

ZWICK
ARMATUREN GMBH 



TRI-CON

**BALL & GATE VALVE
REPLACEMENT**

HIGH STANDARD VALVES FOR NON-STANDARD CONDITIONS.

TRI-CON Features & Benefits

Features

Unique triple-offset, conical seating
Metal-to-metal seating
Unique, self-centering disc design
Emission-control technology
Superior bearing/bushing design
Laminated seal ring

Benefits

Zero leakage in demanding services
Inherently firesafe
Low torque required
Elimination of jamming due to thermal expansion
Bi-directional shutoff capabilities

TRI-CON

- DN 50 - 2200 / 2" - 82"
- PN 6 - 250 / ANSI 150 - 1500
- Materials (CS, SS, Alloys, etc)
- -196°C ... +815°C
- Metal to metal
- Zero Leakage
- TA Luft II
- Fire Safe
- Automatization, ESD, HIPPS, SIL 3 Solutions
- Fast closing, high cycle, etc



VALVE SIZE		ZWICK TRI-CON API 598 RESILIENT		GATE VALVE API 598 METAL		H.P. BUTTERFLY VALVE ANSI CLASS VI		ZWICK TRI-CON API 6D	
INCH	DN	Liquid	Air	Liquid	Air	Liquid	Air	Liquid	Air
3"	80	0	0	12	72	N/A	3	0	0
4"	100	0	0	12	72	N/A	11	0	0
6"	150	0	0	12	72	N/A	27	0	0
8"	200	0	0	20	120	N/A	45	0	0
10"	250	0	0	20	120	N/A	70	0	0
12"	300	0	0	20	120	N/A	100	0	0
14"	350	0	0	28	168	N/A	136	0	0
16"	400	0	0	28	168	N/A	178	0	0
18"	450	0	0	28	168	N/A	225	0	0
20"	500	0	0	28	168	N/A	278	0	0
24"	600	0	0	28	168	N/A	400	0	0
30"	750	0	0	28	168	N/A	620	0	0
36"	900	0	0	28	168	N/A	900	0	0
40"	1000	0	0	28	168	N/A	1111	0	0

Notes: Allowable gate valve leakage per API 598 6th Ed. 1990 - Leakage comparisons are measured in drops/minute for liquid and in bubbles/minute for air. - 1 drop = 0.0625 cm³ - 1 bubble = 0.15 cm³

BALL VALVES

GATE VALVES

ZWICK VALVES

ZWICK TRI-CON VS. OTHERS

Comparative Features to Gate and Ball Valves



Zero Leakage

Bi-directional testing (API 598, API 6D) confirms the power of TRI-CON valves to prevent leakage.

Resilient Metal Seat

Even in the most severe applications, metal seating provides long-term zero leakage.

Quarter-Turn Operation

Stress on pipe is reduced while automation is simplified. Compared with other designs, fugitive emissions are substantially reduced.

All-Metal Construction

Rely on all-metal construction for greater resistance to higher temperatures.

Inherently Firesafe

Zero leakage and all-metal construction make TRI-CON valves inherently firesafe.

Patented Seal Bearing

TRI-CON offers zero- to low-ppm performance out of the stem packing.

Zero-PPM Performance

A superior bearing and bushing design combats the migration of particulates.

Bi-Directional Design

TRI-CON valves are bi-directional and can provide zero-leakage shutoff on request.

Nonrubbing Design

Thanks to triple-offset conical seating, rubbing and wear are eliminated for the entire quarter turn.

Double-Flange Body

The compact design makes installation and maintenance easier.

Available ANSI B16.10 Face-to-Face

Allows direct replacement of most gate, ball and globe valves.

Available API 609, Face-to-Face

The Zwick TRI-CON design allows operators to easily upgrade from high-performance butterfly valves.

Lightweight

Reduce piping stress and maintenance while also lowering construction costs.

ANSI 150, 300, 600, 900, 1500 / PN 6 - 160

Zwick TRI-CON valves are available in familiar gate and ball valve pressure standards.

2" to 82" Sizes

Zwick has the right sized valve for nearly all applications.

Cryogenic to -215°C

Get the low-temperature performance you need.

High Temperature to 815°C

Get better shutoff performance than with soft-seated valves.

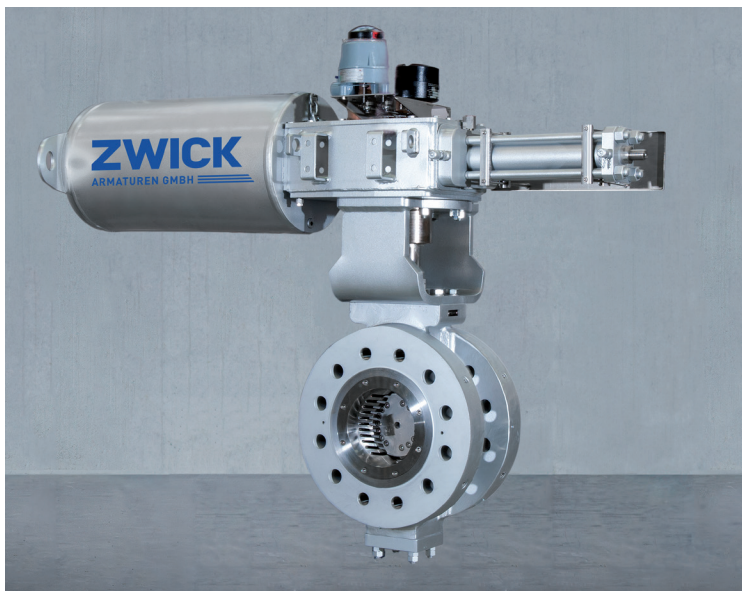
Ease of Automation

Quarter-turn valves require less time and cost to automate.

Fast Operation

Get closing times as fast as 0.15 seconds.

HIGH STANDARD VALVES FOR NON-STANDARD CONDITIONS.



TECHNICAL QUALIFICATIONS

Quality Assurance	ISO 9001
Testing	API 598 Zero Leakage EN 12266 Rate A API 6D Zero Leakage
Flange Drilling	ANSI B16.5 (Sizes 3"-24") ANSI 16.47 Series A & B
Fire Test	API 607 5th Edition
Design	ANSI 16.34, etc
TA Luft II	Emission Control up to 450°C
PED CE Mark Qualified	

CERTIFICATIONS

BAM-Approval for Oxygen
TA-Luft II gem. / acc. to VDI 2440
DIN EN ISO 9001
Fire Safe gem. / acc. to API 607
Fire Safe gem. / acc. to British Standard B.S. 6755
Fire Safe gem. / acc. to EN
CE-Certificate gem. / acc. to 97/23/EG

APPLICATIONS

Zwick TRI-CON valves are used in demanding industries. From applications with oxygen up to exhausted gases, cryogenic and superheated steam and also in widely used chemical processes, TRI-CON valves are proven throughout a wide range of industries.

Refining

Desulphurization Systems and Tail Gas Treaters
Steam
Oil & Refined Product Storage, ESD-Solutions
Hot Cracking Gases
Flare Gas
Light Ends Isolation, Pump Isolation

Petrochemical Plants

Propylene Plant Equipment Isolation
Oxygen & Hydrogen Services
Ethylene Cracking Plants
PSA & Molecular Sieves Switching Valves
Flare Isolation
CO₂
Butadiene & Styrene Plants

Offshore

Fixed Equipment Isolation
Fire Water Systems
CO₂ Switching Valves
Crude Oil Isolation

Power

Steam Isolation
Condenser Cooling
Pump Isolation
Fuel Gas Isolation

Pulp & Paper

Lime & Slurries
Steam Isolation, Boiler Feed Water
Green, Red & Black Liquors
Oxygen Isolation

Commercial Buildings & Energy Centers

Hot Water Isolation
Steam Isolation
Fuel Gas Isolation

Chemical

Syngas
Nitrogen
Acids

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