tel: +49-201-316843-0

info@manufactis.net

www.manufactis.net

ROSS CONTROLS

U.S.A.

Tel: +1-248-764-1800

Customer Svs. 1-800-GET-ROSS

(438-7677)

Technical Svs. 1-888-TEK-ROSS

(835-7677)

sales@rosscontrols.com

www.rosscontrols.com

ROSS ASIA K.K.

Japan

Tel: +81-42-778-7251

custsvc.ra@rosscontrols.com

www.rossasia.co.jp

ROSS UK Ltd.

Great Britain

Tel: +44-1543-671495

sales.uk@rosscontrols.com

www.rossuk.co.uk

ROSS CONTROLS INDIA Pvt. Ltd.

India

Tel: +91-44-2624-9040

ross.chennai@rosscontrols.com

www.rosscontrols.com

ROSS SOUTH AMERICA Ltda.

Brasil

Tel: +55-11-4335-2200

vendas@rosscontrols.com

www.rosscontrols.com.br

ROSS FRANCE SAS

France

Tel: +33-1-49-45-65-65

sales@rossfrance.com

www.rossfrance.com

ROSS CONTROLS (CHINA) Ltd.

China

Tel: +86-21-6915-7961

sales@rosscontrols.com.cn

www.rosscontrolschina.com

ROSS CANADA

Canada

Tel: +1-416-251-7677

sales@rosscanada.com

www.rosscanada.com

6077170 CANADA INC.

AN INDEPENDENT REPRESENTATIVE