



## BACK PRESSURE REGULATOR LPS® F food conformity design angle design DN 25

### Application

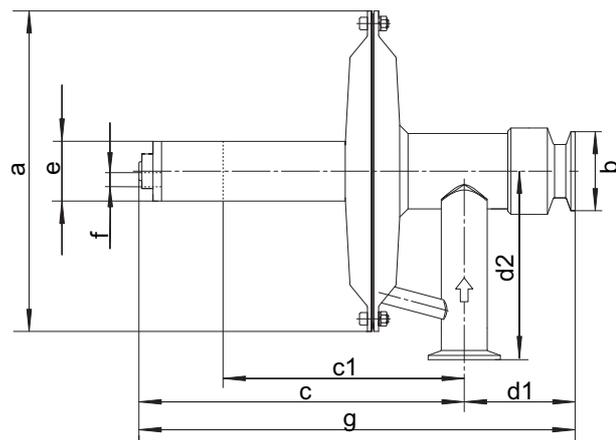
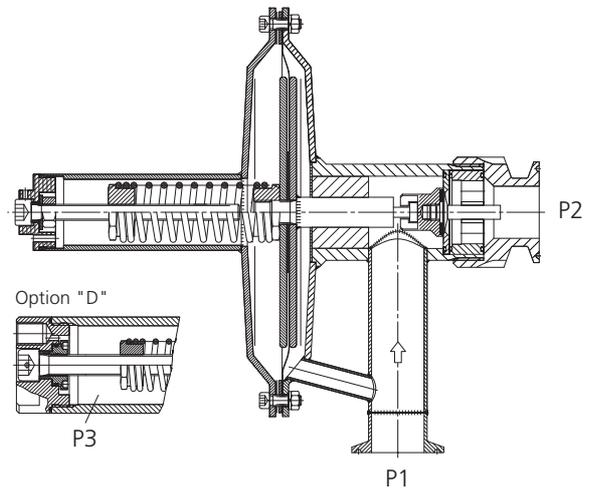
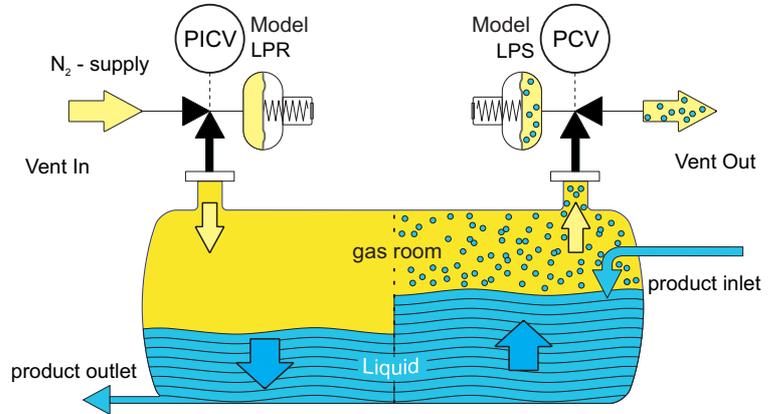
The self contained low pressure reducing regulators and back pressure regulators controls pressure in mbar range. Applications are for inert gas tank blanketing, reactors, centrifuges and agitating tubs with inert gas such as nitrogen. The regulators are designed to meet requirements in the food, chemical, pharmaceutical and biotechnology industries and are particularly corrosion resistant and reliable.

### Design

The large proportioned, spring-loaded diaphragm actuator with directly-controlled valve seat ensures precise control with low hysteresis. The regulators function without auxiliary power supply. High overpressure strength and safe regulator function is achieved by means of the supported diaphragm with long spindle guide. The regulator has a low degree of clearance volume and is self-draining.

### Description

The components coming in contact with the product are manufactured from CrNiMo steel 1.4435 / 1.4404. The diaphragm and seals are made of PTFE and the regulator seat is made of perfluoroelastomer (FFKM – Isolast®, Chemraz®, Kalrez®) as standard, EPDM (Ethylen-Propylen-Dien-Kautschuk) or FDA compliant perfluoroelastomer. These materials guarantee high corrosion resistance and excellent sealing, even at zero flow. The design has a low degree of clearance volume and is self-draining (suitable for CIP). The surface finish for the stainless-steel version is better than Ra 0.8 for housing parts in contact with the medium, better than Ra 0.8 for internal functional parts and better than Ra 3.2 for the outer housing. Internal welding seams are ground and electro-polished.



### Technical data

<b>Nominal diameter:</b>	DN 25 / 1"
<b>Regulating range P1:</b>	L.. to 500 mbar M.. to 1 bar D (pressure difference) to 4 bar = P3
<b>Inlet pressure P1:</b>	max. 5 bar
<b>Vakuum proof</b>	
<b>Pressure connections:</b>	Tri-Clamp ISO Schd.5 Special food connection (Special version available on request)
<b>Weight:</b>	6,0 kg to 8,3 kg
<b>Temperature:</b>	-20 ° to +120 °C for EPDM -20 ° to +160 °C for PTFE
<b>Testing and inspection:</b>	According to IEC 60534-4
<b>Pressure tightness:</b>	Bubble tight sealing category VI

Model dimensions	pressure connection	a	b	c	g	d1 x d2	e	f Option "D"	c1 Fixed setting P1
LPSF-025...-L...-...	Tri-Clamp ISO Schd.5 SMS	Ø 204	Ø50,5	205	275	Standard 70 x 120	Ø38 (M36)	G 1/4" female thread (dimension "e" is always Ø54 (M48) with Option "D")	132
LPSF-025...-M...-...				208	308		Ø54 (M48)		



## MODEL CODE LPS<sup>®</sup>F

food conformity design  
angle design DN 25

1			2			3			4			5			6			7		
Design			Nominal diameter DN/ pressure connection			Flow capacity			Regulating pressure range			Material			Options			Specials		
LP	S	F	-	025	.	-	..	-	...	-	...	-	...	-	.	-	Xn			

### 2 Nominal diameter DN/ Pressure connection

T	Tri-Clamp ISO Schd.5
S	SMS 25

### 3 Flow capacity

07	Seat	ø7 mm	kv = 0.70
12	Seat	ø12 mm	kv = 2.60
16	Seat	ø16 mm	kv = 5.20

### 4 Regulating pressure range P1 (mbar)

L01	2 - 10	L10	16 - 100	M01	200 - 1000
L02	4 - 20	L20	30 - 200		
L05	8 - 50	L50	80 - 500		

### 5 Material (only the same colours can be combined)

Housing/ internal components		Seat seal	Diaphragm/ Regulating range	
S	1.4435 (1.4404)/ 1.4435 (1.4404)	C FFKM con- forms to FDA	P	PTFE L..
		E EPDM	E	EPDM L.. M..
			G	PTFE-glass fibre reinforced / L.. M..

The housing/internal components/spring housing, seat and diaphragms can be combined in any order.

Special materials available on request.

### 6 Options

D	Differential pressure connection
E	NPT 1/4" external impulse connection

### 7 Specials

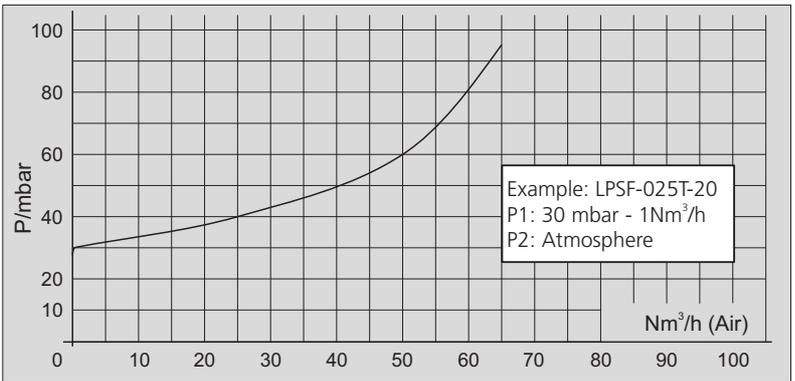
X0 If you require, for example, ATEX, PED, special connections, CIP connections on the housing, welding seams ground on the outside, a fixed setting for P2 ..., please enter an X in this field with the number of desired Specials. Each of the specials must be described in writing.  
X1  
X2  
•  
•  
Xn For special versions and certifications, please contact the manufacturer or the appropriate sales representative.

### Flow table for seat ø20 [flow quantities in Nm<sup>3</sup>/h]

P1 [mbar rel.]	2	5	10	16	25	40	50	80	100	160	250	400
Atm.	8	12	18	22	28	35	39	50	55	70	88	110
-2	11	15	19	23	29	36	40	50	55	70	88	110
-5	15	17	21	25	30	37	41	51	56	71	88	110
-10	19	21	25	28	32	39	43	52	58	72	89	111

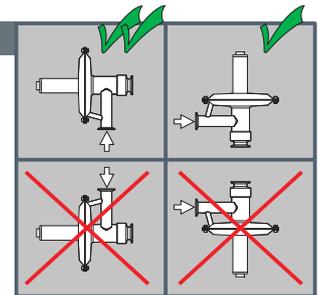
It is recommended to design for operation at a maximum of 70% of the flow values.  
P1 = regulating pressure

### Pressure / flow characteristic



### Installation

The preferred installation position is with vertical diaphragm housing and horizontal input. Pressure fixed unit is adjusted in this position. The output pressure increases by approximately 4 mbar for installation with horizontal diaphragm housing. The installation position must be specified.



### Mounting and start up

- Before connecting the pressure regulator please make sure
- LPSF adjust reduced pressure: (Relative pressure)
- 1.1 to compare the plant data with the name plate
- 1.2 the values marked on the name plate are the values measured during our functional inspection
- 1.3 to check the corrosion resistance of the material
- 1.4 to blow out impurities in the pipes
- 1.5 to note the flow direction – it is marked with an arrow on the housing
- 1.6 to open inlet pipes slowly.
- 2.1 set a light flow (1Nm<sup>3</sup>/h). Set the pressure +/- as required using a hexagonal wrench
- 2.2 the setting can be secured with a seal.
- 3 Adjust the LPSF differential pressure (-D) with the servo-regulator
- 3.1 if the D-connection is pressurised with the servo-pressure, the working pressure is added by the servo-pressure.