

COMPANY PORTRAIT & PRODUCTION RANGE

# GATE GLOBE CHECK

**TERMOVENT SC** SERBIA // INDUSTRIAL VALVES



# Let Us Introduce **Termovent SC**

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A black and white photograph of an industrial setting, likely a factory or workshop. In the foreground, there are several large, circular metal components, possibly valve discs or flanges, arranged in a row. The background is filled with various industrial machines, pipes, and structural elements, creating a sense of a busy manufacturing environment. The lighting is somewhat dim, with some bright spots from overhead lights.

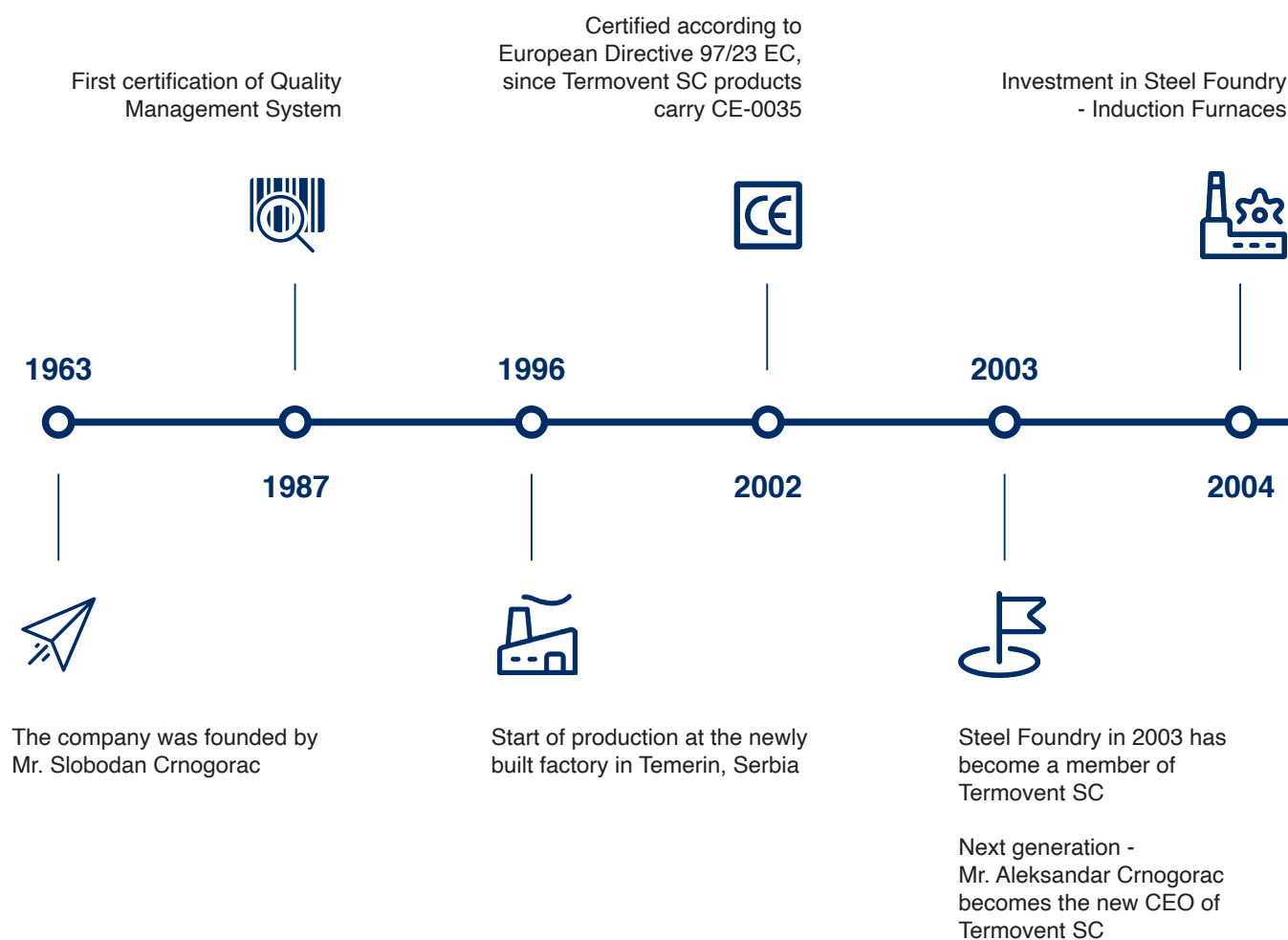
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# Our Story

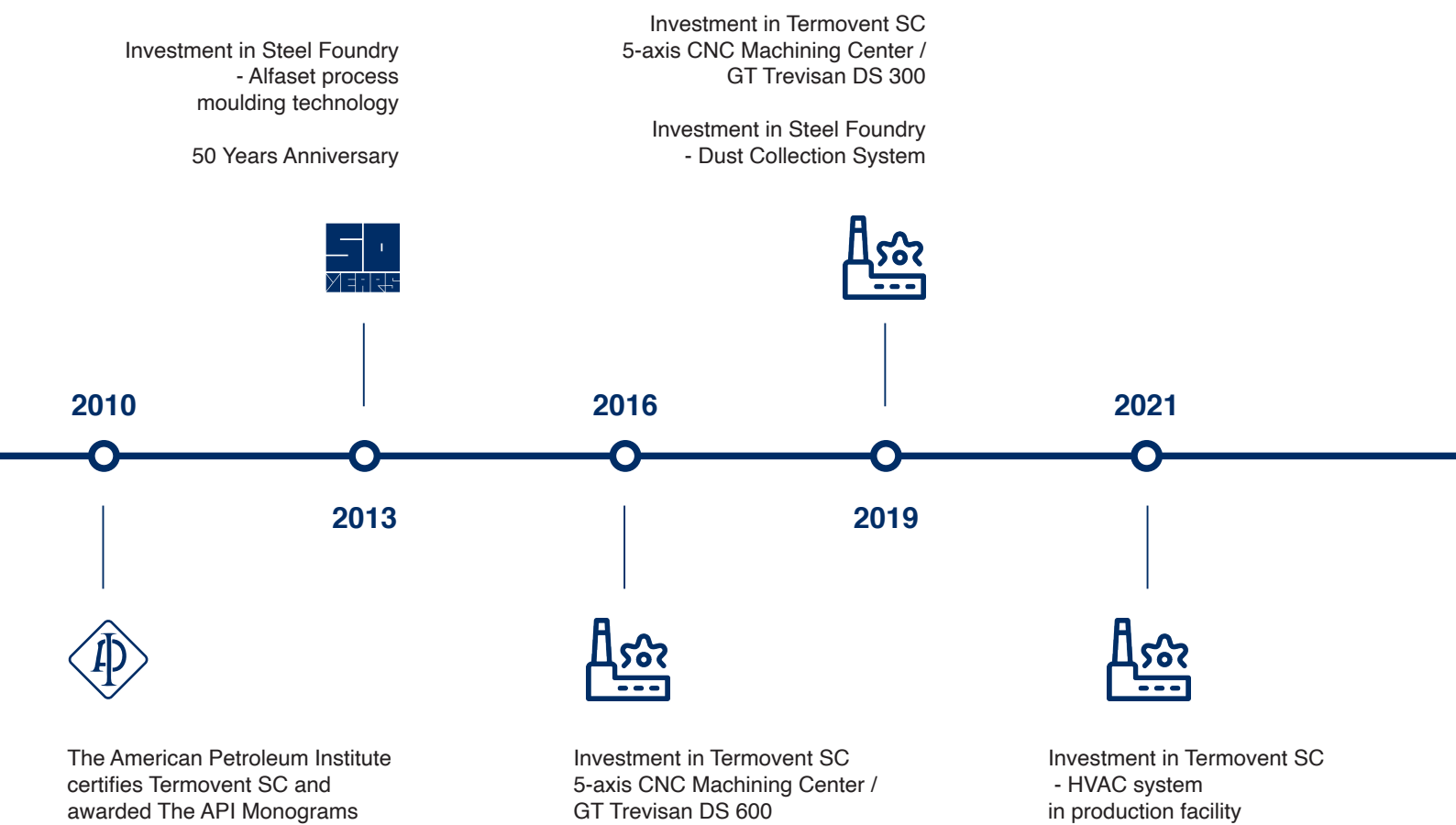
We are TERMOVENT SC Company, a regional leader in production of industrial valves for process industry and thermo energetics.

We remained until today a company in private ownership and management structure, as for the past 60 years of presence.

# Termovent SC Timeline







# All in One Place



All of the product components are manufactured in Temerin Serbia, at our own manufacturing plant. The casting product components are made in our own TERMOVENT SC Steel Foundry in Backa Topola, Serbia. Thus we can guarantee high quality of TERMOVENT SC valves.



## Valve Plant



**140**  
EMPLOYEES



**9.000** m<sup>2</sup>  
OF PRODUCTION SPACE

Production of  
**INDUSTRIAL VALVES**

TERMOVENT SC Temerin, production site with a comprehensive infrastructure, all necessary equipment for long-range future activities and with modern work environment, in which the production started in 1996. Production of Industrial valves for power plants, pipelines, refineries and industrial plants of any kind.



## Steel Foundry



**175**  
EMPLOYEES



**8.500** m<sup>2</sup>  
OF PRODUCTION SPACE

Production of  
**STEEL CASTINGS**

All casting product components are made in our own TERMOVENT SC Steel Foundry in Backa Topola, Serbia. Our long-standing supplier of castings Steel Foundry has become a member of our company since 2003.







# Valves Production Capacities

TERMOVENT SC's ongoing investments into the latest machines and process technology is the key factor for continuously increasing productivity ensuring accurate, efficient and high quality production of valve components.





## Machinery

We feature highly developed production capacities. TERMOVENT SC is continuously investing in latest machines and process technologies, every year. This way we can increase our productivity and achieve a successful and good quality production.

- 5-axis CNC Machining Center — 2 pcs.
- CNC - Lathes — 8 pcs.
- CNC Horizontal Machining Centers — 2 pcs.
- CNC Metal Saw — 3 pcs.
- Automatic Welding Machines — 4 pcs.
- Vertical Lathes (Carousel) — 2 pcs.
- Universal Lathes — 24 pcs.
- Drilling Machines — 9 pcs.
- Milling Machines — 7 pcs.
- Horizontal Boring / Milling / Turning Machine (Borwerk) — 4 pcs.
- Grinding Machines — 3 pcs.
- Lapping Machines — 3 pcs.
- Automatic Painting Lines — 2 pcs.
- Thread Rolling Machine
- ProHeat™ 35 Heat Treatment System



# Reliable Quality

Design, process planning, casting, machining, assembly, testing, surface treatment, logistic and quality management integrated in our own plants is crucial for ensuring the constant high quality of TERMOVENT SC products.



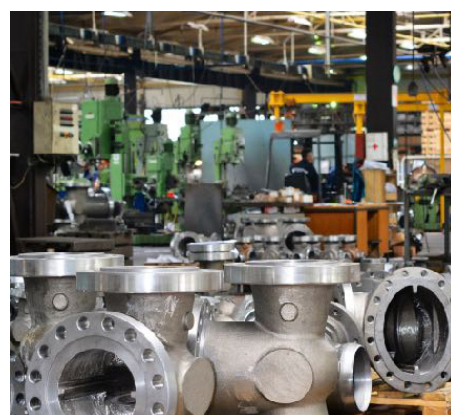
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**TERMOVENT SC**  
Termovent  
Protezione specializzata  
industriali armature



## 100% Testing

In keeping with the pertinent standard, every single product is tested. A unique identification number on each product allows a full traceability of all activities and material consumption. The control process is a permanent activity in our company, including: reception, process (between stages) and final control.





## Measuring & Control Equipment

Reliable Quality Maintenance and on-going improvement of products quality are a commitment and responsibility of all company employees. A reliable and quality product is our priority, and a satisfied customer - our objective in continuity.

- Test bench up to 1600 bar (up to 6 bar with air)
- Test bench up to 650 bar (up to 6 bar with air)
- Test bench up to 500 bar (up to 6 bar with air)
- Test bench for hydraulic testing up to 1000 bar
- Spectrometers for chemical analysis of materials (PMI)
- Equipment for ultrasonic examination — 2 pcs.
- Equipment for magnetic particle examination
- Equipment for wall thickness measuring
- Hardness testing equipment
- Equipment for coating thickness measuring
- Equipment for liquid penetrant examination



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## Quality System

We pay special attention to the application of current international rules and standards in quality system development. We keep improving and maintaining a high level of the quality system through active education.

We have the following valid certificates:

### Valve Plant

- 
- TÜV InterCert ISO 9001:2015
  - EN ISO 3834
  - AD-2000 Merkblatt HP 0
  - PED 2014/68/EU



- 
- API 6A - 1129
  - API 6D - 1049
  - API 600 - 0096



- 
- TP TC 032/2013
  - TP TC 010/2011
  - TP TC 012/2011



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### Steel Foundry

- 
- ISO 9001:2015
  - ISO 14001:2015
  - ISO 45001:2018
  - AD-2000 Merkblatt W 0 Directive 2014/68/EU



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## Fields of Application

### Valves



#### Energetics

- Thermal Power Plants
- Hydroelectric Power Plants
- Heating Stations
- Boilers Production
- Energy from Waste Power Plants
- Biomass Power Plants
- Solar, Wind, Renewable Energy Power Plants



#### Oil & Gas

- Oil & Gas Exploitation
- Oil & Gas Pipelines
- Oil Refineries & Oil Processing
- Pumping Stations & Tanks



#### Process Industry

- Ironworks and Mines
- Smeltery
- Cement Industry
- Paper Industry
- Heating and Cooling Systems
- Production of Agricultural Fertilizers
- Sugar Refineries
- Chemical Plants
- Petrochemical Plants



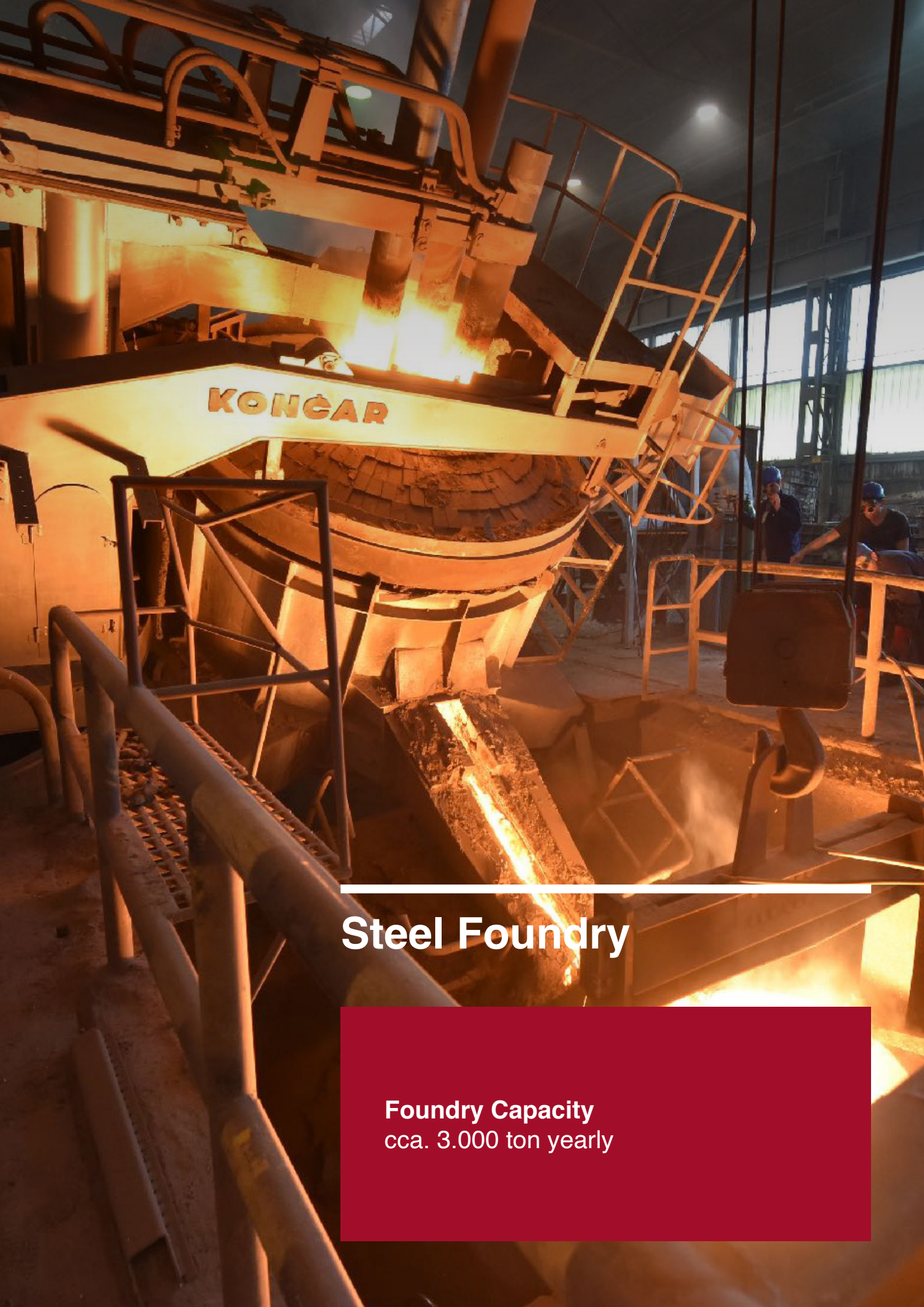
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## Fields of Application

## Castings



- Thermal Power Plants
- Production of Machines and Tools
- Cement Industry
- Mines and Ironworks
- Construction (Building) Industry
- Railways
- Automotive Industry
- Agricultural Mechanization
- Shipbuilding
- Valves Industry

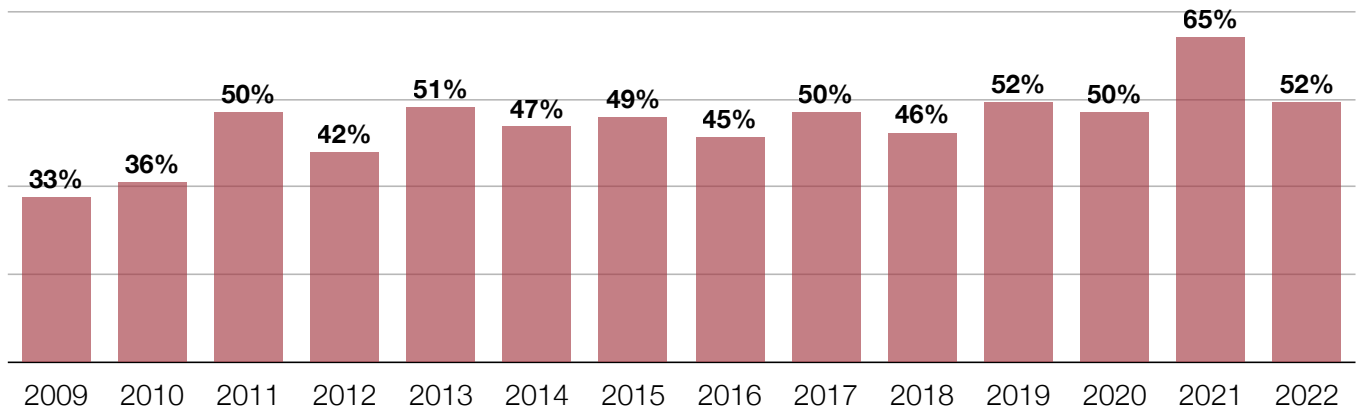


## Steel Foundry

**Foundry Capacity**  
cca. 3.000 ton yearly



## Termovent SC Steel Foundry - Export by the years (in %)



### Materials

#### Carbon Steels

GE300  
GP240GH  
WCB  
LCB  
20L

#### Stainless Steels

GX5CrNi19-10  
GX5CrNiMo19-11-2  
GX5CrNiMoNb19-11-2  
GX5CrNiNb19 11  
GX12Cr12  
CF8  
CF8M  
CF8C  
12X18H9TЛ  
12X18H12M3TЛ

#### Heat Resistant Steels

GX40CrNiSi27-4  
GX40CrNiSi 25-20  
GX130CrSi29

#### Wear Resistant Steels

G20Mn5  
GX120Mn13  
GX120Mn18-2

#### Abrasive Resistant Steels

GX300CrMo15 3  
GX300CrMo27 1

#### Alloy Steels

G20Mo5  
G17CrMo5-5  
G17CrMo9-10  
G24CrMo4  
4A  
4C  
WC1  
WC6  
WC9  
C5  
C12A  
CA15  
G35CrNiMo6-6  
G32NiCrMo8-5-4





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# Production Range

Gate/Globe/Check Valves and Strainers  
acc. to EN Standards

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Gate/Globe/Check/Plug Valves and Strainers  
acc. to API Std.

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High Pressure Globe/Gate  
and Swing Check Valves

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Control Valves

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Forged Gate/Globe/Check Valves and Strainers  
acc. to API 602

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Oil & Gas Exploitation Products

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Other Types of Products

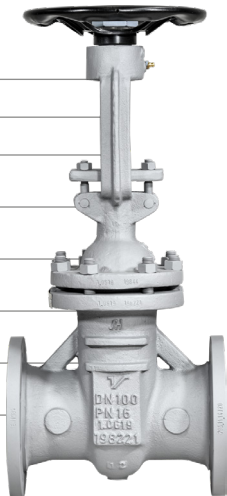
# Gate/Globe/Check Valves and Strainers

according to European Norms (EN)

| BASIC FEATURES                                            |                              | Forged Materials                                     |                                                                  | Casted Materials               |                                   |
|-----------------------------------------------------------|------------------------------|------------------------------------------------------|------------------------------------------------------------------|--------------------------------|-----------------------------------|
| Materials                                                 |                              | EN                                                   | GOST                                                             | EN                             | GOST                              |
|                                                           | Carbon Steel                 | 1.0460                                               | 20                                                               | 1.0619                         | 20Л                               |
|                                                           | Low Temperature Carbon Steel | 1.0565                                               | 09Г2С                                                            | 1.1131                         | 20ГЛ                              |
|                                                           | Low Temperature Alloy Steel  |                                                      |                                                                  | 1.6220                         | 20ГМЛ                             |
|                                                           | Low Alloy Steel              | 1.5415                                               | 15М                                                              | 1.5419                         |                                   |
|                                                           | Heat Resistant Alloy Steel   | 1.7335, 1.7383, 1.7366, 1.4903                       | 15ХМ, 10Х2М, 15Х5М, 10Х9МФБ                                      | 1.7357, 1.7379, 1.7365, 1.4955 | 20ХМЛ, 20Х2М1Л, 20Х5МЛ            |
|                                                           | Stainless Steel              | 1.4301/1.4307, 1.4401/1.4404, 1.4541, 1.4550, 1.4571 | 08Х18Н10/03Х18Н11, 08Х16Н11М3/03Х17Н14М3, 08Х18Н10Т, 10Х17Н13М2Т | 1.4308, 1.4552, 1.4408, 1.4581 | 07Х18Н9Л, 12Х18Н9ТЛ, 12Х18Н12М3ТЛ |
| Pressures-temperatures rating:                            |                              | EN 12516-1                                           |                                                                  |                                |                                   |
| Installation lenght:                                      |                              | EN 558-1 and EN 12982                                |                                                                  |                                |                                   |
| Flange type and size conform to standard:                 |                              | EN 1092-1 and EN 1759-1                              |                                                                  |                                |                                   |
| Butt Welding Ends (BW) type and size conform to standard: |                              | EN 12627                                             |                                                                  |                                |                                   |
| Inspection and Testing conform to Standard:               |                              | EN 12266, Part 1 and part 2                          |                                                                  |                                |                                   |

## Gate Valves acc. to EN 1984 Type: GEN

| Material type    |        | Casted Materials |    |    |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------|--------|------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                  | DN     | 50               | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 650 |
| Nominal Pressure | PN 16  | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |
|                  | PN 25  | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |
|                  | PN 40  | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |
|                  | PN 63  | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |
|                  | PN 100 | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |
|                  | PN 160 | •                | •  | •  | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   | •   |



## Globe Valves acc. to EN 13709

Type: VENS

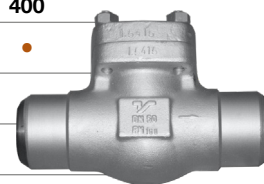
| Material type    |        | Forged Materials |    |    |    |    |    | Casted Materials |    |     |     |     |     |     |     |     |     |  |  |
|------------------|--------|------------------|----|----|----|----|----|------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|
| DN               |        | 15               | 20 | 25 | 32 | 40 | 50 | 65               | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |  |  |
| Nominal Pressure | PN 40  | ●                | ●  | ●  | ●  | ●  | ●  | ●                | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |  |  |
|                  | PN 63  | ●                | ●  | ●  | ●● | ●● | ●  | ●                | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |  |
|                  | PN 100 | ●                | ●  | ●  | ●● | ●● | ●  | ●                | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |  |
|                  | PN 160 | ●                | ●  | ●  | ●● | ●● | ●  | ●                | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |  |
|                  | PN 250 | ●                | ●  | ●  | ●  | ●  |    |                  |    |     |     |     |     |     |     |     |     |  |  |



## Lift Type Check Valves acc. to EN 16767

Type: CLEN

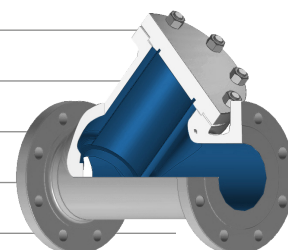
| Material type    |        | Forged Materials |    |    |    |    | Casted Materials |    |    |     |     |     |     |     |     |     |     |  |
|------------------|--------|------------------|----|----|----|----|------------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|                  |        | 15               | 20 | 25 | 32 | 40 | 50               | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 |  |
| Nominal Pressure | DN     |                  |    |    |    |    |                  |    |    |     |     |     |     |     |     |     |     |  |
|                  | PN 40  | ●                | ●  | ●  | ●  | ●  | ●                | ●  | ●  | ●   | ●   | ●   | ●   | ●   | ●   | ●   | ●   |  |
|                  | PN 63  | ●                | ●  | ●  | ●● | ●● | ●                | ●  | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |
|                  | PN 100 | ●                | ●  | ●  | ●● | ●● | ●                | ●  | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |
|                  | PN 160 | ●                | ●  | ●  | ●● | ●● | ●                | ●  | ●  | ●   | ●   | ●   | ●   | ●   |     |     |     |  |
|                  | PN 250 | ●                | ●  | ●  | ●  | ●  |                  |    |    |     |     |     |     |     |     |     |     |  |



## Y type Strainers

Type: SENY

| Material type    |        | Forged Materials |    |    |    |    | Casted Materials |    |    |     |     |     |     |
|------------------|--------|------------------|----|----|----|----|------------------|----|----|-----|-----|-----|-----|
| DN               |        | 15               | 20 | 25 | 32 | 40 | 50               | 65 | 80 | 100 | 125 | 150 | 200 |
| Nominal Pressure | PN 16  | •                | •  | •  |    | •  | •                |    | •  | •   | •   | •   | •   |
|                  | PN 25  | •                | •  | •  |    | •  | •                |    | •  | •   | •   | •   | •   |
|                  | PN 40  | •                | •  | •  |    | •  | •                |    | •  | •   | •   | •   | •   |
|                  | PN 63  | •                | •  | •  | •  | •  | •                | •  | •  | •   |     | •   | •   |
|                  | PN 100 | •                | •  | •  | •  | •  | •                | •  | •  | •   |     | •   | •   |
|                  | PN 160 | •                | •  | •  | •  | •  | •                | •  | •  | •   |     | •   | •   |
|                  | PN 250 | •                | •  | •  | •  | •  |                  |    |    |     |     |     |     |





# Gate/Globe/Check/Plug Valves and Strainers

according to API Standards

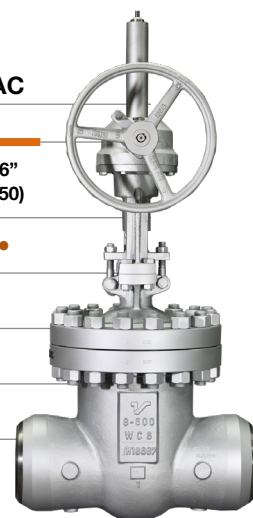
## BASIC FEATURES

|                                                           |                              |                         |
|-----------------------------------------------------------|------------------------------|-------------------------|
| Materials                                                 | Carbon Steel                 | WCB                     |
|                                                           | Low Temperature Carbon Steel | LC1, LCB, LCC           |
|                                                           | Low Temperature Alloy Steel  | LC2                     |
|                                                           | Low Alloy Steel              | WC1                     |
|                                                           | Heat Resistant Alloy Steel   | WC6, WC9, C5, C12, C12A |
|                                                           | Stainless Steel              | CF8, CF8M, CF8C         |
| Pressures-temperatures rating:                            |                              | ASME B16.34             |
| Installation lenght:                                      |                              | ANSI B16.10             |
| Flange type and size conform to standard:                 |                              | ANSI B16.5              |
| Butt Welding Ends (BW) type and size conform to standard: |                              | ANSI B16.25             |
| Inspection and Testing conform to Standard:               |                              | API 598                 |

## Gate Valves acc. to API 600

Type: GAC

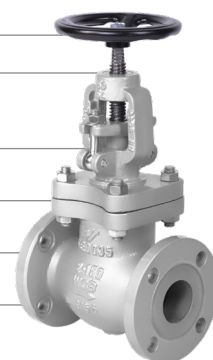
| Material type: |            | Casted Materials |         |          |          |          |           |           |           |           |           |           |           |           |
|----------------|------------|------------------|---------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| NPS (DN)       | 2" (50)    | 2 1/2" (65)      | 3" (80) | 4" (100) | 6" (150) | 8" (200) | 10" (250) | 12" (300) | 14" (350) | 16" (400) | 18" (450) | 20" (500) | 24" (600) | 26" (650) |
| Pressure Class | Class 150  | •                | •       | •        | •        | •        | •         | •         | •         | •         | •         | •         | •         | •         |
|                | Class 300  | •                | •       | •        | •        | •        | •         | •         | •         | •         | •         | •         | •         |           |
|                | Class 600  | •                | •       | •        | •        | •        | •         | •         | •         | •         | •         | •         | •         |           |
|                | Class 900  | •                | •       | •        | •        | •        | •         | •         |           |           |           |           |           |           |
|                | Class 1500 | •                | •       | •        | •        |          |           |           |           |           |           |           |           |           |



## Globe Valves acc. to API 623/BS 1873

Type: VBS

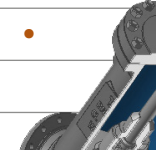
| Material type: |           | Casted Materials |         |          |          |          |           |           |           |
|----------------|-----------|------------------|---------|----------|----------|----------|-----------|-----------|-----------|
| NPS (DN)       | 2" (50)   | 2 1/2" (65)      | 3" (80) | 4" (100) | 6" (150) | 8" (200) | 10" (250) | 12" (300) | 16" (400) |
| Pressure Class | Class 150 | •                | •       | •        | •        | •        | •         | •         |           |
|                | Class 300 | •                | •       | •        | •        | •        | •         | •         | •         |
|                | Class 600 | •                | •       | •        | •        | •        | •         |           |           |
|                | Class 900 | •                | •       | •        | •        | •        |           |           |           |

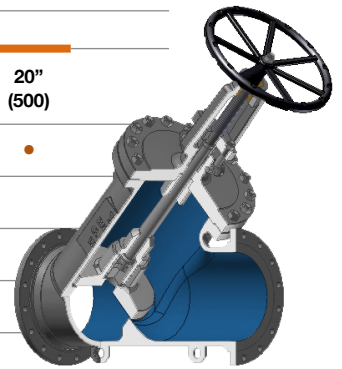


## Y type Globe Valves acc. to API 623/BS 1873

Type: VBSY

| Material type: |            | Casted Materials |                |            |             |             |             |             |              |              |              |              |              |
|----------------|------------|------------------|----------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| NPS<br>(DN)    |            | 2"<br>(50)       | 2 1/2"<br>(65) | 3"<br>(80) | 4"<br>(100) | 5"<br>(125) | 6"<br>(150) | 8"<br>(200) | 10"<br>(250) | 12"<br>(300) | 14"<br>(350) | 16"<br>(400) | 20"<br>(500) |
| Pressure Class | Class 150  | •                |                | •          | •           | •           | •           | •           | •            | •            | •            | •            | •            |
|                | Class 300  | •                |                | •          | •           | •           | •           | •           | •            |              |              |              |              |
|                | Class 600  | •                | •              | •          | •           |             | •           | •           | •            |              |              |              |              |
|                | Class 900  | •                | •              | •          | •           | •           | •           | •           |              |              |              |              |              |
|                | Class 1500 | •                |                |            |             |             |             |             |              |              |              |              |              |



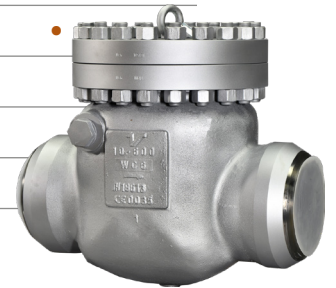


## Swing Check Valves acc. to API 6D/BS 1868

Type: CSBS

| Material type: |            | Casted Materials |            |             |             |             |             |              |              |              |              |              |              |
|----------------|------------|------------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|
| NPS<br>(DN)    | 2"<br>(50) | 2 1/2"<br>(65)   | 3"<br>(80) | 4"<br>(100) | 5"<br>(125) | 6"<br>(150) | 8"<br>(200) | 10"<br>(250) | 12"<br>(300) | 14"<br>(350) | 16"<br>(400) | 18"<br>(450) | 24"<br>(600) |
| Pressure Class | Class 150  | •                | •          | •           | •           | •           | •           | •            | •            | •            | •            | •            | •            |
|                | Class 300  | •                | •          | •           | •           | •           | •           | •            | •            | •            | •            |              |              |
|                | Class 600  | •                | •          | •           | •           | •           | •           | •            |              |              |              |              |              |
|                | Class 900  | •                | •          | •           | •           | •           | •           | •            |              |              |              |              |              |
|                | Class 1500 | •                | •          | •           | •           |             |             |              |              |              |              |              |              |





## Y type Strainers

Type: SBSY

| Material type: |              | Casted Materials |            |                |                |            |                |            |             |             |             |             |              |              |              |              |              |
|----------------|--------------|------------------|------------|----------------|----------------|------------|----------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|--------------|--------------|
| NPS<br>(DN)    | 1/2"<br>(15) | 3/4"<br>(20)     | 1"<br>(25) | 1 1/4"<br>(32) | 1 1/2"<br>(40) | 2"<br>(50) | 2 1/2"<br>(65) | 3"<br>(80) | 4"<br>(100) | 5"<br>(125) | 6"<br>(150) | 8"<br>(200) | 10"<br>(250) | 12"<br>(300) | 14"<br>(350) | 16"<br>(400) | 20"<br>(500) |
| Pressure Class | Class 150    | •                | •          | •              | •              | •          |                | •          | •           | •           | •           | •           | •            | •            | •            | •            | •            |
|                | Class 300    | •                | •          | •              | •              | •          |                | •          | •           | •           | •           | •           | •            |              |              |              |              |
|                | Class 600    | •                | •          | •              | •              | •          | •              | •          | •           | •           | •           | •           | •            |              |              |              |              |
|                | Class 900    | •                | •          | •              | •              | •          | •              | •          | •           | •           | •           | •           |              |              |              |              |              |
|                | Class 1500   | •                | •          | •              |                | •          |                | •          |             |             |             |             |              |              |              |              |              |



## Plug Valves acc. to API 6D/API 599

Type: CPV

| Material type: |              | Casted Materials |            |                |                |            |                |            |             |             |             |             |              |              |              |
|----------------|--------------|------------------|------------|----------------|----------------|------------|----------------|------------|-------------|-------------|-------------|-------------|--------------|--------------|--------------|
| NPS<br>(DN)    | 1/2"<br>(15) | 3/4"<br>(20)     | 1"<br>(25) | 1 1/4"<br>(32) | 1 1/2"<br>(40) | 2"<br>(50) | 2 1/2"<br>(65) | 3"<br>(80) | 4"<br>(100) | 5"<br>(125) | 6"<br>(150) | 8"<br>(200) | 10"<br>(250) | 12"<br>(300) | 14"<br>(350) |
| Pressure Class | Class 150    | •                | •          | •              | •              | •          |                | •          | •           | •           | •           | •           | •            | •            | •            |
|                | Class 300    | •                | •          | •              | •              | •          | •              | •          | •           | •           | •           |             |              |              |              |
|                | Class 600    | •                | •          | •              | •              | •          |                |            |             |             | •           | •           |              |              |              |



# High Pressure Globe Valves

High Pressure Globe Valves acc. to Mnf. Standard  
Pressure Seal Globe Valves acc. to ANSI B16.34

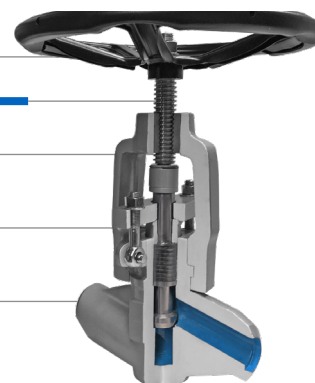
## BASIC FEATURES

|                                                           |                              | Forged Steels                                                                                                  | Cast Steels                                         |
|-----------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Materials                                                 | Carbon Steel                 | A105/1.0460                                                                                                    | WCB/1.0619                                          |
|                                                           | Low Temperature Carbon Steel | LF2/1.0565                                                                                                     | LC1, LCB, LCC                                       |
|                                                           | Low Temperature Alloy Steel  |                                                                                                                | LC2                                                 |
|                                                           | Low Alloy Steel              | F1/1.5415                                                                                                      | WC1                                                 |
|                                                           | Heat Resistant Alloy Steel   | F12Cl.2/1.7335, F22 Cl.3/1.7383, F5/1.7366, F9, F91/1.4903                                                     | WC6/1.7357, WC9/1.7379, C5/1.7365, C12, C12A/1.4955 |
|                                                           | Stainless Steel              | F304/304L(1.4301/1.4307), F316/316L(1.4401/1.4404), F316H, F316Ti/1.4571, F321/321H(1.4541), F347/347H(1.4550) | CF8/1.4308, CF8M/1.4408, CF8C/1.4552                |
| Pressures-temperatures rating:                            |                              | ASME B16.34 or EN 12516                                                                                        |                                                     |
| Installation lenght:                                      |                              | ANSI B16.10 or EN 558-1 and EN 12982                                                                           |                                                     |
| Flange type and size conform to standard:                 |                              | ANSI B16.5 (EN 1759-1) or EN 1092-1                                                                            |                                                     |
| Butt Welding Ends (BW) type and size conform to standard: |                              | ANSI B16.25 or EN 12627                                                                                        |                                                     |
| Inspection and Testing conform to Standard:               |                              | API 598 or EN 12266                                                                                            |                                                     |

## High Pressure Globe Valves acc. to Mnf. Standard

Type: VHP

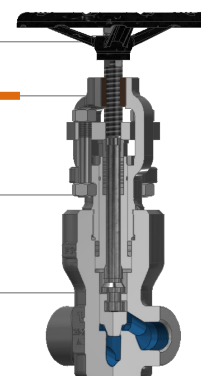
| Material type    |        | Forged Materials |    |    |    |    |    |    |    |
|------------------|--------|------------------|----|----|----|----|----|----|----|
| DN               |        | 10               | 15 | 20 | 25 | 32 | 40 | 50 | 65 |
| Nominal Pressure | PN 250 | •                | •  | •  | •  | •  | •  | •  | •  |
|                  | PN 400 | •                | •  | •  | •  | •  | •  | •  |    |
|                  | PN 500 | •                | •  | •  | •  | •  | •  | •  |    |



## Pressure Seal Globe Valves acc. to ANSI B16.34

Type: VHP\_PS

| Material type                     |                     | Forged Materials |          |        |        | Casted Materials |         |         |  |
|-----------------------------------|---------------------|------------------|----------|--------|--------|------------------|---------|---------|--|
| NPS (DN)                          |                     | 1/2"(15)         | 3/4"(20) | 1"(25) | 3"(80) | 4"(100)          | 6"(150) | 8"(200) |  |
| Pressure Class (Nominal Pressure) | Class 1500 (PN 250) | •                | •        |        | •      |                  | •       | •       |  |
|                                   | Class 2500 (PN 400) | •                | •        | •      | •      | •                | •       |         |  |





# High Pressure Gate Valves

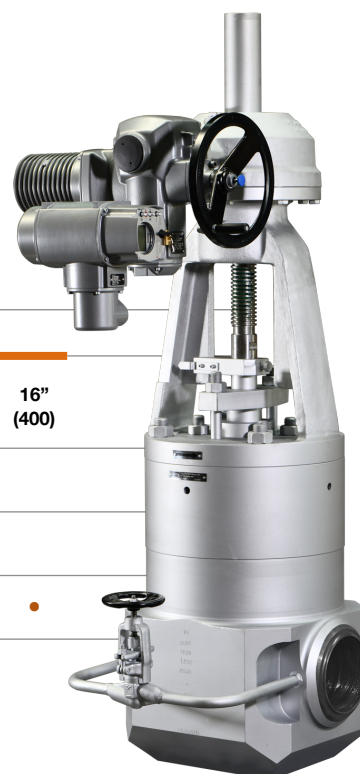
## BASIC FEATURES

|                                                           |                              | Forged Steels                                                                                                   | Cast Steels                                         |
|-----------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Materials                                                 | Carbon Steel                 | A105/1.0460                                                                                                     | WCB/1.0619                                          |
|                                                           | Low Temperature Carbon Steel | LF2/1.0565                                                                                                      | LC1, LCB, LCC                                       |
|                                                           | Low Temperature Alloy Steel  |                                                                                                                 | LC2                                                 |
|                                                           | Low Alloy Steel              | F1/1.5415                                                                                                       | WC1                                                 |
|                                                           | Heat Resistant Alloy Steel   | F12Cl.2/1.7335, F22 Cl.3/1.7383, F5/1.7366, F9, F91/1.4903                                                      | WC6/1.7357, WC9/1.7379, C5/1.7365, C12, C12A/1.4955 |
|                                                           | Stainless Steel              | F304/304L(1.4301/1.4307), F316/316L(1.4401/1.4404), F316H, F316Ti /1.4571, F321/321H(1.4541), F347/347H(1.4550) | CF8/1.4308, CF8M/1.4408, CF8C/1.4552                |
| Pressures-temperatures rating:                            |                              | ASME B16.34 or EN 12516-1                                                                                       |                                                     |
| Installation length:                                      |                              | ANSI B16.10 or EN 558-1 and EN 12982                                                                            |                                                     |
| Flange type and size conform to standard:                 |                              | ANSI B16.5 or EN 1091-1                                                                                         |                                                     |
| Butt Welding Ends (BW) type and size conform to standard: |                              | ANSI B16.25 or EN 12627                                                                                         |                                                     |
| Inspection and Testing conform to Standard:               |                              | API 598 or EN 12266                                                                                             |                                                     |

## Pressure Seal Gate Valves acc. to ANSI B16.34

Type: GHP

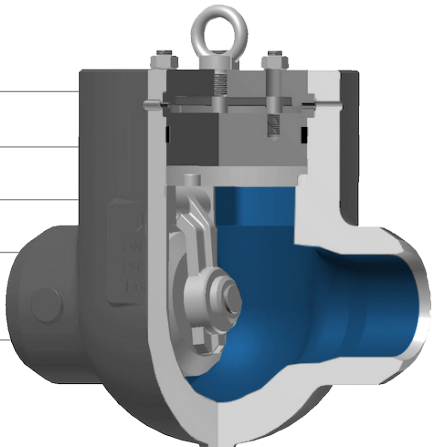
| Material type                        |                     | Forged Materials |           |         |         |             | Casted Materials |          |          |          |           |           |           |           |  |
|--------------------------------------|---------------------|------------------|-----------|---------|---------|-------------|------------------|----------|----------|----------|-----------|-----------|-----------|-----------|--|
|                                      |                     | 1/2" (15)        | 3/4" (20) | 1" (25) | 2" (50) | 2 1/2" (65) | 3" (80)          | 4" (100) | 6" (150) | 8" (200) | 10" (250) | 12" (300) | 14" (350) | 16" (400) |  |
| Pressure Class<br>(Nominal Pressure) | Class 600 (PN 100)  |                  |           |         | ●       |             |                  |          | ●        | ●        |           |           |           |           |  |
|                                      | Class 900 (PN 160)  |                  |           |         | ●       | ●           | ●                |          | ●        | ●        |           | ●         |           |           |  |
|                                      | Class 1500 (PN 250) | ●                | ●         |         | ●       | ●           | ●                | ●        | ●        | ●        | ●         | ●         | ●         | ●         |  |
|                                      | Class 2500 (PN 400) | ●                | ●         | ●       |         | ●           | ●                | ●        | ●        | ●        | ●         | ●         |           |           |  |



# High Pressure Swing Check Valves and Needle Valves

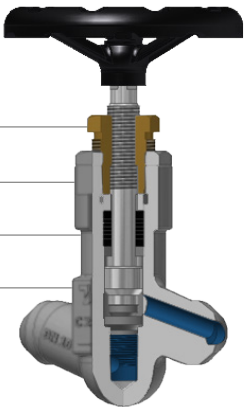
## High Pressure Swing Check Valves

|                    |                                                                 |                                                      |
|--------------------|-----------------------------------------------------------------|------------------------------------------------------|
| Type               | CHPS                                                            |                                                      |
| DN (NPS)           | 10 (3/4") ÷ 250 (10")                                           |                                                      |
| Rating             | PN 250 (CI 1500) and PN 400 (CI 2500)                           |                                                      |
| Standard Materials | 1.0619, 1.6220, 1.7357, 1.7379, C12A, 1.4308, 1.4408            | WCB, WC1, WC6, WC9, C12A, CF8, CF8C, CF8M            |
|                    | 1.0460, 1.5415, 1.7335, 1.7383, 1.4903, 1.4301, 1.4541, 1.4404, | A105, F1, F12 Cl.2, F22 Cl.3, F91, F304, F321, F316, |



## Needle Valves

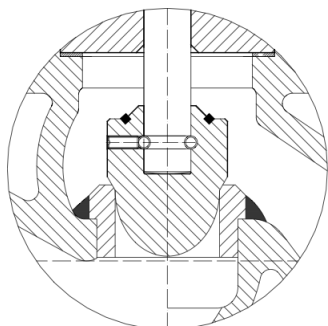
|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| Type               | VNS                                                                  |
| DN                 | 6 ÷ 15                                                               |
| Rating             | PN 16 ÷ 500                                                          |
| Standard Materials | 1.0460, 1.0565, 1.5415, 1.7335, 1.7383,1.4903,1.4301, 1.4541, 1.4404 |



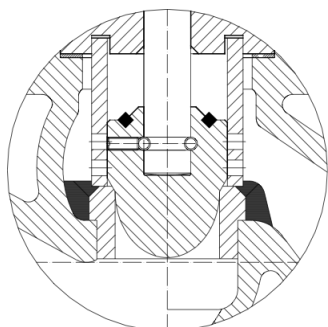
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# Control Valves

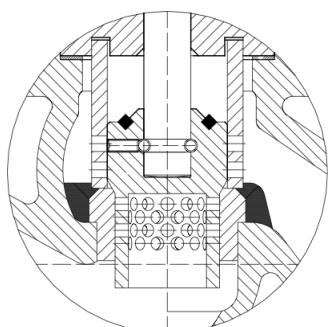
With equal percentage or linear flow characteristic



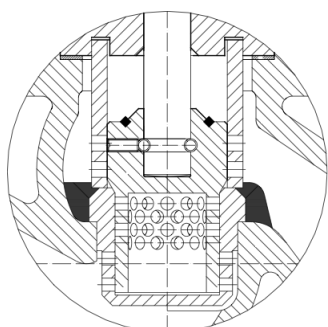
**1 Stage design**  
with Parabolic Plug



**2 Stage design**  
with Parabolic Plug and Anti-Cavitation Cage



**2 Stage design**  
with Perforated Plug and Silencer



**3 Stage design**  
with Perforated Plug, Seat and Anti-Cavitation Cage



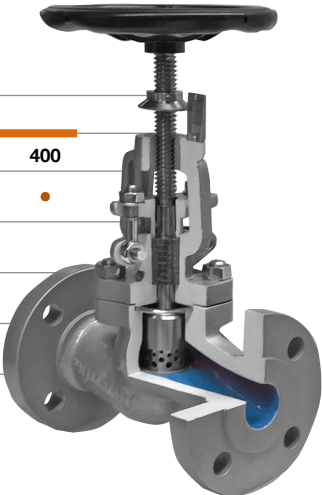
# Control Valves

acc. to EN 1349 / EN 60534

| BASIC FEATURES                                            |                              | Forgings                                             |                                                                   | Castings                       |                                   |
|-----------------------------------------------------------|------------------------------|------------------------------------------------------|-------------------------------------------------------------------|--------------------------------|-----------------------------------|
|                                                           |                              | EN                                                   | GOST                                                              | EN                             | GOST                              |
| Materials                                                 | Carbon Steel                 | 1.0460                                               | 20                                                                | 1.0619                         | 20Л                               |
|                                                           | Low Temperature Carbon Steel | 1.0565                                               | 09Г2С                                                             | 1.1131                         | 20ГЛ                              |
|                                                           | Low Temperature Alloy Steel  |                                                      |                                                                   | 1.6220                         | 20ГМЛ                             |
|                                                           | Low Alloy Steel              | 1.5415                                               | 15M                                                               | 1.5419                         |                                   |
|                                                           | Heat Resistant Alloy Steel   | 1.7335, 1.7383, 1.7366, 1.4903                       | 15XM, 10X2M, 15X5M, 10X9MФБ                                       | 1.7357, 1.7379, 1.7365, 1.4955 | 20XMЛ, 20X2M1Л, 20X5MЛ            |
|                                                           | Stainless Steel              | 1.4301/1.4307, 1.4401/1.4404, 1.4541, 1.4550, 1.4571 | 08X18H10/03X18H11, 08X16H11M3/03X17H1 4M3, 08X18H10T, 10X17H13M2T | 1.4308, 1.4552, 1.4408, 1.4581 | 07X18H9Л, 12X18H9ТЛ, 12X18H12M3ТЛ |
| Pressures-temperatures rating:                            |                              |                                                      | EN 12516-1                                                        |                                |                                   |
| Installation lenght:                                      |                              |                                                      | EN 558-1 and EN 12982                                             |                                |                                   |
| Flange type and size conform to standard:                 |                              |                                                      | EN 1092-1 and EN 1759-1                                           |                                |                                   |
| Butt Welding Ends (BW) type and size conform to standard: |                              |                                                      | EN 12627                                                          |                                |                                   |
| Inspection and Testing conform to Standard:               |                              |                                                      | ANSI/FCI 70-2, EN 12266, and EN 60534                             |                                |                                   |

Control Valves acc. to EN 1349 / EN 60534

|                  |        | Type: VENR       |    |    |    |    |    |    |    |                  |     |     |     |     |     |     |     |
|------------------|--------|------------------|----|----|----|----|----|----|----|------------------|-----|-----|-----|-----|-----|-----|-----|
| Material type    |        | Forged Materials |    |    |    |    |    |    |    | Casted Materials |     |     |     |     |     |     |     |
|                  | DN     | 15               | 20 | 25 | 32 | 40 | 50 | 65 | 80 | 100              | 125 | 150 | 200 | 250 | 300 | 350 | 400 |
| Nominal Pressure | PN 40  | ●                | ●  | ●  | ●  | ●  | ●  | ●  | ●  | ●                | ●   | ●   | ●   | ●   | ●   | ●   | ●   |
|                  | PN 63  | ●                | ●  | ●  | ●● | ●● | ●  | ●  | ●  | ●                | ●   | ●   | ●   | ●   |     |     |     |
|                  | PN 100 | ●                | ●  | ●  | ●● | ●● | ●  | ●  | ●  | ●                | ●   | ●   | ●   | ●   |     |     |     |
|                  | PN 160 | ●                | ●  | ●  | ●● | ●● | ●  | ●  | ●  | ●                | ●   | ●   | ●   | ●   |     |     |     |
|                  | PN 250 | ●                | ●  | ●  | ●  | ●  |    |    |    |                  |     |     |     |     |     |     |     |



# Control Valves

acc. to BS/ANSI

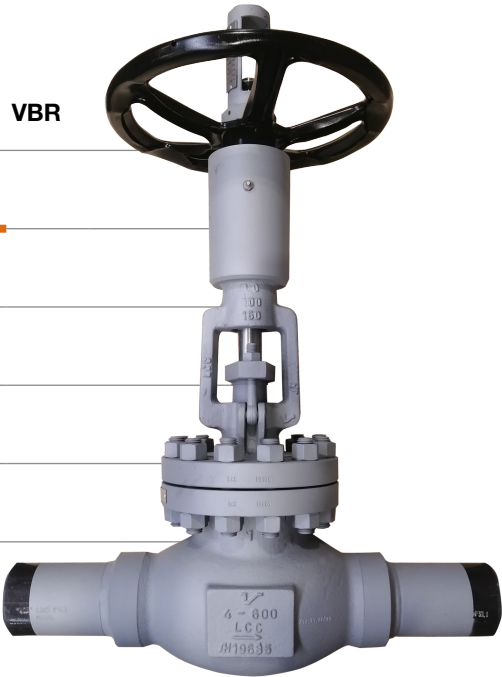
## BASIC FEATURES

|                                                           |                              | Casted Materials        |
|-----------------------------------------------------------|------------------------------|-------------------------|
| Materials                                                 | Carbon Steel                 | WCB                     |
|                                                           | Low Temperature Carbon Steel | LC1, LCB, LCC           |
|                                                           | Low Temperature Alloy Steel  | LC2                     |
|                                                           | Low Alloy Steel              | WC1                     |
|                                                           | Heat Resistant Alloy Steel   | WC6, WC9, C5, C12, C12A |
|                                                           | Stainless Steel              | CF8, CF8M, CF8C         |
| Pressures-temperatures rating:                            |                              | ASME B16.34             |
| Installation lenght:                                      |                              | ANSI B16.10             |
| Flange type and size conform to standard:                 |                              | ANSI B16.5              |
| Butt Welding Ends (BW) type and size conform to standard: |                              | ANSI B16.25             |
| Inspection and Testing conform to Standard:               |                              | ANSI/FCI 70-2           |

## Control Valves acc. to BS/ANSI

Type: VBR

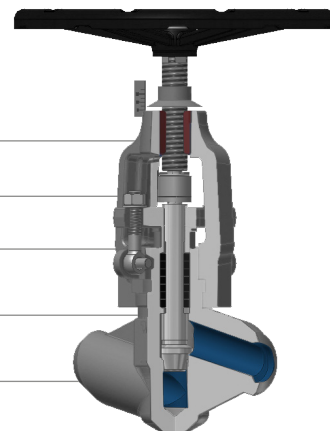
| Material type: |             | Casted Materials |                |            |             |             |             |              |              |              |
|----------------|-------------|------------------|----------------|------------|-------------|-------------|-------------|--------------|--------------|--------------|
|                | NPS<br>(DN) | 2"<br>(50)       | 2 1/2"<br>(65) | 3"<br>(80) | 4"<br>(100) | 6"<br>(150) | 8"<br>(200) | 10"<br>(250) | 12"<br>(300) | 16"<br>(400) |
| Pressure Class | Class 150   | •                | •              | •          | •           | •           | •           | •            | •            |              |
|                | Class 300   | •                | •              | •          | •           | •           | •           | •            | •            | •            |
|                | Class 600   | •                | •              | •          | •           | •           | •           | •            |              |              |
|                | Class 900   | •                | •              | •          | •           | •           | •           |              |              |              |



# High Pressure Control Valves

## High Pressure Control Valves

|                    |                                                                                                                          |
|--------------------|--------------------------------------------------------------------------------------------------------------------------|
| Type               | VHPR                                                                                                                     |
| DN (NPS)           | 10 (3/8") ÷ 65 (2 1/2")                                                                                                  |
| Rating             | PN 250 ÷ 500<br>Cl 1500 ÷ 2500                                                                                           |
| Standard Materials | 1.0460, 1.5415, 1.7335, 1.7383, 1.4903, 1.4301,<br>1.4541, 1.4404<br>A105, F1, F12 Cl.2, F22 Cl.3, F91, F304, F321, F316 |

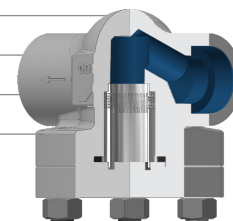
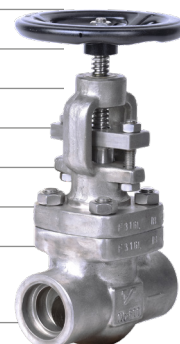


# Forged Gate/Globe/Check Valves and Strainers

according to API 602 Standard

## BASIC FEATURES

|                                                             |                              |                                                           |
|-------------------------------------------------------------|------------------------------|-----------------------------------------------------------|
| Valve type                                                  | Gate Valves                  | GAF                                                       |
|                                                             | Globe Valves                 | VAP                                                       |
|                                                             | Control Valves               | VAPR                                                      |
|                                                             | Lift Type Check Valves       | CAPL                                                      |
|                                                             | Swing Type Check Valves      | CAPS                                                      |
|                                                             | Strainers                    | SAP                                                       |
| Dimensions:                                                 |                              | NPS(DN) 3/8"(10) ÷ 2" (50)                                |
| Pressure Class:                                             |                              | Class 150 ÷ Class 1500                                    |
| Materials                                                   | Carbon Steel                 | A105                                                      |
|                                                             | Low Temperature Carbon Steel | LF2                                                       |
|                                                             | Low Alloy Steel              | F1                                                        |
|                                                             | Heat Resistant Alloy Steel   | F12Cl.2, F22 Cl.3, F5, F9, F91                            |
|                                                             | Stainless Steel              | F304/304L, F316/316L, F316H, F316Ti, F321/321H, F347/347H |
| Pressures-temperatures rating:                              |                              | API 602 and ASME B16.34                                   |
| Installation length:                                        |                              | ANSI B16.10 and Standard Mnf.                             |
| Flange type and size conform to standard:                   |                              | ANSI B16.5                                                |
| Socket Welding Ends (SW) type and size conform to standard: |                              | ANSI B16.11                                               |
| Butt Welding Ends (BW) type and size conform to standard:   |                              | ANSI B16.25                                               |
| Threaded Ends (NPT) type and size conform to standard:      |                              | ANSI B1.20.1                                              |



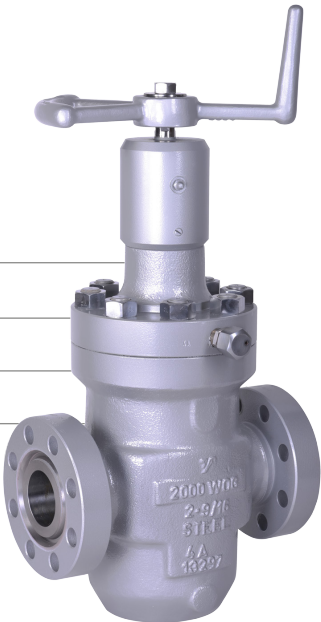


# Oil & Gas

## Exploitation Products

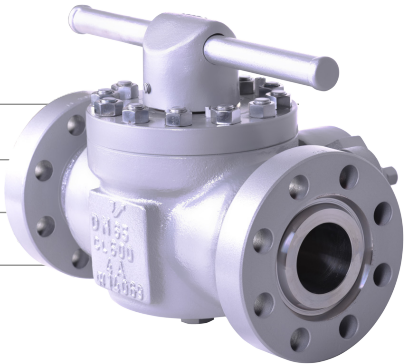
### Xmas Tree Gate Valves API 6A

|                    |                              |
|--------------------|------------------------------|
| Type               | GXT                          |
| DN (NPS)           | 50 (2 1/16") ÷ 100 (4 1/16") |
| Rating             | 2000 ÷ 5000 psi              |
| Standard Materials | 4A, CA15                     |



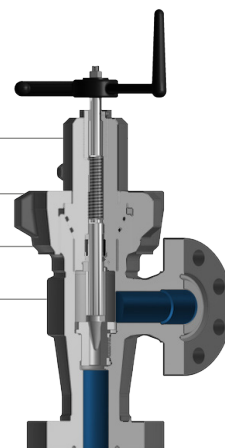
### Pig Valves API 6D

|                    |                                     |
|--------------------|-------------------------------------|
| Type               | CPVP                                |
| DN (NPS)           | 50 (2") ÷ 150 (6")                  |
| Rating             | CI 600 ÷ 1500                       |
| Standard Materials | WCB, LCB, LC1, LC2, CA15, CF8, CF8M |



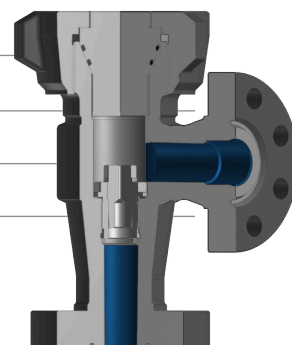
### Adjustable Choke API 6A

|                    |                 |
|--------------------|-----------------|
| Type               | VAC             |
| DN (NPS)           | 50 (2 1/16")    |
| Rating             | 2000 ÷ 5000 psi |
| Standard Materials | 4A, CA15        |



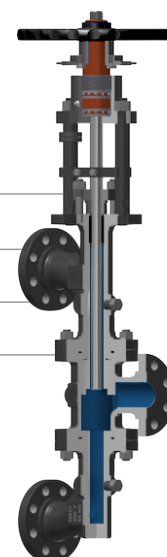
### Positive Choke API 6A

|                    |                 |
|--------------------|-----------------|
| Type               | VPC             |
| DN (NPS)           | 50 (2 1/16")    |
| Rating             | 2000 ÷ 5000 psi |
| Standard Materials | 4A, CA15        |



### Change Over Valves

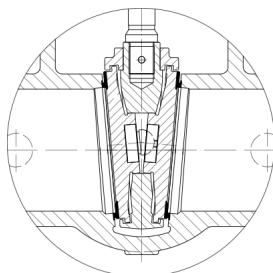
|                    |                          |
|--------------------|--------------------------|
| Type               | COV                      |
| DN (NPS)           | 50 (2") ÷ 200 (8")       |
| Rating             | CI 150 ÷ 900             |
| Standard Materials | WCB, LCB, LCC, CF8, CF8M |



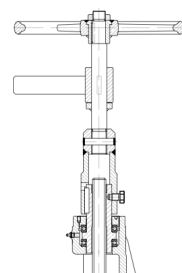
# Optional Executions

Gate Valves

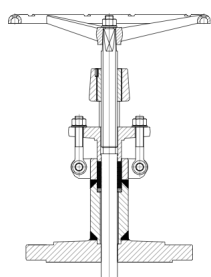
Globe Valves



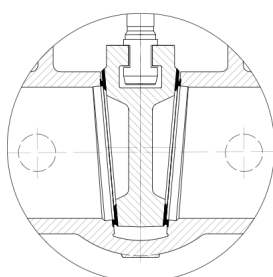
**2 piece split wedge**



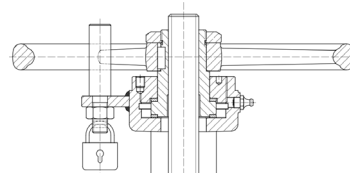
**Extended stem**



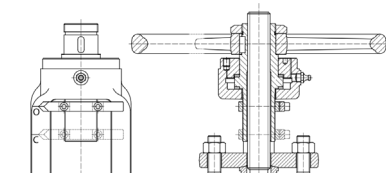
**Extended bonnet**



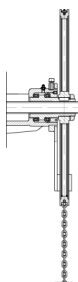
**Solid wedge**



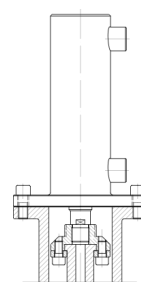
**Locking device**



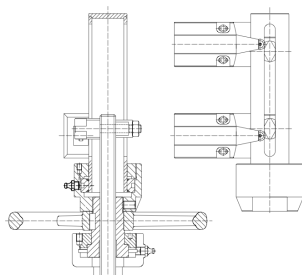
**Position indicator**



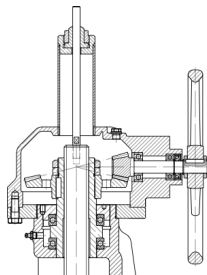
**Chain operated**



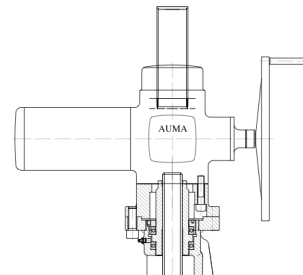
**Hydraulic actuator**



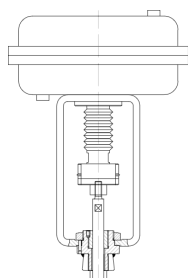
**Limit switches**



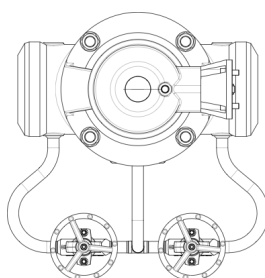
**Gear operated**



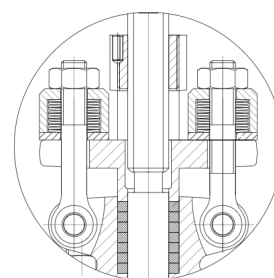
**Electric actuator**



**Pneumatic actuator**

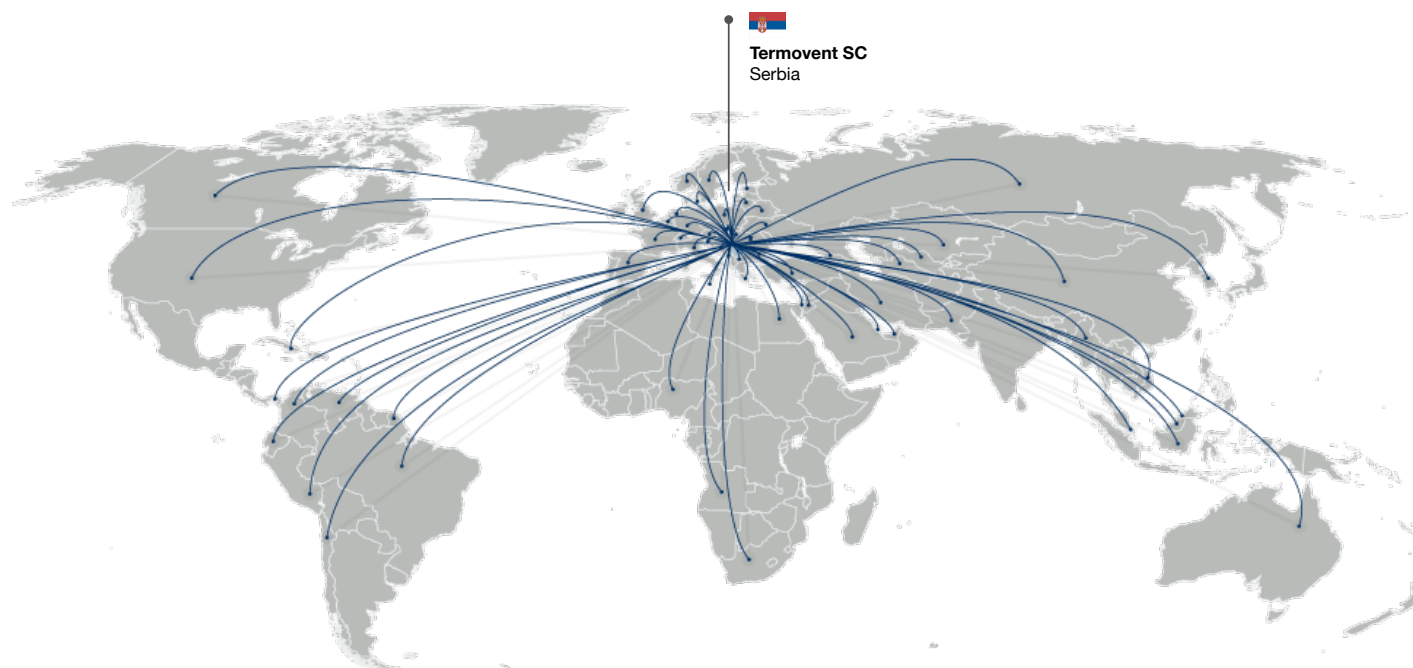


**Overpressure safety device**

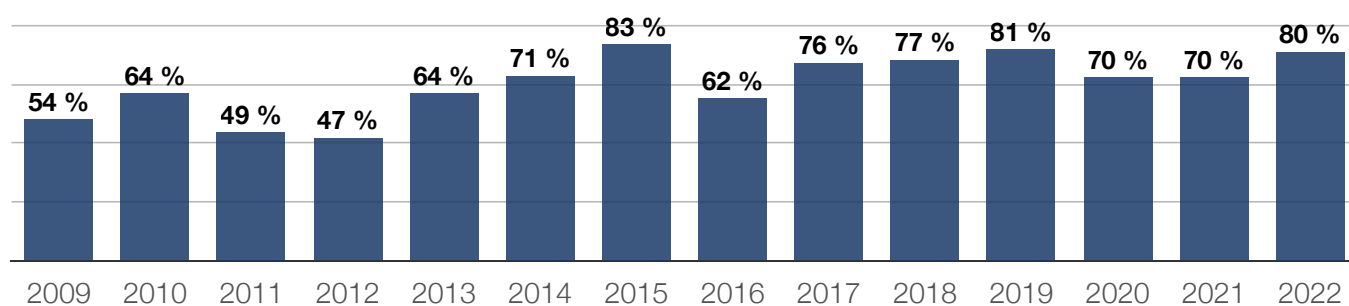


**Spring loaded stuffing box**

# Termovent SC Today



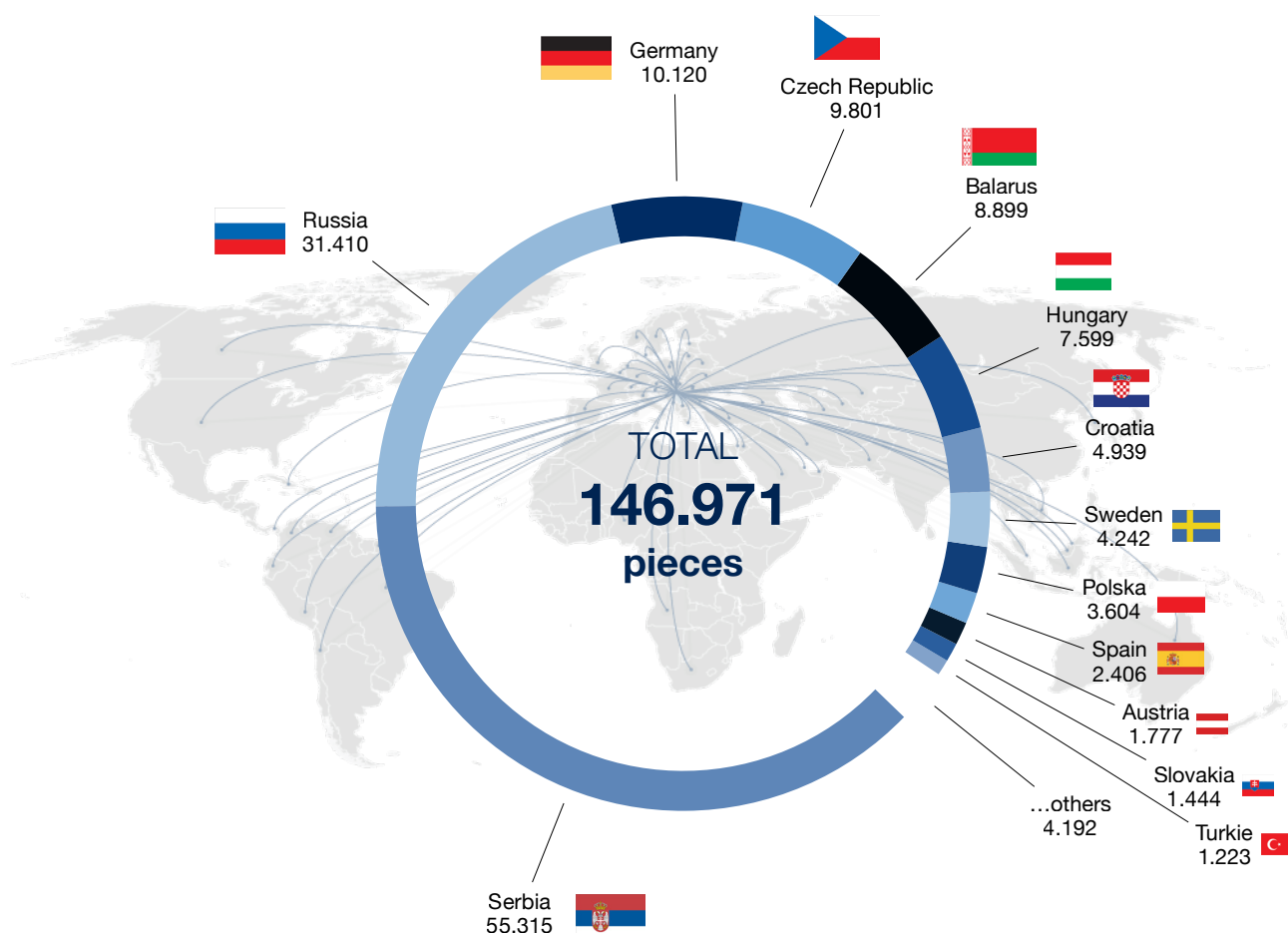
**Termovent SC - Export by the years (in %)**





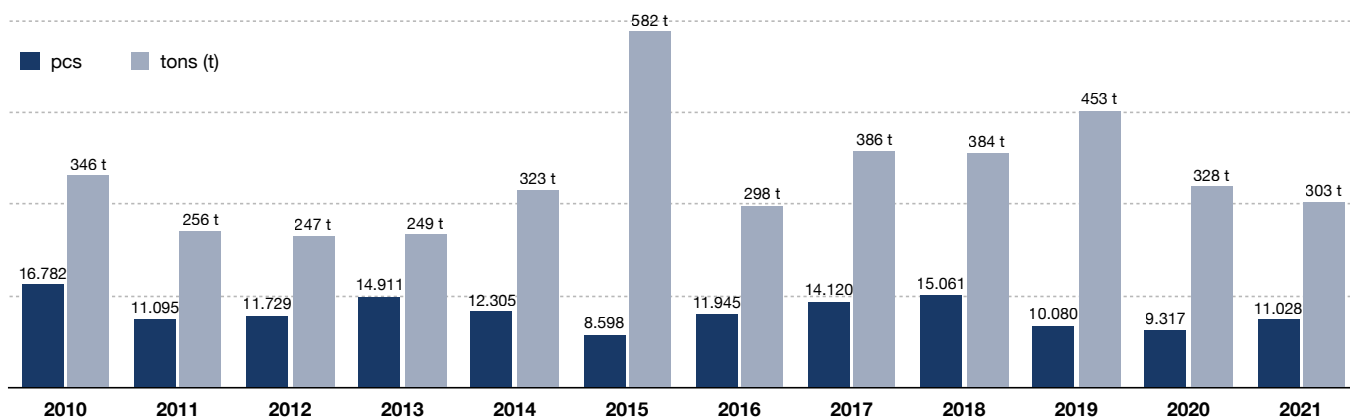
# Top Markets

Termovent SC Products delivered 2010 - 2021



Termovent SC - Products delivered by the years (in pieces & tons)

**TOTAL: 4.155 tons**



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# European Origin Global Presence

TERMOVENT SC products are installed and functioning at the many plants of 68 countries worldwide.

- ANGOLA
- AUSTRALIA
- AUSTRIA
- BELGIUM
- BELARUS
- BOSNIA & HERZEGOVINA
- BRAZIL
- BRUNEI
- BULGARIA
- CANADA
- CHILE
- CHINA
- COLOMBIA
- CROATIA
- CUBA
- CZECH REPUBLIC
- DENMARK
- ECUADOR
- EGYPT
- ESTONIA
- FINLAND
- FRANCE
- FRENCH GUIANA
- GEORGIA
- GERMANY
- GREAT BRITAIN
- GREECE
- HUNGARY
- INDONESIA
- IRAN
- IRAQ
- ISRAEL
- ITALY
- JORDAN
- KAZAKHSTAN
- LITHUANIA
- MALAYSIA
- MALTA
- MONTENEGRO
- NETHERLANDS
- NIGERIA
- NORTH MACEDONIA
- NORWAY
- PAKISTAN
- PANAMA
- PERU
- POLAND
- QATAR
- ROMANIA
- RUSSIA
- SAUDI ARABIA
- SINGAPORE
- SLOVAKIA
- SLOVENIA
- SOUTH AFRICA
- SOUTH KOREA
- SPAIN
- SWEDEN
- SWITZERLAND
- THAILAND
- TURKEY
- TURKMENISTAN
- UAE
- UKRAINE
- USA
- UZBEKISTAN
- VENEZUELA
- VIETNAM

---

# References

Reference projects 2008 - 2021

## Europe and Russia

### Austria

Voestalpine Stahl Linz

### Belgium

MRC Global  
Borealis Kallo

### Bulgaria

Bulgartransgaz  
Lukoil

### Croatia

Đuro Đaković - Glina 1 i 2, St.  
Gradiška, Di Slavonija Đakovo,  
Slatina, Županja

### Czech Republic

Precheza – Prerov  
SES Tlmače-Synthesia  
Planá nad Lužnicí Power Plant  
Horní Planá  
Unipetrol

### Denmark

DOOSAN - BIO4-Hofor

### Germany

Mainz - Wiesbaden Gas Power Plant  
DOOSAN - LICHTERFELDE Power  
Plant  
TOTAL Refinery

### Hungary

MOL OIL Refinery  
JSR MOL, Synthetic rubber plant  
MOL Petrolkémia (TVK)  
BORSODCHEM

### Italy

Macchiareddu Renewable Energy  
Complex, Calgiari

### Poland

DOOSAN - Olsztyn - EfW Plant  
DOOSAN - Zeran  
Opole Power Plant  
PKN Orlen  
Lotos  
Grupa Azoty  
Tauron  
Anwil

### Serbia

Turkstream Bulgaria-Hungary  
interconnection  
NIS-GAZPROM NEFT  
CB&I Construction of Deep  
Conversion Complex in Pančevo Oil  
Refinery

### Slovakia

Slovnaft

### Spain

ANDASOL 3 - Solar Power Plant  
REPSOL  
TAMOI  
SABIC  
DOOSAN - Huelva  
DOOSAN - Curtis  
DOOSAN - Cubillos

### Sweden

DOOSAN - Lund  
SIEMENS - Brista and Jönköping

### Turkey

SIEMENS - Hatay  
TETA KAZAN-Projects Acersoy &  
SATEM, Biomass PP

### Ukraine

Metinvest / Zaporizhstal

### France

DOOSAN Pierrefonds – EfW Plant,  
La Réunion/France  
Hitachi - Ivry II EfW plant

### United Kingdom

Hitachi - Rookery EfW plant  
DOOSAN Lostock - EfW Plant  
DOOSAN NESS Aberdeen - EfW  
Plant  
DOOSAN Protos - EfW Plant  
Hitachi - Ferrybridge EfW plant  
DOOSAN - TeesREP  
SIEMENS - Sleaford

### Russian Federation

Gazprom  
Rosneft  
Antipinsky Refinery  
NLMK  
Rusal  
EuroChem  
PhosAgro  
Metafrax  
TER-Teploenergoremont  
Mosenergo  
TAIF-NK Nizhnekamsk

### Belarus

Grodno Azot  
Mozyr  
Naftan

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# References

Reference projects 2008 - 2021

## Americas

### Canada

SIEMENS - Biomass power plants in  
fort St. James and Merritt  
SIEMENS - Canfor

### Colombia

DOOSAN - Termotasajero II

### Chile

DOOSAN - Combined-cycle power  
plant Kelar

### Cuba

DOOSAN - Boca de Jaruco,  
Condensation Steam Turbine

### French Guiana

Montsinéry-Tonnégrande French  
Guiana, Solar Power Plant

### Panama

DOOSAN - Paco Panama

### Peru

DOOSAN - Tecnicas Reunidas -  
Talara I & II

### USA

DOOSAN - Lansing, Michigan

## Africa and Middle East

### Egypt

ENPPI  
Abou Zaabal Fertilizers  
and Chemicals  
Al Nouran Sugar project, Al Salhiya Al  
Jadida

### Israel

DOOSAN SOREK – Sea water  
desalination plant „B“  
IEC-Hagit, Ramat & Eshkol  
DOOSAN - Mishor  
DOOSAN - SOREK

### Jordan

DOOSAN - Zarqa

### Nigeria

DOOSAN - Okpai

### Saudi Arabia

DOOSAN - Fadhili

### UAE

Hassyan Clean Coal Power Plant,  
Dubai  
ADNOC - TAKREER Refinery

### Qatar

Qatar Petrochemical Company  
(QAPCO) QSC

## Asia and Oceania

### Brunei

ThyssenKrupp IS - Fertilizer plant

### China

Gulei Petrochemical Complex

### Indonesia

DOOSAN - Grati  
DOOSAN - Muara Tawar  
Lombok - Power Plant

### Japan

DOOSAN - Sodegaura

### Kazakhstan

CJSC Caspian Pipeline Consortium  
Pavlodar Oil Chemistry Refinery  
SIEMENS - Chinarevskoe Oil Field

### Malaysia

Petronas

### Pakistan

DOOSAN - Balloka and Muridke  
K-Electric

### South Korea

SIEMENS - Dang Jin Bio Mass  
DOOSAN - Namjeju OTPP

### Taiwan

ThyssenKrupp Uhde - Dragon Steel,  
CO Plant

### Thailand

Siemens BCC2 Project

### Uzbekistan

CASALE Navoyazot Nitric Acid Plant



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# References

## References by the industry

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### EPC

DOOSAN Škoda Power, Czech Republic  
Hitachi Switzerland  
McDermott, USA, Czech Republic  
Siemens, Czech Republic  
ThyssenKrupp Industrial Solution, Germany

ENPPI, Egypt  
CASALE, Switzerland  
UNIS, Czech Republic  
Rafako, Poland

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### EfW

Ferrybridge UK - England  
Rookery UK - England  
Lostock UK - England  
Protos UK - England  
NESS Aberdeen UK - Scotland

Ivry II, Paris, France  
Pierrefonds, La Reunion, France  
Tamoin, Spain  
Olstyn, Poland

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### BioMass / Solar / Wind / Renewable

TETA Kazan-Acersoy&SATEM  
BioMass PP, Turkey  
Curtis BioMass PP, Spain  
Cubillos BioMass PP, Spain  
Huelva BioMass PP, Spain  
Lund BioMass PP, Sweden  
Karlovac BioMass, Croatia  
Gospić BioMass, Croatia  
Brinje BioMass, Croatia  
Montsinery-Tonnegrade BioMass,  
French Guiana  
St. James and Merritt BioMass PP,  
Canada

Sodegaura BioMass PP, Japan  
Dang Jin BioMass PP, S.Korea  
Anda Sol II Solar PP, Spain  
Hatay Wind PP, Turkey  
TeesREP, Renewable Energy Plant,  
UK  
Sleaford, Renewable Energy Plant,  
UK  
Macchiarreddu Renewable Energy  
Complex, Italy

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### Iron & Steel Industry / Mine

HBIS, Serbia  
Zijin Copper, Serbia  
Arcelor Mittal, Bosnia and  
Hercegovina  
Voestalpine Stahl Linz  
NLMK, Russia  
Rusal, Russia

Metinvest/Zaporizhstal, Ukraine  
Aluminium Oxid Stade, Germany  
Arcelor Mittal, Poland  
ZK-REM, Koksownia Jadwiga,  
Poland  
KGHM Cooper mine, Poland

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**Oil & Gas**

|                                                          |                                              |
|----------------------------------------------------------|----------------------------------------------|
| NIS a.d. - Gazpromneft, Serbia                           | Angarsk Petrochemical Refinery, Russia       |
| Srbijagas, Serbia                                        | Komsomolsk Refinery, Russia                  |
| Turkstream Bulgarian - Hungarian interconnection, Serbia | Kuibyshev Oil Refinery, Russia               |
| OKTA, North Macedonia                                    | Novokuibyshevsk Refinery, Russia             |
| MOL, Hungary                                             | Syzran Refinery, Russia                      |
| ORLEN, Poland                                            | Slavneft-Yanos, Russia                       |
| Lotos, Poland                                            | VPK OIL - Kochenevskiy Refinery, Russia      |
| Slovnaft, Slovakia                                       | TAIF NK, Russia                              |
| UNIPETROL, Czech Republic                                | CJSC Caspian Pipeline Consortium, Kazakhstan |
| Repsol, Spain                                            | Pavlodar Oil Chemistry Refinery, Kazakhstan  |
| TOTAL, Germany                                           | SIEMENS - Chinarevskoe Oil Field, Kazakhstan |
| PCK Refinery, Germany                                    | Huntoil, Iraq - Erbil                        |
| OMV, Austria                                             | Petroperu, Peru                              |
| Lukoil, Bulgaria                                         | ADNOC, UAE                                   |
| Bulgartransgaz, Bulgaria                                 | Petronas, Malaysia                           |
| Mozyr, Belarus                                           | QAPCO, Qatar                                 |
| Naftan, Belarus                                          |                                              |
| Lukoil, Russia                                           |                                              |
| Rosnaft, Russia                                          |                                              |
| Antipinski Refinery, Russia                              |                                              |
| Achinsk Refinery, Russia                                 |                                              |

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**ThermoEnegetics**

|                                               |                                                 |
|-----------------------------------------------|-------------------------------------------------|
| TPP Nikola Tesla, Serbia                      | TPP - TEC 22, Russia                            |
| Mainz Wiesbaden Gas PP, Germany               | Mosenergo, Russia                               |
| Lichterfelde PP, Germany                      | TeploEnergoRemont, Russia                       |
| Wood-fired CHP Cuxhaven, Germany              | Mishor Gas PP, Israel                           |
| SES Tlmače, Czech Republic                    | Zarqa CHP Plant, Jordan                         |
| Planá nad Lužnicí HPP, Czech Republic         | Fadili, CHP Plant, KSA                          |
| Žeran CCPP Plant, Poland                      | Hasyan Clean Coal PP, UAE                       |
| Opole PP, Poland                              | Lansing Gas PP, USA                             |
| Tauron, Poland                                | Paco Panama PP, Panama                          |
| TAMEH The Blachownia Generation Plant, Poland | Termotasajero II, Columbia                      |
| PGE Bełchatów                                 | Kelar CCPP, Chile                               |
| Legnica Power Station                         | Boca de Jaruco Condensation Steam Turbine, Cuba |
| BIO4-HOFOR CHP Plant, Denmark                 | Muara Tawar CCPP Plant, Indonesia               |
| Jönköping, Sweden                             | Lombock PP, Indonesia                           |
| Brista, Sweden                                | Grati, Gas PP, Indonesia                        |
| HEP, Croatia                                  | Namjeju Oil Thermal PP, S. Korea                |
| CE Oltenia, Romania                           | SASOL, South Africa                             |

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**Chemical & Petrochemical**

|                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| Methanol Acid Plant Kikinda, Serbia      | EuroChem, Nevinomyssk Azot, Russia                         |
| Messer CO2 Plant - SOS Rusanda, Serbia   | Acron, Velikiy Novgorod, Russia                            |
| MOL Petrolkémia (TVK), Hungary           | Uralchem, Voskresensk Mineral Fertilizers, Russia          |
| JSR MOL, Synthetic rubber plant, Hungary | PhosAgro, Russia                                           |
| Borsodchem, Hungary                      | Metafrax, Gubaha, Russia                                   |
| SABIC Spain                              | GrodnoAzot, Belarus                                        |
| BASF Spain                               | Novoyazot Nitric Acid Plant, Uzbekistan                    |
| Borealis Kallo, Belgium                  | Brunei Fertilizer Plant, Brunei                            |
| Grupa Azoty, Poland                      | Abou Zaabal Fertilizersand Chemicals, Egypt                |
| Anwil, Poland                            | MOPCO Misr Fertilizers Production Company New Kairo, Egypt |
| Precheza a.s., Přerov, Czech Republic    |                                                            |
| EuroChem, NAK Azot, Tula, Russia         |                                                            |

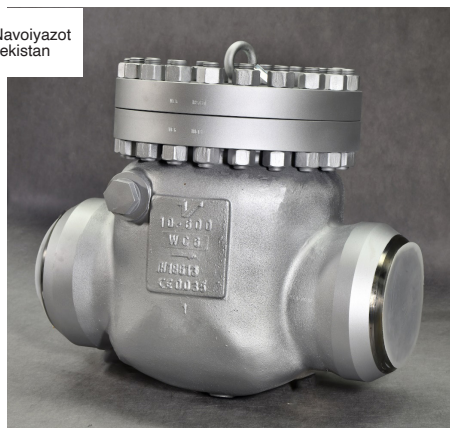




TurkStream Serbia,  
Bulgaria - Hungary  
Interconnection



CASALE – Navoiyazot  
plant Uzbekistan



Bulgartransgaz,  
Bulgaria



TAIF NK Refinery  
Nizhnekamsk, Russia





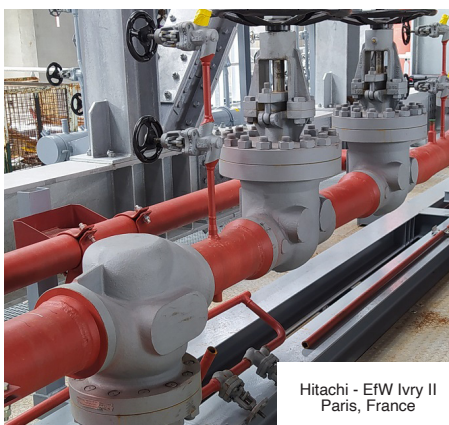
Voestalpine Stahl Linz,  
Austria



Gulei Project China



Brunei Fertilizer Plant



Hitachi - EfW Ivory II  
Paris, France



UNIS – NAFTAN,  
Belarus



Transnafta, Serbia





MOSENERGO  
TEC - 22



MSK – Methanol and  
Acetic Acid Complex,  
Serbia



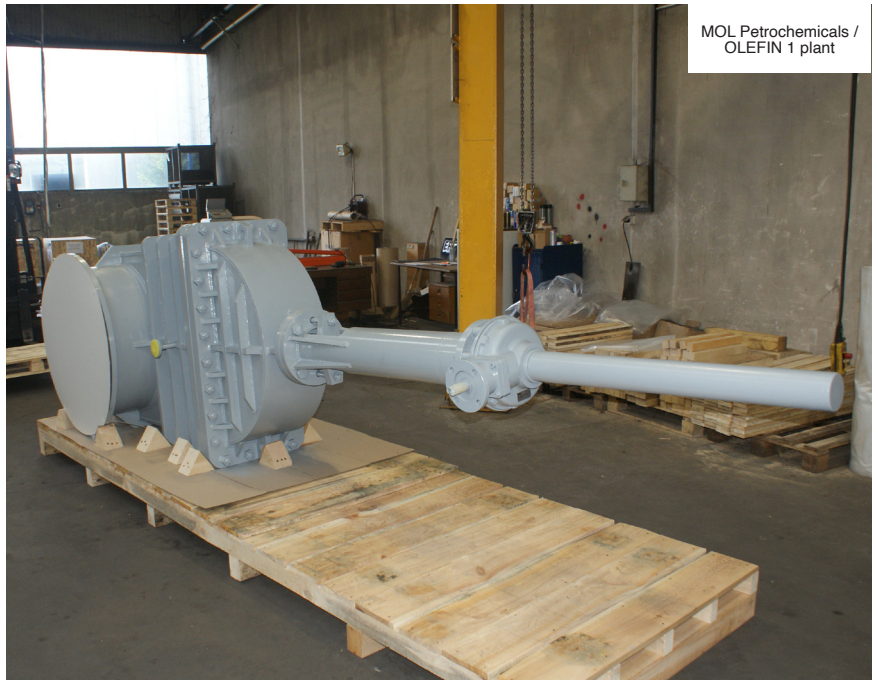
Satəm Bio gas power  
plant Turkey







SASOL, South Africa



MOL Petrochemicals /  
OLEFIN 1 plant



Tailor Made Valves



Before

Products Reparation



After



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