

NEW!
PN 25



ERHARD
VALVES

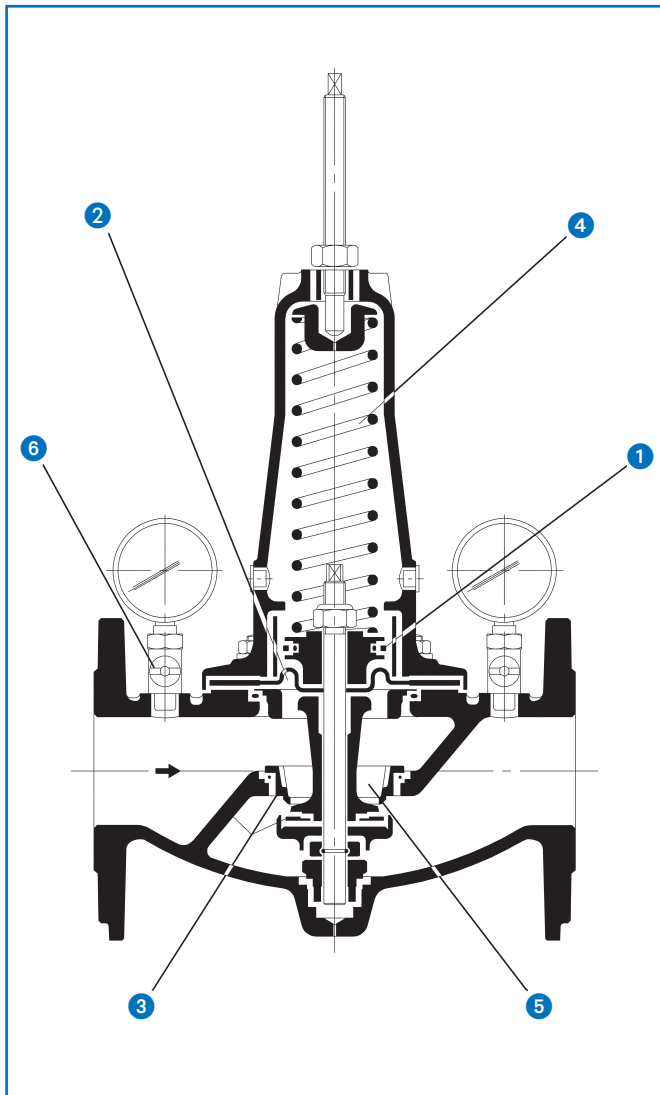
Pressure Reducing Valves

DVF

Spring operated type



ERHARD Pressure Reducing Valves **DVF:** Strength and Reliability



ERHARD Performance

Guide piston not in contact with flow medium, no deposits.

Sturdy rolling diaphragm.

High quality material: body components of SG ductile cast iron.
Internal and external **EKB** epoxy coating.

Covering a large downstream pressure range:
1.5 - 6 bars or 5 - 12 bars adjustable.

All internal parts accessible from above.
No special tools required.

Two pressure gauges with isolating valves.

Your Advantage

① Reliable performance, no risk of blocking.

② Frictionless, instantaneous control.

③ Robust and reliable.
High strength, long life.
Efficient surface protection.

④ Field approved.

⑤ Easy maintenance.

⑥ Easy operation.

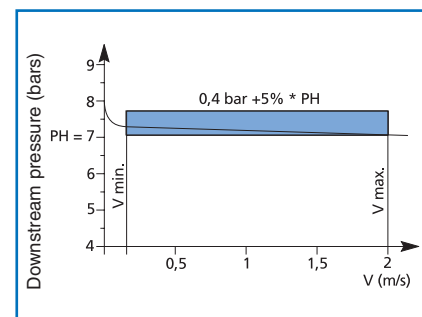
Performance

The spring operated **ERHARD** Pressure Reducing Valve consists of body, cover, plug with guide, spring and rolling diaphragm. The valves are always open under pressureless conditions.

Pressure reducing valves reduce a variable upstream pressure to a constant supply pressure independent of the flow rate. The mobile valve components are pressure compensated with regard to the upstream pressure, therefore the upstream pressure does not effect the control function of the valve.

The set point of the downstream pressure is adjusted by preloading the spring. The downstream pressure acting on the lower valve disc area is opposed to the preloaded spring. When the downstream pressure drops beneath the set value, the valve opens, when it exceeds the set value, the valve closes. When there is a balance between the force acting on the valve disc and the spring force, the valve is in intermediate position.

Example of a control curve: constant downstream pressure



The downstream pressure (P_h) is kept constant with an allowance of $5\% \times P_h + 0,4 \text{ bar}$ (see flow table). When there is no consumption, the downstream pressure will rise by about 1 bar.

Sizing

The valve is not sized to the pipeline diameter but in accordance with the application and the maximum flow conditions:

Recommended flow rate in l/s (m^3/h)

	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
Qmax. *)	4 (15)	7 (25)	10 (36)	16 (58)	25 (90)	35 (126)	63 (227)

*) corresponds to a velocity of 2 m/s referring to the nominal valve diameter..

Fire-extinguishing service: During a short period, velocities of up to 3m/s are admissible.

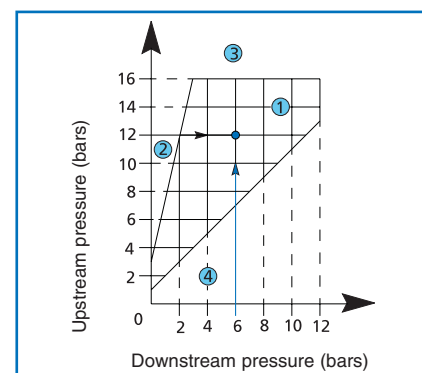
Sizing example:

Hydraulic data: Upstream pressure $P_u = 12 \text{ bars}$
 Downstream pressure $P_d = 6 \text{ bars}$
 Max. flow: $Q_{\text{max.}} = 13 \text{ l/s}$

Selected size $\Rightarrow$ DN 100 (see flow table)

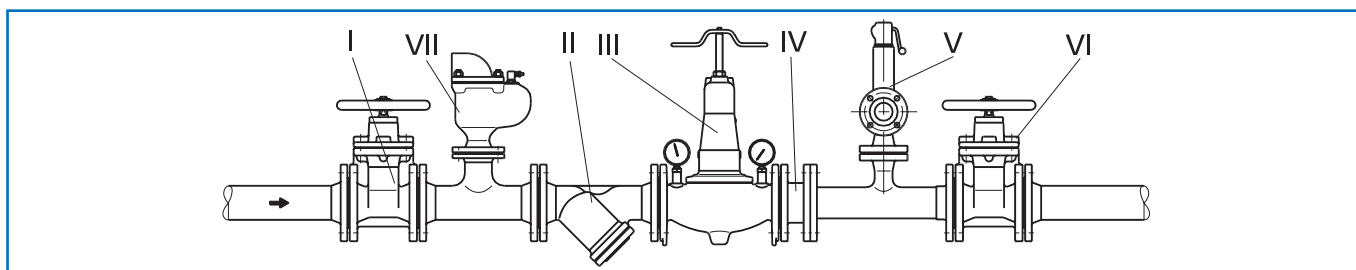
Cavitation? – pressure correlation of the valve within field 1
 $\Rightarrow$ no cavitation.

Sizing chart: Pressure Reducing Valve **DVF** spring operated type



Checking the valve for risk of cavitation:
 Field 1: Normal operation.
 Field 2: Excessive differential pressure (cavitation).
 Field 3: Inadmissible range of application.
 Field 4: Physically impossible as upstream pressure is smaller than downstream pressure.

Recommended Installation



$\Rightarrow$ Horizontal installation of the **ERHARD** Pressure Reducing Valve III.

$\Rightarrow$ Isolating Valve I and Strainer II (max. mesh size: 2 mm) upstream of the Pressure Reducing Valve.

$\Rightarrow$ Dismantling Piece IV, Safety Valve V, and Isolating Valve VI downstream of the Pressure Reducing Valve.

$\Rightarrow$ Draining Device to be provided in the structure:

We recommended to use an Air Valve VII in case of:

$\Rightarrow$ descending downstream main: downstream of the Pressure Reducing Valve.

$\Rightarrow$ rising or horizontal upstream main: upstream of the Pressure Reducing Valve.

Available upon request:

- I, VI Isolating Valves
 - Multamed Gate Valves,
 - flanged Butterfly Valves
 - Wafer Type ECL Butterfly Valves
- II Strainers
- III Pressure Reducing Valve **DVF**
- IV Dismantling Pieces
- V Safety Valves
 - (proportional and normal types)
- VII Air Valves **TWIN-AIR**

ERHARD Pressure Reducing Valve **DVF** PN 10/16/25

spring operated type, of ductile cast iron

Range of application: water max. 70° C

Size	Pressure rating ¹⁾	Max. working pressure = max. upstr. pressure in bars	Range of downstream set pressures ²⁾		Prod. no.
DN	PN		Spring A bars	Spring B bars	
200 ³⁾	16	10	1,5 - 6	–	6005 5400
200 ³⁾	16	10	–	5 - 9	6005 5400
50 - 200	16	16	1,5 - 6	–	6005 5400
50 - 200	16	16	–	5 - 12	6005 5400
50 - 150	25	25	1,5 - 6	–	6005 5400
50 - 150	25	25	–	5 - 12	6005 5400

When placing the order, please specify min. and max. flow rate, max. upstream pressure and required range of downstream set pressures.

Flanges B, DI, type 21, ISO 7005-2, PN 10/16/25.

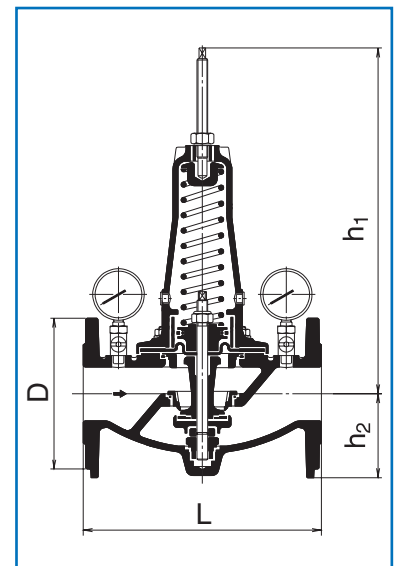
Material Equipment

Surface protection	EKB epoxy coating, blue
Body and bonnet	Ductile cast iron to EN-JS 1040 (ISO 450-10) ⁴⁾
Plug	Lamellor Cast iron (EN-JL 1040) ⁵⁾
Body seat and guide	Alu-bronze
Sealing ring	Polyurethane
Set screw, guide rod	Stainless steel
Spring 2)	Spring steel, varnished
A (blue)	Range of downstream set press.: 1.5 - 6 bars
B (red)	Range of downstream set press.: 5 - 12 bars
Rolling diaphragm	Neoprene with fabric ply
Pressure gauges with isolating valves	Upstream, downstream
Mounting lever	Included in our supply



Dimensions

Size	Face-to-face dimension	Flange dia.		Height	Height	Weight	Packing dimensions
DN	L mm	PN 10/16 D mm	PN 25 D mm	h1 mm	h2 mm	kg	l x b x h mm
50	230	165	165	430	90	19	500 x 400 x 300
65	290	185	185	420	100	25	500 x 400 x 300
80	310	200	200	450	115	29	600 x 400 x 300
100	350	220	235	450	115	32	600 x 400 x 300
125	400	250	270	550	145	61	800 x 500 x 400
150	480	285	300	550	145	66	800 x 500 x 400
200	600	340	360	605	190	117	800 x 500 x 400



1) Upon request special design in PN 40 for DN 50, 65 and 80.

2) Please specify required range of downstream set pressures when placing the order.
For permissible differential pressure, see „Sizing“.

4) Cast iron 450-10 to ISO 1083 has properties similar to those of SG GGG-50 to DIN 1693.

5) corresponding to former DIN description 0.6125 (GG25).

6) DN 200 not available in PN 25.

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Data corresponding to the latest level of development, modifications reserved.

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