SANITARY PRESSURE REDUCING VALVES
P163

DESCRIPTION

The ADCAPure P163 is a series of inline direct acting, diaphragm sensing pressure reducing valves.
These regulators, available with spring or dome-loading, are designed for use with clean steam, compressed air, water and other gases or liquids compatible with the construction materials and valve design.

MAIN FEATURES

Spring or dome-loading.
Non-rising adjustment knob.
Compact inline design with clamped body.
FDA / USP Class VI compliant seals.
Completely machined from bar stock material, no castings or forgings are used.

STANDARD SURFACE FINISH

Internal wetted parts: ≤ 0,51 µm Ra – SF1.
External: ≤ 0,76 µm Ra – SF3.
Other surface conditions see TIS.GIA – General information ADCAPure.
Ultrasonic cleaning.

OPTIONS:
Leakage line connection.
Dome-loading.
Top cap (adjustment screw with cover).
Gauge connection on body.
Lock system, allows inline clean-in-place (CIP) and sterilization-in-place (SIP) operations.
Bottom cover with drain connection.
Different soft sealings for liquids and gases.
Degreased for oxygen application.

USE:
Clean steam, compressed air, water and other gases and liquids compatible with the construction.

AVAILABLE MODELS:
P163.

SIZES:
1/2" to 2"; DN 15 to DN 50.

REGULATING RANGES:
0,8 to 1,5 bar; 1 to 3 bar; 1,5 to 5 bar.

CONNECTIONS:
ASME BPE, DIN and ISO clamp ferrules or tube weld (ETO) ends. Others on request.

PACKAGING:
Assembling and packaging in a clean room certified according to ISO 14644-1.
The product is end capped and sealed with recyclable thermo-shrinkable plastic film, to avoid contamination.

INSTALLATION:
Horizontal installation.
See IMI – Installation and maintenance instructions.

CE MARKING – GROUP 2 (PED – EUROPEAN DIRECTIVE)	
PN 10	**CATEGORY**
1/2" to 2" – DN 15 to 50	SEP

LIMITING CONDITIONS *	
Maximum allowable pressure	10 bar
Maximum upstream pressure	8 bar
Maximum downstream pressure	5 bar
Minimum downstream pressure **	0,8 bar
Maximum operating temperature ***	180 ºC

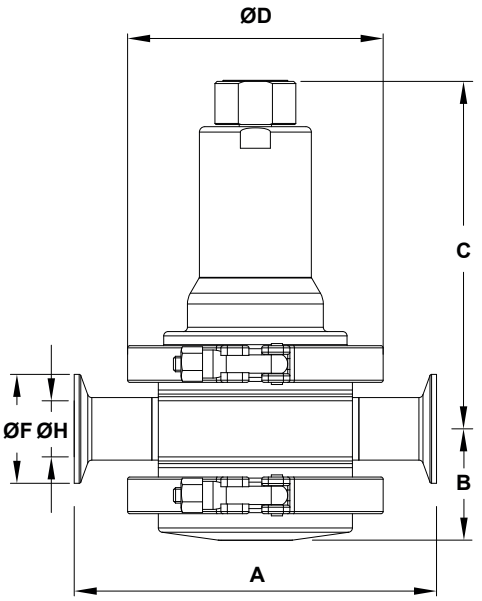
* Other limits on request. Maximum operating conditions may be limited by the valve end connections due to normative restrictions.
** For tight shut off, with adjustment spring relaxed, ensure a minimum downstream pressure of 0,2 bar.
*** See "Ordering Codes" table for restrictions.

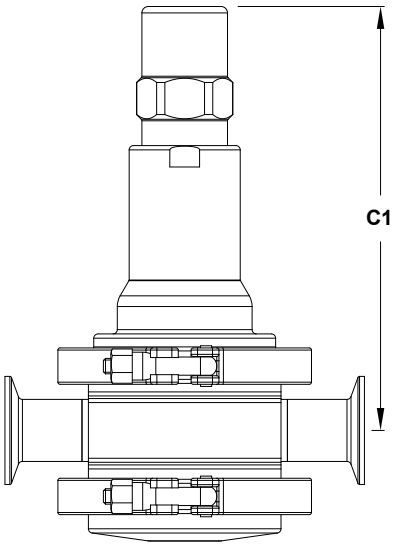
FLOW RATE COEFFICIENTS (m³/h)																
SIZE	ASME BPE					DIN						ISO				
	1/2"	3/4"	1"	11/2"	2"	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 15	DN 20	DN 25	DN 32	DN 40
Kvs	1,3	3	4,2	7	13	2,1	3	4,2	4,2	7	13	2,1	4,2	4,2	7	7

OPTIONS

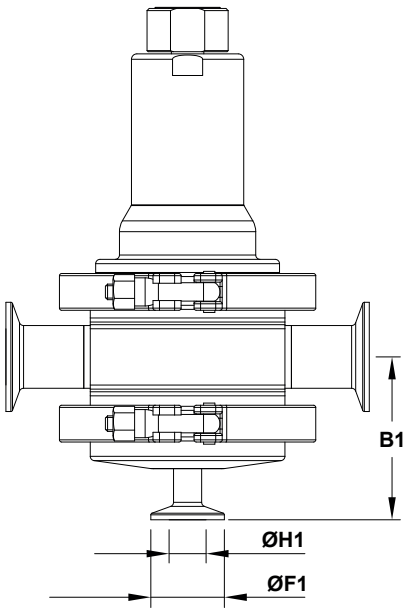
LEAKAGE LINE CONNECTION	DOME-LOADING	TOP CAP
		
GAUGE CONNECTION	**LOCK SYSTEM**	**BOTTOM COVER WITH DRAIN CONNECTION**
		

DIMENSIONS

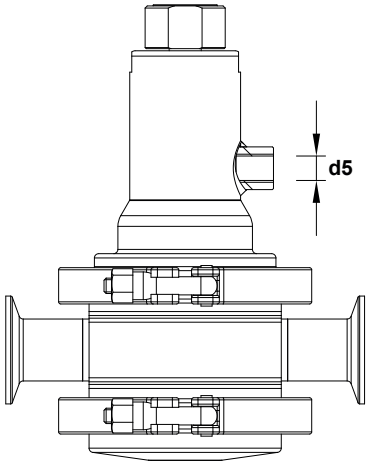




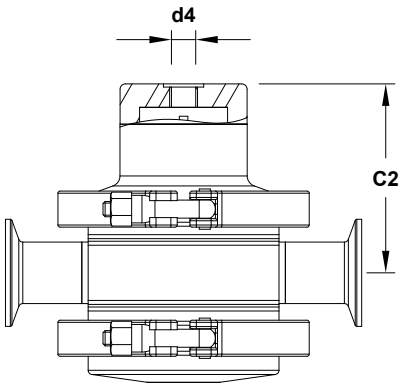
Optional top cap



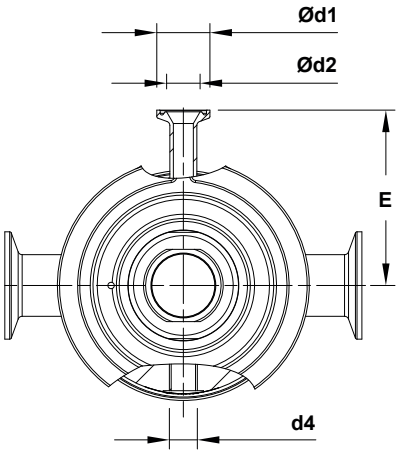
Optional bottom cover with drain connection



Optional leakage line connection



Optional dome loading



Optional gauge connection

DIMENSIONS – ASME BPE (mm)

SIZE	A	B	B1	C	C1	C2	ØD	Ød1	Ød2	d3	d4	d5	E	ØF	ØF1	ØH	ØH1	WGT. (kg)
1/2"	153	47	70	156	203	84	119	25	15,75	1/4"	1/4"	1/4"	83	25	25	9,4	9,4	5
3/4"	153	51	74	160	207	88	119	25	15,75	1/4"	1/4"	1/4"	83	25	25	15,8	9,4	5,6
1"	153	54	77	163	210	91	119	25	15,75	1/4"	1/4"	1/4"	83	50,4	25	22,1	9,4	5,7
11/2"	170	71	95	204	257	124	134	25	15,75	1/4"	1/4"	1/4"	96	50,4	25	34,8	9,4	9,8
2"	170	74	99	207	254	127	134	25	15,75	1/4"	1/4"	1/4"	96	63,9	25	47,5	9,4	9,8

DIMENSIONS – DIN (mm)

SIZE	A	B	B1	C	C1	C2	ØD	Ød1	Ød2	d3	d4	d5	E	ØF	ØF1	ØH	ØH1	WGT. (kg)
DN 15	153	51	74	160	207	88	119	25	15,75	1/4"	1/4"	1/4"	83	34	34	16	10	5,6
DN 20	153	49	72	158	205	86	119	25	15,75	1/4"	1/4"	1/4"	83	34	34	20	10	5,3
DN 25	168	52	75	161	208	89	119	25	15,75	1/4"	1/4"	1/4"	83	50,5	34	26	10	5,6
DN 32	168	54	77	163	210	91	119	25	15,75	1/4"	1/4"	1/4"	83	50,5	34	32	10	5,8
DN 40	185	70	94	202	249	122	134	25	15,75	1/4"	1/4"	1/4"	96	50,5	34	38	10	9,5
DN 50	185	74	98	206	253	126	134	25	15,75	1/4"	1/4"	1/4"	96	64	34	50	10	9,8

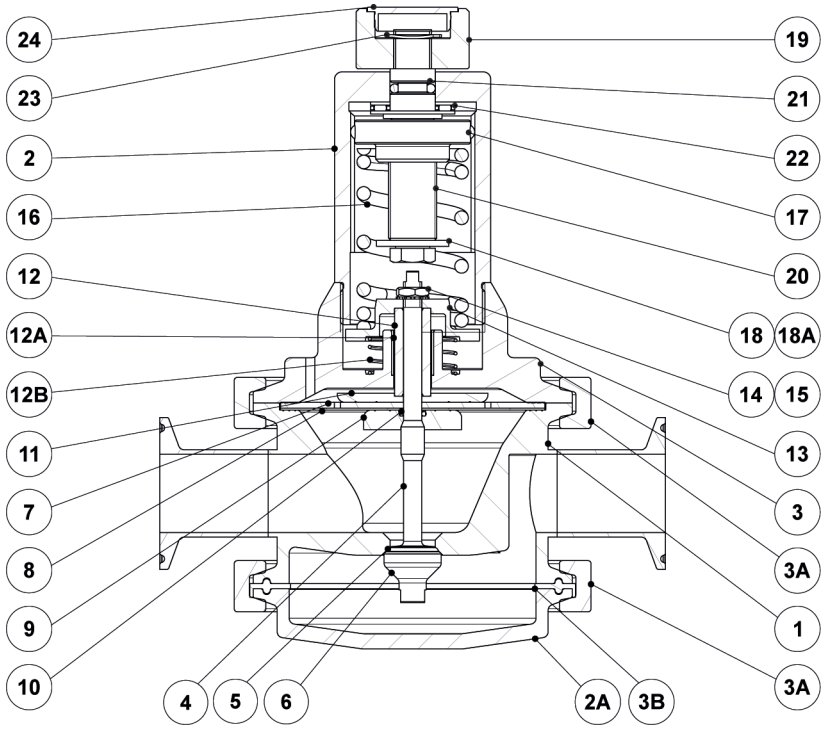
Remarks: Clamp ferrules according to DIN 32676-A. Tube weld (ETO) according to DIN 11866-A (DIN 11850-2).

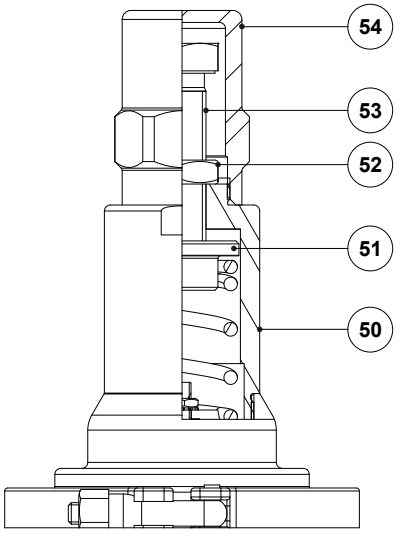
DIMENSIONS – ISO (mm)

SIZE	A	B	B1	C	C1	C2	ØD	Ød1	Ød2	d3	d4	d5	E	ØF	ØF1	ØH	ØH1	WGT. (kg)
DN 15	168	50	73	159	206	87	119	25	15,75	1/4"	1/4"	1/4"	83	50,5	25	18,1	10,3	5,4
DN 20	168	53	76	162	209	90	119	25	15,75	1/4"	1/4"	1/4"	83	50,5	25	23,7	10,3	5,6
DN 25	168	55	78	164	211	92	119	25	15,75	1/4"	1/4"	1/4"	83	50,5	25	29,7	10,3	6
DN 32	185	69	93	202	249	122	134	25	15,75	1/4"	1/4"	1/4"	96	64	25	38,4	10,3	9,6
DN 40	185	76	100	206	253	126	134	25	15,75	1/4"	1/4"	1/4"	96	64	25	44,3	10,3	10

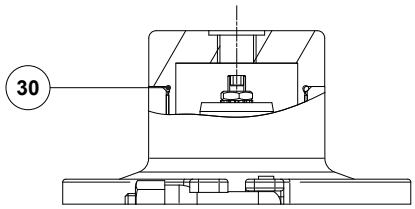
Remarks: Clamp ferrules according to DIN 32676-B. Tube weld (ETO) according to DIN 11866-B (ISO 1127).

MATERIALS

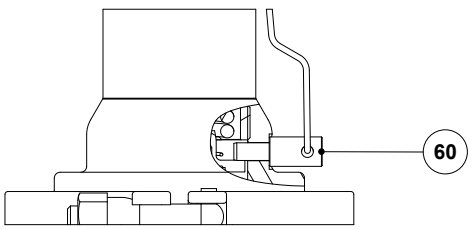




Optional top cap



Optional dome-loading



Optional lock system

MATERIALS		
POS. No.	**DESIGNATION**	**MATERIAL**
1	Valve body	AISI 316L / 1.4404
2	Cover	AISI 316L / 1.4404
2A	Bottom cover	AISI 316L / 1.4404
3	Intermediate flange	AISI 316L / 1.4404
3A	Clamp	AISI 316 / 1.4401
3B	* Gasket	** PTFE/FPM Envelope
4	* Valve stem	AISI 316L / 1.4404
5	* Valve seal	** EPDM; PTFE; FPM
6	* Valve plug	AISI 316L / 1.4404
7	* Upper diaphragm	EPDM
8	* Lower diaphragm	PTFE (Gylon)
9	Lower diaphragm plate	AISI 316L / 1.4404
10	* O-ring	** EPDM
11	Upper diaphragm plate	AISI 316L / 1.4404
12	Stem guide	AISI 316L / 1.4404
12A	Plain bearing	Bronze
12B	Spring	AISI 302 / 1.4300
13	Spring plate	AISI 316L / 1.4404
14	Nut	Stainless steel A2-70
15	* Washer	Stainless steel A2
16	* Adjustment spring	AISI 302 / 1.4300
17	Top spring plate	AISI 316L / 1.4404
18	Washer	Stainless steel A2
18A	Bolt	Stainless steel A2-70
19	Adjustment knob	AISI 316L / 1.4404
20	Adjustment screw	Brass
21	O-ring	NBR
22	Bearing	Corrosion resistant steel
23	Shaft ring	Stainless steel
24	Cover nut	Plastic
30	* O-ring	EPDM
50	Cover	AISI 316L / 1.4404
51	Spring guide	Brass
52	Lock nut	Stainless steel A2-70
53	Adjustment screw	Stainless steel A2-70
54	Top cap	AISI 316L / 1.4404
60	Locking pin	AISI 316L / 1.4404

* Available spare parts. ** Others on request.
Remarks: FDA / USP Class VI seals certificate on request.
All valves have a serial number. In case of non-standard valves, this number must be supplied if spare parts are ordered.

ORDERING CODES P163

VALVE MODEL	P63	1	4	1	T	M	I	X	X	X	DI	15	
P163 – AISI 316L / 1.4404 diaphragm sensing press. reducing valve without drain	**P63**												
P163 – AISI 316L / 1.4404 diaphragm sensing press. reducing valve with drain	**P63D**												
VALVE SERIES													
Series 1		**1**											
REGULATING RANGE													
0,8 to 1,5 bar			**4**										
1 to 3 bar			**5**										
1,5 to 5 bar			**6**										
0,8 to 5 bar (dome-loading) **(a)**			**A**										
FLOW RATE COEFFICIENT													
Kvs 1,3 (only applicable to ASME BPE 1/2" size)				**1**									
Kvs 2,1 (applicable to sizes DIN DN 15 and ISO DN 15)				**2**									
Kvs 3 (applicable to sizes ASME BPE 3/4" and DIN DN 20)				**3**									
Kvs 4,2 (applicable to sizes ASME BPE 1", DIN DN 25 to DN 32 and ISO DN 20 to DN 25)				**4**									
Kvs 7 (applicable to sizes ASME BPE 11/2", DIN DN 40 and ISO DN 32 to DN 40)				**6**									
Kvs 13 (applicable to sizes ASME BPE 2" and DIN DN 50)				**8**									
DIAPHRAGM													
PTFE (Gylon)					**T**								
EPDM (non-standard) – Tmax 150 ºC					**E**								
VALVE SEALING (b)													
Metal to metal (non-standard, except in ASME BPE 1/2" size)						**M**							
EPDM – Tmax 150 ºC (180 ºC with steam and hot water)						**E**							
PTFE						**T**							
FPM / Viton (USP Class VI on request)						**V**							
ADJUSTMENT KNOB, TOP CAP AND LEAKAGE LINE CONNECTION													
Stainless steel adjustment knob							**I**						
Top cap (adjustment screw with cover)							**T**						
Stainless steel adjustment knob w/ ISO 228 G 1/4" leakage line connection							**L**						
Stainless steel adjustment knob w/ 1/4" NPT leakage line connection							**M**						
Top cap (adjustment screw with cover) w/ ISO 228 G 1/4" leakage line connection							**U**						
Top cap (adjustment screw with cover) w/ 1/4" NPT leakage line connection							**V**						
Dome-loading – ISO 228 G 1/4" **(c)**							**X**						
Dome-loading – 1/4" NPT **(c)**							**C**						
GAUGE CONNECTIONS													
Without gauge connections								**X**					
Tri-clamp gauge connection on the left side (relative to flow direction) – downstream pressure								**7**					
Tri-clamp gauge connection on the right side (relative to flow direction) – downstream pressure								**6**					
Tri-clamp gauge connections on both sides – downstream pressure								**5**					
Threaded gauge connection on the left side (relative to flow direction) – downstream pressure – ISO 228 G 1/4"								**4**					
Threaded gauge connection on the right side (relative to flow direction) – downstream pressure – ISO 228 G 1/4"								**3**					
Threaded gauge connections on both sides – downstream pressure – ISO 228 G 1/4"								**2**					
Threaded gauge connection on the left side (relative to flow direction) – downstream pressure – 1/4" NPT								**W**					
Threaded gauge connection on the right side (relative to flow direction) – downstream pressure – 1/4" NPT								**Y**					
Threaded gauge connections on both sides – downstream pressure – 1/4" NPT								**Z**					
SURFACE FINISH (d)													
Standard surface finish									**X**				
Mirror mechanical polished external surfaces (SF1)									**P**				
Electropolished internal wetted parts (SF5)									**E**				
SPECIAL FEATURES													
None										**X**			
Degreased for oxygen										**O**			
CIP / SIP lock system										**C**			
PIPE CONNECTIONS													
Clamp ferrule ASME BPE											**D**		
Clamp ferrule DIN (DIN 32676-A)											**F**		
Clamp ferrule ISO (DIN 32676-B)											**E**		
Tube weld (ETO) according to ASME BPE											**DI**		
Tube weld (ETO) according to DIN 11866-A (DIN 11850-2)											**FI**		
Tube weld (ETO) according to DIN 11866-B (ISO 1127)											**EI**		
SIZE													
1/2" or DN 15												**15**	
3/4" or DN 20												**20**	
1" or DN 25												**25**	
DN 32												**32**	
11/2" or DN 40												**40**	
2" or DN 50												**50**	
SPECIAL CONSTRUCTION / ADDITIONAL OPTIONS													
Full description or additional codes have to be added in case of a non-standard combination													**E**

(a) The loading control pressure can be up to a maximum of 0,2 bar above the required downstream pressure. **(b)** ASME BPE 1/2" size is only available with metal to metal sealing. **(c)** Mandatory in case of dome-loading. **(d)** Consult TIS.GIA – General information ADCAPure – for further details and other surface finish options.