

Feedwater control valve with pump spill back  
DN 25 - 100

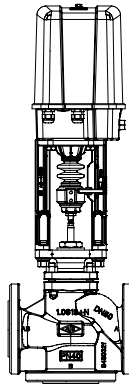
**ARI-STEVI® 453**

**Electric actuator**

**ARI-PREMIO 2,2-15 kN**

**ARI-PREMIO-Plus 2G 2,2-15 kN**

- Enclosure IP 65
- 2 torque switches
- Handwheel
- Additional options available, e.g. potentiometer



Page 2



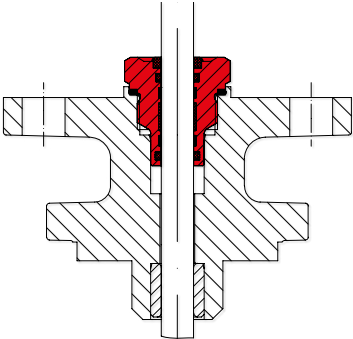
Fig. 453

**Features:**

- Compact design
- Precision guided stem
- Burnished stem
- Tapered seat ring
- 2 screwed seatrings
- Reducible kvs-values
- Rangeability 30 : 1
- Post guided plug
- EPDM sealing
- Travel indicator

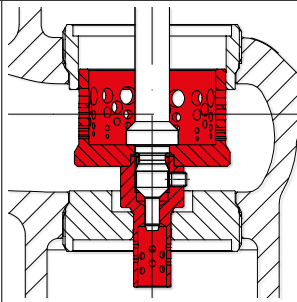
Figure	Nominal pressure	Material	Nominal diameter	Information / restriction of technical rules need to be observed!
35.453	PN40	1.0619+N	DN25 - 100	A production permission acc. to TRB 801 No. 45 is available. The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Other materials and versions on request.				Resistance and fitness must be verified, contact manufacturer for information (refer to Product overview and Resistance list).

**Stem sealing**

Fig. 453	standard
	
	<b>I. EPDM sealing</b> -10°C to 180°C

Pressure-temperature-ratings	Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart.
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acc. to manufacturers standard			-10°C to 120°C	150°C	180°C
1.0619+N	PN40	(bar)	40	38,1	36,2

Plug design standard		Guiding	Rangeability
<ul style="list-style-type: none"> <li>Perforated plug, metal seat</li> </ul>	<ul style="list-style-type: none"> <li>- Leakage class IV acc. to DIN EN 60534-4</li> <li>- Flow characteristic: AB --&gt; A equal percentage AB --&gt; B linear</li> </ul>	 <p>Stem and port guiding</p>	30 : 1

Operation
<p>The feedwater control valve regulates the flow of feedwater to the steam boiler. It is controlled by a level controller. The target of the control is to keep the level in the boiler constant. The feedwater control valve is normally built into the feed water pressure line. If the water level drops in the boiler, the electrical actuator PREMIO-Plus 2G adjusts a perforated plug in the valve. If the water level in the boiler rises, the perforated plug closes the seat.</p> <p>Once the feed water amount to the boiler falls below a certain amount, a further perforated plug opens the bypass valve. It ensures that the minimum amount, required for cooling and lubrication of the feed water pump, is always available.</p>

Necessary data for sizing	
Medium:	Feed water
Temperature:	..... [°C]
Inlet pressure:	..... [bar(g)] (Pump pressure )
After-pressure:	..... [bar(g)] (Boiler pressure)
Boiler capacity:	..... [t/h]
Pump delivery rate:	..... [m³/h]
Recirculation flowrat:	..... [m³/h]
Actuator PREMIO-Plus 2G:	
Voltage:	.....
Options:	.....
Closing pressures refer to page 5.	

Feedwater control valve with pump spill back with electric actuator ARI-PREMIO-Plus 2G

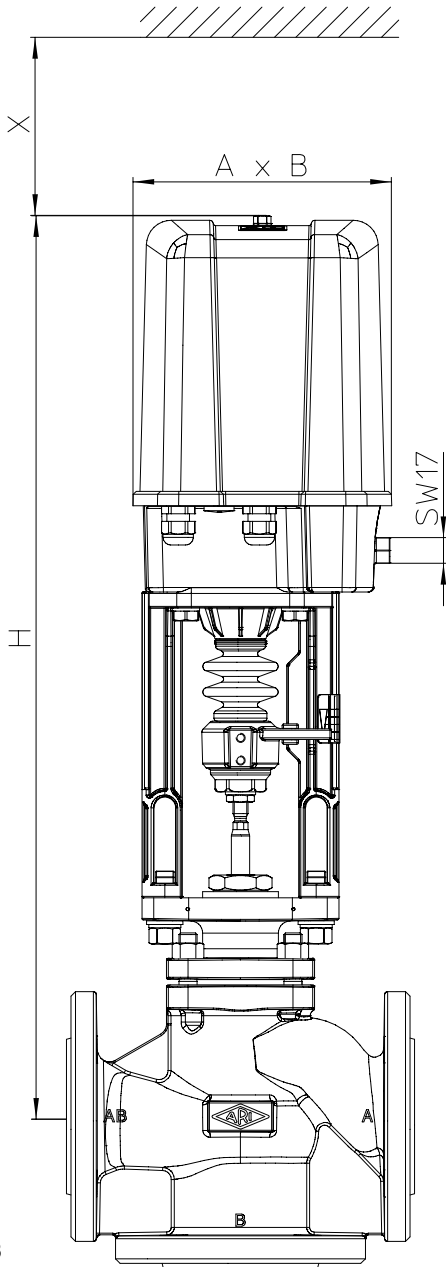


Fig. 453

Actuator data		2,2 - 5 kN	12 - 15 kN
A	(mm)	171	210
B	(mm)	156	184
C	(mm)	50	90
Ø D1	(mm)	90	130
X	(mm)	150	200

Technical data for actuator refer to data sheet ARI-PREMIO/PREMIO-Plus 2G

Heights and weights

DN				25	32	40	50	65	80	100
Fig. 453	2,2 kN	H	(mm)	563	589	595	593	--	--	--
		PN40	(kg)	14	18	22	25	--	--	--
	5 kN	H	(mm)	563	589	595	593	629	645	664
		PN40	(kg)	15	19	22	25	34	45	63
	12 kN	H	(mm)	737	763	769	767	803	819	838
		PN40	(kg)	20	23	27	30	39	49	68
	15 kN	H	(mm)	--	--	--	--	803	819	838
		PN40	(kg)	--	--	--	--	39	49	68

Further dimensions refer to page 6.

max. permissible closing pressures on flow-to-open and P2 = 0.  
 Note restrictions through pressure-temperature-ratings, refer to page 3.

DN			25					32				40				50				
Straight through	Kvs-value	(m³/h)	1	1,6	2,5	4	<b>6,3</b>	2,5	4	6,3	<b>10</b>	4	6,3	10	<b>16</b>	6,3	10	16	<b>25</b>	
	Seat-Ø A	(mm)	27					27				31	27		31	41	27	31	41	51
Bypass	Kvs-value	(m³/h)	0,1	0,16	0,25	0,40	<b>0,63</b>	0,25	0,4	0,63	<b>1,0</b>	0,4	0,63	1,0	<b>1,6</b>	0,63	1,0	1,6	<b>2,5</b>	
	Seat-Ø B	(mm)	8					8				8		13	8		13			
max. differential pressure <sup>1)</sup>		(bar)	40					40				40				40				
Travel		(mm)	20					20				20				20				
<b>2,2 kN</b>	Closing pressure	I. (bar)	15,4					15,4		11,6		15,4	11,6	6,4	15,4	11,6	6,4	4		
	Operating time	(s)	53					53				53				53				
	Operating speed <sup>2)</sup>	(mm/s)	0,38																	
<b>5 kN</b>	Closing pressure	I. (bar)	38,5					38,5		29,2		38,5	29,2	16,6	38,5	29,2	16,6	10,6		
	Operating time	(s)	53					53				53				53				
	Operating speed	(mm/s)	0,38																	
<b>12 kN</b>	Closing pressure	I. (bar)	40					40				40				40				27,2
	Operating time	(s)	53					53				53				53				
	Operating speed	(mm/s)	0,38																	

DN			65				80				100			
Straight through	Kvs-value	(m³/h)	10	16	25	<b>40</b>	16	25	40	<b>63</b>	25	40	63	<b>100</b>
	Seat-Ø A	(mm)	41	41	51	66	41	51	66	81	51	66	81	101
Bypass	Kvs-value	(m³/h)	1,0	1,6	2,5	<b>4</b>	1,6	2,5	4,0	<b>6,3</b>	2,5	4,0	6,3	<b>10</b>
	Seat-Ø B	(mm)	25				25				25			
max. differential pressure <sup>1)</sup>		(bar)	40				40				40			
Travel		(mm)	30				30				30			
<b>5 kN</b>	Closing pressure	I. (bar)	16,5	16,5	10,5	6,2	16,5	10,5	6,2	4	10,5	6,2	4	2,5
	Operating time	(s)	79				79				79			
	Operating speed	(mm/s)	0,38											
<b>12 kN</b>	Closing pressure	I. (bar)	40	40	27,1	16,1	40	27,1	16,1	10,6	27,1	16,1	10,6	6,8
	Operating time	(s)	79				79				79			
	Operating speed	(mm/s)	0,38											
<b>15 kN</b>	Closing pressure	I. (bar)	40	40	34,3	20,4	40	34,3	20,4	13,4	34,3	20,4	13,4	8,6
	Operating time	(s)	79				79				79			
	Operating speed	(mm/s)	0,38											

Further operating speeds: refer to data sheet ARI-PREMIO / PREMIO-Plus 2G

Operating time [s]=	Travel [mm]
	Operating speed [mm/s]

#### I. EPDM sealing

<sup>1)</sup> Max. differential pressure drop with flow

<sup>2)</sup> Based on a frequency of 50Hz the control speed and power consumption of the synchronous motors PREMIO 2,2kN are 20% higher at frequency of 60 Hz.

## Feedwater control valve with pump spill back

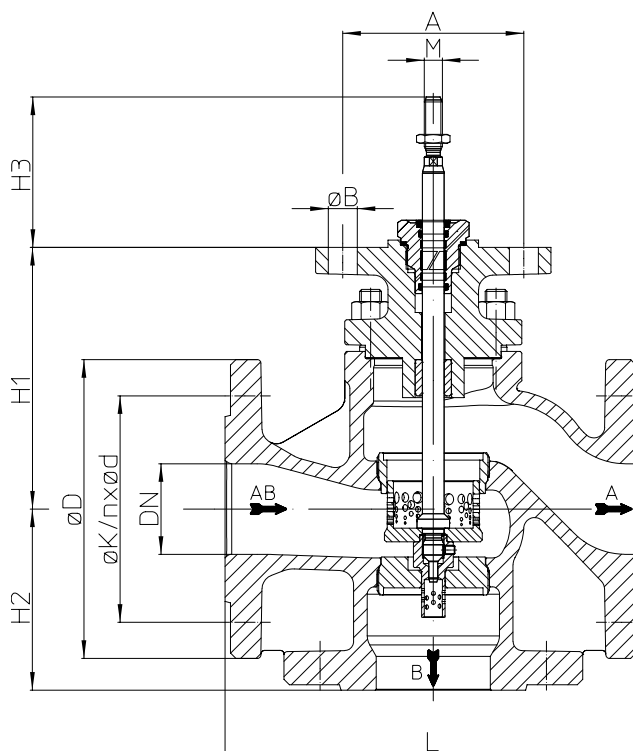


Fig. 453

DN	25	32	40	50	65	80	100
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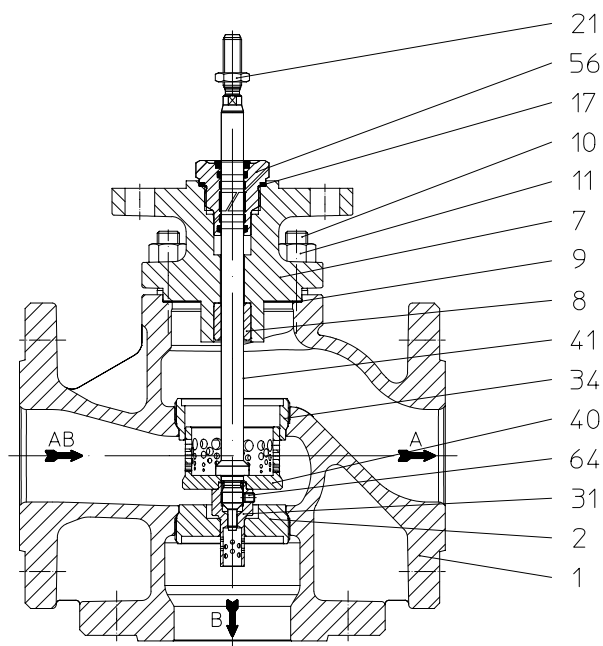
Dimensions			M10				M14 x 1,5		
M	Fig. 453	(mm)							
H1	Fig. 453	(mm)	115	141	147	154	181	197	216
H2	Fig. 453	(mm)	75	80	90	100	120	130	150
H3	Fig. 453	(mm)	83						
A	Fig. 453	(mm)	100						
ØB	Fig. 453	(mm)	2 x Ø 16						

Face-to-face dimension FTF series 1 according to DIN EN 558									
L	(mm)	160	180	200	230	290	310	350	

Flanges acc. to DIN EN 1092-1/-2									
ØD	PN40	(mm)	115	140	150	165	185	200	235
ØK	PN40	(mm)	85	100	110	125	145	160	190
n x Ød	PN40	(mm)	4 x 14	4 x 18	4 x 18	4 x 18	8 x 18	8 x 18	8 x 22

Weights									
Fig. 453	PN40	(kg)	9	13	16	19	28	39	57

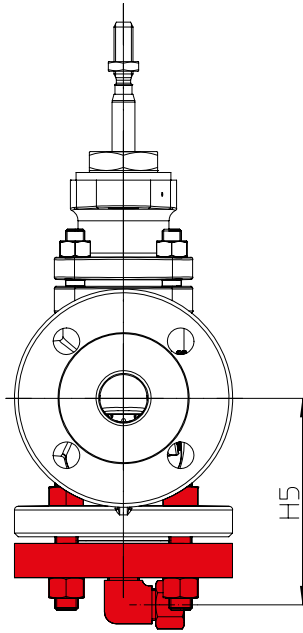
max. perm. closing forces									
Fig. 453		(kN)	12,7				29,5		



Pos.	Ers.	Description	Fig. 35.453
1		Body	GP240GH+N, 1.0619+N
2	x	Seat ring	X20Cr13+QT, 1.4021+QT (hardened)
7		Mounting bonnet	GP240GH+N, 1.0619+N
8		Guide bushing	X20Cr13+QT, 1.4021+QT (hardened)
9	x	Gasket	Pure graphite (CrNi laminated with graphite)
10		Studs	25CrMo4, 1.7218
11		Hexagon nuts	C35E, 1.1181
17	x	Sealing ring	Cu / Soft iron
21		Hexagon nuts	17H-A2G
31	x	Plug	X20Cr13+QT, 1.4021+QT
34	x	Seat ring	X20Cr13+QT, 1.4021+QT (hardened)
40	x	Plug	X20Cr13+QT, 1.4021+QT
41	x	Stem	X20Cr13+QT, 1.4021+QT
64		Grub screw	A2
<b>Stem sealing Fig. 453</b>			
56	x	EPDM sealing	X8CrNiS18-9, 1.4305 / EPDM
		↳ Spare parts	

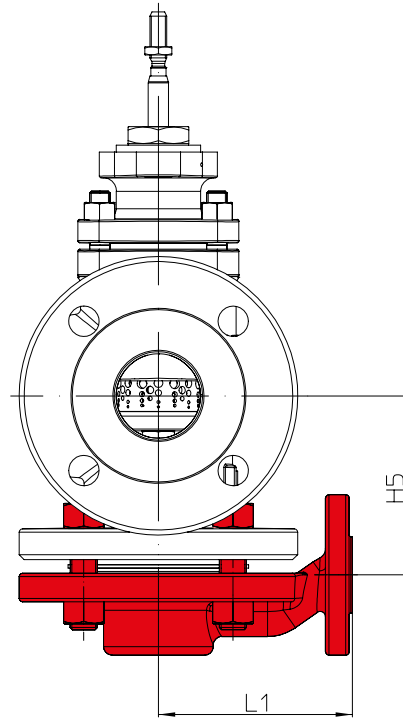
Options: Adapter flange (to make compatible to other design)

DN25 - 32



DN	25	32
<b>Dimensions</b>		
H5	(mm) 109	115
Connection Bypass	90°-elbow 1/2"	

DN40 / 50 / 80



DN	40	50	80
<b>Dimensions</b>			
L1	(mm) 115	115	155
H5	(mm) 111	106	190
Flange connection Bypass	DN15 PN40		DN40 PN40