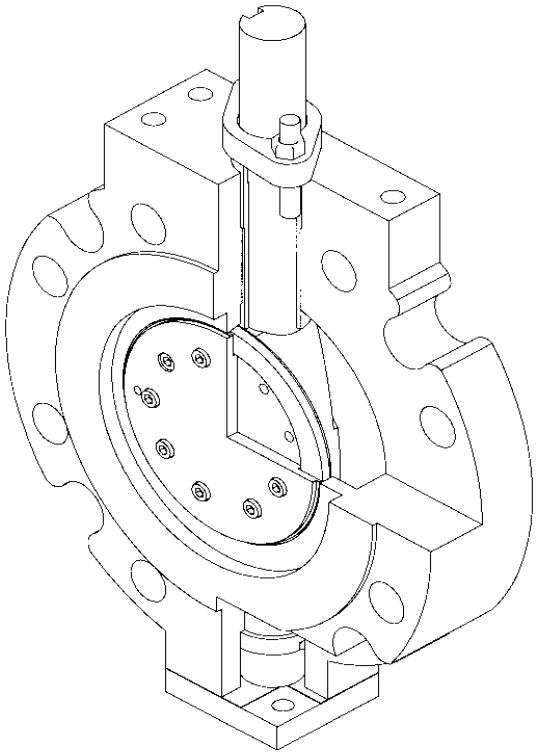
ZWICK
ARMATUREN GMBH

Operating instructions

Rotary process valves Series TRI-CON

(with gear or actuator)



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0 Introduction

This instruction is meant as support for the user of the Rotary process valves Series TRI-CON during installation, operation and maintenance of valves.

Caution	**If below listed caution and warning notes are not observed, it could result in hazards, and the warranty of the manufacturer could become ineffective.** For any queries, please contact the manufacturer. For addresses, see Section 9.

1 Appropriate Use

Rotary process valves of the Series TRI-CON are solely intended to be used in media within the allowed pressure and temperature limits and to shut off or regulate the flow after installation in a pipe system (between flanges or through welding) and after connection of the actuator/end switch (if any) to the controls.

Those Rotary process valves are not recommended for medias with more than small amounts of solids, partially not for those with abrasive solids.

Planning document, the ZWICK brochure <Rotary process valves TRI-CON> (see Section 9 <Information>) describes the allowed pressure and temperature.

Section 2.2 <Safety precautions for the operator> has to be followed when using the valve.

Caution	When using a valve with differential pressures greater than approx. 0.15 bar (liquid media at approximately 20°C) for the continuous control operation, the limits for the use have to be coordinated with the manufacturer. Cavitation has to be avoided by all means.

2 Notes on safety

2.1 General notes on safety

The same safety regulations that apply for the valves apply also for the piping system, in which they are build and for the control system, which will be connected to the actuator. The present instructions provide only those notes on safety for valves that have to be **additionally** observed.

Additional safety notes for actuator assemblies and/or the end switches are listed in the supplied documentation of the manufacturer of these assemblies

2.2 Safety precautions for the operator

It is not the responsibility of manufacturer ZWICK to ensure that the valve

⇒ is used only in accordance as described in Section 1 and in accordance with the supplied documentation (see above)

Life-threatening hazard	Do not use any valve, if it's allowed pressure/temperature area (= "rating") is not sufficient for the operating condition: this allowed area is described in the ZWICK brochure <Rotary process valves TRI-CON> - see Section 9 <Information>. For materials, pressures or temperatures that are not listed in the above brochure, it is mandatory that the operator obtains an approval by the manufacturer for the permitted pressures above room temperature. **Disregard of this regulation could result in injuries or could endanger lives and could cause damage to the piping system.**
Danger	It must be ensured that the selected materials of the parts of the valve - that are in contact with the media - are suitable for the used media. The manufacturer assumes no liability for damage that is caused by corrosion through aggressive media. **Disregard of this regulation could result in injuries or could endanger lives and could cause damage to the piping system.**

- ⇒ to make sure that a gear or a actuator unit that was attached later to the valve and that was adjusted to the valve is properly adjusted in both end positions of the valve. In the closing position, the end stop must take place in the seat of the valve. A stroke limitation within the actuator unit in closing position must be either turned back or must be neutralized.
- ⇒ that the piping system was professionally installed. With such laid pipes, the measurement of the wall thickness of the valve's housing allows an additional load F_z in the usual order of magnitude ($F_z = \pi/4 \cdot DN^2 \cdot PS$).
  (PS = maximum allowable design pressure at room temperature).
  Higher values for F_z can be allowed for Rotary process valves designed for clamping. The applied shear force on the valve's housing may not exceed 10% of the above mentioned forces.
- ⇒ that the valve is properly connected with these systems, particularly such valves that were welded to the pipe
- ⇒ that the actuator/end switch is properly on-site connected to the control system pursuant to the supplied documentation
- ⇒ that the usual flow speeds within these pipes (e.g. B. 4 m/s for fluids) will not be exceeded and that abnormal operational conditions as vibration, water hammering, erosion, (e.g. caused by saturated steam) cavitation, and more, as minor parts of solids in the medium – and particularly such of abrasive nature are clarified with the manufacturer ZWICK
- ⇒ that valves that are operated at an operating temperature of >50°C or <-20°C are protected together with the pipe joints against contact
- ⇒ and that only competent personnel operates, maintains and repairs the valves on pressurized pipes. Competent persons within the meanings of this instruction are individuals who are able to perform their assigned tasks properly by evaluating correctly and by identifying potential hazards and by resolving them due to their training, expertise and experience.

2.3 Special hazards

Life-threatening hazard	The valve stem is sealed by a compression gland. Before the nuts on the compression spacer may be relaxed or loosened, the pressure in the pipeline must be completely relieved, so that no media can leak from the compression gland.
Life-threatening hazard	The pressure in the pipeline must be completely relieved before the screw cap or the body cover may be safely loosened or before the valve may be disassembled from the piping to avoid that the uncontrolled medium discharges from the pipe. It is important to open the valve approx. 5° - 10° to ensure pressure relief on both sides of the valve. If necessary, the actuator may be only dismantled after the valve has been opened for this purpose and remains in opened position.
Danger	For valves that are used as end fitting: With normal operation, particularly with use of gas, hot and/or hazardous media, a blind flange or a sealing lid must be assembled on the non-attached connection part, or the valve must be in "OFF"-position and safely and permanently locked. Caution when closing such a valve: pay attention to the crushing hazard!
Danger	If a valve is an end fitting of a pressurized pipeline and has to be opened, it must be done very carefully so that the squirting out medium does not cause any damage. Be careful when closing such a valve. Pay attention to the crushing hazard!

Danger	When a valve needs to be disassembled from a pipeline: the medium might be discharged from the pipeline or the valve. The piping must be completely empty of health-damaging or hazardous media before the valve is removed. Caution with afterflow residues from dead spaces of the valve or the piping that have remained (under pressure) in the valve. Beforehand disconnect actuator/end switch according to manufacturer's documentation.

2.4 Marking of Rotary process valve

Any Rotary process valve carries a marking with following data (type plate, left column):

EC type plate:

For	Marking	Note
Manufacturer	**Zwick Armaturen GmbH**	Address see Section 9 <Information>
Model no.	e.g.: **C10125C-AA11CP**	Key no., see the Zwick Armaturen GmbH catalog
S.-No.	e.g.: **02-03-7806**	Corresponds to: year – month – serial production no.
Size	**DN (and numerical value)**	Numerical value in mm, e.g. DN200 or in inch, e.g. 8"
PN / class	**Numerical value** for PN / class	PN / class = Dimension standard for flanged Rotary process valves
PS	**Numerical values** in bar or PSI	= maximum allowable pressure at 20°C **/** maximum allowable pressure at max. temperature
TS	**Numerical values in °C or °F**	= ambient temperature ~ 20°C **/** maximum allowable temperature
ΔP	**Numerical values** in bar or PSI	Differential pressure

ASME type plate:

For	Marking	Note
Manufacturer	**Zwick Armaturen GmbH**	Address see Section 9 <Information>
Model no.	e.g.: **C10125C-AA11CP**	Key no., see the ZWICK catalog
S.-No.	e.g.: **02-03-7806**	Corresponds to: year – month – serial production no.
Size	**DN (and numerical value)**	Numerical value in mm, e.g. DN200 or in inch, e.g. 8”
PN / class	**Numerical value** for PN / class	PN / class = Dimension standard for flanged Rotary process valves
CWP / PS	**Numerical value** in bar or PSI	= pressure, upper limit of use at 20°C
max. T / TS	**Numerical value in °C or °F**	= Temperature, upper limit of use
Date	**Year / month**	

and marking for the material of parts that are connected to the media (type plate, right column):

for	Marking	Note
Body	**Marking after material standard**	Material of the housing
Disc & Cl.		Material of the valve’s disc and clamp ring
Shaft		Material of the shaft
Seat		Material of the seat in the body
Lamin.		Material of the (removable) seat ring in the disc
Date	**Year / month**	(Only EC-type plate)
Standards	**API609B/ B16.34/ CE, etc.**	Calculation and test standards

The type plate may not be damaged to identify the valve at all times.

An actuator is usually equipped with an additional type plate.

3 Transport and storage

Valves must be carefully handled, transported and stored:

- ⇒ Store the valve in its original packaging and/or with the protective caps at the flange connections/weld-on ends. The valve should be stored and transported on a pallet (or supported by something similar). This includes transportation to the installation site.
- ⇒ Store the valve prior to installation in a closed space and protect it from harmful influences such as dirt or moisture.
- ⇒ In particular, the metallic seat in the valve, the actuator and the flange connection faces/weld-on ends may not be damaged by mechanical or other influences.
- ⇒ Store valves the same way as they were delivered. Do not operate the gear and/or the actuator.

 **Danger**	*Valves supplied without actuator (special case):* Transport the valve particularly careful so that external influences (e.g. vibration) cannot open an unsecured valve disc that was in the closing position.
 **Caution**	*Valves with actuator type "safety position ON"* There are valves with short installation length. Their clamp disk usually sticks out on both sides of the housing: **The shipping of such clamps is carried out with transport safety measures and closed valve disc:** **Remove transport safely measures first when installing – see Chapter 4.2!**

4 Installation in the pipeline

General

For the installation of valves in a pipeline, the same instructions apply as for the connection of pipes and similar pipeline elements. For valves, the following instructions apply **additionally**.

For the transport to the installation site, observe also Section 3 (above).

Caution	Rotary process valves – particularly such with short installation length - must be **transported and installed with closed valve disc**. Otherwise, the sealing element in the disc could be damaged and the valve might no longer be tight.
Caution	*Crushing hazard exists with non-installed Rotary process valves:* Do not connect and operate the actuator before the **Rotary process valve is installed into the pipeline**. If the valve is intended as end valve of a pipe section, install either an end cover at the exit outlet or securely lock the actuator against unauthorized operation to eliminate the crushing hazard.
Note	*The Rotary process valve is adjusted for tight closing position:* In the closing position, the end stop of the valve/actuator must take place in the seat of the Rotary process valve. A stroke limitation in the gear/actuator must be either reset or otherwise rendered ineffective. Do not change **the adjustment of the end stop "CLOSE".**

Life-threatening hazard	*If - in an exceptional case – a valve has to be installed without a gear/without an actuator:* **ensure that such a valve is not pressured**. If a gear/actuator unit is upgraded, the torque, rotational direction, operation angle and the position of the position of the end stops "OPEN" and "CLOSE" of the valve must be adjusted according to the operating instructions. **Disregard of this regulation could result in injuries or could endanger lives and could cause damage to the valve or the piping system.**
Caution	*Valves with electric actuator:* *Make sure that the valve is switched off in the "**CLOSE**"-position **through the signal of the torque switch**.* In the position "**OPEN**", the flap has to be switched off **with the signal of the limit switch**. *For further references, see documentation for the electric actuator.*

Work steps

⇒ Transport valve in protective packaging to the installation site and unpack only there**.**

⇒ Inspect the valve/gear/actuator for transportation damages. Valves/gears/actuators with visible damages may not be installed.

⇒ Make sure that only such valves are installed whose pressure class, connection type and connection dimensions comply with the conditions of use. See type plate on the valve. The connection data for the actuator must be in accord with the data of the control. See type plate on the actuator.

Life-threatening hazard	Install no valve if it's permitted pressure/temperature area (="rating") is not sufficient for the operation condition: this allowed area is described in the ZWICK brochure <Rotary process valves TRI-CON> - see Section 9 <Information>. For materials, pressures or temperatures that are not listed in the above brochure, it is mandatory that the operator obtains an approval by the manufacturer for the permitted pressures above room temperature. **Disregard of this regulation could result in injuries or could endanger lives and cause damage to the piping system.** In case of doubts, contact the manufacturer.

⇒ If the actuator unit allows manual operation, conduct a test function at the beginning of the installation: the valve must open and close properly. Recognizable malfunction must be corrected by all means before the activation. See also Section 7 <Help with malfunctions>. The position indicator at the gear/at the actuator unit must match the position of the valve disc.
For the installation, **the valve must be in a closed position**.

⇒ *Rotary process valves with short installation length:*
Counter flanges and/or pipe ends must have a clearance or inside width/height that allows sufficient space for the opened valve disc so that the precision sealing element in the valve disc will not be damaged during panning.

⇒ For the protection of the sealing element, the valve and the connecting pipe has to be thoroughly cleaned prior to the installation and particularly hard foreign bodies must be removed.

Life-threatening hazard	*Rotary process valves with short installation length and pneum./electro-hydr. Actuator "safety position OPEN":* The actuator is blocked **with a transport lock in position <CLOSE>**. For the installation ▸ first, the actuator has to be pressurized with the control energy and blocked in the closed position, in which it was delivered, ▸ next, the transport safety must be removed, ▸ then, the closed valve must be held constantly under full control pressure in the "CLOSE" position until it is inserted into the pipe and securely mounted there, ▸ and finally, the control pressure can be slowly released. **Disregard of this regulation could result in injuries or endanger lives and cause damage to the piping system.**

⇒ *Rotary process valves of the series TRI-CON are generally installed in flow direction. They also can be installed in the opposed direction, if this had been agreed with the purchaser (for the sealing in the non-preferred direction, the activity has to be planned with a higher torque).* Install the valve so that the **marked arrow** on the housing matches the direction **that pressure exercises on a closed disc**. This direction may be indeed opposite to the flow direction with open Rotary process valve!

⇒ The preferred mounting position is the one with horizontal Rotary process valve stem. If possible, do not arrange the gear/actuator directly below the valve: compression gland leakage could damage the actuator.

Danger	A valve that is mounted to the side of an actuator (electr./electr.-hydraul./pneum.) must be supported if it causes a non-planned bending effect due to its weight.

⇒ When inserting the valve (and the flange seals) in an already mounted pipeline, measure the distance between the pipe ends so that all connecting surfaces (and seals) remain undamaged.
But the gap may not be larger than necessary to generate no additional pressures in the pipeline during mounting.

Only Rotary process valves with flanges:

⇒ The counter flanges in the pipeline must be aligned and coplanar.

Caution	*Rotary process valves with flange ends:* the seal faces on the housings with Rotary process valve flange ends are designed for the use of flange seals according to EN1514-1 or ANSI B16.21. Counter flanges must have smooth sealing strips, e.g. form B1 or B2 according to Standard EN 1092 or stock finish according to ANSI B 16.5.
Caution	Other flanges with short installation length must be inserted with closed disc in the gap between the pipeline ends, otherwise the precision sealing element in the disc could be damaged and the valve is will be no longer tight.

⇒ During the installment, the flanged Rotary process valves must be fitted with the flange screws to the counter flange before the screws are tightened.

Caution	Rotary process valves with short installation length require usually screws of different lengths for the connection to the counter flanges. For the size of these flange screws, see the ZWICK planning documents <Zw-TriCon-Scr-2002-A1>

Only Rotary process valves with weld-on ends:

⇒ The weld-on ends of the valve must be aligned, coplanar and of the same kind as the piping material - see materials in the type plate of the valve. Opposite positioned weld-on ends must fit together in diameter and edge form.

⇒ During welding, earth cable may not be attached to the valve but must be connected to the pipeline.

⇒ Professional welding must ensure that no significant tensions are created in the pipeline section nor transmitted on the valve. It must be ensured that the Rotary process valve is not damaged by heat. Only temperatures of <300°C are permitted, measured on the housing wall.

⇒ *Rotary process valves >DN 400:*

Caution	When welding the valve into the pipe, the welding process must be controlled in a way that limits added heat energy and to avoid warping of the valve housing. For example, "crossed" welding must be carried out to avoid tensions on the valve housing. Disregard of those regulations may cause warping of the valve housing. Already 1/10 mm of steady warping in the seat area (around the mounting of the connection pieces) may render the valve useless.

All Rotary process valves:

⇒ The instruction of the actuator manufacturer applies for the connection of the actuator/end switch to the control.

⇒ In order to complete the installation, conduct a test function with the signals of the controls: The valve must close and open with the necessary actuator torque in accordance with the control commands. The signals from end switches/position detectors (if any) must display properly the position of the valve.
Recognizable malfunctions must be corrected by all means before the activation. See also Section 7 <Help with malfunctions>.

Danger	Incorrectly executed control commands could cause danger to the operating staff and to the piping system.

5 Pressure test and activation

The pressure tests of the valves have already been carried out by the manufacturer. For the pressure test of a pipe section with built-in valves, the following should be noted:

- ⇒ Rinse newly installed pipe systems carefully to remove all contaminant.
- ⇒ **Valve opened:** the test pressure may not exceed **value 1.5 x PS** (according to the type plate). (*PS = maximum allowable operating pressure at 20°C).*
- ⇒ **Valve closed:** the test pressure may not exceed **value 1.1 x ∆P** (according to the type plate).

If a valve should leak, pay attention to Section 7 <Help with malfunctions>.

6 Normal operation and maintenance

Valves that were delivered ex factory with the gear/actuator are precisely adjusted and should not be adjusted as long as the valve works properly.

For valves with hand wheel, normal hand forces are sufficient. The use of extensions to increase the actuating torque is not allowed.

Valves with actuators must be operated with signals of the control. For a hand emergency operation on the actuator (if available), normal hand forces are sufficient. The use of extensions to increase the actuating torque is not allowed.

Valves do not require regular maintenance work, but during the test of the pipe section no leakage may occur on the pipe section of a valve – particularly not at the compression gland. In such cases, pay attention to Section 7 <Help with malfunctions>.

It is recommended to cycle the valves 1 to 2 x per year if they continuously remain in one position.

Danger	*A Rotary process valve is usually not self-locking:* The gear/ the actuator may not be dismounted **as long there is pressure on the valve**.
Note	*A piston actuator is not self-locking* Piston actuators require **a constant supply of control pressure** for all positions that are approached under control pressure.

7 Help with malfunctions

When troubleshooting, strictly adhere to Section 2 <Notes on safety>.

Note 1:

Order spare parts with all specification on the type plate. Only ZWICK original spare parts may be installed.

Note 2:

If it is determined after disassembly that housing and/or internal parts are not sufficiently resistant against the medium, please inform the manufacturer and mention all specification on the type plate.

Type of the malfunction	Measure
When a spring return actuator has to be removed.	**Risk of injury** The actuator must be disconnected from the supply of the control pressure, prior removal of the actuator from the valve,
Leakage from a connection to the pipeline flange or body cover.	Tighten flange screws. *If leakage cannot be removed by tightening flange screws:* Repair is necessary: Replace the seal. Pay attention to the notes of Section 2.3 <Special hazards> and order the seal for cover and necessary instruction from ZWICK.
Valve with hand wheel: Seat Leakage	Examine if valve is 100% closed. *When the valve is in the closed position:* Examine if the gear closes with necessary torque. *If the gear closes at peak torque.* Open/close valve under pressure several times. *If the valve still leaks:* Repair is necessary: Replace the lamella seal. Pay attention to the notes of Section 2.3 <Special hazards> and order spare parts and get necessary instructions from ZWICK.
Type of the malfunction	**Measure**
Valve with actuator: Seat Leakage	Examine if valve is 100% closed. *When the valve is in the closed position:* Examine if actuator closes with necessary torque. If actuator closes at peak torque: Open/close valve under pressure several times. *If the valve still leaks:* Increase the torque of the actuator in position "CLOSE" up to maximal 1.1 nominal torque. *If the valve should be still leaky:* Repair is necessary: Replace the lamella seal. Pay attention to the notes of Section 2.3 <Special hazards> and order spare parts and necessary instruction from ZWICK.

Corrosion within the housing wall	 **Danger of injury and life threatening hazard** *A larger corrosion than 1.5mm leads to weakening of pressure-bearing parts and can lead to breakage of the housing wall with sudden discharge of a large amount of the operating medium in very high speed.* According to Section 2.2, it is the responsibility of the operator to coordinate housing material and the operating medium to eliminate this kind of danger from the start.
Leakage of the compression gland	Tighten both nuts on the compression gland alternately clockwise in little by little ¼ turns. *If the leakage does not stop:* Repair is necessary: order spare parts and necessary instructions from ZWICK. *When the nuts on the gland follower must be loosened or removed (counter- clockwise):*  **Life-threatening hazard** To protect the operation staff from hazards make sure that the pipe on both sides of the valve were prior depressurized. Pay attention to Section 2.3 <Special hazards>.
Valve with hand wheel: Malfunction	Examine function of the actuator. *If the actuator functions properly:* Demount and inspect the valve (and by doing so pay attention to the notes of Section 2.3 <Special hazards>. *If the valve is damaged:* Repair is necessary: order spare parts and necessary instructions from ZWICK.
Valve with actuator: Malfunction	Examine actuator unit and control command. If actuator and controls function properly: Demount and inspect the valve (and by doing so pay attention to the notes of Section 2.3 <Special hazards>. *If the valve is damaged:* Repair is necessary: order spare parts and necessary instructions from ZWICK.

In case of malfunctions of the actuator unit, see documentation of the actuator's manufacturer.

8 Caution with use of the Rotary process valves in ⟨Ex⟩-hazardous environments

Caution for the valve (without the electro-/hydraulic-/pneumatic actuator):

Below is a summary of the results of the ZWICK ignition analysis, carried out in accordance with EN 13463-1:

Source of hazard	Measure
Valve (without actuator/accessories)	The valve has no own source of ignition, if the user pays attention to below measures.
Sparks when installing a Rotary process valve in the pipe section	Mounting / dismounting / service is only allowed in non-ignitable environmental atmosphere.
Heating of the valve's housing wall to unacceptably high temperature	*The manufacturer of the valve is not liable for damage resulting from this hazard.* It is the responsibility of the operator to ensure that the operating medium remains within permissible limits of the environment that contains ⟨Ex⟩-hazards.
Charging of individual valve components from the function (OPEN-CLOSE)	*All outside parts of the valve are made of metal and are conductive connected with each other.* It is necessary to ensure that the TRI-CON valve is properly grounded and remains this way.

Warning for the electro-/hydraulic-/pneumatic actuator and/or the accessories:

The actuator/the (electric) accessories of the valve has its own source of ignition.

No additional ignition danger results from the combination of the TRI-CON valve and the actuator/the (electric) accessories in an environment with ⟨Ex⟩-hazards if the warnings of the table in Section 8.1 above are adhered to.

Source of hazard	Measure
Actuator	The supplied documentation of the actuator's manufacturer (see the declarations by manufacturer ZWICK that were delivered as part of the shipping) must be strictly and completely adhered to and must considered in the risk analysis of the pipe section.

9 Further Information

You will receive these instructions, the named ZWICK brochures and further information and advice – also in other languages – from:

Zwick Armaturen GmbH, Egerstraße 1

D-58526 Ennepetal,

Tel: +49 (0) 2333 98565

E-Mail: info@zwick-gmbh.de

www.zwick-armaturen.de

10 EU directives

Declaration of conformity according to: **Directive 97/23 EC**
Manufacturer's declaration according to: **Directive 06/42 EC**
Manufacturer's declaration according to: **Directive 94/9 EC**

The Manufacturer	**Zwick Armaturen GmbH, D-58256 Ennepetal**
explains that the valve	**Rotary process valve Series TRI-CON** • **with pneumatic-/ electro-/ hydraulic actuator** • **with free shaft extension for later actuator mounting**

EC Directives

Directive 97/23 EC	Directive 06/42 EC	Directive 94/9 EC
1. is a pressurized equipment within the meaning of the EC pressure equipment directive 97/23 EC and complies with the requirements of this directive 2. may be only operated under consideration of the supplied operating instruction no. Zw-TriCon-2014.	3. is a partly completed machinery (applies only to model that has an actuator) within the meaning of art. 2 g of the directive 06/42 EC (machine directive) and is only intended to be installed in a completed machinery 4. must not be put into service unless it is incorporated in a completed machinery which has been declared in conformity with this directive 5. fulfills the declared requirements of this directive 6. may be only operated under consideration of the supplied operating instruction no. Zw-TriCon-2014.	**(without actuator/accessories)** 7. has been submitted to a hazard analysis according to directive 94/9 EC 8. has no own source of ignition and can therefore be used in an explosive atmosphere 9. cannot comply with the directive 94/9/EC 10. may be only operated under consideration of the supplied operating instruction no. Zw-TriCon-2014, especially chap. 8 **Note:** Electrical/pneumatic/hydraulic actuators and accessories have to be submitted to a separate assessment of conformity according to directive 94/9 EC.

The activation of this valve is only allowed if the valve is attached on both sides to the pipe, which excludes danger of injury.

Applied EU directives and standards:

97/23 EC	**EC Pressure Equipment Directive**
EN 593	**Industrial valves – Metallic Rotary process valves**
EN 12516	**Industrial valves – Shell design strength**
94/9 EC	**European explosion-protection directive**
EN 1127-1	**Explosive Atmospheres – Explosion prevention and protection**
EN 13463-1	**Non-electrical equipment for potentially explosive atmospheres**
06/42 EC	**EC Machine Directive**

Type description and technical characteristics:

ZWICK Catalog <Rotary process valves Series TRI-CON>

Authorized person to compile technical documentation:

Daniel Zwick, D-58256 Ennepetal

Applied conformity assessment procedure:

for Directive 97/23 EC on pressure equipment, category III, module H

Name of the notified body:	*Identification no. of the notified body:*
LRQA GmbH Hamburg	**0525**

Modifications to valves and/or assemblies will render these declarations invalid if these changes have an impact on the technical data of the valve and the <Appropriate use> pursuant to Section 1 of the operating instructions and when they substantially alter the valve and/or a supplied assembly.

Ennepetal, 01st October 2014

Daniel Zwick, CEO