

Pressure reducing valve in straightway form
DN 15 - 100

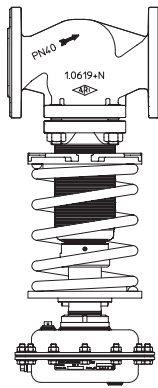
ARI-PREDU®

**Pressure reducing valve,
straight through
with diaphragm actuator DMA**

- Actuator with rolling diaphragm

Grey cast iron
SG iron
Cast steel

Fig. 701



Page 2

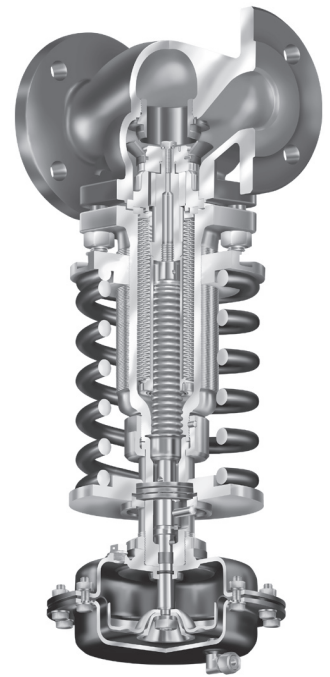


Fig. 701

Features:

- Compact design
- Exact and easy adjustment
- Diameter independent ranges
- 5 exchangeable actuator sizes
- 3 exchangeable spring sizes
- Pressure balanced by stainless steel bellow
- Spindle sealing via stainless steel bellow
- Tapered seat ring
- Screwed seat ring
- Construction without pillars
- Simple change of spring and actuator

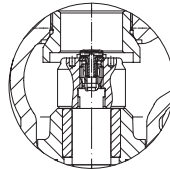
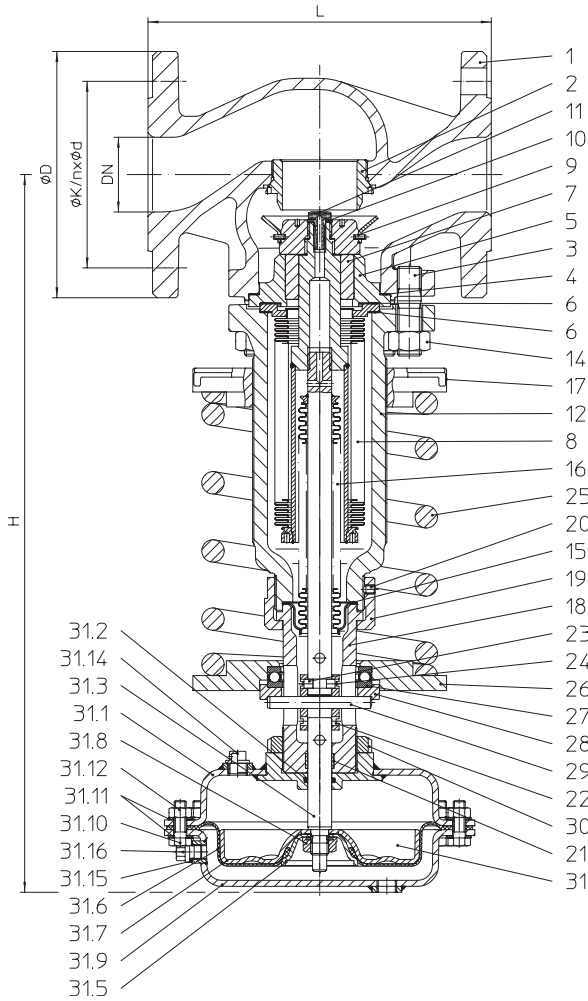
Pressure reducing valve, straight through with diaphragm actuator DMA

Figure	Nominal pressure	Material	Nominal diameter
12.701	PN16	EN-JL1040	DN15-100
22.701	PN16	EN-JS1049	DN15-100
23.701	PN25	EN-JS1049	DN15-100
34.701	PN25	1.0619+N	DN15-100
35.701	PN40	1.0619+N	DN15-100

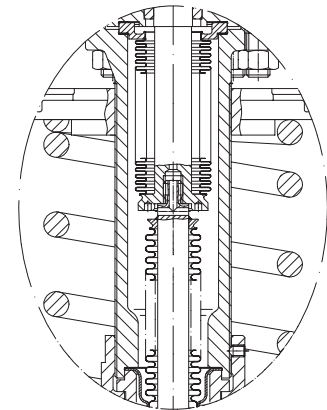
Selection of possible applications

 Industrial installations, processing technology, plant manufacturing, etc.
 (other applications on request)

Selection of possible flow media

 Steam, neutral gases, vapours and liquids, etc.
 (other flow media on request)


Disc DN 15 - 32



Bellows seal DN 15 - 40

Dimensions and weights

		DN	15	20	25	32	40	50	65	80	100
L		(mm)	130	150	160	180	200	230	290	310	350
H	DMA 40	(mm)	435	435	440	440	480	480	485	530	550
	DMA 80	(mm)	435	435	440	440	480	480	485	530	550
	DMA 160	(mm)	440	440	440	440	480	480	490	530	550
	DMA 250	(mm)	455	455	460	460	500	500	505	545	585
	DMA 400	(mm)	495	495	500	500	540	540	545	585	610
Weights	DMA 40	(kg)	17	18	19	21	26	32	39	61	79
	DMA 80	(kg)	18	19	20	22	27	33	40	62	80
	DMA 160	(kg)	19	20	21	23	28	34	41	63	81
	DMA 250	(kg)	21	22	23	25	30	36	43	65	83
	DMA 400	(kg)	26	27	28	30	35	41	48	70	85
Kvs-value	(m ³ /h)	3,2	5	8	12,5	20	32	50	80	125	
Seat-ø	(mm)	18	22	25	32	40	50	65	80	100	
Max. differential pressure drop	(bar)	40	40	25	25	25	25	20	20	20	

Standard-flange dimensions refer to page 5.

Face-to-face dimension FTF series 1 according to DIN EN 558

Downstream-pressure ranges	(barg)	0,2 - 0,6	0,5 - 1,2	0,8 - 2,5	2 - 5	4,5 - 10	8 - 16
Actuator DMA	(cm²)	400	250	160	80	40	
Actuator PN-max.	(barg)	1,6	2,5	6	10	20	
Spring end-No.		04	04	07	07	07	10

Parts

Pos.	Description	Fig. 12.701	Fig. 22.701 Fig. 23.701	Fig. 34.701 Fig. 35.701
1	Body	EN-JL1040, EN-GJL-250	EN-JS1049, EN-GJS-400-18U-LT	GP240GH+N, 1.0619+N
2	Screwed seat ring *	X20Cr13+QT, 1.4021+QT		
3	Stud	25CrMo4, 1.7218		
4	Gasket *	Pure graphite (CrNi laminated with graphite)		
5	Bush housing	EN-JS1049, EN-GJS-400-18U-LT / EN-JM1130, EN-GJMB-350-10		
6	Gasket *	Pure graphite (CrNi laminated with graphite)		
7	Guide bush	X20Cr13+QT, 1.4021+QT		
8	Balanced-bellow-unit *	X6CrNiMoTi17-12-2, 1.4571		
9	Disc unit *	X20Cr13+QT, 1.4021+QT		
10	Washer	A4		
11	Hexagon screw	A4-70		
12	Bonnet Fig. 700 closed	EN-JS1049, EN-GJS-400-18U-LT		
14	Hexagon nut	C35E, 1.1181		
15	Gasket *	Pure graphite (CrNi laminated with graphite)		
16	Sealing-bellow-unit *	X6CrNiMoTi17-12-2, 1.4571		
17	Adjusting plate	EN-JS1049, EN-GJS-400-18U-LT		
18	Head	EN-JS1030, EN-GJS-400-15		
19	Screw joint	11SMn30+C, 1.0715+C		
20	Thread pin	45 H - A2G		
21	Guide bush	PTFE-25%C		
22	Guide coupling	X20Cr13+QT, 1.4021+QT		
23	Cylindrical balls	102Cr6, 1.2067		
24	Securing wire	X12CrNi17-7, 1.4310		
25	Spring *	51CrV4, 1.8159		
26	Spring plate	S235JR, 1.0037		
27	Axial bearing	102Cr6, 1.2067		
28	Pressure plate	11SMn30+C, 1.0715+C		
29	Parallel pin	St		
30	Lock nut	5.8 - A2G		
31	Pneumatic Actuator DMA *			
31.1	Diaphragm housing	DD13+QT, 1.0335+QT / EN-JS1049, EN-GJS-400-18U-LT		
31.2	O-ring	NBR / EPDM		
31.3	Spindle DMA	X6CrNiMoTi17-12-2, 1.4571		
31.5	Diaphragm flange	11SMn30+C, 1.0715+C / DD13+QT, 1.0335+QT		
31.6	Rolling diaphragm *	NBR / EPDM		
31.7	Diaphragm plate	DD13+QT, 1.0335+QT / 11SMn30+C, 1.0715+C		
31.8	Collar nut *	8-A4G		
31.9	Diaphragm hood	DD13+QT, 1.0335+QT / EN-JS1049, EN-GJS-400-18U-LT		
31.10	Hexagon screw	8.8-A4G		
31.11	Washer	St-A4G		
31.12	Hexagon nut	8-A4G		
31.14	Vent plug	Polyäthylen (nature)		
31.15	Sealing ring	Al		
31.16	Plug	A4		

* Spare parts

Information / restriction of technical rules need to be observed!

Operating instructions can be ordered by phone +49 (0)5207 / 994-0 or fax +49 (0)5207 / 994-158 or -159.

ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.

A production allowance acc. to TRB 801 No. 45 exists (acc. to TRB 801 No. 45 EN-JL1040 is not allowed.)

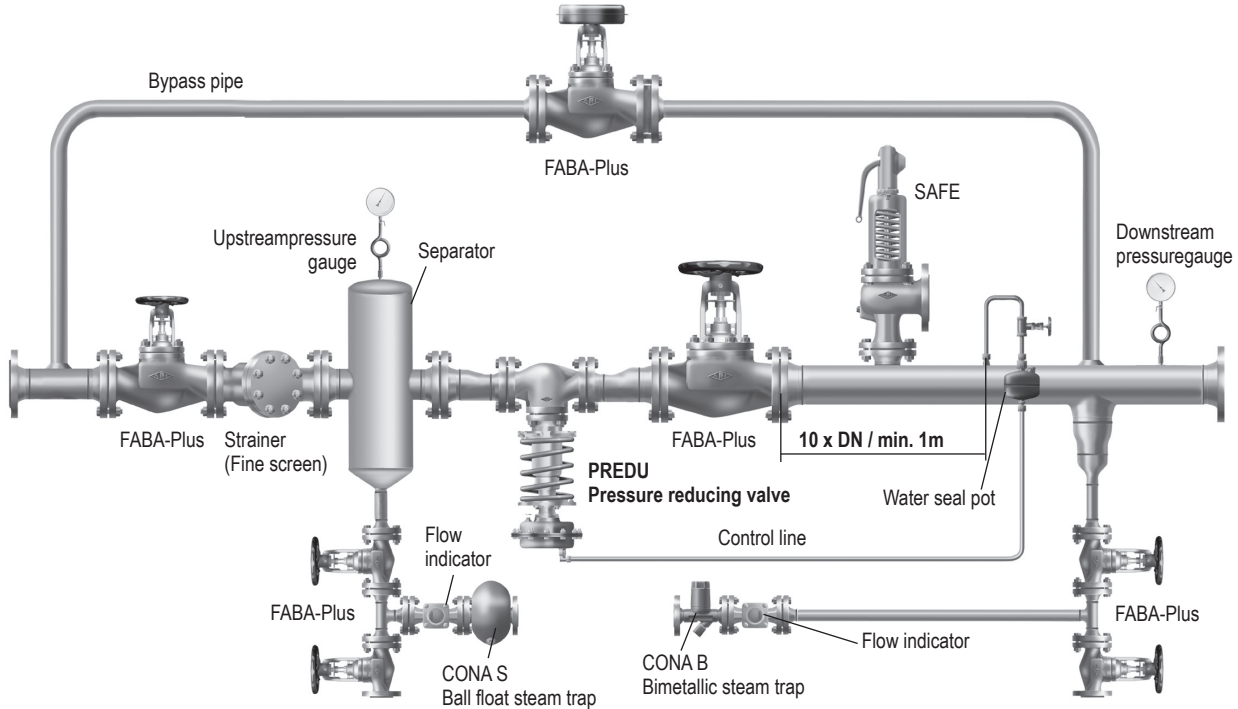
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Application

The pressure reducing valve is a direct acting proportional regulator, self operated; which regulates a high upstream pressure to a smaller downstream pressure. The downstream pressure is regulated, this means the valve closes when the downstream pressure rises.

Operating fields are to regulate steam, neutral gases, vapours and liquids. With steam and liquids, having temperatures higher than the allowable working temperatures a water seal pot must be installed in the control line (to protect actuator diaphragm).(refer to page 6).

Installation in the control line can be seen in the system drawing:



Sizing

For the calculation you have the program „ARI-VASI“ (Program part „Pressure reducing valves“). After giving in the process data, the Fig.-No. and size is recommended out of the integrated data bank. The diameter of the piping in front and behind of the pressure reducing valve can also be calculated with the max. allowable flow velocities with „ARI-VASI“.

The necessary downstream pressure gives the needed pressure range. Because the regulation tolerance at the end of the range is smaller, the smaller range must be used, in case of a range overlapping. For example: Downstream pressure 2,4 bar(g), choose actuator range 0,8 - 2,5 bar(g), although 2-5 bar(g) could be used.

The safety valve used to secure the downstream pressure must have an adequate distance between set pressure and downstream pressure. The max. possible capacity of the pressure reducing valve is used to select the safety valve at it's set pressure. The max. possible capacity has to be calculated with p1 (= max. possible upstream pressure), p2 (= set pressure of the safety valve) and the Kvs-value of the pressure reducing valve with „ARI-VASI“. With this found capacity you can, with „ARI-VASI“ (Program part: Safety valves), select the safety valve, and with the pressure reducing valves and other valves, administer them under a project.

Important: If not secured that the bypass valve has a larger capacity than the pressure reducing valve, or that it can be open parallel, then the extra capacity must be considered for the safety valve sizing.



Standard-flange dimensions

Flangeholes / -thickness tol. acc. to DIN 2533/2544/2545

DN		(mm)	15	20	25	32	40	50	65	80	100
PN16	ØD	(mm)	95	105	115	140	150	165	185	200	220
PN16	ØK	(mm)	65	75	85	100	110	125	145	160	180
PN16	n x Ød	(mm)	4x14	4x14	4x14	4x18	4x18	4x18	4x18	8x18	8x18
PN25	ØD	(mm)	95	105	115	140	150	165	185	200	235
PN25	ØK	(mm)	65	75	85	100	110	125	145	160	190
PN25	n x Ød	(mm)	4x14	4x14	4x14	4x18	4x18	4x18	8x18	8x18	8x22
PN40	ØD	(mm)	95	105	115	140	150	165	185	200	235
PN40	ØK	(mm)	65	75	85	100	110	125	145	160	190
PN40	n x Ød	(mm)	4x14	4x14	4x14	4x18	4x18	4x18	8x18	8x18	8x22

Pressure-temperature-ratings acc. to DIN EN 1092-2

Material			-60°C to <-10°C*	-10°C to 120°C	150°C	200°C	250°C	300°C	350°C
EN-JL1040	16	(bar)	--	16	14,4	12,8	11,2	9,6	--
EN-JS1049	16	(bar)	on request	16	15,5	14,7	13,9	12,8	11,2
EN-JS1049	25	(bar)	on request	25	24,3	23	21,8	20	17,5

Pressure-temperature-ratings acc. to manufacturers standard

Material			-60°C to <-10°C*	-10°C to 120°C	150°C	200°C	250°C	300°C	350°C
1.0619+N	25	(bar)	18,7	25	23,9	22	20	17,2	16
1.0619+N	40	(bar)	30	40	38,1	35	32	28	25,7

Intermediate values for max. permissible operational pressures can be determined by linear interpolation of the given temperature / pressure chart.

Please indicate when ordering

- Figure-No.
- Nominal diameter
- Nominal pressure
- Body material
- Disc version
- Kvs-value
- Pressure range
- Actuator
- Special design / accessories

Example:

Figure 35.701; nominal diameter DN 100; nominal pressure PN 40; body material 1.0619+N; metal seal; Kvs 125; 0,8 - 2,5 bar; ARI-DMA 160 with NBR-diaphragm; water seal pot size. 1.

 Dimensions in mm
 Weights in kg
 Pressures in barg (gauge)
 1 bar $\hat{=}$ 10⁵ Pa $\hat{=}$ 0,1 MPa
 Kvs in m³/h

Diaphragm-Actuator DMA 40 - DMA 400

- Rolling diaphragm
- Connection through a central thread
- Spindle connection with a fast coupling
- Delivered with a flow restrictor and 90°-elbow

Material (Diaphragm):

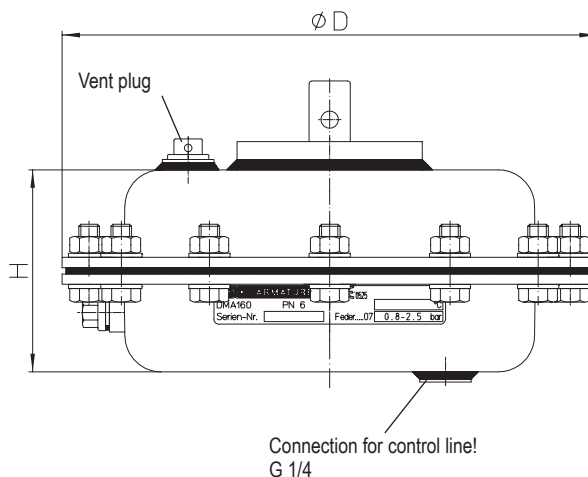
EPDM -40°C to +130°C

NBR -40°C to +100°C

Selection of possible applications:

- Neutral gases, Vapours and liquids

Actuator		DMA 40	DMA 80	DMA 160	DMA 250	DMA 400
ØD	(mm)	140	170	210	250	300
H	(mm)	75	75	80	90	135



Water seal pot

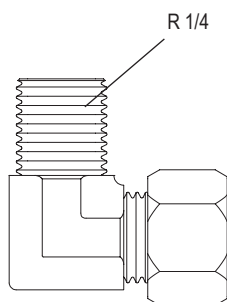
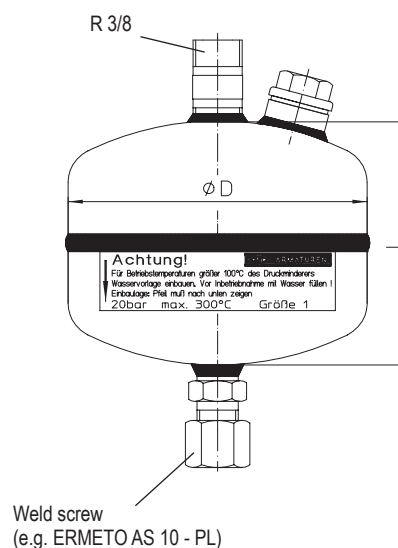
(for media temperatures higher than the allowed diaphragm temperature)

- Delivered with a funnel

Selection of possible applications:

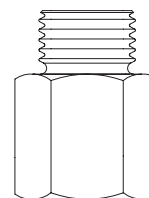
- Steam
- Hot water
- Neutral liquids

Actuator		DMA 40	DMA 80	DMA 160	DMA 250	DMA 400
Size		1			2	
ØD	(mm)	102		140		
L	(mm)	83		110		
V	(dm ³)	0,6		1,2		



90°-elbow

(e.g. ERMETO WE10-LLR)



Flow restrictor

G 1/4 / G 1/4