

# spirax sarco

TI-P204-04  
 CH Issue 6

## DLV7 SG Iron Pressure Reducing Valve

### Description

The DLV7 is an SG iron direct acting bellows sealed pressure reducing valve. The standard version has an EPDM diaphragm and is suitable for steam.

**Note:** To protect the actuator diaphragm on steam applications a WS4 water seal pot must be installed in the downstream pressure signal line to the actuator. Refer to TI-S12-03 for details.

### Available types:

The DLV7 is available with the following pressure ranges:

Valve + Actuator and Size	Pressure range (bar)	Actuator PN rating
DLV71 DN100	0.5 - 1.5	2.5
DLV72	DN15 to DN50	2.5
	DN65 to DN80	
DLV73 DN100	1.0 - 4.0	6.0
DLV74	DN15 to DN80	16.0
	DN100	
DLV75 DN15 to DN80	4.0 - 13	25.0

### Standards and approvals

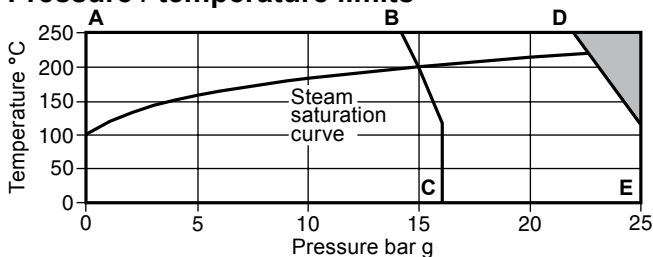
This product fully complies with the requirements of the European Pressure Equipment Directive 97/23/EC and carries the CE mark when so required.

### Certification

This product is available with a manufacturer's Typical Test Report.

**Note:** All certification/inspection requirements must be stated at the time of order placement.

### Pressure / temperature limits



The product **must not** be used in this region.

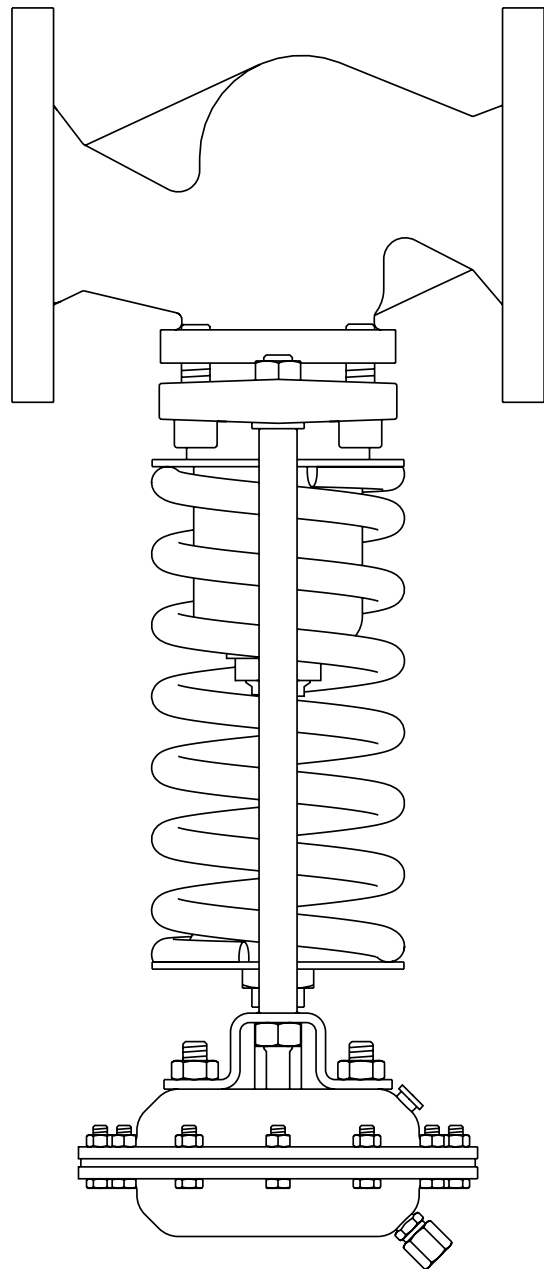
A - B - C Flanged EN 1092 PN16.

A - D - E Flanged EN 1092 PN25.

Body design conditions	PN25	PN16
Maximum design pressure	25 bar g @ 100°C	16 bar g @ 100°C
Maximum design temperature	250°C @ 21.8 bar g	250°C @ 13.9 bar g
Minimum design temperature	0°C	0°C
Maximum operating temperature	250°C @ 21.8 bar g	250°C @ 13.9 bar g
Minimum operating temperature	0°C	0°C
Maximum differential pressure	19 bar g	16 bar g
Designed for a maximum cold hydraulic test pressure of	38 bar g	24 bar g
<b>Note:</b> With internals fitted,	25 bar g	16 bar g
test pressure must not exceed		

### Sizes and pipe connections

DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100.  
 Flanged EN 1092 PN16 and PN25.



### Kvs values

Size DN	15	20	25	32	40	50	65	80	100
Kvs	3.0	5.8	10.2	14.7	21.6	36	52	83	130

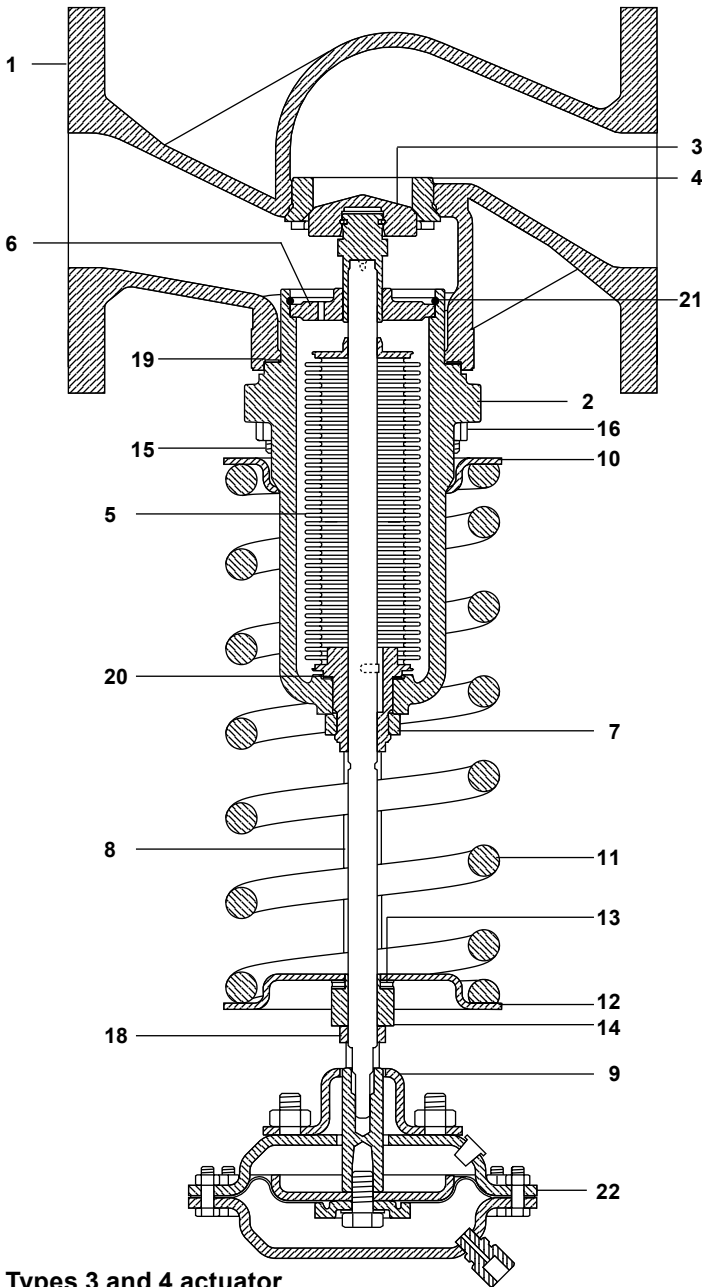
**Note:** The Kvs values shown above are full capacities and should be used for safety valve sizing purposes where they are required.

## Materials

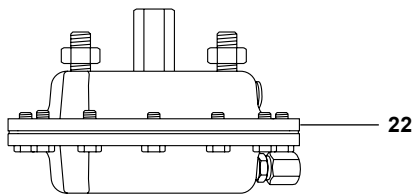
No.	Part			Material			
1	Body			SG iron	EN-JS1025		
2	Bonnet			SG iron	EN-JS1025		
3	Valve head assembly (including snap ring)			Stainless steel	BS 970 431S29 A276 431		
4	Valve seat	DN15 - DN32		Stainless steel	420A UGIMA		
		DN40 - DN100		Stainless steel	BS 970 431S29 A276 431		
	Balancing bellows assembly			Stainless steel	316L		
				Guide bush	PTFE / Steel composite		
5	Except components	Ball bearing	DN15 - DN20	Stainless steel	AISI 440B or 440C		
		Spirol pin	DN25 - DN100	Stainless steel	SAE 51420		
6	Spindle guide plate	DN15 - DN65		Stainless steel	BS 970 304S11		
		DN80 - DN100		Stainless steel	ASTM A276 316L		
7	Clamp nut			Carbon steel	BS 970 230 M07		
8	Pillar			Carbon steel	BS 970 230 M07		
9	Actuator mounting plate	DN15 - DN50		Steel zinc plate	BS EN 10111 1.0335		
		DN65 - DN100		Steel zinc plate	BS 1449 HR14		
10	Bonnet spring plate			Steel zinc plate	BS EN 10111 1.0335		
11	Spring			Steel	BS EN 10270-1 SM or DM		
12	Spring plate			Steel zinc plate	BS EN 10111 1.0335		
13	Axial needle bearing			Steel			
14	Adjustment nut			Steel	BS 970 606 M36		
15	* Cap screw	DN15 - DN32	M10		DIN 17240-CrMo5		
		DN40 - DN50	M12		DIN 17240-CrMo5		
	Stud	DN65	M12		DIN 17240-CrMo5		
		DN80 - DN100	M16		DIN 17240-Gr. CK35		
16	* Nut (Bonnet)	DN65	M12		DIN 17240-Gr. CK35		
	Nut	DN80 - DN100	M16		DIN 17240-Gr. CK35		
17	Nut (Pillars)		M12		BS 3692 Gr. 8.8		
18	Lock-nut		M14 x 1.5	Steel	BS 970 230 M07		
19	Gasket (Bonnet / Body)			Semi-rigid graphite	Klingersil SLS or Geegraf SSR		
20	Gasket (Bonnet / Bellows clamp)			Semi-rigid graphite	Klingersil SLS or Geegraf SSR		
21	Snap ring (Retain spindle guide)	DN65 - DN100		Stainless steel	DIN 7993 St.St. (Austenitic)		
			Type 1, 2, 3 and 4	Carbon steel	DIN 1614 PT2 Gr StW 24		
			Type 5	Low carbon steel	BS EN 10025 Gr. S355J2G3		
			Type 1, 2, 3 and 4	Carbon steel	DIN 1614 PT2 Gr StW 24		
			Type 5	Low carbon steel	BS EN 10025 Gr. S355J2G3		
			Types 1 and 2	Steel zinc plated	BS 3692 Gr. 5.6		
			Type 3, 4 and 5	Steel zinc plated	BS 3692 Gr. 8.8		
			Types 1 and 2	Steel zinc plated	BS 3692 Gr. 5		
			Type 3, 4 and 5	Steel zinc plated	BS 3692 Gr. 8		
22	Actuator assembly			Diaphragm	Polyester fibre fabric EPDM coated		
				Hex headed bolt	Stainless steel	BS 6105	
				Sealing washer	Fibre		
				Diaphragm clamp	Stainless steel	ASTM A351 CF8M	
				Piston	Carbon steel	BS 1449 Pt 1 HR14	
				Actuator spindle	Carbon steel	BS 970 Pt3 230M07 PB	
				Mounting nuts	Carbon steel	BS 3692 Gr. 8	
				Coupling	Steel zinc plated		
		23	* Name-plate	PN25	DN50	Stainless steel	
		24	* Hammer drive screw			Stainless steel	18-8
			* Name-plate arrow			Stainless steel	

\* Not shown

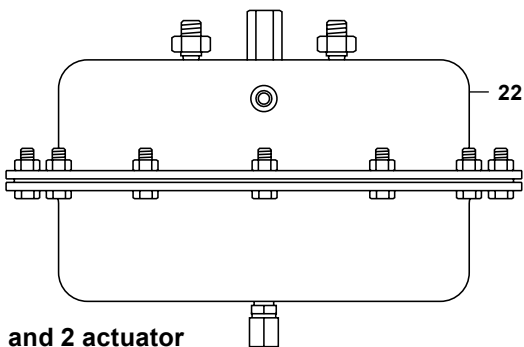
DN65 - DN100



Types 3 and 4 actuator

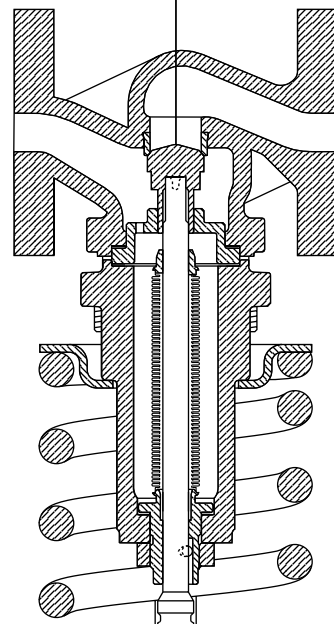


Type 5 actuator

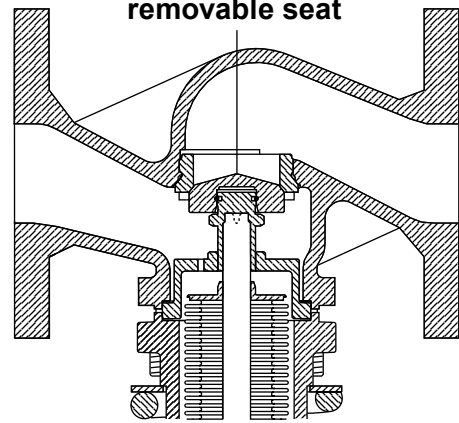


Types 1 and 2 actuator

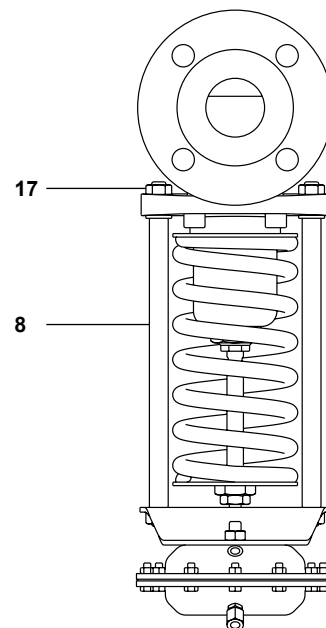
DN15 and DN20  
Fixed head and seat



DN40 and DN50  
removable seat



View illustrating the pillars



## Dimensions / weight (approximate) in mm and kg

Size	A Flanged EN 1092 PN16 and PN25	Actuator type										Valve weight
		1		2		3		4		5		
		B	C	B	C	B	C	B	C	B	C	
DN15	130			488	250			423	168	408	143	9.4
DN20	150			488	250			423	168	408	143	10.2
DN25	160			497	250			432	168	417	143	12.0
DN32	180			497	250			432	168	417	143	16.2
DN40	200			511	250			446	168	431	143	17.4
DN50	230			511	250			446	168	431	143	19.5
DN65	290			588	250			523	168	508	143	26.8
DN80	310			600	250			535	168	520	143	32.0
DN100	350	740	304			668	208	638	168			45.2
<b>Actuator weight</b>		12.3		6.5		3.9		2.5		2.6		

**Note:** To calculate the total weight of the unit add the valve and actuator weights together.

## Safety information, installation and maintenance

For full details see the Installation and Maintenance Instructions (IM-P204-03) supplied with the product.

### Installation note:

**Caution - To protect the actuator diaphragm on steam applications a WS4 series water seal pot must be installed in the downstream pressure signal line to the actuator. Refer to TI-S12-03 for details.**

The valve should be mounted vertically downwards in a horizontal pipeline with the direction of flow as indicated by the arrow on the valve body. For applications with downstream temperatures below 125°C the valve can alternatively be mounted vertically upwards.

## How to select a DLV direct acting pressure reducing valve:

<b>Connection type</b>	DN15, DN20, DN25, DN32, DN40, DN50, DN65, DN80 and DN100
<b>Valve type</b>	DLV
<b>Body material</b>	7 = SG iron
<b>Spring setting range</b>	1 = DN100 0.5 - 1.5 bar g
	2 = DN15 to DN50 0.2 - 1.8 bar g
	DN65 to DN80 0.4 - 1.8 bar g
	3 = DN100 1.0 - 4.0 bar g
	4 = DN15 to DN80 1.0 - 5.5 bar g
DN100 3.5 - 13 bar g	
5 = DN15 to DN80 4.0 - 13 bar g	
<b>Option</b>	Blank = EPDM diaphragm
<b>Flange rating</b>	PN16 PN25
<b>Water seal pot</b>	WS4 or WS4-3 (see Safety information, installation and maintenance above)
<b>Connections</b>	BSP, NPT or butt weld (BW)

DN25

DLV

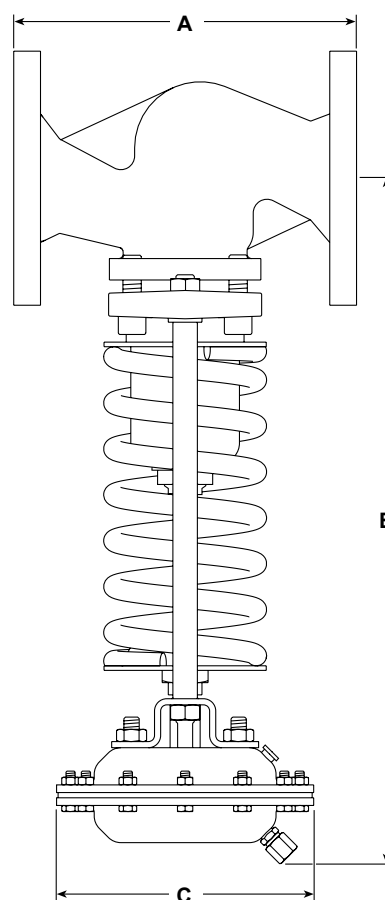
7

2

PN25

WS4

BSP



**Selection example:** **DN25** **DLV** **7** **2** flanged **PN25** plus **WS4** water seal pot having screwed **BSP** connections.

## How to order

**Example:** 1 off Spirax Sarco DN25 DLV72 direct acting pressure reducing valve having flanged PN25 connections plus WS4 water seal pot having screwed BSP connections.

## Spare parts

The spare parts available are detailed below. No other parts are supplied as spares.

### Available spares

Coupling			A
Diaphragm set	Diaphragm and sealing washer		B, C
Needle bearing			D
Sealing bellows set	Sealing bellows assembly, sealing bellows gasket, bonnet gasket and (DN65 - DN100) snap ring		E, F, G, K
Control spring(s)			I
Head set (DN15 - DN32)	Head assembly and bonnet gaskets <b>Note</b> - The seat cannot be replaced in valve sizes DN15 - DN32		L, G, F
Seat/head set (DN40 - DN100)	Seat, head assembly and bonnet gaskets.		J, L, G, F
Gasket set	Sealing bellows gasket and bonnet gasket		F, G

### How to order spares

Always order spares by using the description given in the column headed 'Available spares' and state the size and type of valve.

**Example:** 1 - Gasket set for a Spirax Sarco DN15 DLV72 pressure reducing valve.

