

# DUNCON DUNCON

40  
Years

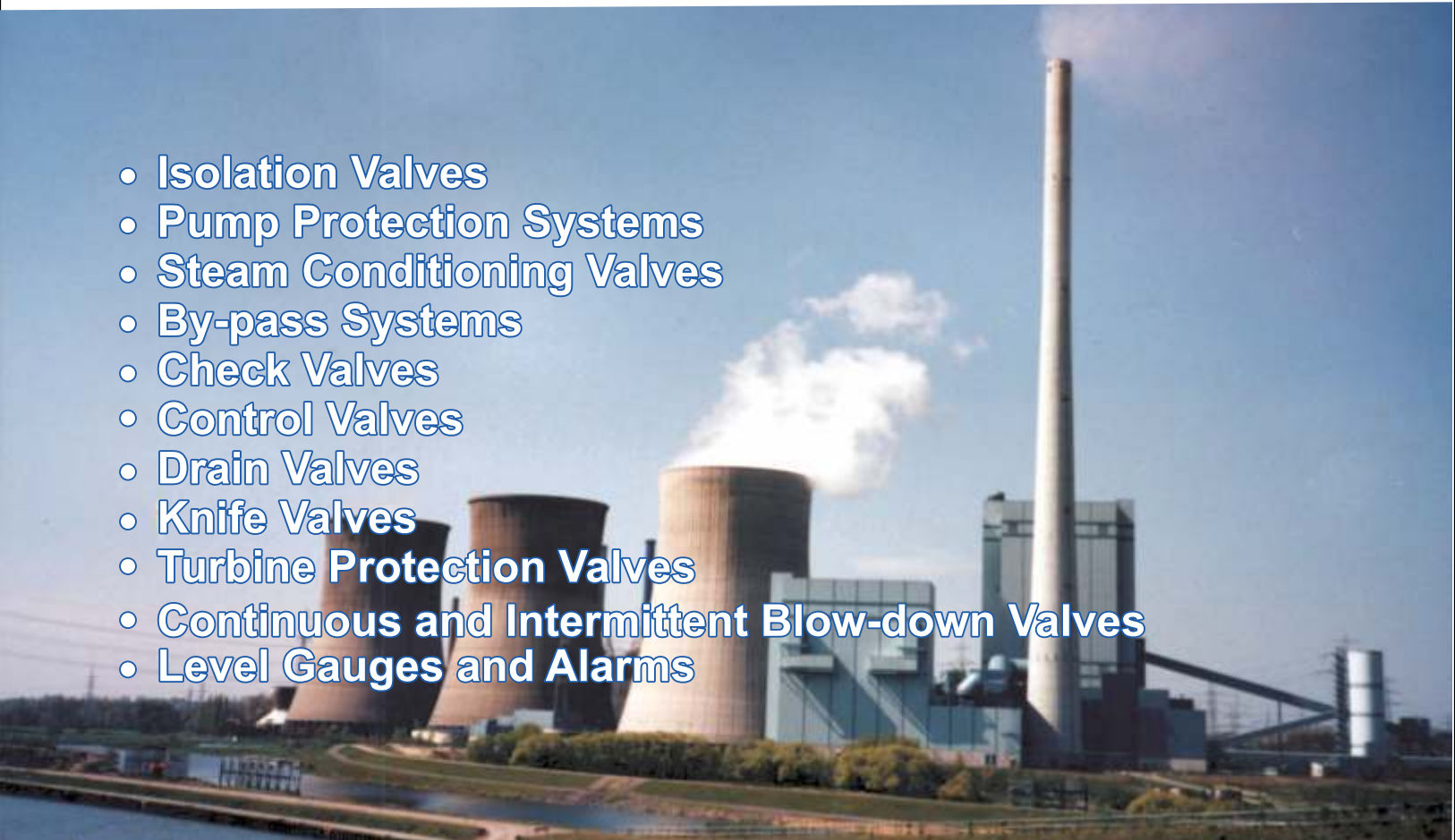


## VALVES



**THE RIGHT PRODUCT FOR YOUR APPLICATION**

- Isolation Valves
- Pump Protection Systems
- Steam Conditioning Valves
- By-pass Systems
- Check Valves
- Control Valves
- Drain Valves
- Knife Valves
- Turbine Protection Valves
- Continuous and Intermittent Blow-down Valves
- Level Gauges and Alarms



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## A history of growth and excellence

**DURCON** is a premium manufacturer of industrial valves in Brazil. It combines high standards in technology, quality and productivity, with tradition, experience and reliability.

Founded in 1974, **DURCON** employs 200 workers in 4 (four) manufacturing plants in Brazil and the EUA. The total plant area is 20 thousand square meters.

The company produces a wide range of high technology valves, with over 2 hundred thousand valves sold, with sizes ranging from 1/4" to 120" and pressure class up to 4500#. We are present in Latin America, North America, Europe and Asia.

Our QMS is ISO 9001:2008 certified for design, development, manufacture and service. We are also PED 97/23/EC (Pressure Equipment Directive) certified, (CE Mark).

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## Complete solution for your applications and requirements

**DURCON** supplies Contractors, OEM's, Distributors and End Users with high quality solutions. Our understanding of customer's process, enables us to select the right product for your application.

- Experienced specialists who understand your process
- Fast delivery
- Full technical support
- Wide range of valves
- Competitive prices
- Long service valve life
- Flexible products to suit your needs
- Quick response to your request for quotations
- All actuators and accessories available
- Taylor-made solutions



Sales Department



Sizing Program

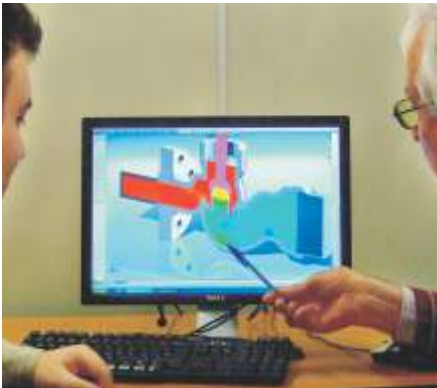


Experienced Specialists

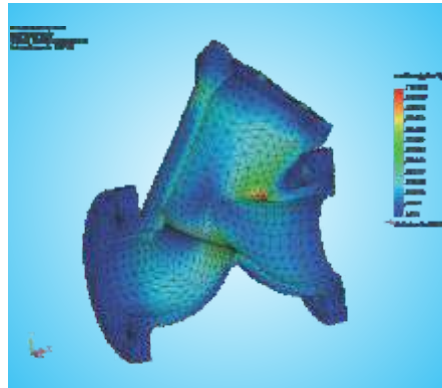
## Engineering Efficiency

**DURCON** engineers are ready to help our customers to meet the most demanding design challenges and applications. We have the skill, the experience and most modern tools to assist our customers to whatever extent

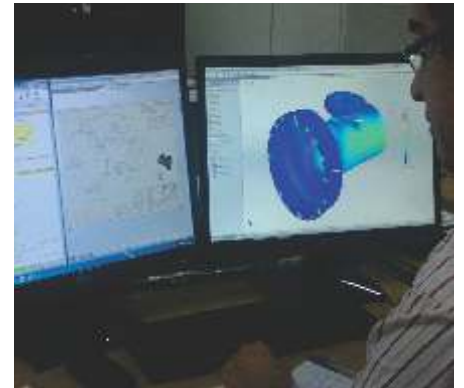
- Project Engineers
- Design/Drafting
- CAD/CAM - 3D
- Finite Element Analysis (FEA)
- Computer Flow Analysis (CFA)
- Testing (Destructive and Non Destructive)
- Performance Test Capability
- Research & Development
- Computer Casting Process Simulation



Flow Analysis - CFD - 3D



Finite Element Analysis - FEA - 3D



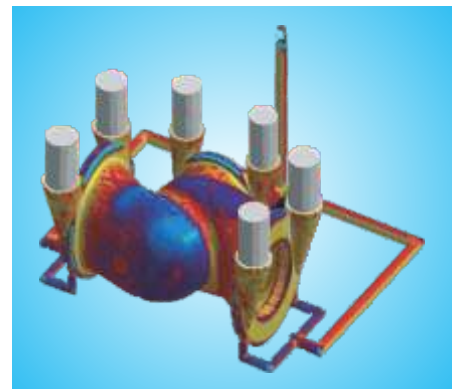
Design CAD / CAE / CFD / 3D



Machining Analysis - CAM - 3D



Performance Test - LAB



Computer Casting Process Analysis - 3D



Cryogenic Test



Fire Safe Test



Performance Test



## High-Quality Manufacturing

**DURCON** manufacturing facilities are supported by the latest generation software, validated processes, state-of-art measurement tools and instrumentation, trained personnel and best technology equipments.

- ERP Enterprise Resource Planning - SAP
- MRP Manufacturing Resource Planning
- ISO 9001-2000 quality standard
- CE mark
- International quality assurance standards
- International purchasing agreements
- Quick response capability
- Latest CNC equipments
- Latest generation CNC Machining Centers
- Automatic welding machines
- Three dimensional measuring machine
- CAD CAM 3D
- Quality assurance equipment and certified non-destructive examination level 1 and 2 personnel.
- Weld processes and welders qualified by ASME.
- Pressure and seat tightness equipment to 15.000 psi.



CNC Machining Centers



Horizontal CNC Machining Centers



CNC Lathe



CNC Machining Centers



Assembly area



Assembly BPTV



Test machines up to 120" (3000mm)



Test Machines



Test Machines up to 4500# (PN 640)

## Focus on Customer's Satisfaction

**DURCON** has an efficient instruments to meet targets defined in our Strategic Plan. The company and its products meet all the legislation requirements, as well as international codes and standards.

- SA 8000
- ISO 9001:2008
- CE 0045



CE 0045



ISO 9001:2008



SA 8000



Three Dimensional Control



Ultrasonic Control



Final Inspection

## A World of Service

**DURCON** understands the critical role our flow control products serve. To meet these needs, we have established a network of Quick Response and Service Centers.

- 24/7 Support
- Spares inventory
- Assembly capability
- Quick manufacturing
- Commissioning
- Skilled technicians
- Repair/Return/Remanufacturing/Up-grading
- Around-the-clock on-site service
- In/Out house training



Field Service



Shipment



Inventory

## Around the World

In practically every type of service and every type of application, you will find a **DURCON** flow control solution.

## Market Segments

### Power

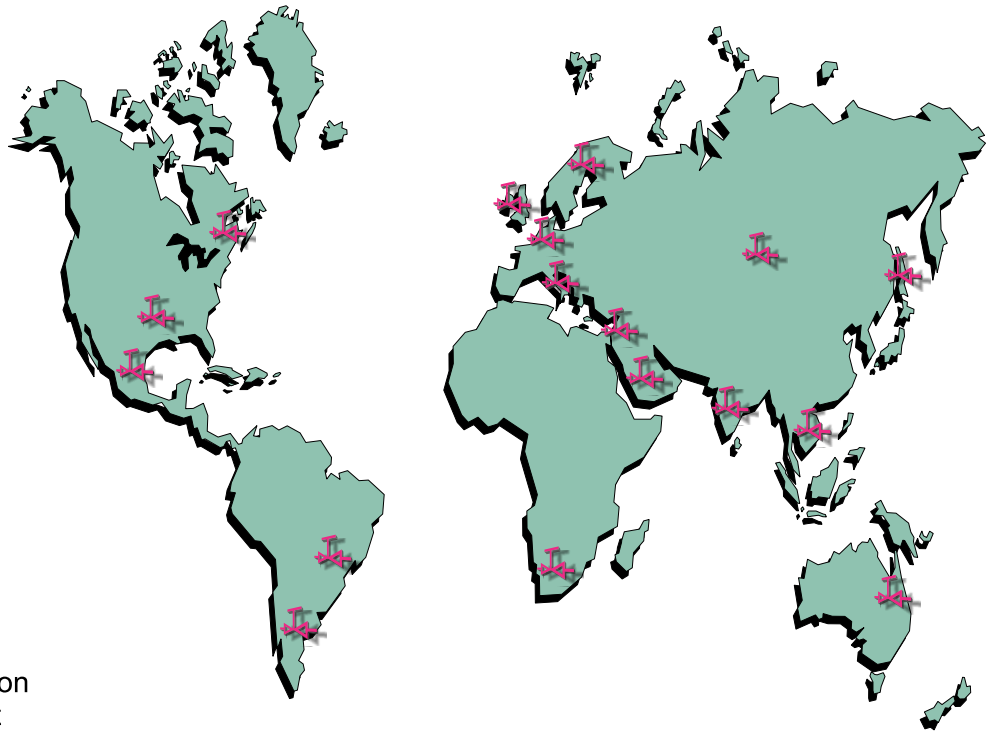
Thermoelectric  
Hydroelectric

### Industry

Oil and Gas  
Chemical and Petrochemical  
Pulp & Paper  
Sugar and Alcohol  
Steel Mill  
Mining  
Many others...

### Water / Sewage

Water treatment and distribution  
Waste and Sewage treatment



## Market and Application x Products

PRODUCTS	THERMOELECTRIC POWER GENERATION	OIL UP STREAM & DOWN STREAM	GAS	SUGAR & ALCOHOL
	COOLING WATER SYSTEMS	CRUDE WELLS INJECTION	RECOVERY	COOLING WATER SYSTEMS
	CONDENSATE SYSTEMS	PIPELINES	SEPARATION	STEAM AND CONDENSATE LINES
	HIGH PRESSURE DRAIN	DISTILLATION SYSTEMS	REFLECTION	STEAM GENERATION SYSTEMS
	BLOW DOWN	DESALINIZATION SYSTEMS	SEPARATION	STEAM AND CONDENSATE LINES
	GAS INLET	OTHER PROCESSES	SEPARATION	STEAM GENERATION SYSTEMS
	GAS EXHAUST	PIPELINES	RECOVERY	STEAM AND CONDENSATE LINES
	AIR INJECTION	DISTILLATION SYSTEMS	SEPARATION	STEAM AND CONDENSATE LINES
	STEAM & CONDENSATE LINES	PIPELINES	RECOVERY	STEAM AND CONDENSATE LINES
	FEED WATER	PIPELINES	RECOVERY	STEAM AND CONDENSATE LINES
	SUPERHEATED AND STEAM MAIN	PIPELINES	RECOVERY	STEAM AND CONDENSATE LINES
AUTOMATIC RECIRCULATION VALVE	• •	• • • • • • • •	• • • • • • • •	• • • • • • • •
TWO COLOR BOILER LEVEL GAGE	• •	• • • • • • • •	• • • • • • • •	• • • • • • • •
PREHEATER BY-PASS VALVE	• •	• • • • • • • •	• • • • • • • •	• • • • • • • •
GATE, GLOBE & CHECK VALVES - BOLTED BONNET	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •
GATE, GLOBE & CHECK VALVES - PRESSURE SEAL BONNET	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •
TURBINE BY-PASS VALVE (STEAM CONDITIONING)	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •
EXTRACTION CHECK VALVE	• •	• • • • • • • •	• • • • • • • •	• • • • • • • •
SPECIAL VALVES	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •
GLOBE STOP AND DRAIN VALVE	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •
TRIPLE ECCENTRIC BUTTERFLY VALVE	• • • • • • • •	• • • • • • • •	• • • • • • • •	• • • • • • • •



## Main Customers by Market



### Contract/ Engineering

Voest Alpine  
Snamprogetti  
Techint  
Fluor  
Bechtel  
Fels Setal  
Oderbrecht  
Camargo Correa  
Stone and Webster



### Power Generation

Birchwood Co-Generation  
Sierra Pacific Power Co.  
Atlantic Thermal Systems  
Tampa Electric  
Eletronuclear  
AES  
Itaipu  
EDF  
Tractebel



### Oil and Gas

Petrobras  
Shell  
Mobil  
Repsol  
Chevron-Texaco  
Agip  
Comgas  
YPF  
Pemex



### Chemical and Petrochemical

Lyondell Petrochemical  
E.I. Dupont  
Hyundai Petrochemical  
Dow Chemical  
Braskem  
Bunge  
Bayer  
Rhodia



### Sugar and Alcohol

Shree Renuka (Equipav)  
Usina da Barra  
Usina Sta. Elisa  
LDC (Usina Cresciumal)  
Copersucar  
Grupo Raizen (Cosan)  
Usina Caeté  
Usina São Martinho  
Usina Barra Grande



### OEM (Boilers, Turbines, Pumps, etc.)

Mitsubishi  
Babcock  
Foster Wheeler  
Kvaerner  
KSB  
Flowserve  
Siemens  
Alston-ABB  
Rolls Royce



### Pulp & Paper

Wausau Paper  
Federal Paper  
Eurocan Pulp & Paper  
Temple-Inland Paper  
Celulosa Arauco  
Fibria (Aracruz)  
Klabin  
Fibria (VCP)  
International Paper  
Suzano



### Mining

Cia. Panamericana  
Getchell Gold  
Samarco  
Vale  
Alunorte  
Alcoa  
Alcan  
MBR  
Kobrasco  
V&M



### Steel Mill

CSN-Nippon Steel  
Usiminas  
Arcelor Mittal-CST  
Gerdau  
Usinor  
Sidenor



### Water and Sewage

Sabesp  
Cedae  
Sanepar  
Sanasa  
Corsan  
Copasa  
Embas  
Caesb  
Cosanpa

## Market and Application x Products

CHEMICAL & PETROCHEMICAL														PULP & PAPER						STEEL MILL				MINING				WATER / SEWAGE			INDUSTRIAL PROCESSES																			
HC CRACKING SYSTEMS	OLEFINS UNITS	POLYMERIZATION	AROMATIZATION	CHLORINATION	DEHYDRATION	DEHYDROGENATION	HYDRATION	HYDROGENATION	HYDROLYSIS	OXIDATION	DESULPHURATION	ALKYLATION	COOLING WATER SYSTEMS	STEAM & CONDENSATE LINES	STEAM GENERATION SYSTEMS	PAPER PULP	DIGESTOR	PAPER MACHINE	CHEMICAL RECOVERY	BLEACHING	COOLING WATER SYSTEMS	STEAM & CONDENSATE LINES	STEAM GENERATION SYSTEMS	LAMINATOR	BLAST FURNACE	COOLING WATER SYSTEMS	STEAM AND CONDENSATE LINES	STEAM GENERATION SYSTEMS	MINERAL PROCESSING	MINERAL TRANSPORT	COOLING WATER SYSTEMS	STEAM & CONDENSATE LINES	STEAM GENERATION SYSTEMS	WASTE TREATMENT	WATER TREATMENT	PUMP STATION	VACUUM	OXYGEN	ACID/ ALKALI	CRYOGENIC	GAS AND AIR									
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## Automatic Recirculation Valves (NVM, VRM-HPM and NVL)



### Application and Series

Centrifugal pump protection. Avoids low and reverse flow in centrifugal pump operation, eliminating maintenance problems due to NPSH, superheating and premature wear of housing, disks and bearings. Three basic models:

#### Series 2500

Model VRM-HPM for high pressure pumps.

#### Series 1700

Model NVM for low to medium pressure pumps.

#### Series 0700

Model NVL for low pressure pumps

**Sizes**  
25 to 750mm  
1" to 30"

**Pressure Class**  
PN 10 to 420  
150# to 2500#

**Connection**  
BW or Flanged

### Features and Benefits

Complete system, self-actuated, with flow-measuring function, recirculation control and main flow check valve.

Utilizes the principle of operation of measurement of flow from pump to process and controls the recirculation in stages avoiding flashing and cavitation.

Operation is silent and reliable. Easy maintenance and sealed to environment.

The investment will pay off within a few months, since it reduces the operational and maintenance cost of the centrifugal pump.

## Two color Boiler Level Gauge



### Application and Series

#### Series 6000

Read-out of water level of Boiler or Pressure vessel.

Utilized with various model of Illuminator types

Wide Angle direct reading, Closed circuit TV, Explosion Proof.

Visibility:  
190 mm  
to 1000 mm.

### Features and Benefits

Unmistakeable read-out in two colors, green for water and red for steam.

Long operational life with minimum maintenance required.

Maximum safety due to the Port type transparent elements.



## Pressure Seal Valves Gate, Globe and Check Valves



### Application and Series

#### Series 7600- 7999

Tight shut-off, control and throttle valve of process lines for liquids, steam and gases.

Pressure Seal and Lip Seal construction for superior sealing of the body-bonnet connection.

For saturated and superheated steam applications.

Various options of cast or forged materials available: Carbon steel- WCB, A105, etc. Alloy steel - WC6, WC9, C12A, F11, F22, F91, etc. According to special requirements, or specifications.

**Sizes**  
10 to 900mm  
½" to 36"

**Pressure Class**  
Up to PN 420  
Up to 2500#

**Conection**  
SW, BW or Flanged

### Features and Benefits

Gate valves with various alternatives, solid wedge, flexible wedge or double disc wedge.

Globe, "Y" Globe, Angular or Non-Return type valves.

Check valves: Swing, Piston, Ball, Tilting Disc and others.

Actuators: Handwheel, Impact Handwheel, Handwheel with gear reducer, Electric, Pneumatic or Hydraulic Actuators

## Stop Globe and Drain Valves ("Y" and "T" configurations)



### Application and Series

#### Series 5500

Tight shut-off, control and throttle valve for water and steam lines at high pressure and temperature.

A high performance valve with long life. Recommended specially for severe service applications of Saturated or Superheated steam and liquids.

Many options of cast or forged materials available: Carbon steel- WCB, A105, etc. Alloy steel - WC6, WC9, C12A, F11, F22, F91, etc. According to special requirements, or specifications.

**Sizes**  
10 to 80mm  
½" to 3"

**Pressure Class**  
Up to PN 420  
Up to 4500#

**Conection**  
SW, BW or Flanged

### Features and Benefits

Packing stuffing box included in one piece body. No leaking points.

Yoke externally screwed is not part of the pressure vessel.

TRANS-O-FLOW device that protects the sealing surface against premature wear, increasing the valve's life dramatically.

Valve reseating may be made without removing the valve from the line.

Handwheel, Impact Handwheel, Pneumatic or Electric Actuators.

## Butterfly Valves (Triple Eccentric)



### Application and Series

#### Series 3000

Isolation (shut off) and control of liquids, steam and process lines. Various sealing alternatives:

Metal-to-Metal, Bi-directional, Zero-leakage sealing.

Sizes	Pressure Class	Connection
50 to 2500mm 2" to 100"	PN 2 to 160 25# to 1500#	Wafer, Lug or Flanged

### Features and Benefits

Triple-eccentric with Bi-directional Zero-leakage sealing.

Special projects for large sizes and high pressure, high temperature and high cycle applications.

Actuators: Manual, Pneumatic, Electric, Hydraulic with or without limit switches

## Feedwater pre heaters By-pass valves



### Application and Series

#### Series 9800

Three way valve for feedwater pre heaters By-pass:

- To allow depressurization of the High Pressure Feed Water Heaters for inspection, repair or other operational needs,
- To continue the operation of the power plant while bypassing the High Pressure Feed Water Heaters,
- To Protect the High Pressure Feed Water Heaters from damage caused by overpressure, heavy vibration, water hammer, blasting water, or in case of a heater tube rupture or leak,
- To protect the turbine extraction from excessive backpressure,
- To avoid power plant shutdown caused by above circumstances.

Size	Pressure Class	Connections
150 to 600mm 6" to 24"	PN 10 to 640 150 to 4500#	Butt Weld or Flanged

### Features and Benefits

- Eliminates two Stop Valves, With electric actuators
- Eliminates one tee fitting,
- Eliminates side mounting of stop valves (increase wear and maintenance)
- Simplify piping layout,
- Eliminates one motor operation connection
- Make three fields weld, not seven.

**DURCON** 3 way valve, cuts the typical total installed cost in 50%

## Turbine Bypass and Steam Conditioning Valve



### Application and Series

#### Series 12.000

This valve reduces the pressure and temperature in one piece.

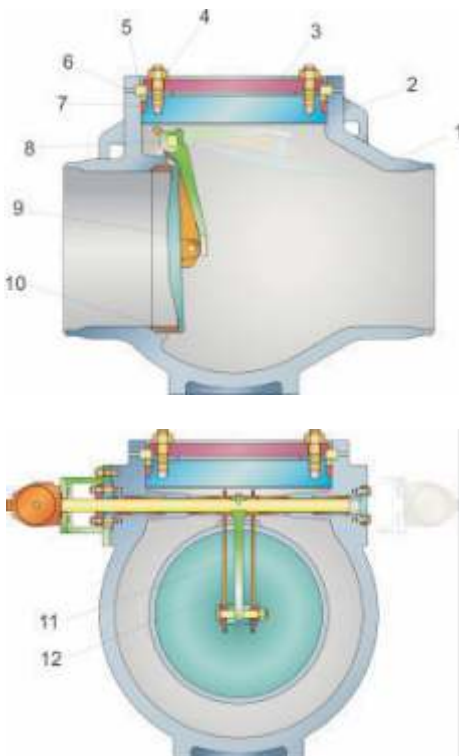
- Turbine By-pass
- Steam conditioning for continuous operation
- Rangeability from 1:10 to 1:100

Sizes	Pressure Class	Conection
Entry 3" - 20" (80-500mm)	PN 16 to 630	Butt Weld
Exit 4" - 64" (100 to 1600mm)	150 to 4500#	or Flanged

### Features and Benefits

- Multistage controllable reduction for the entire pressure range,
- All internal parts can be replaced on site (by the customer),
- Wear and tear is minimized due to downstream injection,
- Spherical body for tension reduction,
- Customized characteristics,
- Centrally situated hot steam cooling unit enables fast, homogenous, temperature distribution,
- Body made of a semi-finished product,

## Extraction Check Valve



### Application and Series

#### Series 14.000

Extraction check valve Type B:  
Free running check valve with pneumatic - swivelling closing device

#### Other Applications:

- Extraction steam non return
- Bled steam non return
- Instalation horizontal or vertical

Sizes	Pressure Class	Conections
80 to 1100mm 3" to 44"	PN 10 to 160 150 to 1500#	Butt Weld or Flanged

### Features and Benefits

- Free swinging disc,
- Low friction stuffing,
- Very low friction mechanical seals,
- Inclined seat design,
- Positive closing (assisted by de spring on the cylinder, < 0,5s)
- Easy maintenance.



## Applications



Steam Conditioning Valve  
USINA COLORADO



Pressure Seal Gate Valve  
ALUNORTE - CVRD - VALE



Triple-eccentric Butterfly Valve  
OXITENO



Severe Service Stop-Globe Valve (Durblock)  
ARACRUZ



Automatic Recirculation Control Valve  
PETROBRAS



Bicolor Level Gage for Boiler  
Visibility 12 1/2" - 1500#  
USINA SANTA ISABEL



Gate Valve Bolted Bonnet and Dual Plate Check Valve 20" - 300#  
GRUPO COSAN - DEDINI



Knife Valve 4 to 24" - 150#  
VALE - BRUCUTU MINE



Globe Valve With Pneumatic Actuator for Turbine Protection  
TGM - CITROSUCO



Globe Valve, Y type, Non Return, Pressure Seal  
RIO POL - LUMMUS  
SNAM PROGETTI

## Large size Valves



Gate Valve, size 64"  
PROMON - MITSUI



Control Globe Valves, size 44" and 18"  
ARCELOR MITTAL - CST



Butterfly Valve for water application, size 100"  
CAESB



Butterfly Valve 40" with by-pass for Small Hydroelectric plant  
ENERG POWER



Forged body Pressure Seal Gate Valve 16" - 2500#  
BRASKEM-ALSTOM

## Plants



Custom-made and Specialty Valves  
Cajamar - SP - Brazil



Serial-made Valves  
Cajamar - SP - Brazil



Specialty Valves  
Three Rivers - Michigan - USA



Steel Foundry  
Caeiras - SP - Brazil



Under construction  
Franco da Rocha - SP - Brazil

**The right product for your application.**

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