

**CRANE**<sup>®</sup>

**brands you trust.**



**Solutions for Power Generation**

Crane ChemPharma & Energy

# Introduction PT Cipta Solusi Andalan



## About CiSA

PT. Cipta Solusi Andalan (CiSA) is a valves company who dedicate their business to Crane Chempharma Energy as sole agent and stockist for Crane products. CiSA team has proven valves knowledge for many applications in Oil & Gas, Power Generations, Chemicals & Petrochemicals (included Fertilizer and Pulp & Paper), Mining, General Industry, and Water Treatments. CiSA established big sales team to work closely with end users to determine their needs. Currently CiSA sales team are located at Jakarta, Cilegon, Karawang, Cirebon, Surabaya, Pekanbaru, Bontang, Pekanbaru, and Palembang; and still expanding due to high demand on Crane Chempharma Energy products.

With full support by Crane Chempharma Energy, CiSA experiences and CiSA Valves Specialist Engineer & technicians; CiSA will be able to provide technical consultancy or solution to any valves issue or trouble shootings.

# PT Cipta Solusi Andalan

## CISA Core Capabilities:

- Supply of Quality Valves for Fluid Handling
- Repair and Servicing of Valves
- Valve Assessment and Condition Reporting
- Painting to Industry Standards
- Valve Modifications (material changes)
- Fitment of Actuators and other Accessories
- Fabrication and Machining of Adaptors and Brackets
- Management and Documentation of complex Valve supply projects.



## Introduction to Crane • Crane Co.

### FOUNDED IN 1855

- 1 FLUID HANDLING
- 2 AEROSPACE & ELECTRONICS
- 3 MERCHANDISING SYSTEMS AND PAYMENT TECHNOLOGIES
- 4 ENGINEERED MATERIALS

### Crane Co.

Crane Co. is a diversified global manufacturer of engineered industrial products traded on the New York Stock Exchange (NYSE: CR). One of its segments, Crane Fluid Handling, provides highly engineered products for fluid handling applications worldwide.

### The Fluid Handling Segment

Crane Fluid Handling provides highly-engineered products including **valves, pumps, controls and water treatment equipment for fluid handling applications worldwide.** Its operating units include Crane ChemPharma & Energy, Crane Nuclear, Crane Building Services, Crane Pumps & Systems, Crane Supply, Barksdale Control Products.

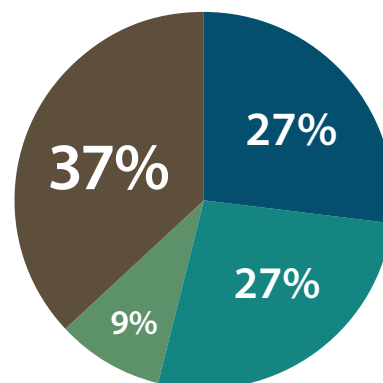
### Crane ChemPharma & Energy (CPE)

Crane CP&E designs and manufactures a variety of high-performance products including: highly-engineered **check valves, sleeved plug valves, lined valves, process ball valves, high performance butterfly valves,** bellows sealed globe valves, aseptic and industrial diaphragm valves, multi/quarter-turn valves, actuation, sight glasses, lined pipe, **fitting and hoses, and air-operated diaphragm and peristaltic pumps.** Its trusted brands are in use worldwide in many industries, including **Oil & Gas, Oil Refining, Petrochemical, Power Generation, Chemical Processing, Biotechnology, and Pharmaceutical.**

### Crane (CPE) Brands

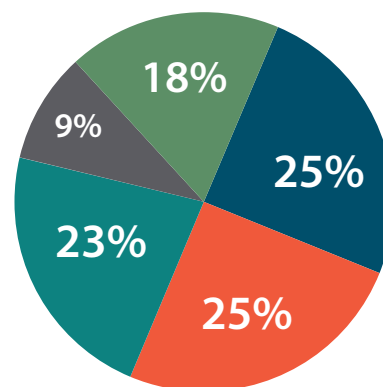
ALOYCO • CENTER LINE • COMPAC-NOZ • CRANE • DEPA  
DUO-CHEK • ELRO • FLOWSEAL • JENKINS • KROMBACH  
NOZ-CHEK • PACIFIC • RESISTOFLEX • REVO • SAUNDERS  
STOCKHAM • TRIANGLE • UNI-CHEK • WTA • XOMOX

### Crane Co.



- Fluid Handling
- Aerospace & Electronics
- Merchandising and Payment Technologies
- Engineered Materials

### Key Markets



- Chemical/Petrochemical
- Energy
- Building Services
- Municipal
- General Industry

# Quality & Certifications

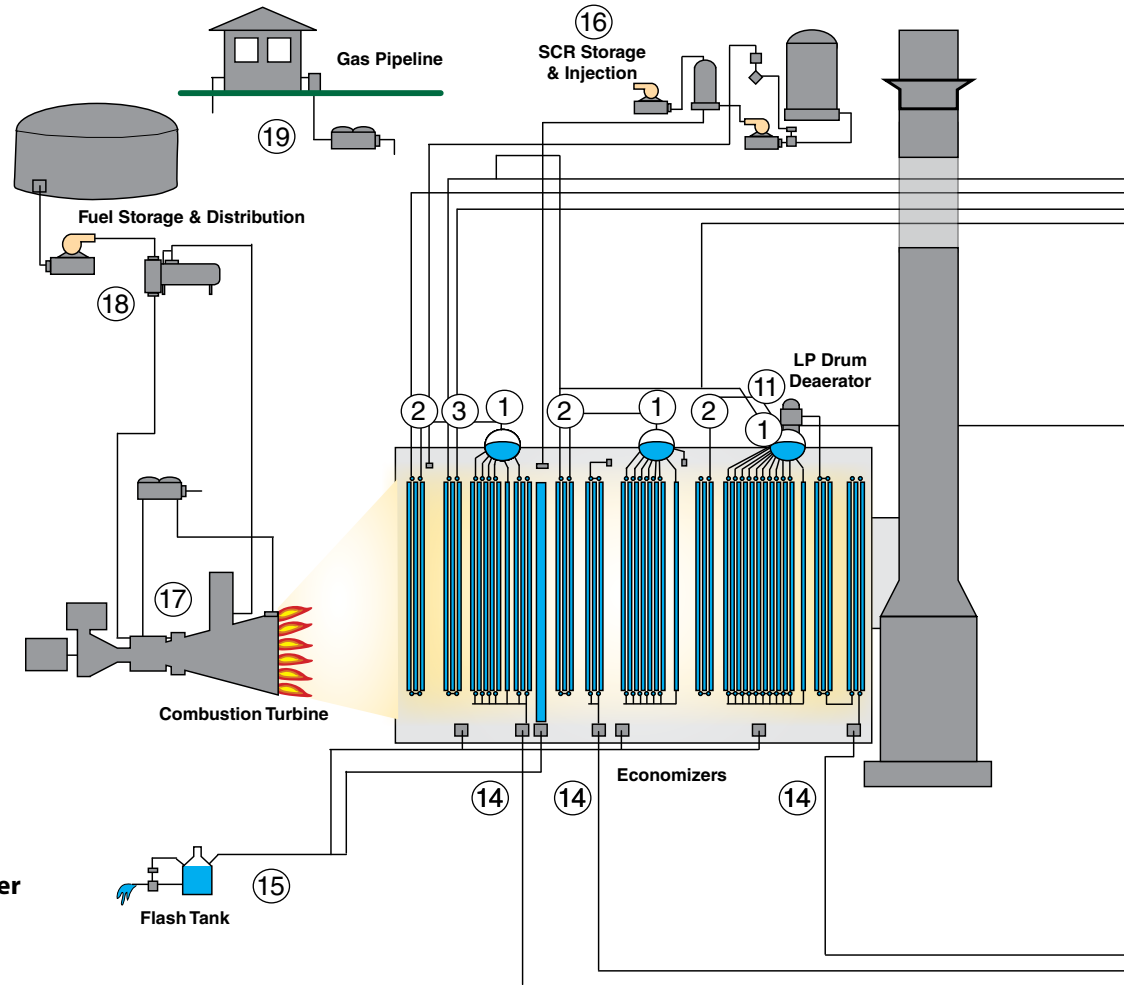


The following is a partial list of certificates held by Crane ChemPharma & Energy. All certificates are available upon request.

- ISO 15848-1
- ASME 16.34, 16.10, 16.5, 16.25
- ISO 9001: 2000 (Det Norske Veritas, TÜV)
- ISO 14001:2005 (TÜV Nord)
- Zertifikat DGRL Certificate PED (TÜV Nord)
- Directive 97/56/EG
- API 6D
- QS - Certificate of Assessment PED (Det Norske Veritas)
- Technical Standards & Safety Authority
- Laboratorio De Pruebas De Equipos Y Materiales
- Welding Procedure Approval (Det Norske Veritas)
- Russian GOST R
- Water Regulation Advisory Scheme
- Design Assessment (American Bureau of Shipping)
- Konformitätserklärung ATEX - Declaration of Conformity ATEX
- DVGW - Baumuster-Prüfzertifikat Gasversorgung (DVGW Zertifizierungsstelle)
- Certificate of Recognition (Bureau Veritas)
- AD 2000-Merkblatt HP 0/TRD 201/GGVE/GGVs
- AD 2000-Merkblatt A4
- Shipbuilding approval according to MODE IBV/Mode II
- EN 729-2
- KTA 1401
- TA Luft 2000
- API 622 emissions testing
- EPA Method 21 emissions testing
- CE
- 10CFR50 Appendix B
- ASME N45.2
- ASME N-Stamp N-2 899
- ASME NPT Stamp N-2900
- ASME NCA-4000
- ASME NB Registration
- Repair and Testing of Valves and Actuators in Compliance with 10CFR.50 Appendix B and ASME NQA-1
- "NR"- Field Repair or Replacement of Class 1, 2, & 3 Line Valves and Section III Class 1, 2 and 3 Pressure Relief Devices
- "VR"- Field Repair of ASME Section I, III and VIII PRV

\*\* These certifications are only applicable to certain products.

# Combined Cycle Power Plant



**1. Drums (HP, IP, LP)**

- Check Valves
- Isolation Valves
- Non-return Valves
- Vent & Drain Valves

**2. Superheater (HP, IP, LP)**

- Check Valves
- Isolation Valves
- Vent & Drain Valves

**3. Reheater**

- Check Valves
- Isolation Valves
- Vent & Drain Valves

**4. Steam Turbine with Condenser**

- Extraction/Induction Check Valves
- Main Steam Isolation
- Drain Valves

**5. Cooling Water Circulation**

- Butterfly alves
- Check Valves
- Isolation Valves
- Drain Valves
- Diaphragm Valves
- Polypropylene-Lined Pipe

**6. Water Treatment**

- Butterfly alves
- Check Valves
- Isolation Valves
- Drain Valves
- Diaphragm Valves
- Polypropylene-Lined Pipe

**7. Condensate Pumps**

- Butterfly alves
- Check Valves
- Isolation Valves
- Drain Valves

**8. Heat Exchanger**

- Check Valves
- Isolation Valves
- Vent & Drain Valves

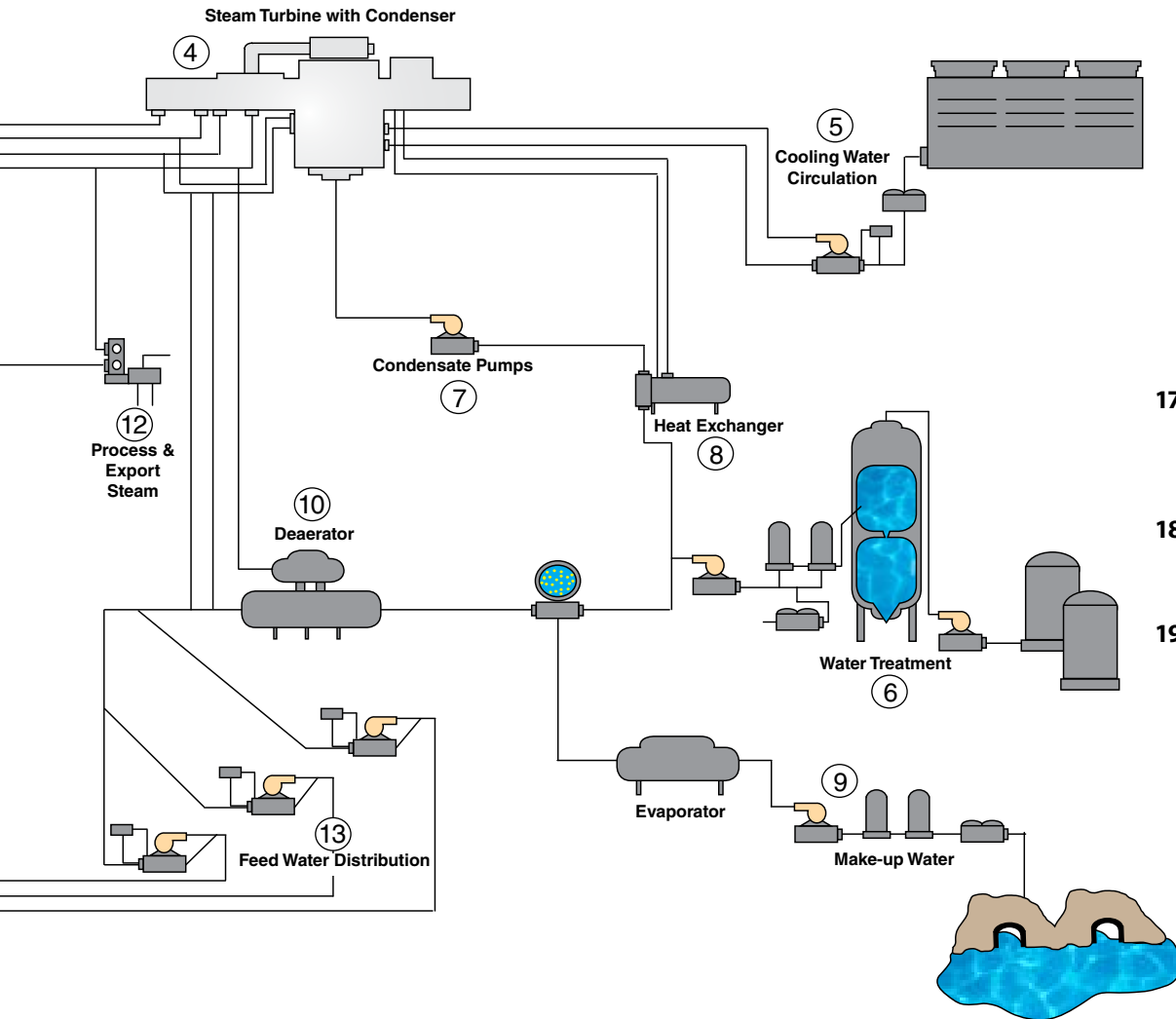
**9. Make-up Water**

- Butterfly alves
- Check Valves
- Isolation Valves
- Lined Valves
- Strainers
- Diaphragm Valves
- Polypropylene-Lined Pipe

**10. Deaerator**

- Check Valves
- Isolation Valves
- Vent & Drain Valves
- Diaphragm Valves

# Combined Cycle Power Plant



## 11. LP Drum Deaerator

Check Valves  
Isolation Valves  
Vent & Drain Valves

## 12. Process & Export Steam

Check Valves  
Isolation Valves  
Vent & Drain Valves

## 13. Feed Water Distribution (HP, IP, LP)

Butterfly alves  
Check Valves  
Isolation Valves  
Metal Seated Ball Valves

## 14. Economizers (HP, IP, LP)

Check Valves  
Isolation Valves  
Vent & Drain Valves  
Metal Seated Ball Valve

## 15. Flash Tank

Check Valves  
Isolation Valves  
Vent & Drain Valves

## 16. SCR Storage & Injection

Butterfly alves  
Check Valves  
Isolation Valves

## 17. Combustion Turbine

Butterfly alves  
Check Valves  
Isolation Valves

## 18. Fuel Storage & Distribution

Butterfly alves  
Check Valves

## 19. Gas Pipeline (custody transfer station)

Butterfly alves  
Check Valves  
Isolation Valves  
Drain Valves

# Coal-fired Power Plant

- 1. Drums**  
Check Valves  
Isolation Valves  
Non-return Valves  
Vent & Drain Valves

- 2. Superheater**  
Check Valves  
Isolation Valves  
Vent & Drain Valves

- 3. Reheater**  
Check Valves  
Isolation Valves  
Extraction Check Valves  
Vent & Drain Valves

- 4. Steam Turbine w/ Condenser**  
Drain Valves  
Extraction Check Valves  
Main Steam Isolation

- 5. Cooling Water Circulation**  
Check Valves  
Isolation Valves  
Butterfly alves  
Drain Valves  
Diaphragm Valves  
Polypropylene-Lined Pipe

- 6. Water Treatment**  
Butterfly alves  
Check Valves  
Isolation Valves  
Drain Valves  
Diaphragm Valves  
Polypropylene-Lined Pipe

- 7. Condensate Pumps**  
Check Valves  
Isolation Valves  
Drain Valves

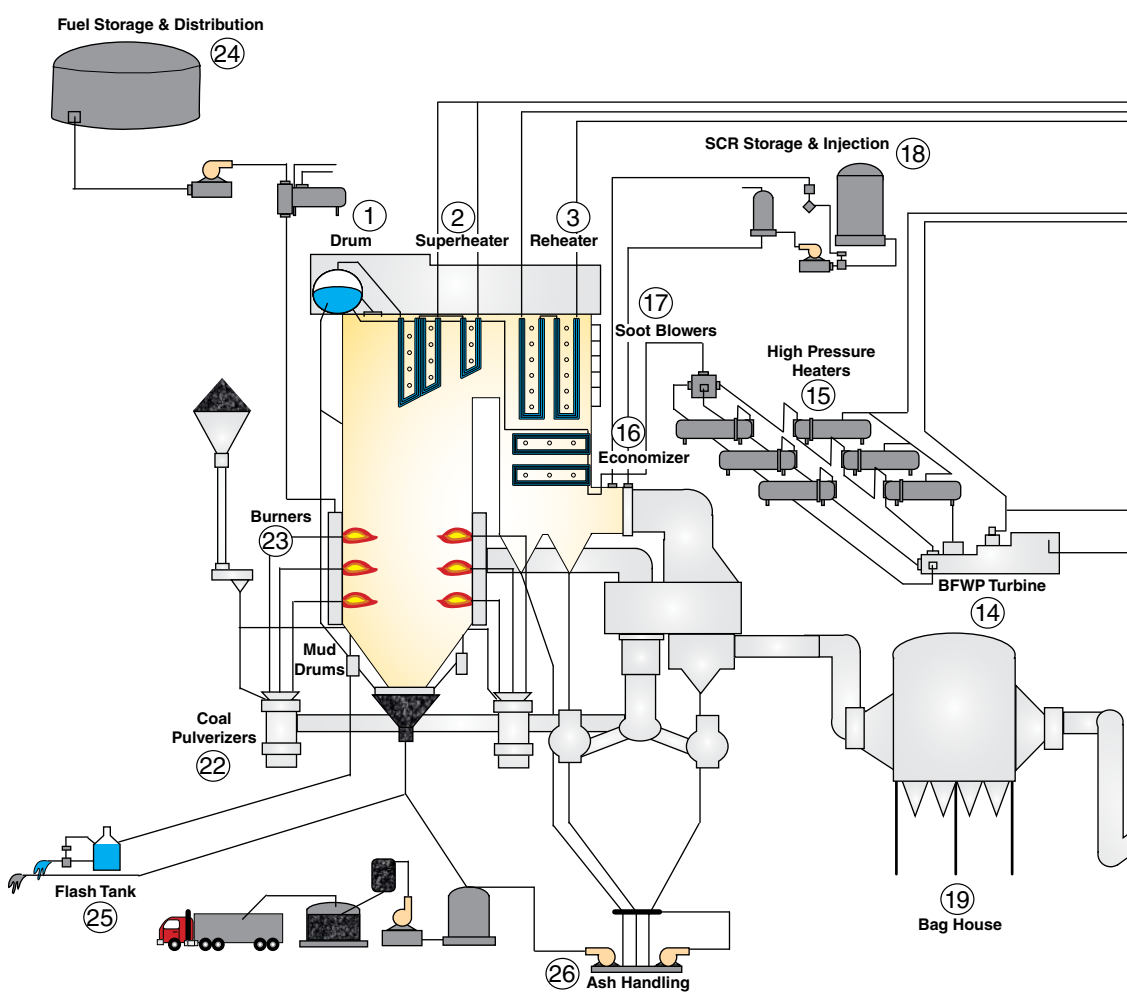
- 8. Heat Exchanger**  
Check Valves  
Isolation Valves  
Vent & Drain Valves

- 9. Low Pressure Heaters**  
Check Valves  
Isolation Valves

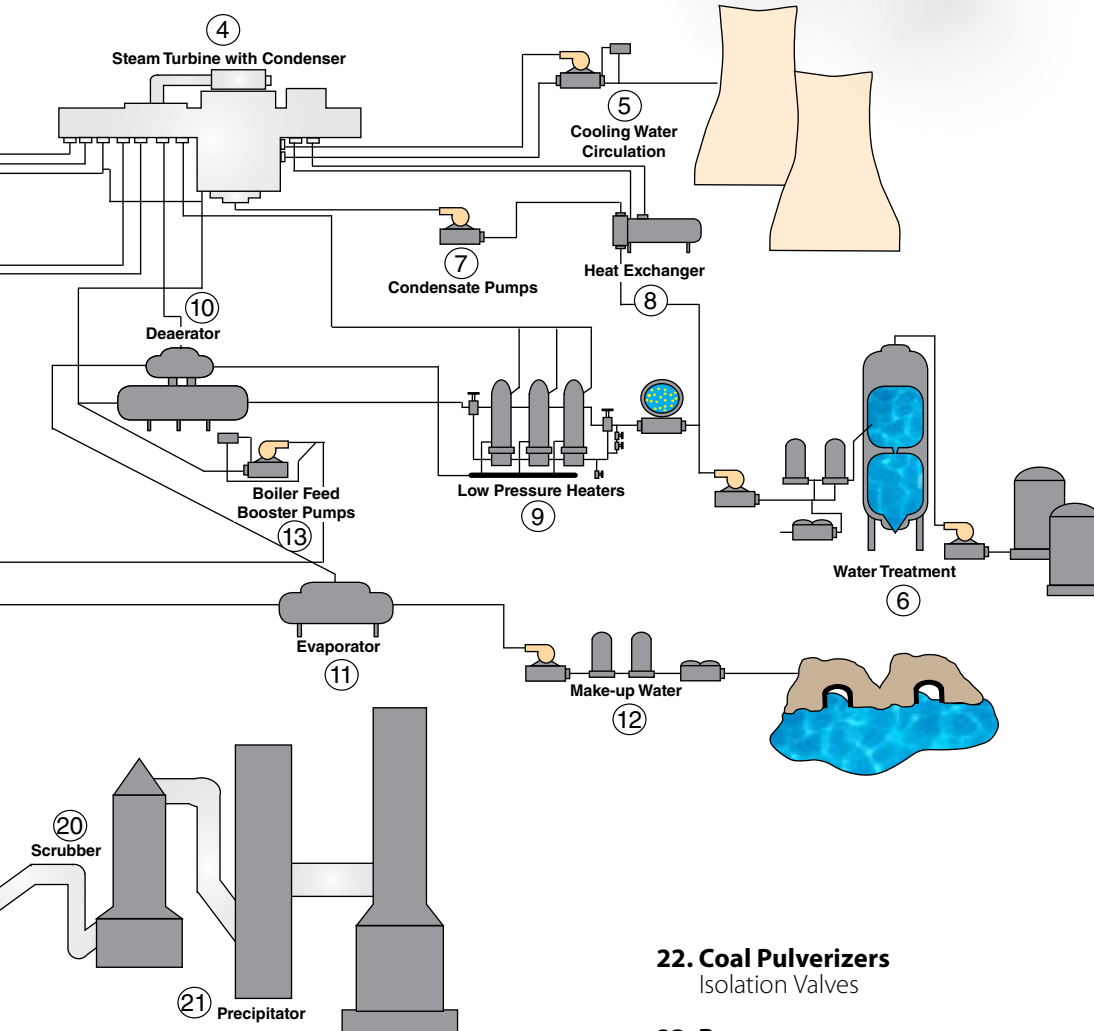
- 10. Deaerator**  
Check Valves  
Isolation Valves  
Vent & Drain Valves  
Diaphragm Valves  
Polypropylene-Lined Pipe

- 11. Evaporator**  
Check Valves  
Isolation Valves  
Vent & Drain Valves

- 12. Make-up Water**  
Check Valves  
Isolation Valves  
Vent & Drain Valves  
Strainers  
Diaphragm Valves  
Polypropylene-Lined Pipe



# Coal-fired Power Plant



**13. Boiler Feed Booster Pumps**  
Check Valves  
Isolation Valves

**14. BFWP Turbine**  
Check Valves  
Isolation Valves  
Vent & Drain Valves

**15. High Pressure Heaters**  
Check Valves  
Isolation Valves  
Extraction Check Valves  
Vent & Drain Valves  
Metal Seated Ball Valves

**16. Economizer**  
Check Valves  
Isolation Valves

**17. Soot Blowers**  
Check Valves  
Isolation Valves

**18. SCR Storage & Injection**  
Check Valves  
Isolation Valves

**19. Bag House**  
Isolation Valves

**20. Scrubber**  
Isolation Valves

**21. Precipitator**  
Isolation Valves

**22. Coal Pulverizers**  
Isolation Valves

**23. Burners**  
Isolation Valves

**24. Fuel Storage & Distribution**  
Check Valves  
Isolation Valves

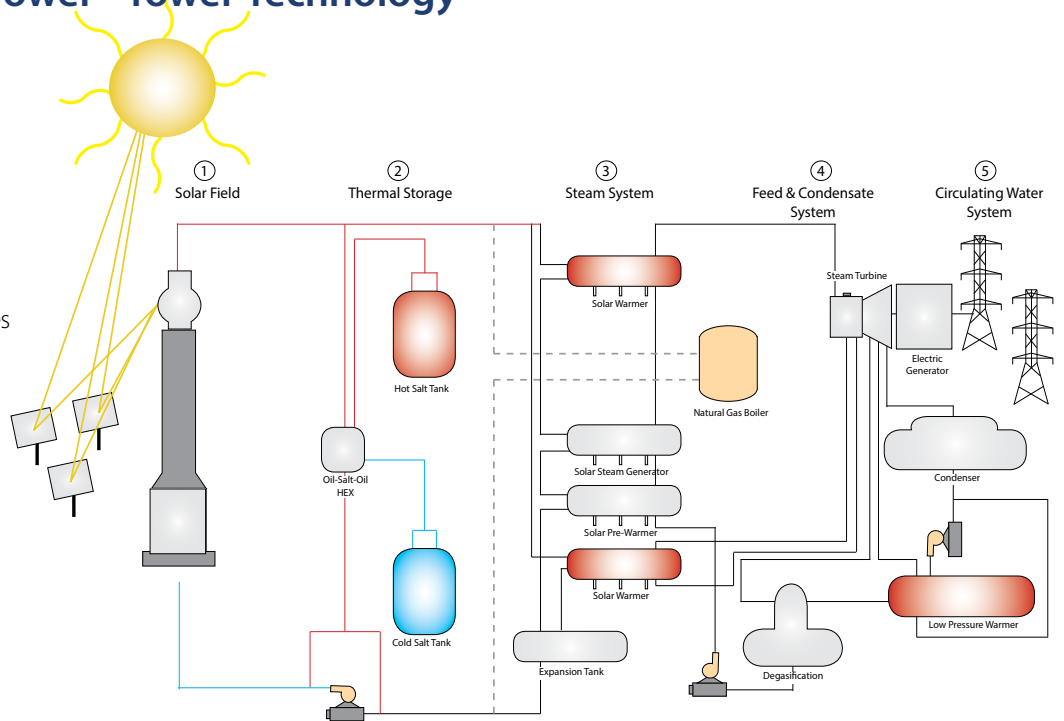
**25. Flash Tank**  
Check Valves

**26. Ash Handling**  
Isolation Valves  
Diaphragm Valves  
Polypropylene-Lined Pipe

# Solar & Geothermal Power

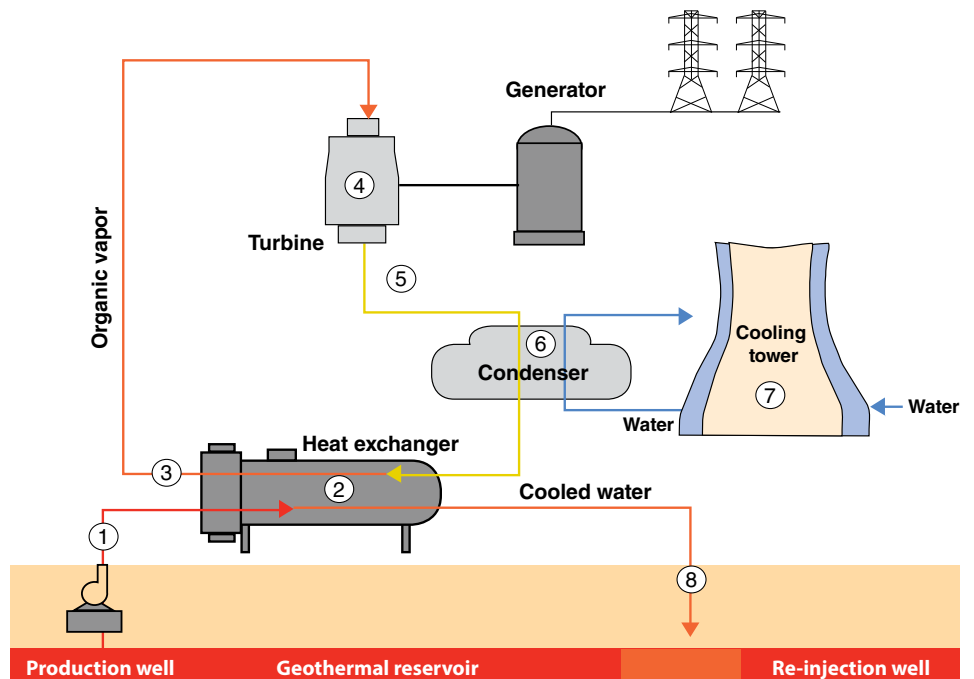
## Concentrated Solar Power - Tower Technology

1. **Solar Field**  
3-way Valves  
Check Valves  
Isolation Valves
2. **Thermal Storage**  
Check Valves  
Isolation Valves
3. **Steam System**  
Check Valves  
Cold Reheat Non-Return Check Valves  
HP/HT Isolation Valves  
Non-Return Valves  
Vent & Drain Valves
4. **Feed & Condensate System**  
Check Valves  
Isolation Valve
5. **Circulating Water System**  
Check Valves  
Isolation Valves  
Polypropylene-Lined Pipe

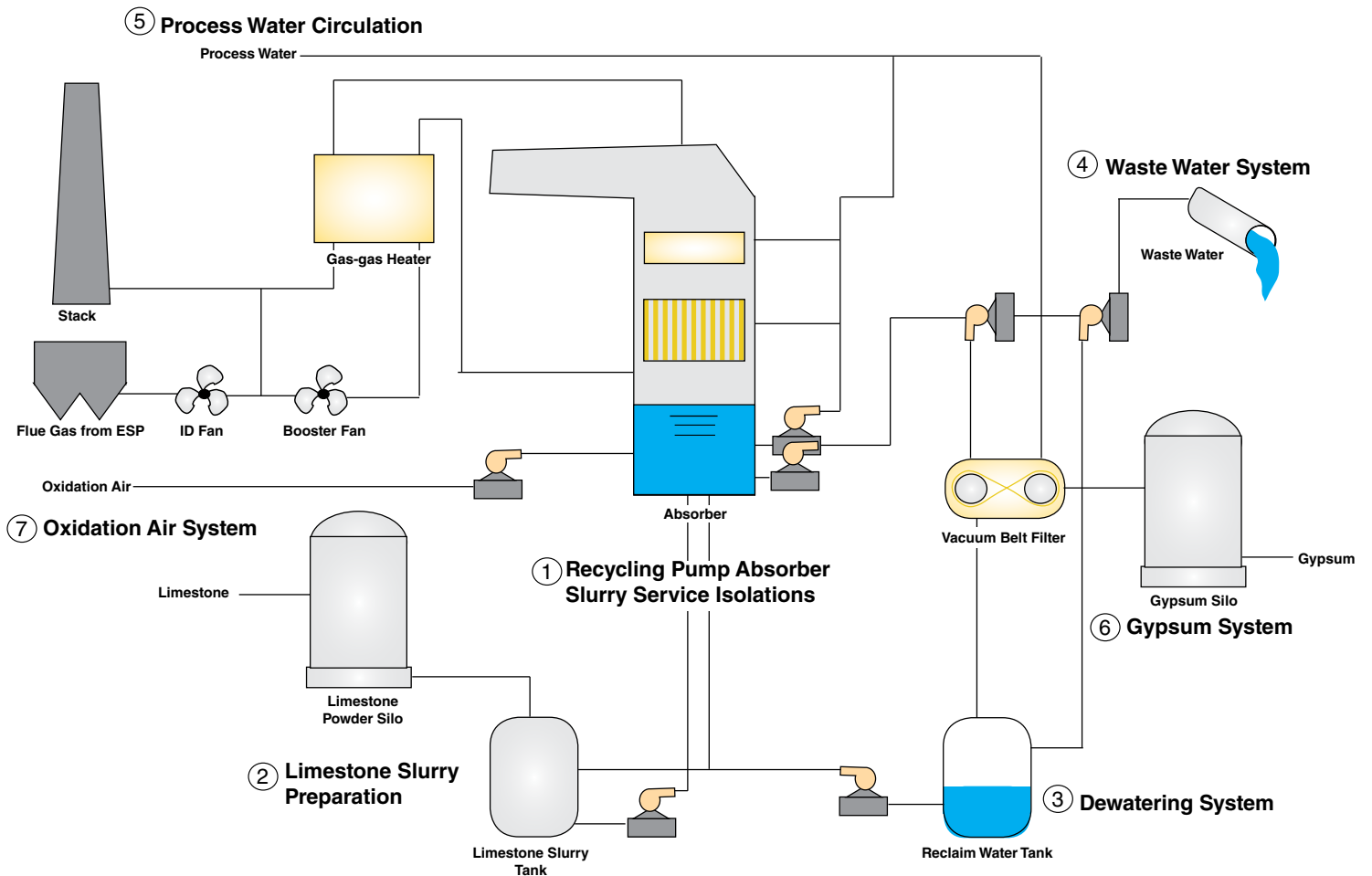


## Geothermal Power Binary Cycle

1. **Production Wells**  
Butterfly valves  
Gate, Globe and Check
2. **Heat Exchanger**  
Isolation valves  
Gate, Globe and Check
3. **Organic Vapor**  
Butterfly valves  
Gate, Globe and Check
4. **Steam Turbine**  
Extraction check valves  
Bypass valves  
Drain Valves  
Vent Valves
5. **Outlet Steam Pipe Steam Turbine**  
Butterfly valves  
Gate, Globe and Check
6. **Condenser**  
Butterfly Valves
7. **Cooling Tower**  
Isolation valves  
Drain Valves  
Polypropylene-Lined Pipe
8. **Injection Wells**  
Butterfly valves  
Gate, Globe and Check



# Wet Flue Gas Desulfurization



1. **Recycling Pump - Absorber**  
Slurry Service Isolation Valves

2. **Limestone Slurry Preparation**  
Butterfly alves  
Diaphragm Valves  
Polypropylene-Lined Pipe

3. **Dewatering System**  
Butterfly alves  
Diaphragm Valves  
Polypropylene-Lined Pipe

4. **Waste Water System**  
Butterfly alves  
Diaphragm Valves  
Polypropylene-Lined Pipe

5. **Process Water Circulation**  
Butterfly alves  
Ball Valves  
Diaphragm Valves  
Polypropylene-Lined Pipe

6. **Gypsum System**  
Butterfly alves  
Diaphragm Valves

7. **Oxidation Air System**  
Butterfly alves

# Isolation Valves Pressure Seal

## Pressure Seal Gate

**Brand:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 600 - 4500

**Sizes:** 2½" - 36"

**DN:** 65 - 900

**Materials:** Carbon Steel, Stainless Steel & Alloy. Cast and Forged

**Connections:** Weld End, Flanged, Venturi

### Features & Benefits:

- Gate valves offered in two designs: parallel disc and flexible wedge
- Provides superior shutoff service for your high pressure and temperature applications
- The parallel disc gate valve eliminates excessive leakage, thermal binding and maintenance with:
  1. Spring-loaded discs that seal with differential pressure and self adjust for thermal growth and pipe stresses – the higher the differential pressure the tighter the seal
  2. Integrally cast body stops that eliminate over travel and prevent wire drawing or steam cutting of seats
  3. Fully guided carrier assembly which is position seated rather than torque seated
  4. Parallel seating components that are hard-faced and self cleaning, ensuring extended life
  5. Lower torque requirements allowing smaller actuation packages
  6. Easy in-line repair and fitting



## Pressure Seal Globe

**Brand:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 600 - 4500

**Sizes:** 8" - 24" (Y-Globe) 2"-12" (T-Globe)

**DN:** 65 - 600

**Materials:** Carbon Steel, Stainless Steel & Alloy. Cast & Forged

**Connections:** Weld End, Flanged, Venturi

### Features & Benefits:

- Available in both y-pattern and t-pattern, as well as both globe stop and stop-check (non-return) configurations, bodies with streamlined flow path to minimize pressure drop
- Fully body-guided discs for perfect seating in high pressure service
- Disc, seat rings, and backseat have hardened surfaces for maximum service life
- Stainless steel, precision ground stems to minimize packing friction
- Two-piece, self-aligning glands
- Fully fabricated yokes designed to withstand seismic activity, while offering easy maintenance and actuator mounting
- Hammerblow handwheel standard
- Best in class flow characteristics (Cv) for Y-Globe valves



# Isolation Valves Bolted Bonnet

## Bolted Bonnet Gate

**Brands:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 150 - 1500

**Sizes:** 2" - 36"

**Materials:** Carbon Steel, Stainless Steel, Alloy

**Connections:** Weld End, Flanged, Threaded

### Features & Benefits:

- Body is cast with straight through ports to minimize turbulence, erosion and pressure drop are minimized
- Seat rings are seal welded to eliminate leak path behind rings and for long trouble-free service
- Our one piece flexible disc provides accurate alignment of mating seating surfaces so the valve can absorb piping strains without leakage and avoids any tendency to stick in the seated position
- Packing contains corrosion inhibitor to avoid stem pitting
- Stuffing box is deep, assuring long packing life
- Gland Eyebolts swing aside for ease in repacking the stuffing box
- API 624 available



## Bolted Bonnet Globe

**Brands:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 150-1500

**Sizes:** 2" - 24"

**Materials:** Carbon Steel, Stainless Steel, Alloy

**Connections:** Weld End, Flanged

### Features & Benefits:

Available in globe stop configurations. Our globe valves are designed for services requiring frequent operation and throttling when pressure drop across the valve is about 20% of inlet pressure.

- Body is designed with heavy sections reinforced at points subjected to the greatest stress
- Seat ring welded in to eliminate leak path in cast steel design
- Disc stem ring connects the disc to the stem, permitting the disc to swivel and aid in securing tight seating for trouble-free service
- Gland eyebolts are securely fastened to the bonnet yet swing away to permit easy access to the stuffing box
- API 623 available



# Flow Reversal Protection Valves

## Pressure Seal Check

**Brand:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 600 - 3500

**Sizes:** 2 1/2" - 36"

**DN:** 65 - 900

**Materials:** Carbon Steel, Stainless Steel, Alloy

**Connections:** Weld End, Flanged

### Valve Types:

Swing Check, Tilting Disc (Non-Slam), Y-Pattern Lift, and T-Pattern Lift Configurations

- The tilting disc check valve uses gravity to rapidly close the disc upon flow reversal (Non-Slam)
- Valve design fully opens or closes through an arc of only 45 degrees, (unlike most other tilting disc check valves which must swing through a 90 degree arc)
- Conical seating is self aligning, tight, and always closed in a no-flow situation
- Hard-faced seating surfaces, large diameter hinge pins, and corrosion resistant bearing surfaces ensure long life, and an internal disc stop prevents flutter
- The internal disc hanger provides adjustable alignment and eliminates body wall penetrations



## Bolted Bonnet Swing Check

**Brands:** Aloyco, Crane, Krombach, Pacific

**ASME Class:** 150-1500

**Sizes:** 2" - 36"

**Materials:** Cast Iron, Carbon Steel, Stainless Steel, Alloy, Forged Steel

**Connections:** Weld End, Flanged

### Features & Benefits:

- Used to prevent reversal of flow in horizontal pipe lines
- There is no tendency for the seating surfaces to gall or score, because the disc meets the flat seat squarely without rubbing contact upon closing
- Can be furnished with outside lever and adjustable weight in certain sizes, to assist in closing the valve more rapidly, thus minimizing reversal of flow and resultant surge and shock
- With the lever and weight mounted to balance the weight of the disc, the valve becomes more sensitive to low flow velocities



# Flow Reversal Protection Valves

## Nozzle Check (Compact & Full Body)

**Brands:** Compac-Noz, Noz-Chek

**ASME Class:** 150 - 4500

**Sizes:** 2" - 84"

**DN:** 50 - 2100

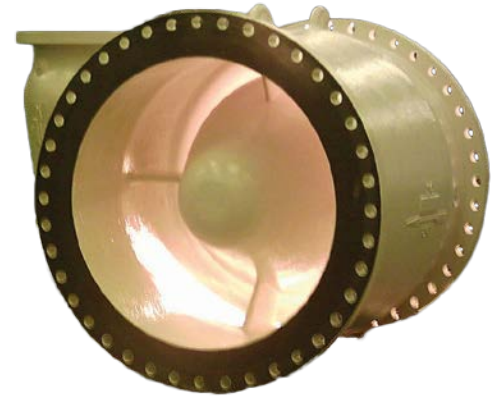
**Materials:** Ductile Iron, Carbon Steel, Stainless Steel, Alloy

**Connections:** Flanged, Hub-End, Weld-End

**Standards:** ASME, DIN, JIS

### Features & Benefits:

- Engineered and sized for the application, not the line size
- One piece body casting (no body penetration, no fugitive emission to atmosphere)
- One moving part resulting in minimum wear and long life
- Short stroke length resulting in quick dynamic response and minimizing the reverse velocity through the valve, thus preventing water hammer risks
- Suitable for reciprocating compressor service (removal of chatter effects frequently associated with conventional check valves)
- Stable behavior due to the Venturi type design, the opening characteristics ensure a fully opened check valve
- Choice of spring torques to suit critical velocity systems and improve valve response time
- Anti-spinning device to stabilize disc
- Tight shut-off
- Maintenance free design



## Dual Plate Check

**Brands:** Duo-Chek

**ASME Class:** 125 - 4500

**Sizes:** 2" - 84"

**DN:** 50 - 2100

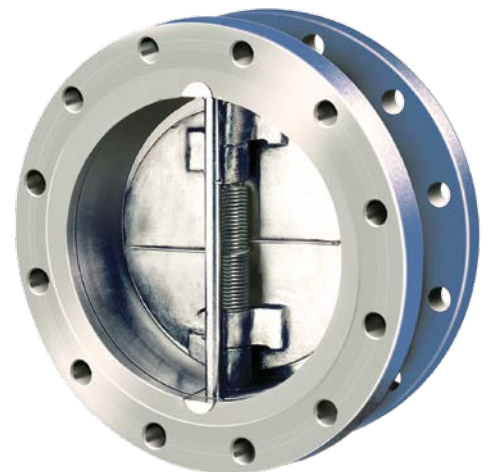
**Materials:** Cast Iron, Bronze, Carbon Steel, Stainless Steel, Alloy

**Connections:** Wafer, Lugged, Flanged

**Standards:** ASME, DIN, JIS, AS

### Features & Benefits:

- Lightweight & compact compared to the traditional swing check valve
- Spring assisted closure (independent spring design), plates are more responsive to changes in flow conditions
- Faster response time improved by the use of independent springs and support sleeves, minimizes water hammer risks for non slam applications
- Retainerless design available (no fugitive emission to atmosphere, valve is inherently fire-safe)
- Choice of spring torques to suit critical velocity systems and improve valve response time



## Special Application Valves

### Resilient-Seated Concentric Butterfly

**Brands:** Center Line, CRANE, Krombach

**ASME Class:** 150 CWP

**Sizes:** 1½" - 54"

**DN:** 40 - 1350

**Materials:** Cast Iron, Ductile Iron, Carbon Steel, Stainless Steel

**Body Styles:** Wafer, Lugged, Double Flanged

#### Features & Benefits:

- Qualified for both gaseous and liquid service
- Positive shut-off b-directionally
- Phenolic backed cartridge seat
- PTFE bushing standard
- Locking handle standard (2"-12")
- End of line service standard on lug style
- Ease of automation
- Field repairable (2"-24")
- Complete size range: 1½" - 54"



### High Performance Butterfly

**Brands:** Flowseal, Xomox

**ASME Class:** 150 - 600

**Sizes:** 2" - 48"

**DN:** 50 - 1200

**Materials:** Carbon Steel, Stainless Steel & Alloy

**Body Styles:** Wafer, Lugged (Double Dead End)

#### Features & Benefits:

- Soft seat design provides bubble tight shut-off
- Metal seated; ASME Class IV Leakage
- Wafer and lug body styles
- Firesafe, Meets API 607, Rev. 4
- MSS-SP-68
- Unparalleled service in vacuum-to-low pressure



# Special Application Valves

## Double Eccentric Butterfly

**Brands:** Krombach

**ASME Class:** 150 - 600

**PN:** 10 - 40

**Sizes:** 4" - 136"

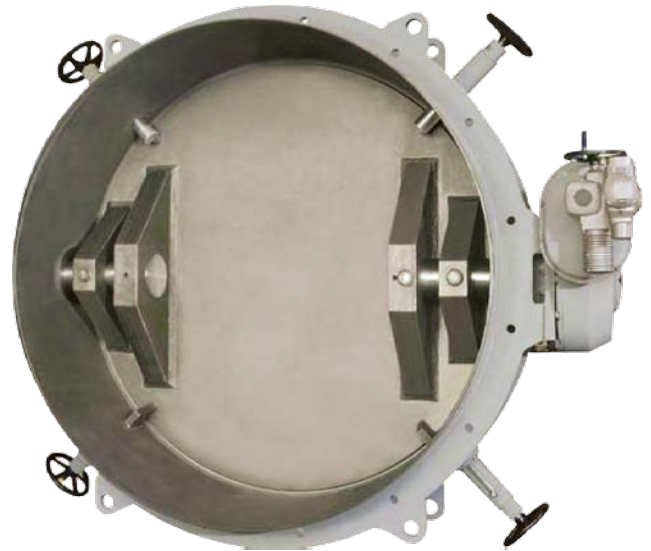
**DN:** 100 - 3400

**Materials:** Ductile Iron, Carbon Steel

**Body Styles:** Double Flanged Short or Long Pattern, Custom Ends

### Features & Benefits:

- Fabricated body, resilient seated
- Soft seat design provides tight shut-off
- Optimal flow profile of disc
- Hard rubber coating for heavy duty installations possible



## Triple Offset

**Brands:** CRANE®FKX 9000

**ASME Class:** 150, 300

**PN:** 10 - 100

**Sizes:** 3" - 96"

**DN:** 80-600

**Materials:** Carbon Steel, Stainless Steel, Special Materials

**Body Styles:** Lug, Double Flanged Short or Long

### Features & Benefits:

- Optimized seat angle design and Stellite® hard-faced valve body seat deliver a longer seal life and improved abrasion resistance
- Metal-to-metal sealing to deliver reliable and bidirectional shutoff in high-temperature, high-pressure, severe service applications, etc.
- Innovative stem seal design
- Fugitive emissions tested: ISO 15848
- Torque-seating self-adjusts to evenly distribute seal compression
- A "floating" seal ring and wide seal ring supporting gasket eliminate binding and enhance performance

Note: special configuration Turbine Trip & Throttle Valve with customized quick-closing actuation package.



## Special Application Valves

### Extraction Check / Cold Reheat Non-Return Check Valves

**Brand:** Krombach

**ASME Class:** 150 - 300

**PN:** 16 - 40

**Sizes:** 6" - 72" (others upon request)

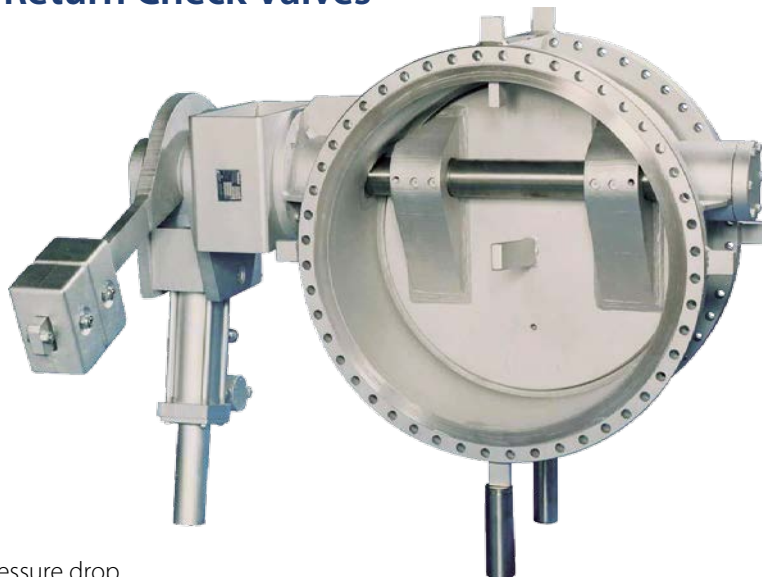
**DN:** 150 - 1800 (others upon request)

**Materials:** Carbon Steel, Stainless Steel

**Connections:** Double Flanged, Weld Ends

#### Optional Features:

- Fabricated design
- Free swinging disc
- Hardened seating surfaces
- Canted seat angle
- Hardened bushings
- Graphite packing
- Counterweights & actuation packages available
- Customized seat diameter & disc thickness to minimize pressure drop
- Special face-to-face dimensions, flanges, and materials available
- Special approvals (ASME, CRN, IBR)



### Industrial Diaphragm Valve

**Brands:** Saunders

**Sizes:** ½" - 20"

**Class:** ASME 125-150

**DN:** 15-500

**Materials:** Cast Iron, Ductile Iron, Cast Steel, Stainless Steel, Gunmetal

**Linings:** Glass, Rubber, Plastic

**Diaphragm:** Rubber, PTFE

**Operation:** Manual, Pneumatic, Electric, Hydraulic

**Connections:** Flanged, Threaded

**Body Style:** Weir or straight through types

#### Features & Benefits:

- The Science Inside®: Proprietary diaphragm technology provides unique sealing solution and complete emissions control.
- Unmatched Expertise & Innovation: Comprehensive selection of polymers delivers superior corrosion and abrasion resistance for a wide range of demanding applications, since 1928.
- Efficient Operation: Top entry design enables in-line maintenance capability to reduce plant down-time.



# Polypropylene-Lined Pipe and Fittings



**Brand:** Resistofl x  
**ASME Class:** 150, 300  
**Sizes:** 1" – 12"  
**DN:** 25 – 300  
**Materials:** Carbon Steel, Stainless Steel  
**Connections:** Flanged

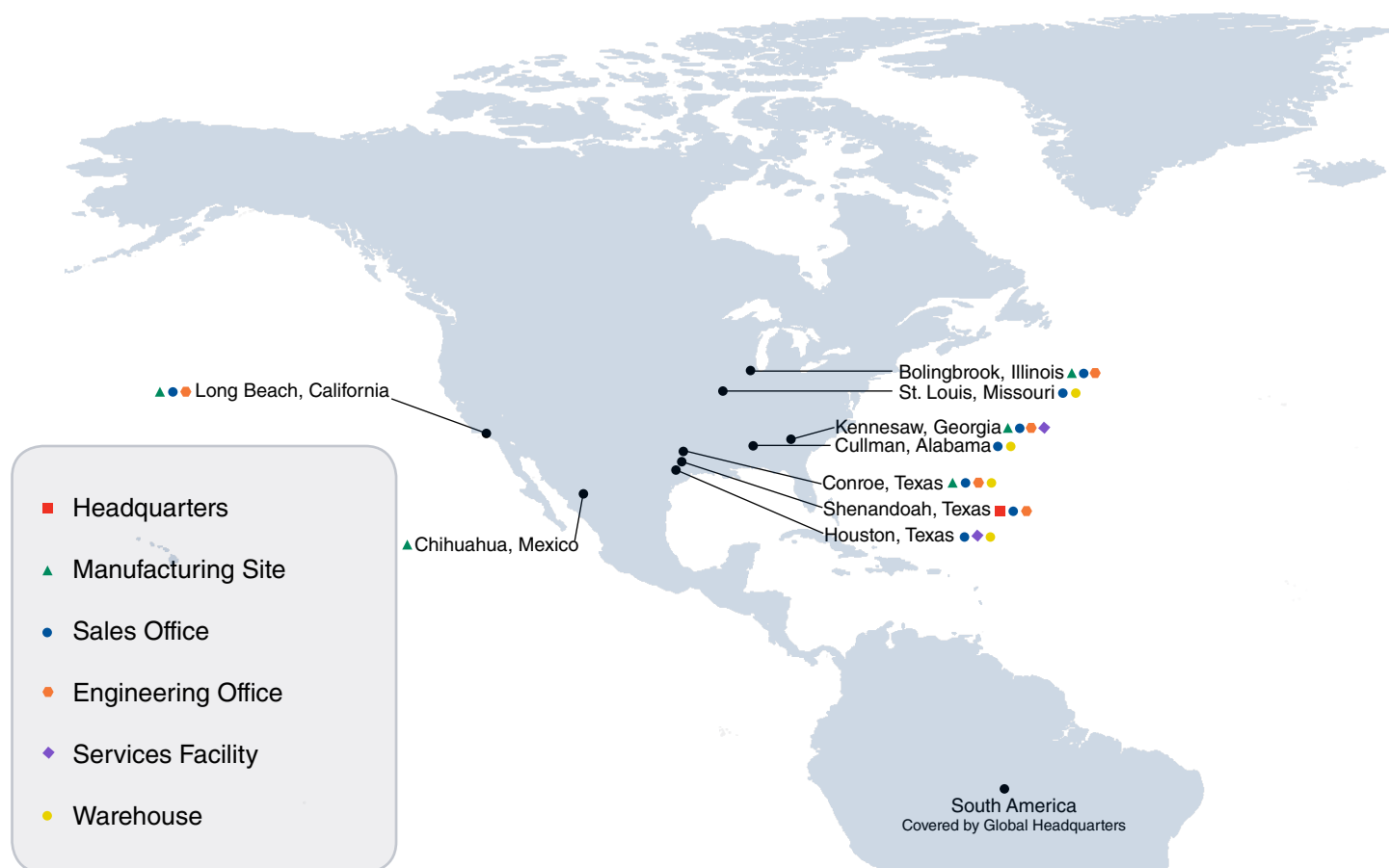
## Features and Benefits:

- Pipe and fittings liners have a heavy wall thickness and are made from raw resin at our North Carolina manufacturing facility.
- Pipe and fittings are rated for continuous full vacuum service up to 225°F
- The Resistoflex Thermalok™ process locks the plastic liner in the metal housing, resulting in the liner and metal housing acting as one monolithic unit, even during frequent thermal cycling. Inherently stiff liner remains tight against the housing interior throughout its lifespan.
- Polypropylene has shown good abrasion resistance on fine slurries, such as fly ash. Third party testing indicates that Resistoflex Polypropylene liners will outperform rubber liners by a factor of four, giving enhanced service life.
- Resistoflex Polypropylene lined pipe and fittings are delivered to site ready to bolt-up, with no expensive, time-consuming, or equipment-dependent fabrication procedures.
- Polypropylene has excellent chemical resistance to a broad spectrum of acids and caustics.
- Good release properties to fight scale buildup
- Weld free construction reduces NDE costs.
- Straight lengths available up to 20 ft.
- Resistoflex pipe and fittings comply with the requirements of ASME B31.3 and ASTM F1545-15a



Special Configurations Available with  
ETFE or PVDF Liner

## Global Coverage



## Major Sales Offices

### AMERICAS

#### United States

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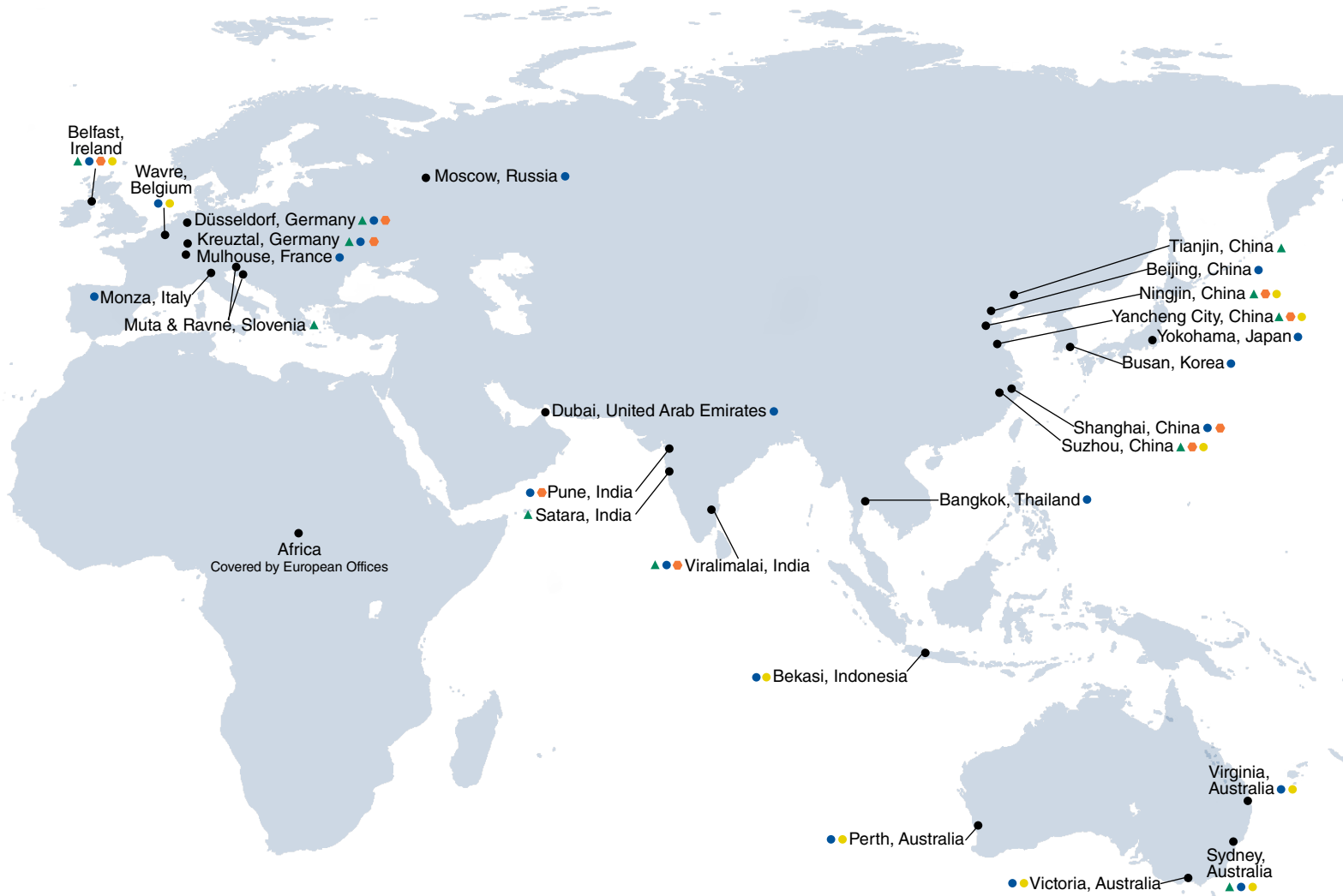
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# Global Coverage



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### Original Equipment Manufacturer (OEM)

Crane Valves Services is the OEM replacement part provider for Crane brands including Chapman and Flomatics. Our archives hold over thousands of drawings, bills of materials, material specifications and processes for valves supplied as early as the 1900's. We deliver the parts you need based on the original specifications and by using original parts your valve will have the greatest chance of functioning at its best.



### High-Quality Manufacturing

Using high-quality materials, state-of-the-art processes and ultra-modern machining equipment, Crane Valve Services reproduce parts to match the original print. The end result is reliability you can count on for years to come.

### Valve Experts

Through our national network of service centers and authorized repair centers, our team of factory trained professionals offers expert, dependable repair and reconditioning work, fast turnaround and warranted performance on just about any valve. Call one of our expert part specialists today to help with all your OEM needs.



### Delivered Fast Using QuickShipSM

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## PT. Cipta Solusi Andalan

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Operational Office: Kompleks Kartika Jaya Kavling Hankam  
Blok G. No.33 RT.07/RW.03 Ceger, Cipayung, Jakarta Timur – 13820 | [www.cisa.id](http://www.cisa.id)

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