



Cat.no.:E-PS



Cat.no.:E-GGC



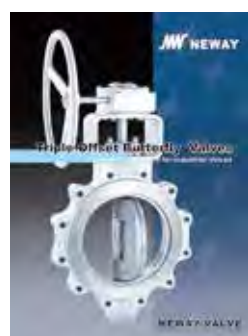
Cat.no.:E-TMBV



Cat.no.:E-FBV



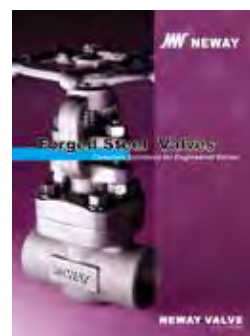
Cat.no.:E-DOV



Cat.no.:E-TOV



Cat.no.:E-PLV



Cat.no.:E-FSV



Cat.no.:E-DAV



Cat.no.:E-CPS



Cat.no.:E-AV

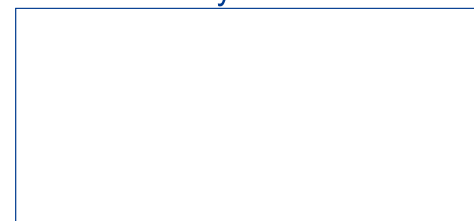


Cat.no.:E-PV

**NW NEWAY**  
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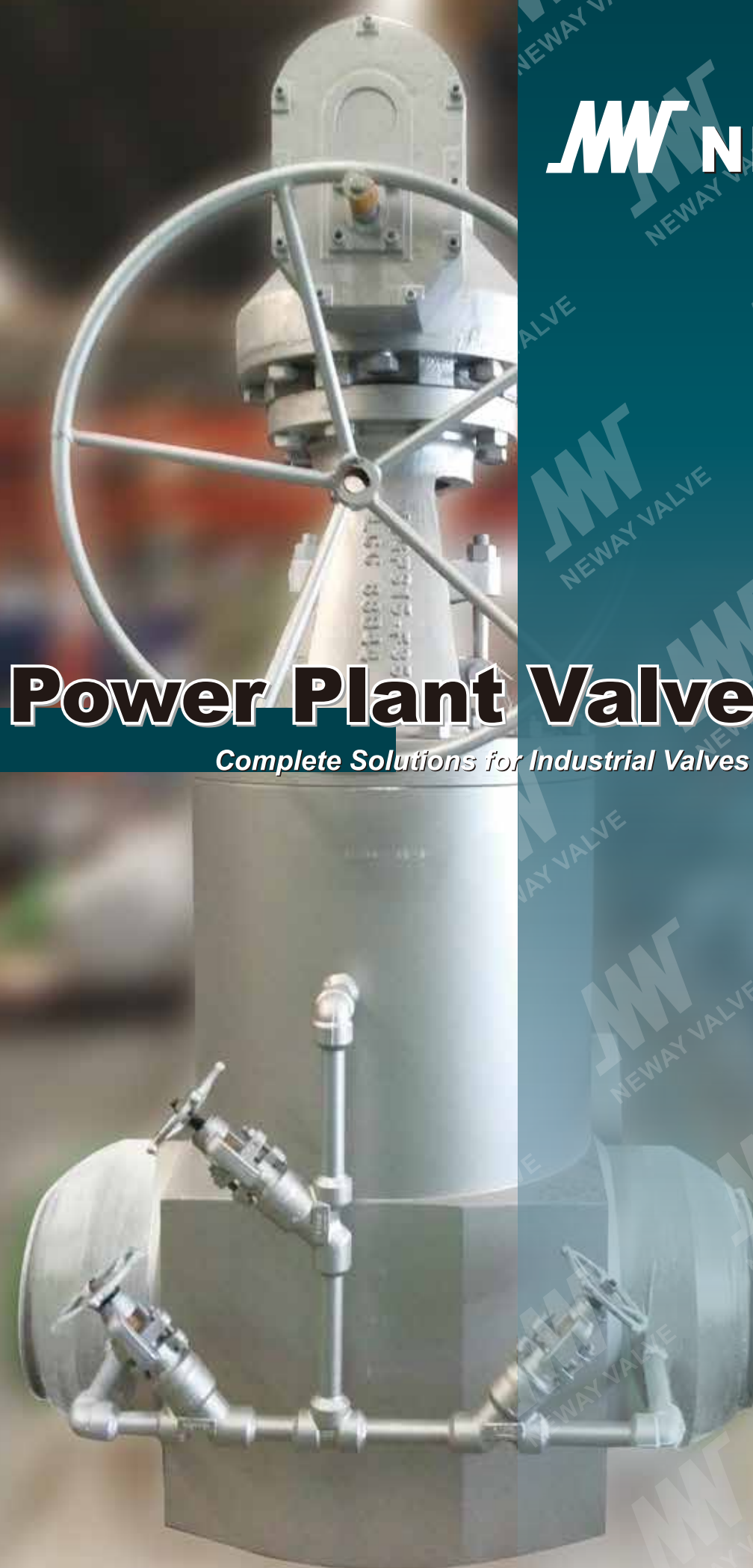
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Cat.no.:E-PGV-2017

# Power Plant Valves

Complete Solutions for Industrial Valves



**NEWAY VALVE**

Cat.no.:E-PGV-2017

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Complete Solutions for Industrial Valves

As a global leader of valve manufacturing, Neway (SSE:603699) is dedicated to the production, research, and development of industrial valves. Neway is committed to providing complete valve solutions to all industries through advanced engineering and innovation.

Neway’s product line includes Ball, Gate, Globe, Check, Butterfly, Nuclear, Control, Subsea, Safety valves. Our high quality standards and innovative ability are recognized by many global end users and EPCs. Neway valves are utilized in a wide variety of industries and working conditions such as Gas, Oil, Refining, Chemical, Coal Chemical, Offshore, FPSO, Air Separation, LNG, Nuclear Power, Power Generation, and Pipeline Transmission applications.

Facilities & Service

Neway has developed a sophisticated multi-plant management system operating one valve assembly plant, one API6A valve plant, three foundries, and one R&D center. Our newest assembly plant was expanded in 2013, and it now covers 35,000 square meters.

Advanced software (ANSYS, FE-Safe, CF-Design, Siemens PLM and NX) is applied here at Neway for the Research & Development of products. We use SAP to control the traceability and status of all products during the manufacturing process. In order to ensure the safety, eco-friendliness, and reliability of our products, we use the most advanced fire-safe, cryogenic, high pressure, and fugitive emission test equipment.

As part of Neway’s global strategy, to provide better service to our customers, we have established our overseas subsidiaries in North America, Brazil, Netherlands, Italy, Singapore, and Dubai along with over 80 agents and distributors worldwide.

High Quality, High Value

Neway is dedicated to the pursuit of “Zero Defect”. We maintain a quality management system that encompasses our entire operation from order entry, to final inspection. Through Neway’s continuous efforts, our products have achieved industrial certificates including ISO 9001, API Q1, API 6A, API 6D, CE/PED, ASME N & NPT, TA-Luft, ABS, CU-TR, and Fire-Safe approvals.

NORSOK



API Q1



API 6D



CE/PED

AD2000



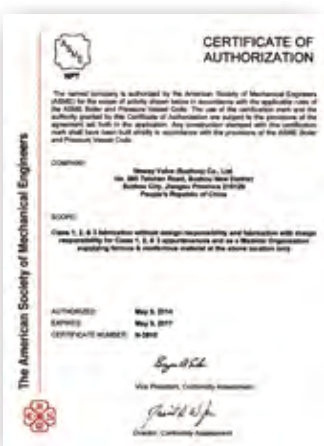
ABS



Fire Safe Test



ASME N



ASME NPT

Neway recognizes the importance of valve quality for the safety and protection of personnel health and property. It is our quality commitment to focus our resources to provide our customers with first class products at a competitive price, designed, manufactured, inspected and tested in accordance with our customers specifications and complying with all international standards.

Current industrial standards do not always take into consideration the likelihood and consequences of possible deterioration in

service, related to specific service fluids or the external environments in which they operate. Therefore we request that our customers communicate with our engineering department. Our valve optimization program continuously strives to provide valves that withstand deterioration in service, and ensure safety over the valves expected lifetime.



### Power Plant

The power plant is a station that converts original power into electric power for fixed facilities or transportation, e.g. fire, water, wind, photovoltaic, geothermal, tide, biological, fuel or nuclear power plants. The installed capacity of fossil-fuel power station, in particular, accounts for 70% of the total worldwide, with 80% power generation of the aggregate. Fossil-fuel power station, as an important part of electric power production, is playing a fundamental role in economic growth and living standard improving. It is known for burning coal, petroleum or natural gas, classified into coal / fuel / gas-fired power stations and cogeneration.

### Combined Cycle Power Generation System

Gas turbine combined cycle, also known as gas-steam combined cycle, refers to the gas turbine and steam turbine combined as a way of electricity generation, made up of combustion turbine (compressor, combustor, turbine, control system and auxiliary system), heat recovery boiler and steam turbine.

### Typical Coal-fired Power Generation System

Coal-fired power generating units are mainly composed of combustion system (with boiler as the core), steam water system (including various pumps, feedwater heater, condenser, pipe, water wall, etc.), electrical system (primarily including steam turbines and primary transformer) and control system, etc. The former two produce steam of high temperature and pressure; the electrical system presents conversion of thermal power and mechanical energy into electrical energy; control system is designed to ensure that the system operates safely, properly and economically.

### Binary Cycle Geothermal Power Plant

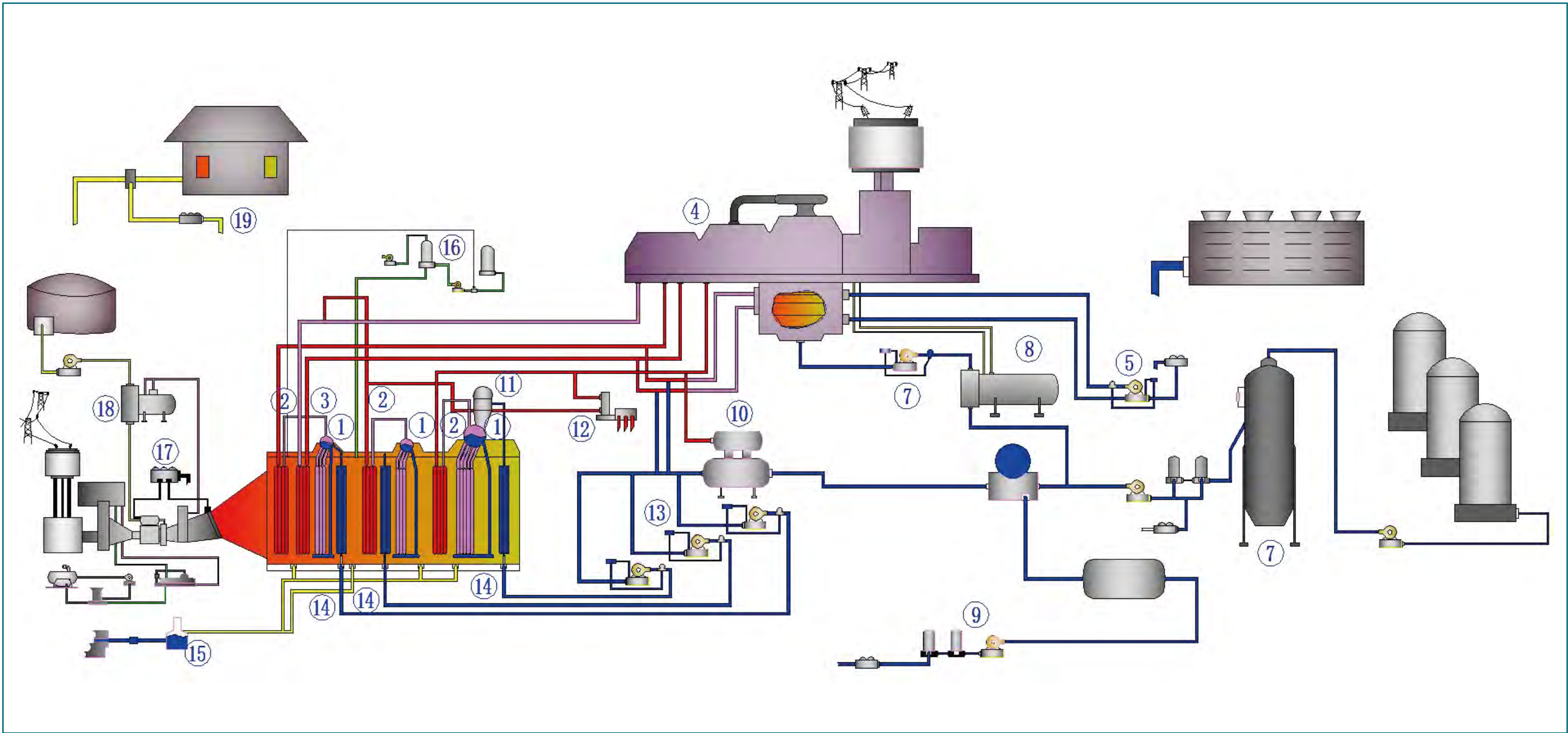
Binary Cycle Geothermal Power Plants represent the latest technology in geothermal application. A heat exchanger is used to transfer hot water energy to heat-conducting fluids with low boiling point, leading to greater efficiency. The water from the earth never comes into contact with the turbines, which minimizes emissions of trace gases into the atmosphere.

### Flash Evaporation Geothermal Power Plant

Flash Evaporation Geothermal Power Plants are the most common type of geothermal power station, with hot water pumped at high pressure to the surface. This requires valves and actuators capable of handling the conditions. The heated water is extracted with an array of pressure vessels with internal pressure lower than that of thermal water while the pressure difference turns the water into steam. The steam flows into turbine to work before condensing. It finally return to geothermal reservoir through injection well.

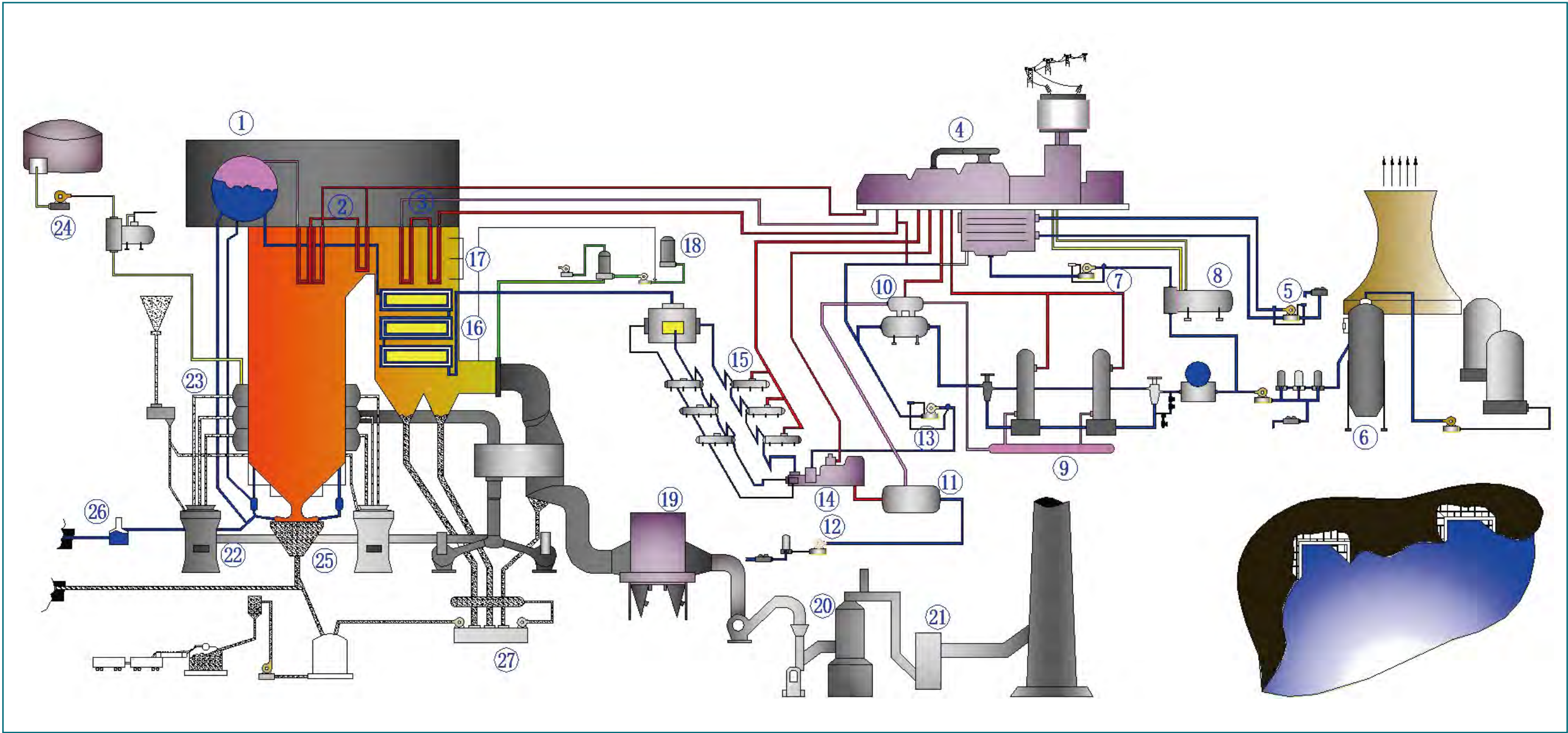
### Valve Application in Power Plant

The valve is the control device of fluid pipeline, serving to connect, shut off and direct service fluids, regulate medium pressure and flow and protect pipeline and equipment from improper working. It plays a vital part in the control system of power station.



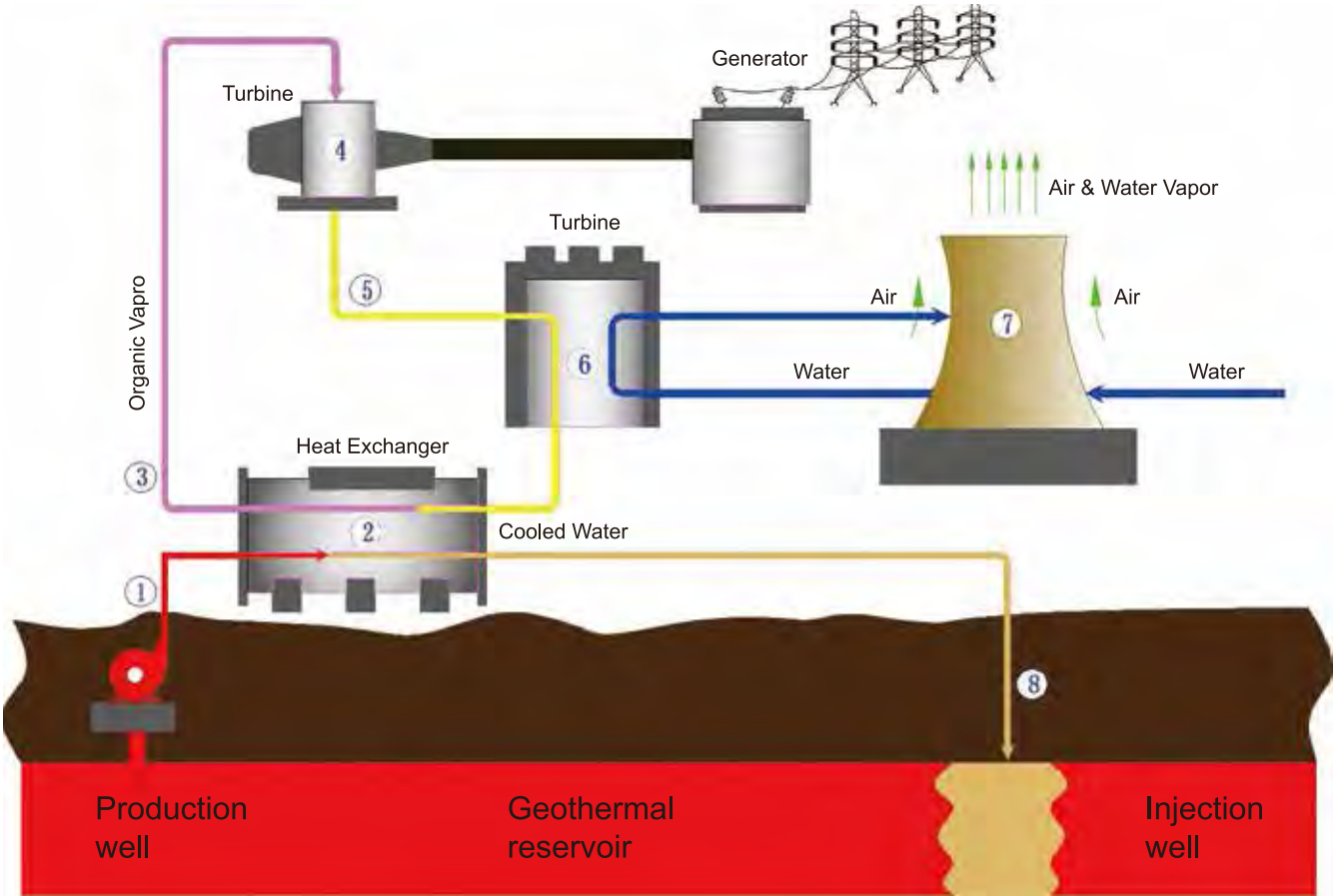
Neway can provide a full range of valves for power system

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. DRUM (HP, IP, LP)</b> <ul style="list-style-type: none"><li>• Blowdown Valves</li><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul> | <b>3. DRUM (HP, IP, LP)</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul>                                                                                                          | <b>5. COOLING WATER CIRCULATION</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul>  | <b>7. CONDENSATE PUMPS</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul>                        | <b>9. MAKE-UP WATER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>11. LP DRUM DEAERATOR</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul>  | <b>13. FEED WATER STORAGE AND DISTRIBUTION (HP, IP, LP)</b> <ul style="list-style-type: none"><li>• By-pass System</li><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li></ul> | <b>15. FLASH TANK</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Discharge Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul>                                                                                                                   | <b>17. COMBUSTION TURBINE</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>19. GAS PIPELINE (CUSTODY TRANSFER STATION)</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li></ul> |
| <b>2. SUPERHEATER (HP, IP, LP)</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Safety Valves</li></ul>                      | <b>4. STEAM TURBINE WITH CONDENSER</b> <ul style="list-style-type: none"><li>• Desuperheaters</li><li>• Extraction/induction Check Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li><li>• Start-up/by-pass Valves</li><li>• Turbine Protection Valves</li></ul> | <b>6. WATER INTAKE AND TREATMENT</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>8. HEAT EXCHANGER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>10. DEAERATOR</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul>            | <b>12. PROCESS AND EXPORT</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul> | <b>14. ECONOMIZERS (HP, IP, LP)</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul>                                                                                    | <b>16. SCR STORAGE AND INJECTION</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Liquid Level Valves</li><li>• Pump Protection Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li></ul> | <b>18. FUEL STORAGE AND DISTRIBUTION</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Pilot Operated Pressure / Vacuum Valves</li><li>• Safety Relief Valves</li><li>• Tank Blanketing Regulators</li></ul>           | <b>1 TO 19</b> <ul style="list-style-type: none"><li>• Hand Valves and Manifolds</li><li>• Steam Traps</li></ul>                                                                                                                                                          |



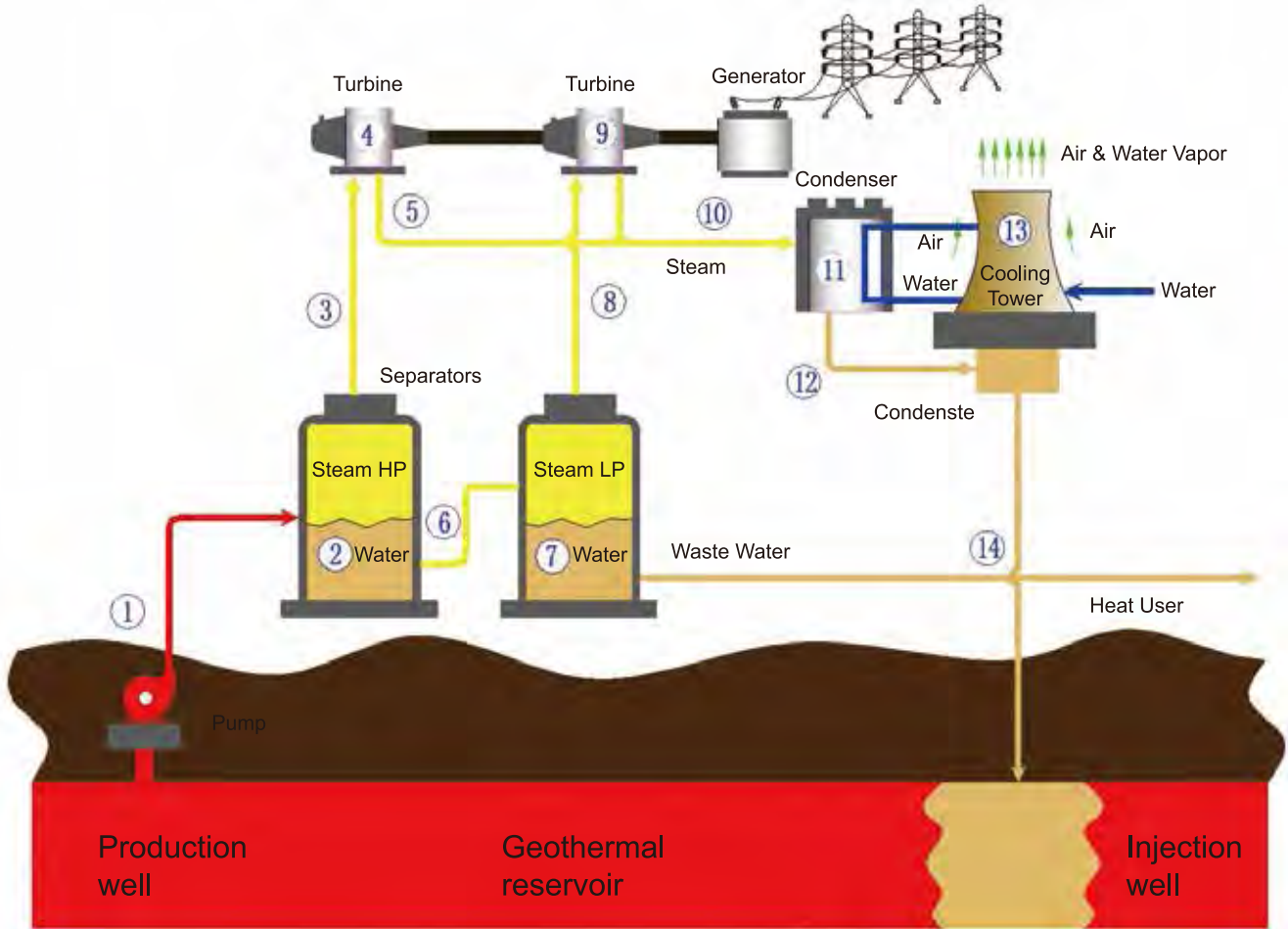
Neway can provide a full range of valves for power system

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| <b>1. DRUM</b> <ul style="list-style-type: none"><li>• Blowdown Valves</li><li>• Check Valves</li><li>• Drain Valves</li><li>• Safety Valves</li></ul>                               | <b>3. REHEATER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Desuperheaters</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul>                                                                                    | <b>5. COOLING WATER CIRCULATION</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul>    | <b>7. CONDENSATE PUMPS</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul>                        | <b>9. LOW PRESSURE HEATERS</b> <ul style="list-style-type: none"><li>• By-pass System</li><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul> | <b>11. EVAPORATOR</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul>                                     | <b>13. BOILER FEED BOOSTER PUMPS</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul>                                                                                                                                             | <b>15. HIGH PRESSURE HEATERS</b> <ul style="list-style-type: none"><li>• By-pass System</li><li>• Check Valves</li><li>• Control Valves</li></ul>              | <b>17. SOOTBLOWERS</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul>                                                                                                                                                          | <b>19. BAG HOUSE</b> <ul style="list-style-type: none"><li>• Isolation Valves</li></ul>    | <b>24. FUEL STORAGE &amp; DISTRIBUTION</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Detonation &amp; Flame Arresters</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul> | <b>26. FLASH TANK</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Discharge Control Valves</li><li>• Drain Valves</li><li>• Safety Relief Valves</li></ul>                |
| <b>2. SUPERHEATER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Desuperheaters</li><li>• Safety Valves</li><li>• Vent Valves</li></ul> | <b>4. STEAM TURBINE WITH CONDENSER</b> <ul style="list-style-type: none"><li>• Desuperheaters</li><li>• Extraction/induction Check Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li><li>• Start-up/by-pass Valves</li><li>• Turbine Drain Valve</li></ul> | <b>6. WATER INTAKE &amp; TREATMENT</b> <ul style="list-style-type: none"><li>• Check valves</li><li>• Control valves</li><li>• Drain valves</li><li>• Isolation valves</li><li>• Pump protection valves</li><li>• Safety relief valves</li></ul> | <b>8. HEAT EXCHANGER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>10. DEAERATOR</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Relief Valves</li></ul>                                    | <b>12. MAKE-UP WATER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Safety Relief Valves</li></ul> | <b>14. BFWP &amp; DRIVE TURBINE</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Desuperheaters</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li><li>• Start-up Control Valves</li><li>• Turbine Protection Valves</li></ul> | <b>16. ECONOMIZER</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Safety Valves</li></ul> | <b>18. WATER INTAKE &amp; TREATMENT</b> <ul style="list-style-type: none"><li>• Check Valves</li><li>• Control Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li><li>• Pump Protection Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Safety Relief Valves</li><li>• Drain Valves</li><li>• Isolation Valves</li></ul> | <b>21. PRECIPITATOR</b> <ul style="list-style-type: none"><li>• Isolation Valves</li></ul> | <b>22. COAL PULVERIZERS</b> <ul style="list-style-type: none"><li>• Isolation Valves</li></ul>                                                                                                                                        | <b>27. ASH HANDLING</b> <ul style="list-style-type: none"><li>• Control Valves</li><li>• Isolation Valves</li><li>• Pilot Operated Safety Relief Valves</li><li>• Transport Valves</li></ul> |
|                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                  |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                   | <b>20. ABSORBER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li></ul>     | <b>25. MUD DRUMS</b> <ul style="list-style-type: none"><li>• Blow-off Valves</li><li>• Continuous Blowdown Valves</li><li>• Drain Valves</li></ul>                                                                                    | <b>1 To 27</b> <ul style="list-style-type: none"><li>• Hand Valves &amp; Manifolds</li></ul>                                                                                                 |
|                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                  |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                   | <b>23. BURNERS</b> <ul style="list-style-type: none"><li>• Isolation Valves</li></ul>      |                                                                                                                                                                                                                                       |                                                                                                                                                                                              |



Neway can provide a full range of valves for power system

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|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. PRODUCTION WELLS</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li></ul> | <b>3. STEAM PIPE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li><li>• Control Valves</li></ul>        | <b>5. OUTLET STEAM PIPE<br/>STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li><li>• Safety Relief Valves</li></ul> | <b>7. COOLING TOWER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• Safety Relief Valves</li><li>• Drain Valves</li></ul> |
| <b>2. HEAT EXCHANGER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li></ul> | <b>4. STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Extraction Check Valves</li><li>• Safety Relief Valves</li><li>• Bypass Valves</li><li>• Drain Valves</li></ul> | <b>6. CONDENSER</b> <ul style="list-style-type: none"><li>• Large Bore Butterfly Valves</li><li>• Knife Gate Valves</li><li>• Safety Relief Valves</li></ul>                                      | <b>8. INJECTION WELLS</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li></ul>   |



Neway can provide a full range of valves for power system

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. PRODUCTION WELLS</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li></ul>                             | <b>4. HP STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Extraction Check Valves</li><li>• Safety Relief Valves</li><li>• Bypass Valves</li><li>• Drain Valves</li></ul>                   | <b>7. LP HEAT EXCHANGER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li></ul>                                 | <b>10. OUTLET STEAM PIPE<br/>LP STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li><li>• Safety Relief Valves</li></ul> | <b>13. COOLING TOWER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• Safety Relief Valves</li><li>• Drain Valves</li></ul> |
| <b>2. HP HEAT EXCHANGER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li></ul>                          | <b>5. OUTLET STEAM PIPE<br/>HP STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Control Valves</li><li>• Safety Relief Valves</li></ul> | <b>8. LP STEAM PIPE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li><li>• Control Valves</li></ul>        | <b>11. CONDENSER</b> <ul style="list-style-type: none"><li>• Large Bore Butterfly Valves</li><li>• Safety Relief Valves</li></ul>                                                                     |                                                                                                                                                   |
| <b>3. HP STEAM PIPE</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li><li>• Control Valves</li></ul> | <b>6. PIPE BETWEEN HP &amp;<br/>LP HEAT EXCHANGERS</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• Metal-seated Butterfly Valves</li><li>• GGC Valves</li></ul>           | <b>9. LP STEAM TURBINE</b> <ul style="list-style-type: none"><li>• Extraction Check Valves</li><li>• Safety Relief Valves</li><li>• Bypass Valves</li><li>• Drain Valves</li></ul> | <b>12. OUTLET PIPE<br/>CONDENSER AND<br/>CONDENSATE HEADER</b> <ul style="list-style-type: none"><li>• Isolation Valves</li><li>• GGC Valves</li><li>• Safety Relief Valves</li></ul>                 | <b>14. COOLING TOWER</b> <ul style="list-style-type: none"><li>• Triple Offset Valves</li><li>• GGC Valves</li></ul>                              |



High Pressure Flexible Wedge Gate Valve

Product Range

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2" ~ 30"(DN50 ~ DN750)                                                                                                                 |
| Pressure Rating | CLASS 900~CLASS 4500 (PN150~PN760)                                                                                                     |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld                                                                                                                              |
| Temperature     | See attached                                                                                                                           |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                                                                |
| Structure       | Single Wedge                                                                                                                           |

Design Feature

- Resistant to high temperature, high pressure, suitable for special working conditions. It is irreplaceable to some degree.
- Cavity pressure seal design. Higher pressure means more reliable seal.
- Three-way closed-die forging technology for die forging valve body (Multi-way die forging technology). The parts are dense structurally and superior in material performance.
- By-pass valve is available to balance the upstream and downstream pressure of main valve pressure, convenient for piping reheating when the system is open and closed.



Expanding Through Conduit Gate Valve

Product Range

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2"~24" (DN50~DN600)                                                                                                                    |
| Pressure Rating | CLASS 300~CLASS 4500 (PN50~PN760)                                                                                                      |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                      |
| Temperature     | See attached list                                                                                                                      |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                                                                |
| Structure       | Expanding Disc                                                                                                                         |

Design Feature

- Expanding through conduit gate valve, distinctively characterized by expanding construction, takes on excellent seal performance under high pressure and low pressure, applied to elevated temperature and high pressure service.
- The valve, with bi-directional seal and full bore, is designed per API 6d standard, whose port could be purged with pigging ball.
- During on-off travel, gate seal face is isolated from seat sealing surface to reduce wear, protect the sealing surface and prolong the service life.
- Independent from installation position, the valve could be mounted horizontally, vertically or other arbitrary angles of the pipeline.
- The valve has an emergency sealant injection system on the body through which sealant could be injected in the case of damaged gate sealing face to prevent leakage, easy for the gate to be repaired and replaced.
- Valve is of fire safe construction.

Product Range

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2"~28" (DN50~DN700)                                                                                                                    |
| Pressure Rating | CLASS 300~CLASS 4500 (PN50~PN760)                                                                                                      |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                      |
| Temperature     | See attached list                                                                                                                      |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                                                                |
| Structure       | Parallel Slide                                                                                                                         |

Design Feature

- Class300-600: Bolted bonnet
- Class900-4500: Pressure seal bonnet
- Parallel slide gate valve depends on media force seal. Higher pressure contributes to more reliable seal.
- Oriented block design: oriented block not only prevents stem rotation, but also indicates open and close position, able to accurately control the valve stroke, ensuring valve stable operation.
- Wedge Versatility , convenient for online maintenance and replacement.
- Disc and seat sealing surface with hard alloy materials,excellent wear resistance, long service life.
- In response to customer demand, the gate tapping or with bypass valve
- structure is accessible to avoid expanding of two wedges caused by pressure trapped in cavity after valve is closed, otherwise, breakaway torque would be increased or valve opening would fail.



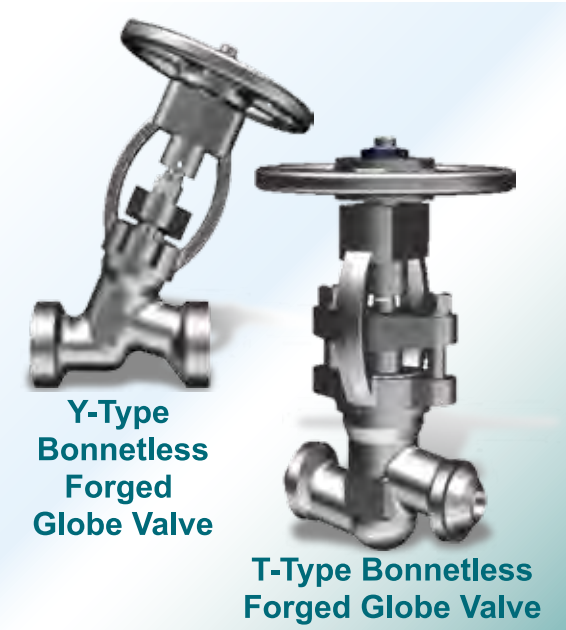
Parallel Slide Gate Valve

Product Range

|                 |                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------|
| Size            | 1/2"~2-1/2" (DN15~DN65)                                                                        |
| Pressure Rating | CLASS 1500~CLASS 4500 (PN250~PN760)                                                            |
| Body Material   | A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, socket-weld, threaded                                                               |
| Temperature     | See attached list                                                                              |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                        |
| Structure       | Bonnetless precision forging                                                                   |

Design Feature

- Bonnetless forged steel globe valve including T type and Y type, is a two piece structure without bonnet, reducing cavity leaking path; assembly without welding settles the trouble of high-temperature material welding temperature and post-weld heat treatment.
- When the valve is used in the service of considerable and highly-frequent temperature variations, the packing nut can be replaced by the disc spring nut assembly to assure packing seal.
- When CLASS>1700lb , rising stem is adopted, with needle (ball) bearing equipped to diminish valve operating torque. Injection of grease or oil through oil cup is intended to improve the bearing life and reduce friction coefficient, which leads to the drive system fully enclosed.
- Rising stem: open position could be readily suggested via position indicator. Anti-rotation shaft between stem and yoke could prevent stem from turning along with on-off to avoid packing impairment and extend valve working life.
- With special structure, it can be fast and convenient to remove the packing and the pressing nut below, so as to realize on-line maintenance and cut reconditioning cost..



Y-Type Bonnetless Forged Globe Valve

T-Type Bonnetless Forged Globe Valve



Forged Gate, Globe and Check Valves

Product Range

|                 |                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------|
| Size            | 1/2"~2" (DN15~DN50)                                                                            |
| Pressure Rating | CLASS 150~CLASS 1500 (PN20~PN250)                                                              |
| Body Material   | A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Socket-weld, Threaded                                                               |
| Temperature     | See attached list                                                                              |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                        |
| Structure       | Precision closed die forging                                                                   |

Design Feature

Forged Steel Gate Valves:

- Seat ring is featured by cup ring, simply and efficiently produced.
- Low flow resistance, less open and closing force, freely oriented service medium, low flow corrosion and compact face-to-face dimension

Forged Steel Globe Valve:

- Stem of rotating lifting movement and medium of one-way flow.
- Less travel, short stroke time and optimal machinability.
- Simple shape, compact face-to-face dimension, desirable manufacturability and wide applications.

Forged Steel Lift Check Valve:

- Disc-assisted spring design. Disc is closed driven by spring force and can be installed at your option.
- The disc pressure relief hole design diminishes the resistance the disc opens against.
- Stud, welding or self-seal are optional for body flange design.



Ball Valve

Product Range

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 1/2"~24" (DN15~DN600)                                                                                                                  |
| Pressure Rating | CLASS 150~CLASS 4500 (PN20~PN760)                                                                                                      |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Socket-weld, Flange                                                                                                         |
| Temperature     | See attached list                                                                                                                      |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                                                                |
| Structure       | Straight                                                                                                                               |

Design Feature

- Ball and seat sealing surfaces are subject to spray or spray welding of hard alloy, which could result in superior resistance against corrosion and make valve work longer.
- Body integral forging and reliable packing seal structure offers no leakage path.
- Seat spring preloading ensures that the valve has a sustained and stable sealing preload.
- Double bearing design guarantees smooth strokes.
- Independent positioning frees the valve stroke from leakings at stem packing.

Product Range

|                 |                                                         |
|-----------------|---------------------------------------------------------|
| Size            | 3"~60" (DN80~DN1500)                                    |
| Pressure Rating | CLASS 150~CLASS 600 (PN20~PN110)                        |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M                    |
| End Connection  | Wafer, Lug, Double Flange, BW                           |
| Temperature     | See attached list                                       |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc. |
| Structure       | High-performance triple offset butterfly valve          |

Design Feature

- Double-assurance blow-out proof stem, safe and reliable.
- Seat rings can be mutually replaced, simplifying the maintenance procedures and reducing maintenance cost.
- Optimum bi-directional sealing capability satisfies requirements of demanding service.
- Real pure metal sealing makes valve fire safe, with API607 fire safe certification.
- ISO 15848 fugitive emission certification.
- Broad temperature range, applicable for ambient temperature and high temperature. The temperature fluctuations has little effect on operating torque.
- Short stroking time. It could be shut within only three seconds, fit for the need to pneumatic actuation in need of rapid close.



Triple Offset Butterfly Valve

Product Range

|                 |                                                                                                                                        |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 6" ~42" (DN150~DN1050)                                                                                                                 |
| Pressure Rating | CLASS 150~CLASS 2500 (PN20~PN420)                                                                                                      |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                      |
| Temperature     | See attached list                                                                                                                      |
| Operation       | Pneumatic actuator                                                                                                                     |
| Structure       | Check Valve                                                                                                                            |

Design Feature

- Seating surface subjected to hardfacing is immune to impact and highly capable of scour, prolonging the service life of the valve.
- Disc quick closing ( $\leq 1s$ ) effectively protects the steam turbine.
- Add cooling plate outside yoke to make sure pneumatic actuator works at  $< 80^{\circ}C$ .
- There are bosses located at both sides of valve body. Pneumatic actuator can be fitted at either side, strongly adaptive in power plant piping layout.
- Body is mounted with stop cage, which can effectively prevent pin movement.



Extraction Check Valve



Three-way Valve

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2" ~24" (DN50~DN600)                                                                                                                      |
| Pressure Rating | CLASS 900~CLASS 3500 (PN150~PN600)                                                                                                        |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Handwheel, Gearbox, Pneumatic, Hydraulic, Electric etc.                                                                                   |
| Structure       | Tee                                                                                                                                       |

Design Feature

- The valve body is integrally forged or casting structured, with no weld joints and external leakage path.
- Cavity pressure seal design. Higher pressure means more reliable seal.
- Internal hydraulic actuator opens and closes the valve by water pressure, with additional actuators unnecessary.
- Rapid conversion of opening and closing avoids facility damage.
- The plug is streamlined, minimizing disc pressure drop.



Control Valve for Boiler  
Feed Pump Recirculation

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 4" ~8" (DN100~DN200)                                                                                                                      |
| Pressure Rating | CLASS 150~CLASS 900 (PN20-PN150)                                                                                                          |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Pneumatic, Electric (Manual available)                                                                                                    |
| Structure       | Porous Sleeve                                                                                                                             |

Design Feature

- Grades of cage vary with pressure ratings. Multiple trims are available.
- The plug is of balanced structure, with large differential pressure allowed.
- Low noise, cavitation-resistance and high differential pressure endurance.
- Preimum adjustment capability and high precision for control.
- Plug and seat sealing surface is placed as different angles for linear seal, achieving bubble-tight shutoff.
- Multi-level cage is intended to avoid direct flushing from medium on the seat.
- Stellite hardfacing is used to further sustain erosion and abrasion, assuring proper long-term working of sealing surface.
- Piston actuator can lead to valve tolerance of high differential pressure.
- Quick dismantling function features the seat, simply structured and convenient for assembly and maintenance.

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2" ~42" (DN50~DN1050)                                                                                                                     |
| Pressure Rating | CLASS 150~CLASS 4500 (PN20-PN760)                                                                                                         |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L / F304H /<br>F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Automatic                                                                                                                                 |
| Structure       | Isolation                                                                                                                                 |

Design Feature

- The valve features design of straight-through and full bore, either unidirectionally or bidirectionally. Stellite hardfacing is used on sealing surface.
- Cavity pressure seal design for high pressure valves. Higher pressure means more reliable seal.
- The valve is used as an isolating device during the hydraulic pressure test. When the system is on normal operation, the valve is used as a pipeline after replacing the blind plate by a guide cylinder.
- The blind plate and a guide cylinder are not installed but packaged independently and delivered as accessories to the destination with the valves.



Block Valve

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 3/4" ~4" (DN20~DN100)                                                                                                                     |
| Pressure Rating | CLASS 600~CLASS 2500 (PN110-PN420)                                                                                                        |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Pneumatic, Electric (manual available)                                                                                                    |
| Structure       | Labyrinth cage                                                                                                                            |



Attemperator Spray Water Control  
Valve and Soot Blower Reduction Valve  
for Regular and Continuous Blowdown



Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 3/4" ~16" (DN20~DN400)                                                                                                                    |
| Pressure Rating | CLASS 150~CLASS 2500 (PN20-PN420)                                                                                                         |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Pneumatic, Electric (Manual available)                                                                                                    |
| Structure       | Single seat plunger or cage guiding                                                                                                       |

Design Feature

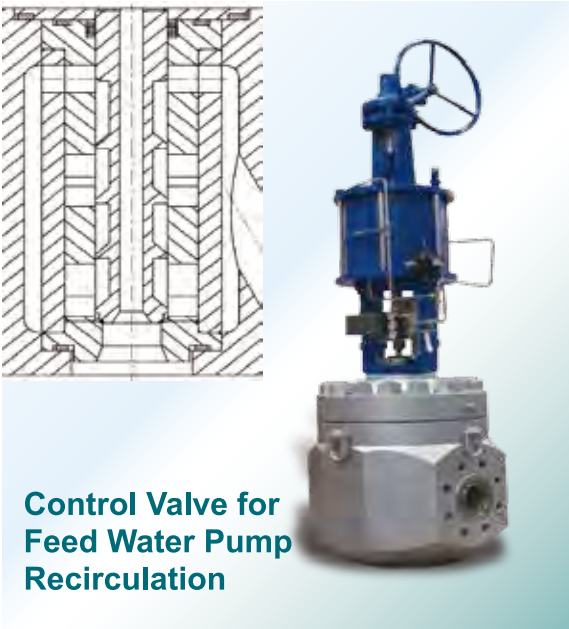
- The port of S-shaped uniform section, low flow resistance and enormous flow capacity.
- The integration design for small-sized plug-stem is used to avoid the problems arising from welding or pin.
- Top guide in small-sized valves, compact structure, smooth flow, free of .blocking.
- Large-sized valve fitted with clamping ring guide, simply structured, preventing plug from joggle, convenient for installation, removal and maintenance.
- Broad adjustable range and high adjusting precision.
- Pneumatic actuators mostly include multi-spring diaphragm actuators and double acting piston actuators, which are tight in structure and large in output force.
- Electric linear actuators are adopted, integrally constructed and functioning powerfully.
- Applicable to controls over all sorts of fluid medium .

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 1" ~16" (DN25~DN400)                                                                                                                      |
| Pressure Rating | CLASS 150~CLASS 600(PN20-PN110)                                                                                                           |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Wafer, Flange                                                                                                                             |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Pneumatic, Electric (Manual available)                                                                                                    |
| Structure       | Cam Flexure                                                                                                                               |

Design Feature

- Body straight port design minimizes the flow resistance of fluid inside body, affording the valve the large flow capacity.
- Adjustable ratio up to 100:1.
- High seal level: leaking grade of metal-seated valve, FCI70-2 IV; soft seated valve, FCI70-2 VI.
- 50 degree stroke design and rapid on-off. Besides, special offset construction owns strong shear force, especially used in throttling of service fluids containing fiber and tiny particles.
- The valve is simple in structure, small in size and light in weight. With easy maintenance, it can be installed in any position.
- Remarkable reliability, beautiful appearance, complete functions, a wide spectrum of applications.



Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 1-1/2"~6" (DN40~DN150)                                                                                                                    |
| Pressure Rating | CLASS 300~CLASS 2500 (PN50~PN420)                                                                                                         |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Spring Automatic Opening                                                                                                                  |
| Structure       | Spring                                                                                                                                    |

Design Feature

- The valve is basket-like structured. With the premise of ensuring strength, the design leads to complete convective heat transfer between spring worked in cavity and surrounding air , thereby reducing spring working temperature and assuring consistent rigidity of the spring.
- The back-up sleeve is of labyrinth configuration. After the valve is open, air pressure in chamber of the structure is controlled to present the high pressure forcing disc to close quickly, fulfilling the requirements of on-off differential pressure.
- Disc of flexible structure could absorb high temperature deformation and assist seal. Meanwhile, seat beam is steered at rotation direction opposite to disc opening, which generates a recoil force along with opening direction, making safety valve quickly open and reach lifting height.

Temperature Range of Power Plant Valve Shell Materials

| Shell Material                | Temperature Range (Recommended) |
|-------------------------------|---------------------------------|
| WCB/A105                      | -29°C ~ 425°C                   |
| F36                           | -29°C ~ 480°C                   |
| WC6/F11                       | -29°C ~ 540°C                   |
| WC9/F22                       | -29°C ~ 570°C                   |
| C12A/F91                      | -29°C ~ 600°C                   |
| F92                           | -29°C ~ 620°C                   |
| F304L/F316L                   | -29°C ~ 425°C                   |
| CF3M/CF8M/F304/F316/F321/F347 | -29°C ~ 538°C                   |
| F304H/F316H                   | -29°C ~ 650°C                   |

Product Range

|                 |                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Size            | 2" ~8" (DN50~DN200)                                                                                                                       |
| Pressure Rating | CLASS 900~CLASS 2500(PN150-PN420)                                                                                                         |
| Body Material   | WCB / WC6 / WC9 / C12A / CF3M / CF8M<br>A105 / F11 / F22 / F36 / F91 / F92 / F304 / F304L /<br>F304H / F316 / F316L / F316H / F321 / F347 |
| End Connection  | Butt-weld, Flange                                                                                                                         |
| Temperature     | See attached list                                                                                                                         |
| Operation       | Pneumatic, Electric (Manual available)                                                                                                    |
| Structure       | Multi-step Plug                                                                                                                           |

Design Feature

- Grades of cages and plugs vary with pressure ratings. Multiple trims are available.
- The plug is of the balanced structure, with large differential pressure allowed.
- Low noise, cavitation-resistance and high differential pressure endurance.
- Preimum adjustment capability and high precision for control.
- Plug and seat sealing surface is placed as different angles for linear seal, achieving bubble-tight shutoff.
- Multi-level plug is intended to avoid direct flushing from medium on the seat.
- Stellite hardfacing is used to further sustain erosion and abrasion, assuring proper long-term working of sealing surface
- Piston actuator can lead to valve tolerance of high differential pressure.
- Quick dismantling function features the seat, simply structured and convenient for assembly and maintenance.

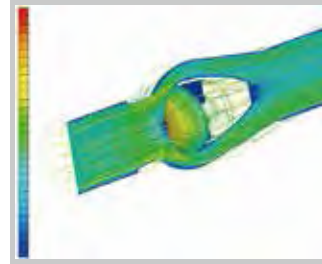


## Application of Finite Element Methods

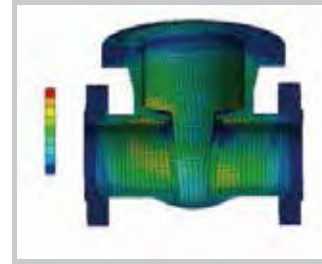
Professional software for structure and fluid analysis, via actual service simulation, is used to analyze stress-strain, temperature impact and flow coefficient (Cv) for ensuring rational structural design of valves, making temperature of such parts as packing and actuator vary in acceptable range and Cv conform to customer requirements.



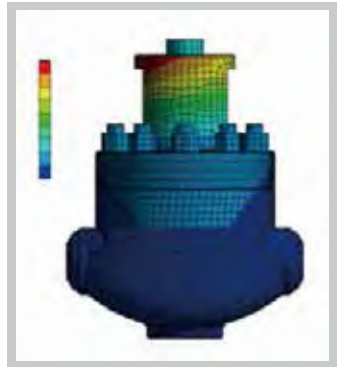
Noise Analysis



Fluid Analysis



Static Structural Analysis



Seismic Analysis



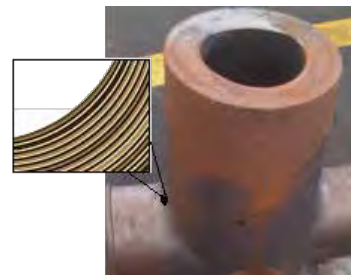
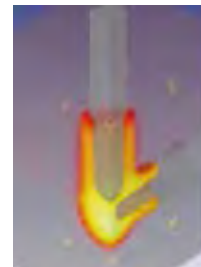
Fatigue Analysis



Thermal Coupling Analysis

## Three-way Hollow Forging Technology

Three-way Hollow Forging Technology  
Better Material Properties by More Compact Metallographic Structure



Multi-way Die Forging Forming Technology

Neway is committed to providing customers with "zero defects" valve products. Six sigma quality management implemented by the firm, through the use of advanced data statistical analysis, continuously improves the process management capability. Meanwhile, procedure research department is set up to refine the valve production process. It has developed a full set of cutting-edge equipment for inspection and testing to control the quality from the rough casting or forging to finished products. The facilities can be used in radiographic inspection, magnetic particle inspection, ultrasonic inspection, spectroscopic analysis, positive material identification (PMI), impact testing, tensile testing, hardness testing, fire safe test, cryogenic testing, high temperature testing, vacuum testing, fugitive emission testing, high-pressure gas testing and conventional hydrostatic test, etc.

## Corporate Management



## Production Field



5M Vertical Lathe



Assembly Workshop



Hot-wire TIG Automatic Cladding System



Clean Room for Special Valve

## Raw Material Control



Chemical Analysis before Pouring



MT



PT



Tensile Test



Impact Test



RT



Micro-structure Analysis



Microstructure Analysis

Process Control



Coordinate Measuring Machine



Hardness Test



PMI



Constant Temperature and Humidity Test Chamber



Paint Thickness Test



Provincial Level Test Lab

Product Verification Test



High Temperature Test



Low Fugitive Emission Test



Hydrostatic Test



High-pressure Gas Test



Valve Life Test



Flow Resistance Test

Seller will replace without charge or refund the purchase price of products provided by Seller which prove to be defective in material or workmanship, provided in each case that the product is properly installed and is used in the service for which Seller recommends it and that written claim, specifying the alleged defect, is presented to the Seller within 18 months from the date of shipment or 12 months after installation, whichever occurs first. Seller shall in no event bear any labor, equipment, engineering or other costs incurred in connection with repair or replacement. The warranty stated in this paragraph is in lieu of all other warranties, either expressed or implied. With respect to warranties, this paragraph states Buyer's exclusive remedy and seller's exclusive liability.