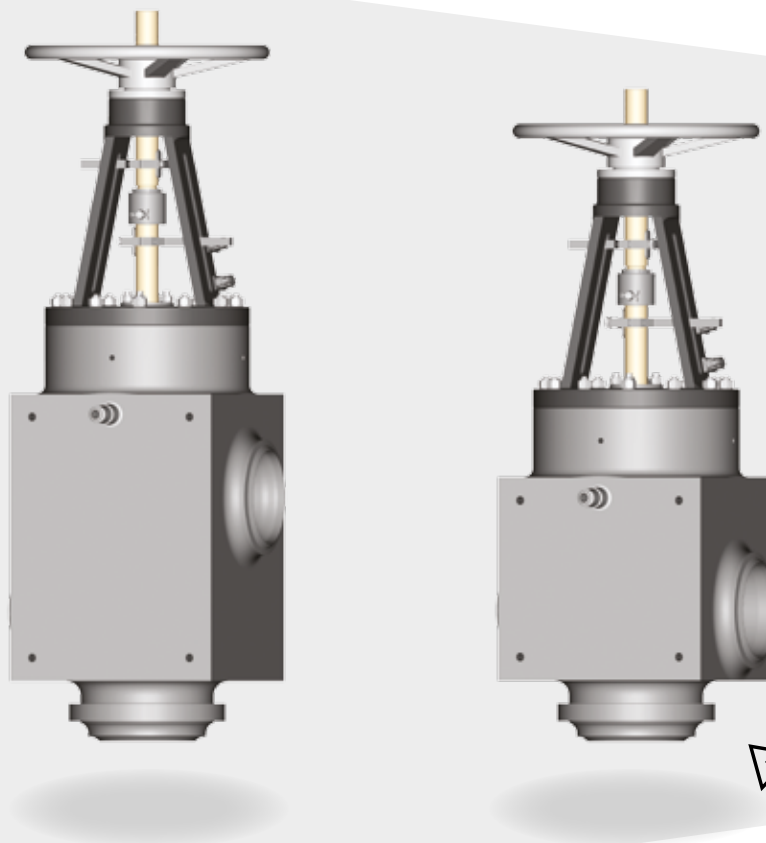


UV / SV



*Engineering
GREAT Solutions*

Preheater Bypass System

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://imibr.nt-rt.ru/> || irb@nt-rt.ru

UV / SV

To improve the efficiency of a steam generator, water is pressurised and pre-heated before being fed into the boiler. The heat exchangers in this feed water system need to be protected in case there is a rupture between the steam heating pipes and the water circulation, such a rupture would severely damage downstream equipment including the turbines. The pre-heater is protected by a bypass system that diverts the feed water around the heat exchanger in the event of a problem thus protecting the entire system.

Key features

- > Easy maintenance and long life
- > Monolithic body design to avoid weld joints and for cost effectiveness
- > Modular design of the valve to meet customer specifications and requirements
- > Inlet, outlet and bypass connections to match the dimensions and material of the pipework

Benefits

While in normal operation the feed water enters the inlet valve (UV), passes through the preheater and exits through the outlet valve (SV). In case of a pressure build-up in the preheater or in case of a leakage in the steam line, sensors will trip the bypass system and the feed water is diverted by the inlet valve (UV) around the pre-heater and out through the outlet valve (SV).

The main valves are medium actuated, i.e. they use the feed water pressure and flow to move the valves to the bypass position. There are pneumatic/manual periphery valves for triggering the system, bleeding

the system during commissioning and post maintenance and for adjusting the stroke speed of the main valves.

While in bypass mode the same pressure drop can be achieved as generated in the preheater.

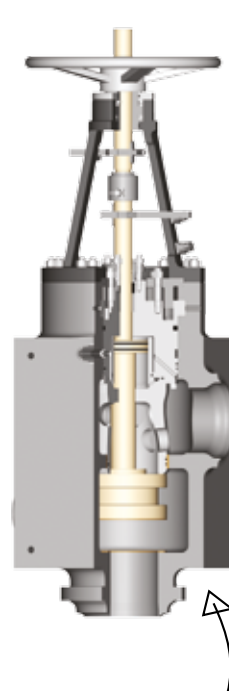
After commissioning is completed or after the valves trip, the valve position is set to normal manually using the integrated hand wheels and gags.

Application

The valves are positioned at the inlet (UV valve) and at the outlet (SV valve) of the preheater. Steam, which is tapped off the turbine, is used to heat up the feed water passing through the preheater. Whenever a pressure build-up in the preheater is detected or if there is a rupture in the draw-off steam line which might possibly cause the high pressure feed water to enter the turbine, the preheater bypass system is activated. This is achieved by sending a signal to the quick acting on/off valves

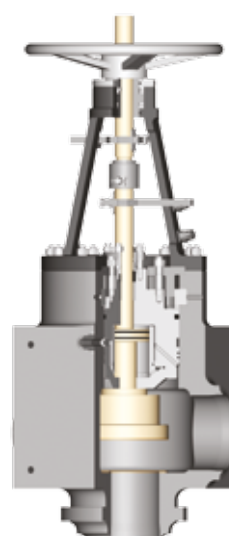
which are connected to the actuators of the UV and SV valve. On the signal, the quick action on-off valves open and drain the upper piston chambers of the actuators inside the UV and SV valves which cause them to change the flow direction from preheater (normal) mode into bypass mode. The stroking times of both valves are controlled by a throttling device which is located between the main valves and the quick acting on/off valves.

Self-actuated with simple manual reset



Streamlined interior for reduced pressure drop

Feedwater powered



Straight through bypass

Technical details

Body style

3-way type, self-actuating

Operating limits

Temperatures up to 400 °C
Inlet pressures up to 350 bar[a]

Interfaces

Butt-weld ends according to the customer's specification

Seat

Hard faced plug and seat

Bonnet

Self-sealing bonnet

Actuator

Feedwater powered actuator inside the valve body

Codes

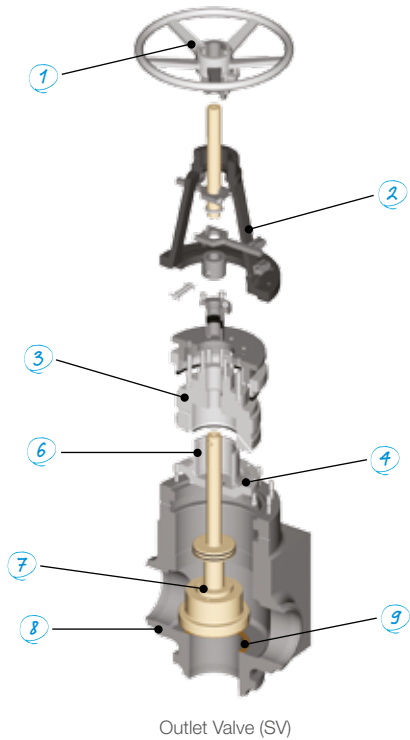
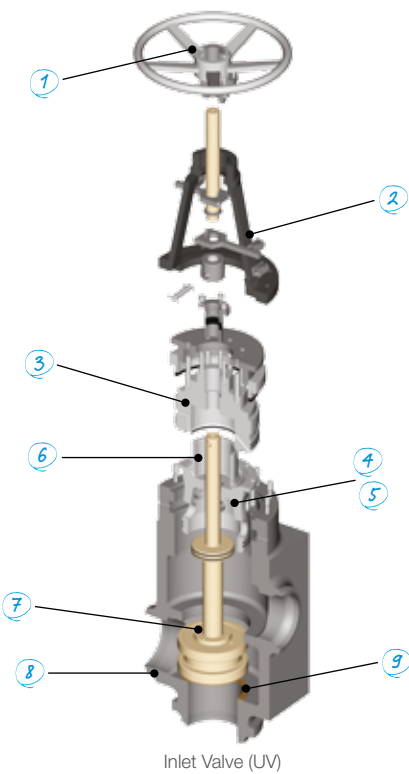
AD 2000, TRD, IBR, manufacturing acc. to ASME

Options

Manual control valve for on-site activation of the bypass mode
Additional limit switches for position indication

Product breakdown

Item	Designation
1.	Hand wheel
2.	Yoke
3.	Pressure seal / upper actuator chamber
4.	Actuator lower chamber
5.	PR stage (UV only)
6.	Piston area
7.	Stem with plug
8.	Valve body
9.	Seat



Materials

Typical materials	
Materials EN	ASTM
1.0460	SA 105
1.4515	SA 182 Gr. F1
1.6336	
Further materials on request	

Алматы (7273)495-231	Иваново (4932)77-34-06	Магнитогорск (3519)55-03-13	Ростов-на-Дону (863)308-18-15	Тольятти (8482)63-91-07
Ангарск (3955)60-70-56	Ижевск (3412)26-03-58	Москва (495)268-04-70	Рязань (4912)46-61-64	Томск (3822)98-41-53
Архангельск (8182)63-90-72	Иркутск (395)279-98-46	Мурманск (8152)59-64-93	Самара (846)206-03-16	Тула (4872)33-79-87
Астрахань (8512)99-46-04	Казань (843)206-01-48	Набережные Челны (8552)20-53-41	Санкт-Петербург (812)309-46-40	Тюмень (3452)66-21-18
Барнаул (3852)73-04-60	Калининград (4012)72-03-81	Нижний Новгород (831)429-08-12	Саратов (845)249-38-78	Ульяновск (8422)24-23-59
Белгород (4722)40-23-64	Калуга (4842)92-23-67	Новокузнецк (3843)20-46-81	Севастополь (8692)22-31-93	Улан-Удэ (3012)59-97-51
Благовещенск (4162)22-76-07	Кемерово (3842)65-04-62	Ноябрьск (3496)41-32-12	Саранск (8342)22-96-24	Уфа (347)229-48-12
Брянск (4832)59-03-52	Киров (8332)68-02-04	Новосибирск (383)227-86-73	Симферополь (3652)67-13-56	Хабаровск (4212)92-98-04
Владивосток (423)249-28-31	Коломна (4966)23-41-49	Омск (3812)21-46-40	Смоленск (4812)29-41-54	Челябинск (351)202-03-61
Владикавказ (8672)28-90-48	Кострома (4942)77-07-48	Орел (4862)44-53-42	Сочи (862)225-72-31	Череповец (8202)49-02-64
Владимир (4922)49-43-18	Краснодар (861)203-40-90	Оренбург (3532)37-68-04	Ставрополь (8652)20-65-13	Чита (3022)38-34-83
Волгоград (844)278-03-48	Красноярск (391)204-63-61	Пенза (8412)22-31-16	Сургут (3462)77-98-35	Якутск (4112)23-90-97
Вологда (8172)26-41-59	Курск (4712)77-13-04	Петрозаводск (8142)55-98-37	Сыктывкар (8212)25-95-17	Ярославль (4852)69-52-93
Воронеж (473)204-51-73	Курган (3522)50-90-47	Псков (8112)59-10-37	Тамбов (4752)50-40-97	
Екатеринбург (343)384-55-89	Липецк (4742)52-20-81	Пермь (342)205-81-47	Тверь (4822)63-31-35	

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://imibr.nt-rt.ru/> || irb@nt-rt.ru