

w.ta.[®]

brands you trust.



Bellows Sealed Globe Valves

CRANE[®]

Crane ChemPharma & Energy

www.cranecpe.com

Overview

Founded in 1978, WTA[®], a Crane ChemPharma & Energy brand, designs and manufactures a comprehensive range of high-quality bellows sealed globe valves, strainers, check valves, relief valves, change-over valves and special valves to meet the stringent specifications required by the global chemical and petrochemical industries. Our highly-engineered bellows sealed globe valves are extensively specified and in service worldwide.

All standard products are available in:

- Carbon steel
 - Stainless steel
 - Alloys and other special materials
-
- DN 15 to DN 600
 - NPS 1/2" to NPS 24"
-
- PN 16 to PN 160
 - ASME 150 lbs to 2500 lbs
-
- T-type
 - Y-type
 - Corner type

Backed by a history of engineering excellence and manufactured from the highest-quality materials, bellows sealed globe valves from WTA[®] lead the industry in innovation and safety. With superior design and construction, WTA[®] valves incorporate the market's most advanced safety features to ensure leak-proof performance and long service life.

Founded on structural solutions that are backed by extensive field experience, WTA[®]'s advanced safety features have proven effective in numerous chemical applications. Crane's comprehensive product portfolio likewise includes a variety of other valve types that utilize the same trusted methods of design and fabrication.

The strength of the WTA[®] brand lies not only in our commitment to using the most reliable materials and manufacturing processes, but in our ability to provide customized solutions with existing special valve designs.



While some applications require the fabrication of non-standard valves with novel materials, our custom designed valves can be supplied to fit the need.

Frequently used materials include heat-resistant carbon steel 1.0619/WCB and corrosion-resistant stainless steel 1.4408/CF8M. Low temperature applications are often supplied carbon steel 1.6220/LCB/LCC, Hastelloy[®], Incoloy[®], Inconel[®] and Monel[®], while titanium and pure nickel also form part of the range.



Steel and stainless steel valves are frequently equipped with bellows made of high-quality metals such as Hastelloy[®]. It is also possible to reinforce the plug/seat area with special materials.

Clean Room



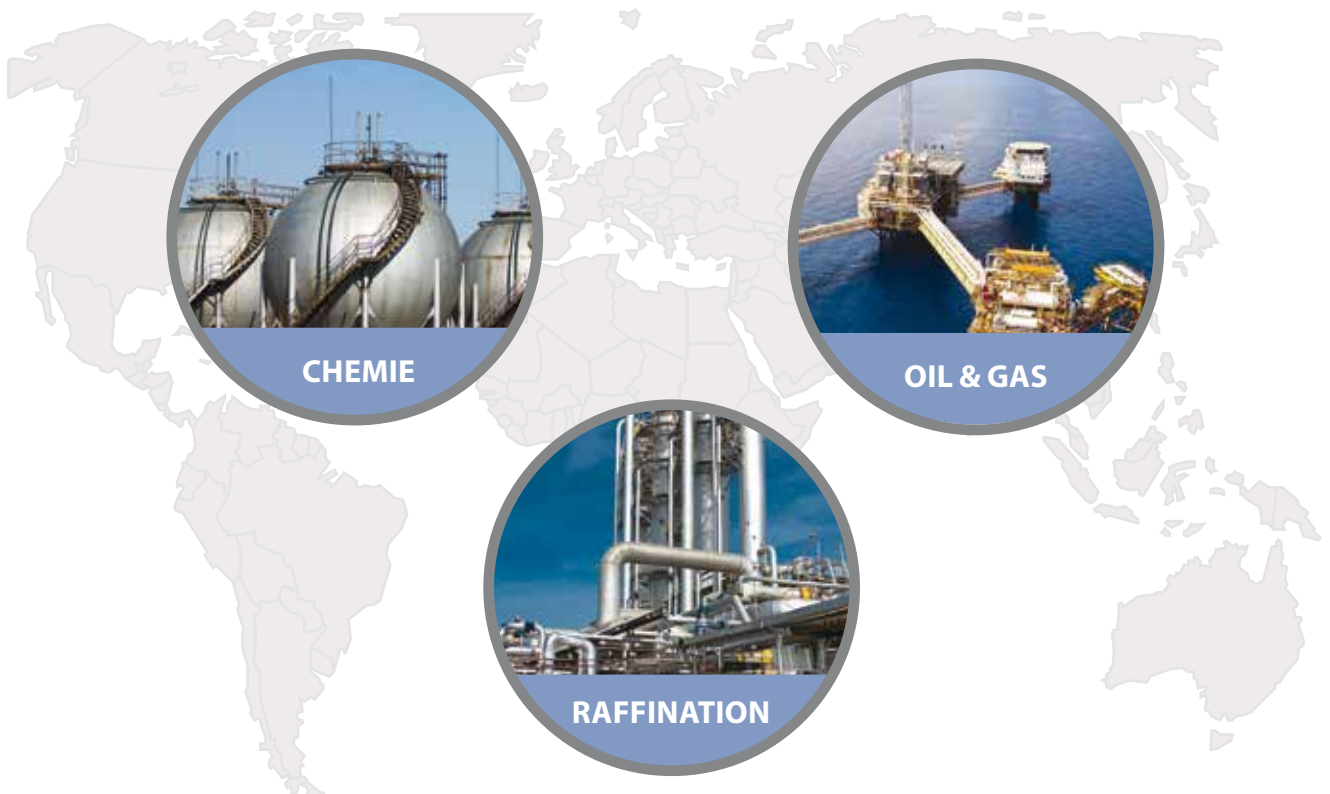
Our state of the art ISO compliant clean room is equipped with an ultrasonic cleaning system, featuring air locks for materials, and a test booth where leakage tests for strength and helium testing are conducted to determine the gas-leak tightness of the bellows and valve bodies. These tests are followed by vacuum compliant packing of the finished valves. In this clean room, special oil and grease-free valves are assembled, checked and packed by our trained experts.

The individual valve components are first cleaned in the ultrasonic cleaning system and then entered into the clean room through the air lock. After the cleaning process the valves are exposed to UV-light, in an initial examination for the presence of undesired oil and grease. During the subsequent assembly process, any contamination of the valve interior is ruled out because of the process optimized sequence.

Various tests for leak tightness and strength are then conducted using nitrogen and helium, and another cleanliness inspection under UV-light takes place before the finished vacuum sealed valves leave the clean room.

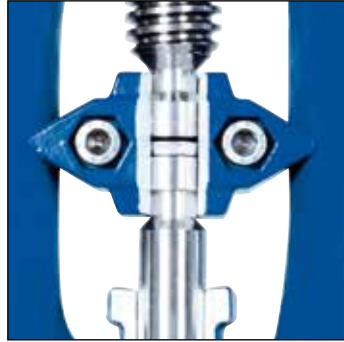
The clean room itself is permanently supplied with clean, almost particle free, air from above through filter-fan units. Remaining dust particles are thereby forced out of the room. This process generates an overpressure inside the clean room, which prevents the entry of foreign particles when the air lock is opened.

The ISO compliant clean room with ultrasonic cleaning system ensures safety, quality, and gas-leak tightness of our products.



Bellows Sealed Globe Valve 11.3

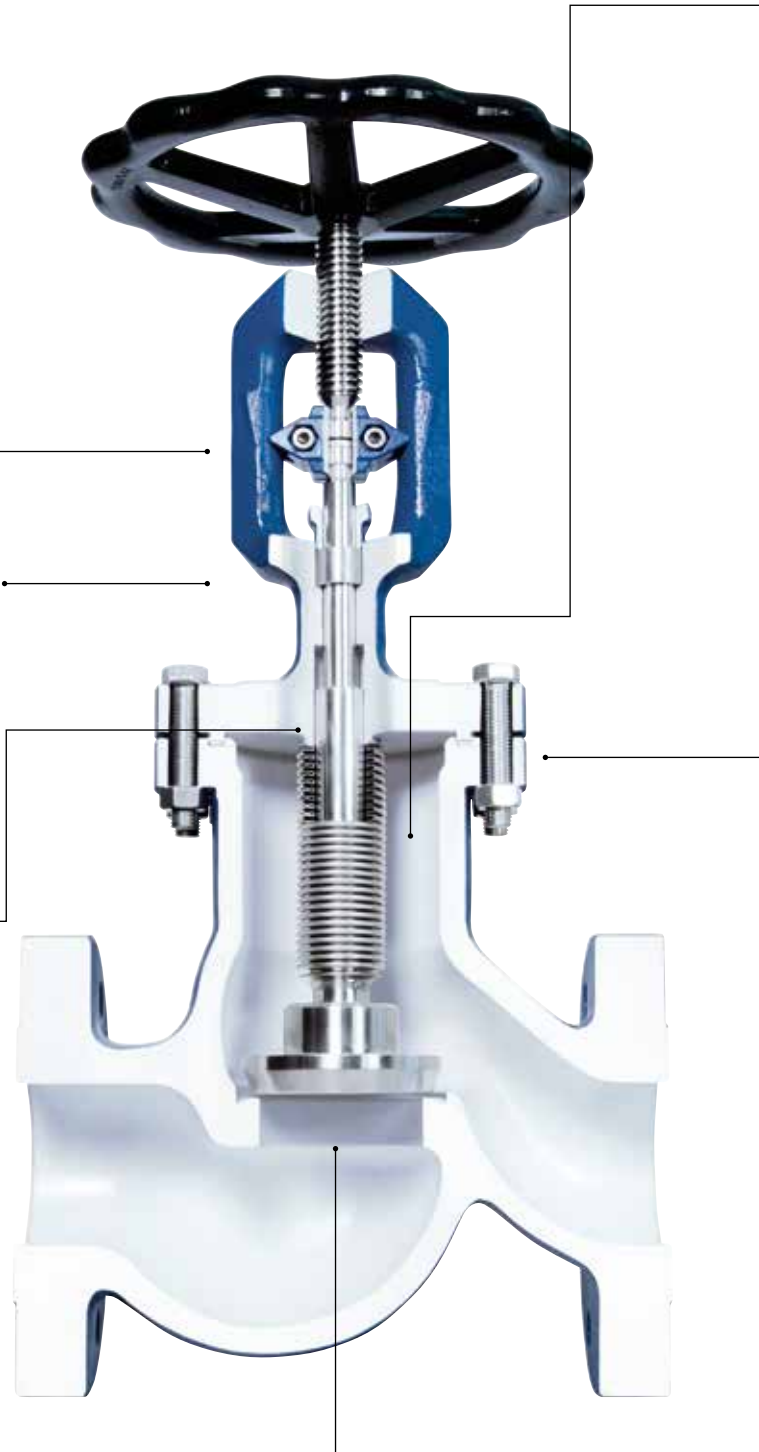
1. 2-part rising stem with outside roll-formed thread; stem coupling with bellows anti-torque device and position indicator



2. Full size **safety gland packing** made of pure graphite; can also be supplied in PTFE if requested



3. **Metal back seat** with stroke limiter in open position and bellows anti-vibration device





4. Multiple wall, fully flushed stainless steel bellows, secured against torsion, designed for 10,000 cycles; fully welded

Product Description

Bellows sealed globe valve for chemical applications with safety gland packing.

Typical Applications

For various media with inflammable, explosive, volatile, toxic or aggressive characteristics, whose emission into the atmosphere must be prevented.

Materials

Carbon steel 1.0619/WCB, stainless steel 1.4408/CF8M, low temperature carbon steel 1.6220/LCB/LCC

Other materials are available upon special request

Size Range

DN 25-400 / NPS 1"-16"

Other sizes are available upon request

Compliance

- Permissible working pressure acc. EN 1092 part 1 and ASME B16.34-2009
- Inspection and testing per EN 12266 and API 598
- Design in accordance with TA-Luft
- Face-to-face dimension acc. EN 558-1, EN 12982 and ASME B16.10

Pressure Ratings

PN 16-400 / Class 150-2500

Body Configurations

Straight type, Y-type or corner-type valve

Special Options

- Pneumatic or electric actuated
- Soft sealing and regulating piston
- Welded bonnet
- Heating jacket

End Connections

Flanges, butt weld ends or socket weld ends



5. Stainless steel cam-profiled bonnet gasket coated with pure graphite, mounted in **tongue and groove bonnet flanges**



6. Conically shaped plug made of hardened chromium steel 1.4021/AISI 420, or hard-surfaced with stellite 6; body seat hard-surfaced with stainless steel 1.4370/AISI 307 or stellite 21

Bellows Sealed Globe Valve 11.9 and 11.35

Product Description

Compact globe valve with fully flushed bellows in straight type, Y-type or corner type; with flanges or butt weld ends and safety gland packaging; can be supplied in carbon steel 1.0619/WCB, stainless steel 1.4408/CF8M, low temperature carbon steel 1.6220/LCB/LCC, and special materials

Design Features

- Stem with internal rollformed stem thread and rising hand wheel
- Multiple wall, fully flushed stainless steel bellows, designed for 10,000 cycles
- Metal back seat
- Full size safety gland packing made of pure graphite
- Stainless steel cam profiled bonnet gasket coated with pure graphite, mounted in tongue and groove bonnet flanges



Product Description

Bellows sealed globe valve with protected bellows in straight type, Y-type or corner type; with flanges or butt weld ends and safety gland packaging; can be supplied in carbon steel 1.0619/WCB, stainless steel 1.4408/CF8M, low temperature carbon steel 1.6220/LCB/LCC, and special materials. Abrasion and water hammer are prevented by the protected bellows.

Design Features

- Protected bellows to prevent erosion and pressure shocks, designed for 10,000 cycles
- Metal back seat
- Full size safety gland packing made of pure graphite
- Stem with internal roll-formed stem thread and rising hand wheel
- Stainless steel cam profiled bonnet gasket coated with pure graphite, mounted in tongue and groove bonnet flanges

Alkylation Valve HF11.35

Product Description

Bellows sealed globe valves with protected bellows and safety gland packing designed for 10,000 cycles.

Typical Applications

For various media with toxic or aggressive characteristics including HF Alkylation and other HF applications.

Materials

- Body made of ASTM A 216 WCB-S16, Monel®, Hastelloy® C276
- Body seat hard-faced with Stellite® 21
- Disc in Hastelloy® C276 hard-faced with Stellite® 6
- Bellows and trim in Monel®, Hastelloy® C276
- Other materials are available upon request

Body Configurations

- T-type body design
- Globe valve face to face standard
- Gate/Plug valve face to face standard
- Body/bonnet wall thickness exceeds API 602 for additional corrosion resistance

Size Range

NPS ½" - 12"

Other sizes are available upon request

Pressure Ratings

ASME class 300, 600, 800

Other classes are available upon request

End Connections

Flange design in accordance with ASME B 16.5 and EN 1092-1.

Other classes are available upon request

Painting

Body/bonnet and end flanges painted with HF leakage detection paint.

Testing

In accordance with UOP and ConocoPhillips requirements including Shell and Helium leak test. WTA® HF Valves exceed API 598 requirements by testing every valve to zero leakage.*

Automation

Pneumatic actuated HF valves available with special bellows designed for up to 100,000 cycles.



* Zero leakage - in accordance with UOP specifications and API 598 standards



4. Bridge and pillar design separates yoke from bonnet; pillars are bolted and secured with nuts

Product Description

Chlorine bellows sealed globe valves with protected bellows and safety gland packing according to Euro Chlor recommendation GEST.

Typical Applications

Liquid chlorine and dry chlorine gas

Materials

Low temperature carbon steel 1.6220 / LCB / LCC
Other materials are available upon special request

Size Range

DN 25, 40, 50, 80, 100, 150 / NPS 1", 1 1/2", 2", 3", 4", 6"
Other sizes are available upon request

Compliance

WTA is a certified supplier and a member of Technical Correspondents of the Euro Chlor organization. WTA valves are manufactured in compliance with Euro Chlor GEST Specification and Chlorine Institute Pamphlet 6.



5. Bonnet flange in tongue and groove design; stud bolts made of 1.7225/A320 Grade L7M with a nut at each end made of 1.7218/A194 Grade 7M; bonnet gasket is PTFE coated



Pressure Ratings

PN 40 and Class 300
Other pressure classes are available upon request

Body Configurations

Straight type

Special Options

Complete internals in 2.4819/Hastelloy C276 are available upon request

End Connections

Flange design in accordance with EN 1092-1 and ASME B 16.5



6. Exchangeable disc with conical shape; sealing surface hard-faced with Stellite® 6; body seat hard-faced with Stellite® 21

Change-Over Valve 11.7/11.8

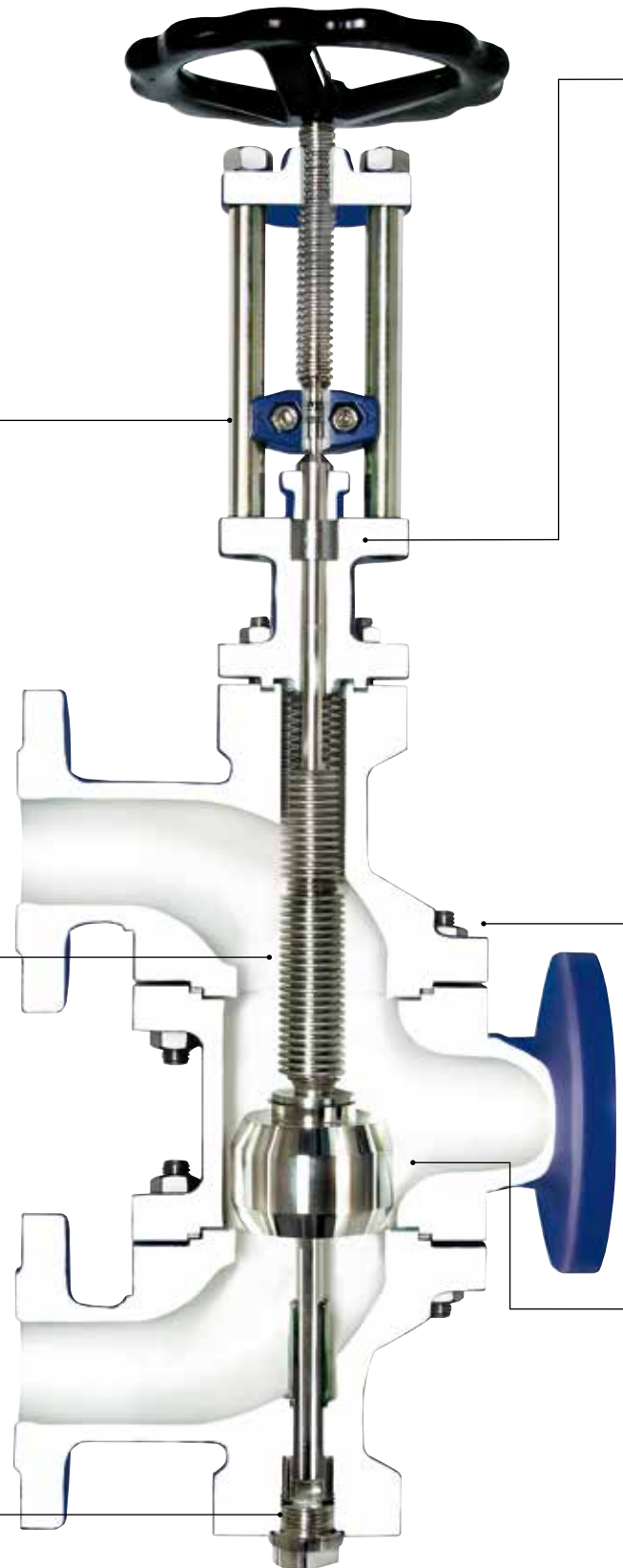
1. 2-part rising stem with outside roll-formed thread; stem coupling with bellows **anti-torque device** and position indicator



2. Multiple wall, fully flushed stainless steel bellows, secured against torsion, designed for 10,000 operations; fully welded



3. Metal back seat with stroke limiter in open position and bellows anti-vibration device





4. Full size **safety gland packing** made of pure graphite; can also be supplied in PTFE if requested



5. Stainless steel camprofiled bonnet gasket coated by pure graphite, mounted in **tongue and grooved bonnet flanges**



6. Conical shaped **plug made of hardened chromium steel** 1.4021 or armoured with stellite 6; **body seat hardfaced** with stainless steel 1.4370 or stellite 21

Product Description

Type 11.8: Three-way change-over valve with safety gland packing and bellows in flange design

Type 11.7: Three-way change-over valve with safety gland packing in flange design

Typical Applications

Change-Over-valves are used to connect two Safety Relief Valves to a pressure system using one pipe point. Change-over Valves are primarily used on storage tanks or vessels commonly found in refineries, chemical, petrochemical, or pharmaceutical processing plants where continuous operation has to be maintained.

Features

- The Three-Way Changeover valves are ideal for environments where continuous plant operation is essential.
- Extremely low pressure loss coefficients (zeta value from 0,60 to 1,05) permit optimal flow rates to fulfill the requirements of the pressure loss < 3%.

Materials

Carbon steel 1.0619/WCB, stainless steel 1.4408/CF8M, low temperature carbon steel 1.6220/LCB/LCC

Other materials are available upon special request

Size Range

DN 25-400 / NPS 1"-16"

Other sizes are available upon request

Compliance

- Permissible working pressure acc. EN 1092 part 1 and ASME B16.34-2009
- Inspection and testing per EN 12266 and API 598
- Design in accordance with TA-Luft
- TR certificate of conformity

Pressure Ratings

PN 16-400 / Class 150-2500

Special Options

Type 11.75/11.85: Changeover-Combination with safety relief valves

End Connections

Flange design in accordance to EN 1092-1 and ASME B 16.5

Steam distributor V21.9 / Condensate collector V21.9/K

Product Description

Compact condensate collector with integrated bellows sealed globe valves made of 1.0619/WCB or 1.0460/A105 respectively with flanges or butt weld ends; the condensate collector is also equipped with an immersion tube to avoid water hammer.

Typical Applications

Steam heating systems as well as consolidation of condensate pipework. Replacement of conventional manifolds whose individual components previously had to be fabricated at greater cost.

Design Features

- Reduced planning expenses due to standard components
- Simplified procurement of compact units
- Low weight and small space requirements
- Costs saving due to lower insulation requirements
- Safe operation, maintenance-free bellows sealed valves
- Supplied ready for fitting, tested, mounted and painted

Operation

One-piece compact body with 4, 8 or 12 connections positioned sideways in order to make it even more compact. The manifolds are produced in modules of 4 connections and can be extended to multiples of 4, by welding the modules next to each other. This whole modular construction can be bolted on site by means of threaded holes situated under the manifolds. In the condensate collector, the discharged condensate flows down through a condensate drain (pipe) welded inside the manifold, and forms a water bed in which the internal pipe is immersed. Water hammer is thereby prevented. The accumulated condensate is discharged upwards via the immersion tube.



Relief Valve 14.3



Product Description

Spring loaded relief valve in straight type, Y-type or corner type; with flanges or butt weld ends. With multiple-wall, fully flushed stainless steel bellows, secured against torsion, designed for 10,000 cycles.

Design Features

- Mainly used as bypass valve in small circuits
- With lockable hand wheel cover and stem lock nut to prevent alteration of the set opening pressure
- Changing the opening pressure takes place after removal of the hand wheel cover by turning the hand wheel; by so doing the outer pressure spring is tensioned and adjusted to a defined pressure
- The valve is not compensated against backpressure

Special Materials and Designs

Standard valves are supplied in three material variants; in heat-resistant carbon steel 1.0619/WCB, in corrosion resistant stainless steel 1.4408/CF8M, and in low temperature carbon steel 1.6220/LCB/LCC. In addition, we have the ability to process practically all materials that can be casted, or are malleable and/or weldable. Nickel-based alloys are commonly used as special materials.

The most frequently used materials are Hastelloy, Incoloy, Inconel and Monel; however, Titanium or pure Nickel also form part of the range that can be delivered. Steel and stainless steel valves are very frequently equipped with bellows made of high quality materials such as Hastelloy. Finishing the plug/ seat area by reinforcement with special materials is possible in exactly the same manner.



One of our many strengths is our ability to supply customer specified variants of our existing special valve designs. While in some instances fabrication of non-standard valves calls for innovative designs and/or novel materials, our custom designed valves can be supplied at competitive prices with short delivery times!



Insulated cover



Liquid salt valves with heated gland packing



Isolation design



Hand wheel cover



Counter hand wheel



Heating jacket design

Approvals and Certificates



Euro Chlor Certificates



TR Certificates



TÜV ISO 9001:2008

TÜV AD 2000 HP0

TÜV Quality-Assurance System acc. to Directive 97/23/EG

TÜV System of Transferring the Marking of Materials

CRANE/WTA manufacturers declaration to Directive 94/9/EC (ATEX)

Euro Chlor Certificates GEST

TÜV-CERT TA-Luft 2002/Pkt. 5.2.6.4

TR Certificates

Rostechadzor

Fire-Safe Inspection Certificates

Canada Registrations



TA-Luft Certificates



Fire-Safe Certificates

Since before the introduction and certification of WTA's quality management system compliant with DIN EN ISO 9000 in 1993, WTA has continued its program of perpetual advancement in its standards for quality and engineering. WTA has obtained numerous certifications from relevant authorized organizations documenting the implementation of such new standards, in some cases to comply with customer-specific requirements.



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