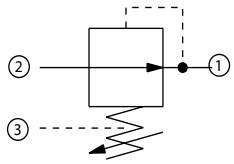
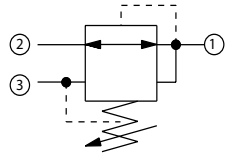
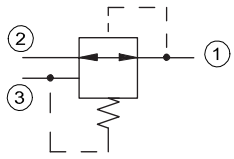
ENGINEERING TOMORROW

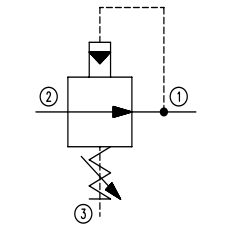
Pressure Reducing Valves Technical Information

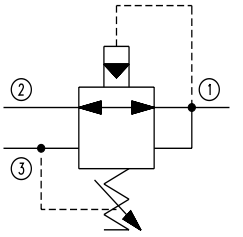
Quick Reference

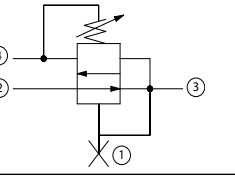
Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**CP230-2**	**SDC10-3**	Pressure Reducing, Non-Relieving, Direct Acting	40 l/min [11 US gal/min]	210 bar [3045 psi]	**PR - 4**
	PRC 06	**NCS06/3**		40 l/min [11 US gal/min]	315 bar [4570 psi]	**PR - 5**

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**CP230-1**	**SDC10-3**	Pressure Reducing, Relieving, Direct Acting	40 l/min [11 US gal/min]	210 bar [3045 psi]	**PR - 6**

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**PRR10-PVG**	**SDC10-3**	Pressure Reducing, Relieving, Direct Acting, Designed for PVG Actuators	40 l/min [11 US gal/min]	210 bar [3045 psi]	**PR - 7**

Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**CP230-4**	**SDC10-3**	Pressure Reducing, Non-Relieving, Pilot Operated	40 l/min [11 US gal/min]	350 bar [5075 psi]	**PR - 8**
	PPRC 06	**NCS06/3**		40 l/min [11 US gal/min]	315 bar [4570 psi]	**PR - 9**

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**PRMP 064**	**SDC10-3**	Pressure Reducing, Relieving, Pilot Operated	40 l/min [11 US gal/min]	315 bar [4570 psi]	**PR - 10**
	CP231-3	**CP12-3S**		115 l/min [30 US gal/min]	350 bar [5075 psi]	**PR - 11**

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	**PRR10-DRD**	**SDC10-4**	Pressure Reducing, Relieving, Direct Acting with Damping Port	38 l/min [10 US gal/min]	210 bar [3045 psi]	**PR - 12**

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

PRESSURE REDUCING VALVES

Pressure reducing valves are pressure limiting devices that limit pressure in one portion of a circuit while leaving system pressure unaffected. They are available in direct-acting and pilot-operated types and as pressure reducing/relieving valves or as pressure reducing valves only.

Pressure reducing valves

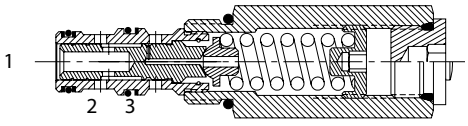
DIRECT ACTING PRESSURE REDUCING / RELIEVING VALVES

Direct-acting pressure reducing/relieving valves allow flow to pass from 2 to 1 until the pressure at 1 reaches the predetermined setting, at which point the spool shifts to restrict input flow from 2 (reducing mode) or to open flow from 1 to 3 (relieving mode) as needed to maintain the regulated pressure at 1.

Advantages of direct-acting pressure reducing valves are:

- Fast response
- Economical

Direct acting pressure reducing valve



A typical application for direct-acting pressure reducing valves is for pressure control in systems requiring two or more different pressure settings. These valves are best suited for low flow applications such as hydraulic brake or motor shift.

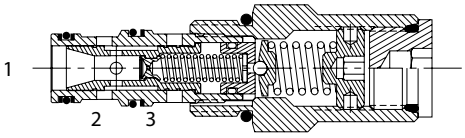
PILOT-OPERATED PRESSURE REDUCING / RELIEVING VALVES

Pilot-operated pressure reducing/relieving valves operate similarly to direct-acting pressure reducing/relieving valves -- the spool allows flow to pass from 2 to 1 until the pressure at 1 reaches the predetermined setting and forces the pilot poppet off it's seat. This creates a pressure differential across the spool that causes the spool to shift and maintain regulated pressure at 1 in the same manner as the direct-acting pressure reducing/relieving valve.

Advantages of pilot-operated relief valves are:

- Smooth, stable response
- High pressure capability
- Precise pressure control with varying flow rates

Pilot-operated pressure reducing valve



A typical application for pilot-operated pressure reducing valves is for pressure control in systems requiring two or more different pressure settings where high pressure capability and/or extremely precise pressure control is required.

ENGINEERING TOMORROW

Pressure Reducing Valves Technical Information

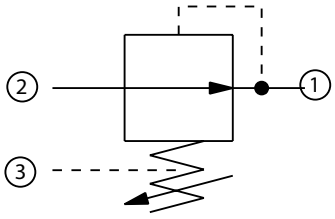
Pressure Reducing, Non-Relieving, Direct Acting

CP230-2

OPERATION

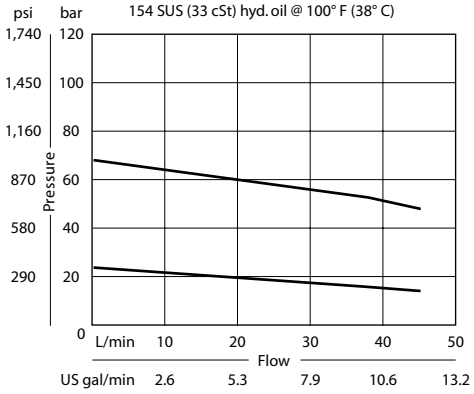
This is a direct-acting pressure-reducing (non-relieving) valve.

Schematic



SPECIFICATIONS

Theoretical performance



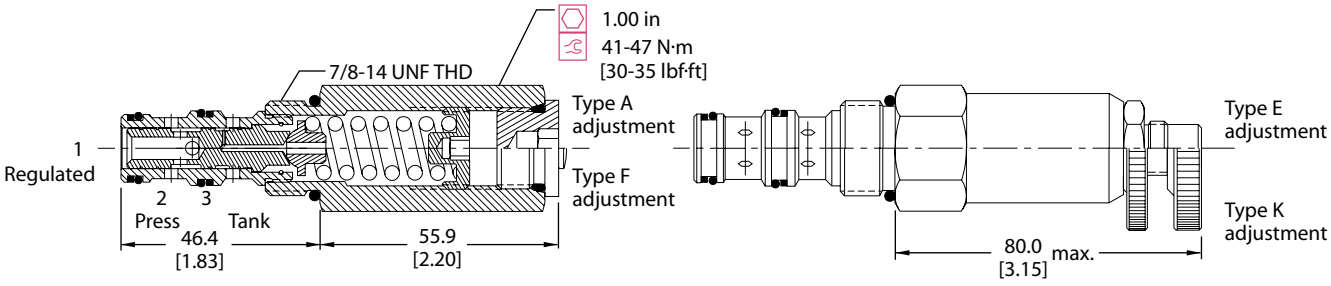
Specifications

Rated pressure	210 bar [3045 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.25 kg [0.56 lb]
Cavity	**SDC10-3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP230 - 2 - B - 6S - A - C - 100

Seals
B = Buna-N
V = Viton

Seal kit
120027
120028

Housing and ports

			Housing P/N
0	=	No Housing	No Housing
SE3B	=	Al, 3/8 BSP	SDC10-3-SE-3B
SE4B	=	Al, 1/2 BSP	SDC10-3-SE-4B
6S	=	Al, #6 SAE	CP10-3-6S
8S	=	Al, #8 SAE	CP10-3-8S

Other housings available

Adjustment option
A = Internal
E = External
F = Tamper resistant
K = Knob

Crack pressure
Code x 10 = psi
Example: 100 = 1000 psi

Pressure range

		bar	[psi]
A	=	4-28	[50-400]
Std. setting		17	[250]
B	=	5-55	[75-800]
Std. setting		28	[400]
C	=	7-97	[100-1400]
Std. setting		69	[1000]
D	=	34-166	[500-2400]
Std. setting		103	[1500]

ENGINEERING TOMORROW

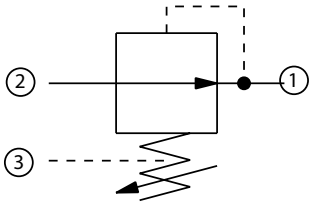
Pressure Reducing Valves Technical Information

Pressure Reducing, Non-Relieving, Direct Acting
PRC 06

OPERATION

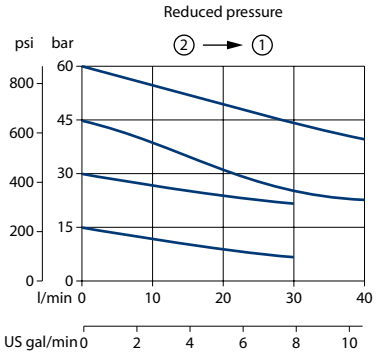
This is a direct-acting pressure reducing (non-relieving) valve.

Schematic



SPECIFICATIONS

Theoretical performance



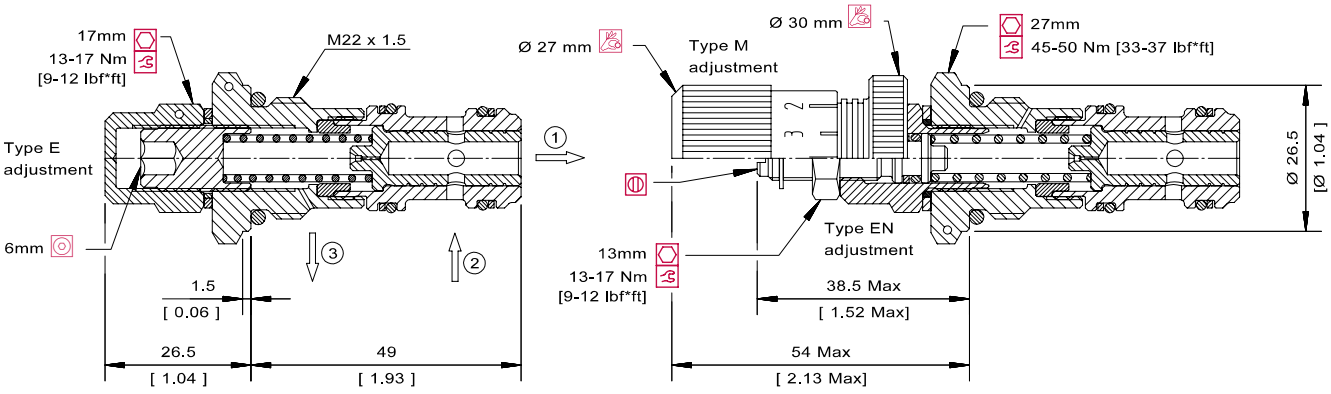
Specifications

Rated pressure	315 bar [4570 psi]
Rated Flow	40 l/min [11 US gal/min]
Weight	0.14 kg [0.31 lb]
Cavity	**NCS06/3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PRC 06 - EN - 1 - 00 - V

Type of adjustmen t
E = Internal screw
EN = External screw
M = Handwheel

Setting range
.5 = 1-10 bar [14.5-145 psi]
1 = 10 - 25 bar [145-363 psi]
2 = 25-80 bar [363-1160 psi]

Seals
V = Viton
B = Buna-N

Seal kit
230000110
230000070

Housing and ports

		Housing P/N
00	= No Housing	No Housing
SE3/8	= AL, 3/8 BSP	NCS06/3-SE-3/8
SE1/2	= AL, 1/2 BSP	NCS06/3-SE-1/2
SE6S	= AL, #6 SAE	NCS06/3-SE-6S
SE8S	= AL, #8 SAE	NCS06/3-SE-8S

Other housings available

To order this valve with a specific factory setting, contact your Danfoss ICS representative

ENGINEERING TOMORROW

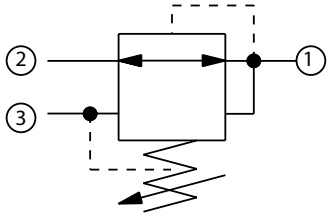
Pressure Reducing Valves Technical Information

Pressure Reducing, Relieving, Direct Acting
CP230-1

OPERATION

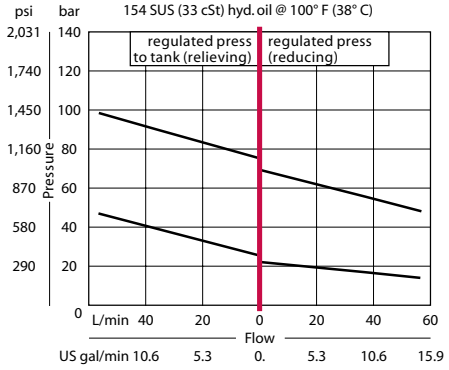
This is a direct-acting pressure reducing/ relieving valve.

Schematic



SPECIFICATIONS

Theoretical performance



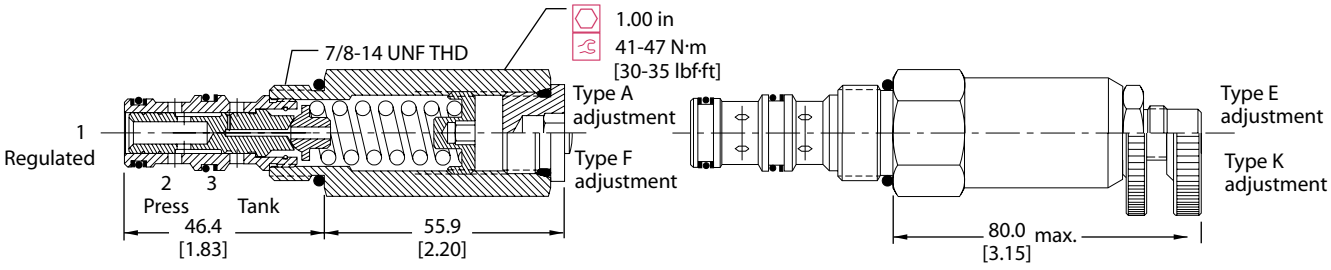
Specifications

Rated pressure	210 bar [3045 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.23 kg [0.51 lb]
Cavity	**SDC10-3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP230 - 1 - B - 6S - A - C - 100

Seals
B = Buna-N
V = Viton

Seal kit
120570
120571

Housing and ports
0 = No Housing
SE3B = Al, 3/8 BSP
SE4B = Al, ½ BSP
6S = Al, #6 SAE
8S = Al, #8 SAE
Other housings available

Housing P/N
No Housing
SDC10-3-SE-3B
SDC10-3-SE-4B
CP10-3-6S
CP10-3-8S

Adjustment option
A = Internal
E = External
F = Tamper resistant
K = Knob

Pressure setting
Code x 10psi (0.69 bar)
Example: 100 = 1000 psi (70 bar)

Pressure range

	bar	[psi]
A =	4-28	[50-400]
Std. setting	17	[250]
B =	5-55	[75-800]
Std. setting	28	[400]
C =	7-97	[100-1400]
Std. setting	69	[1000]
D =	34-166	[500-2400]
Std. setting	103	[1500]

Pressure Reducing Valves Technical Information

Pressure Reducing, Relieving, Direct Acting, Designed for PVG Actuators

PRR10-PVG

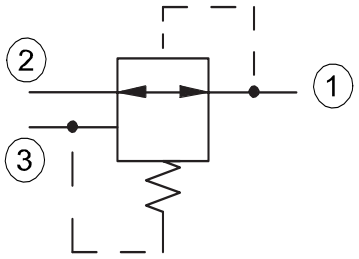
OPERATION

This is a direct-acting pressure reducing/ relieving valve, designed for PVG actuators.

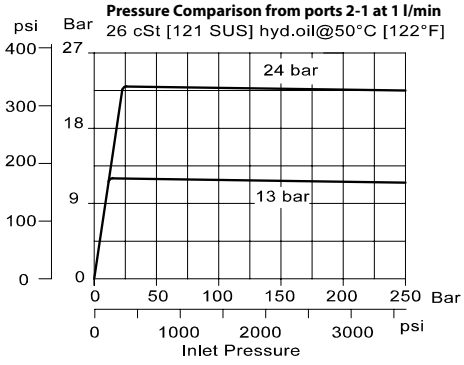
SPECIFICATIONS

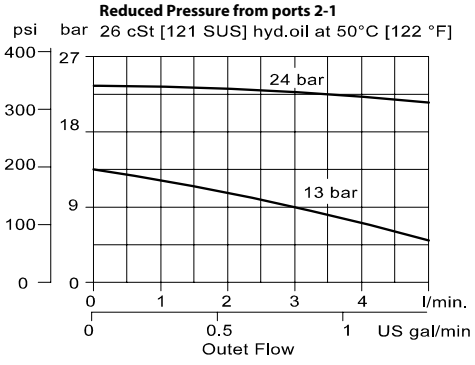
Max. pressure in port 2	210 bar [3045 psi]
Maximum flow	5 l/min [1.3 US gal/min]
Cartridge Weight	0.23 kg [0.51 lb]
Cavity	**SDC10-3**

Schematics



Theoretical performance

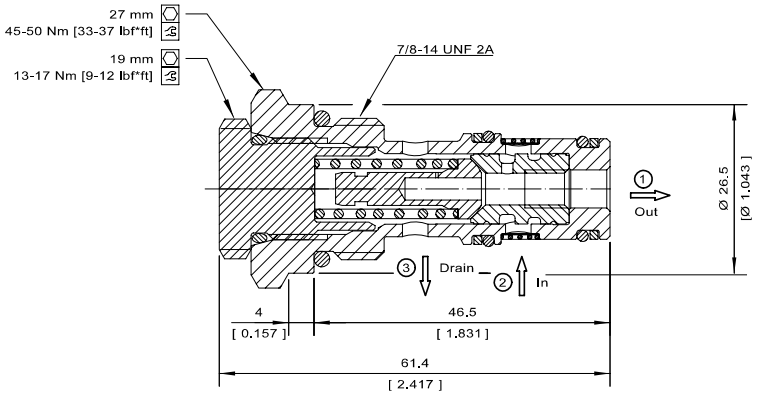




DIMENSIONS

Cross-sectional view

mm [in]



ORDERING INFORMATION

PRR10-PVG-E-13-B-F-00

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
SE3B = Al, 3/8 BSP
SE4B = Al, 1/2 BSP
Other housings available

Body Nomenclature
No Body
CP10-3-6S
CP10-3-8S
SDC10-3-SE3B
SDC10-3-SE4B

F = FILTER 300um
(Omit if not required)

Pressure setting:
E13 = 13 Bar for Electrical (PVE)
H24 = 24 Bar for Hydraulic (PVH) or High Current (PVHC)

SEALS
B = Buna
V = Viton

SEAL KIT
230000650
354001019

ENGINEERING TOMORROW

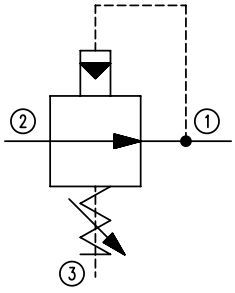
Pressure Reducing Valves Technical Information

Pressure Reducing, Non-Relieving, Pilot Operated
CP230-4

OPERATION

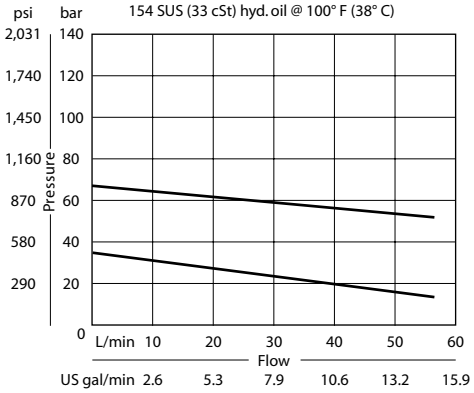
This is a pilot-operated pressure-reducing (non-relieving) valve.

Schematic



SPECIFICATIONS

Theoretical performance



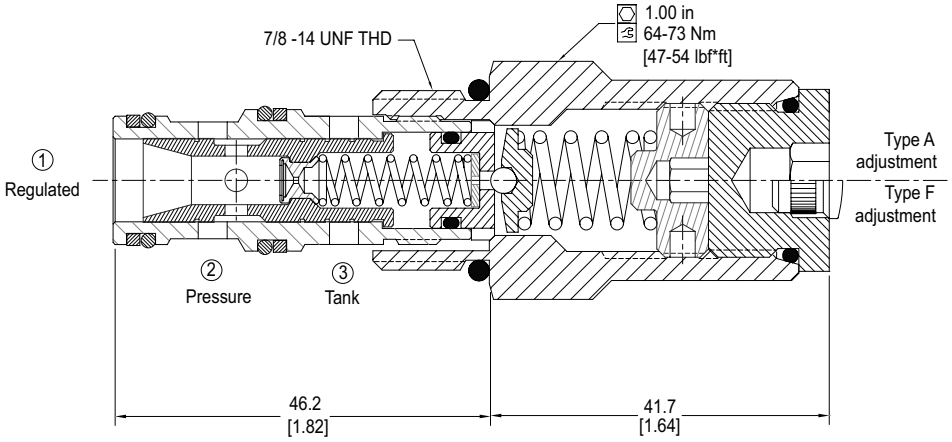
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.20 kg [0.43 lb]
Cavity	**SDC10-3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP230 - 4 - B - 6S - A - C - 150

Seals
B = Buna-N
V = Viton

Seal kit
120027
120028

Housing and ports

0	=	No Housing
SE3B	=	Al, 3/8 BSP
SE4B	=	Al, 1/2 BSP
6S	=	Al, #6 SAE
8S	=	Al, #8 SAE

Other housings available

Housing P/N

No Housing
SDC10-3-SE-3B
SDC10-3-SE-4B
CP10-3-6S
CP10-3-8S

Adjustment option

A	=	Internal
E	=	External
F	=	Tamper resistant
K	=	Knob

Pressure setting
Code x 10psi (0.69 bar)
Example: 150 = 1500 psi (105 bar)

Pressure range

	bar	[psi]
A =	14-55	[200-800]
Standard	28	[400]
B =	21-103	[300-1500]
Standard	69	[1000]
C =	28-207	[400-3000]
Standard	103	[1500]
D =	28-345	[400-5000]
Standard	103	[1500]

Pressure Reducing Valves Technical Information

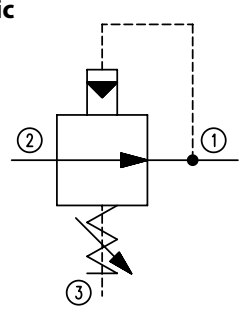
Pressure Reducing, Non-Relieving, Pilot Operated

PPRC 06

OPERATION

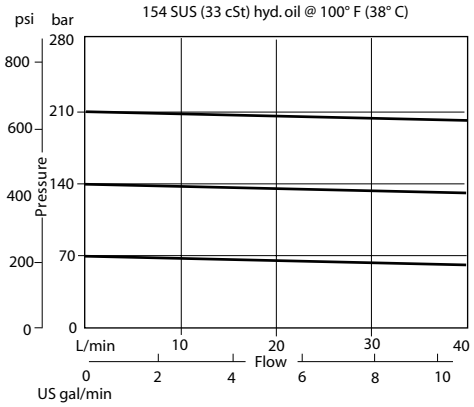
This is a pilot-operated pressure reducing (non-relieving) valve.

Schematic



SPECIFICATIONS

Theoretical performance



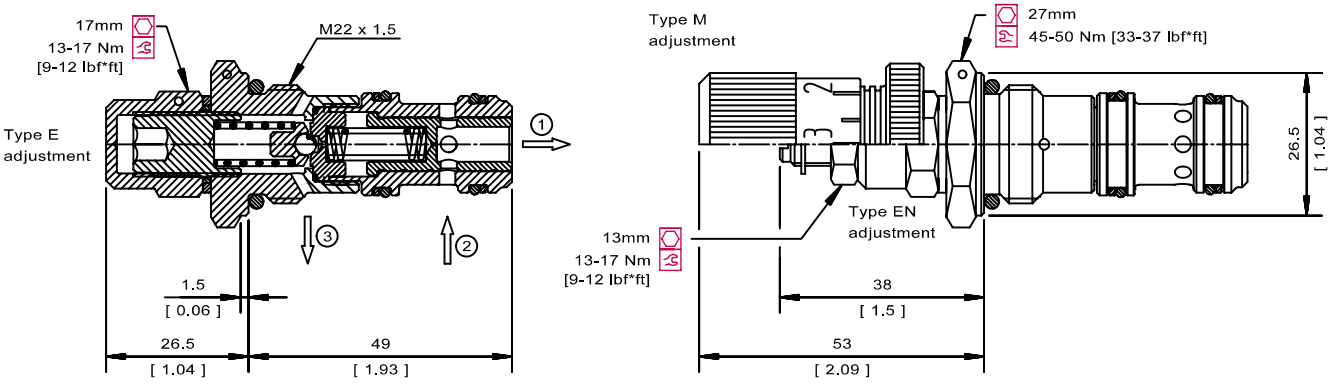
Specifications

Rated pressure	315 bar [4570 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.14 kg [0.31 lb]
Cavity	**NCS06/3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PPRC 06 - EN - 1 - 00 - V

Type of adjustment
E = Internal screw
EN = External screw
M = Handwheel

Setting range
1 = 10-70 bar [145-1015 psi]
2 = 30-140 bar [435-2031 psi]
3 = 70-210 bar [1015-3046 psi]

Seals
V = Viton
Omit = Buna-N

Seal kit
230000110
230000070

Housing and ports

		Housing P/N
00	= No Housing	No Housing
SE3/8	= AL, 3/8 BSP	NCS06/3-SE-3/8
SE1/2	= AL, 1/2 BSP	NCS06/3-SE-1/2
SE6S	= AL, #6 SAE	NCS06/3-SE-6S
SE8S	= AL, #8 SAE	NCS06/3-SE-8S

Other housings available

To order this valve with a specific factory setting, contact your Danfoss ICS representative

Pressure Reducing Valves Technical Information

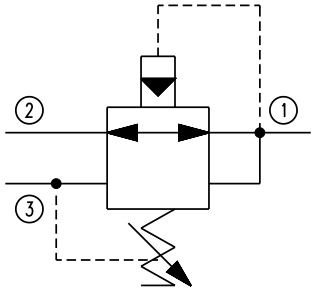
Pressure Reducing, Relieving, Pilot Operated

PRMP 064

OPERATION

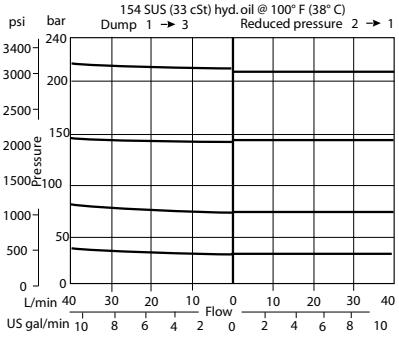
This is a pilot-operated pressure reducing/relieving valve.

Schematic



SPECIFICATIONS

Theoretical performance



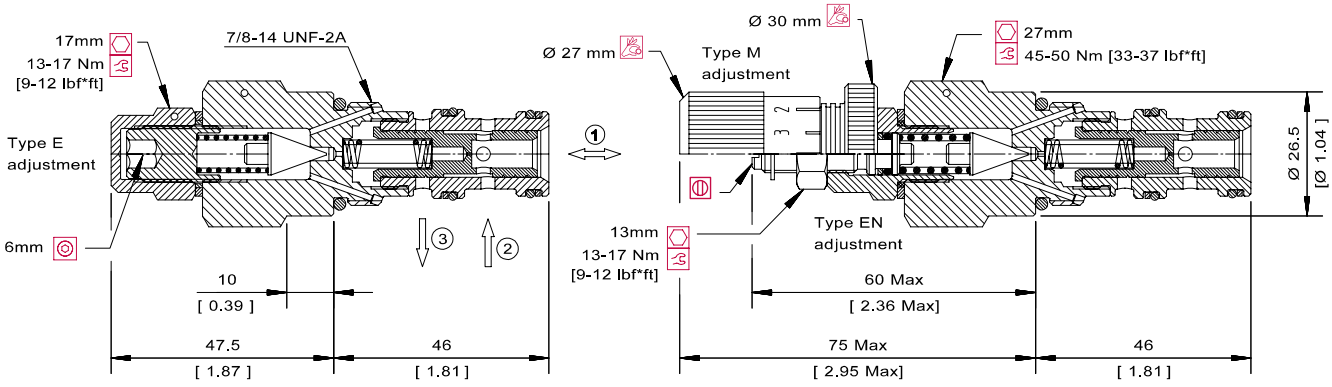
Specifications

Rated pressure	315 bar [4570 psi]
Rated Flow	40 l/min [11 US gal/min]
Weight	0.21 kg [0.46 lb]
Cavity	**SDC10-3**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PRMP 064 - EN - 1 - SE3/8 - V

Adjustment
- E = Internal screw
- EN = External screw
- M = Handwheel

Setting range
- 1 = 10-70 bar [145-1015 psi]
- 2 = 30-140 bar [435-2031 psi]
- 3 = 70-210 bar [1015-3046 psi]

Seals — **Seal Kit**
- V = Viton — 354001019
- Omit = Buna-N — 354000919

Housing and ports — **Housing P/N**

00	=	No Housing	No Housing
SE3B	=	Al, 3/8 BSP	SDC10-3-SE-3B
SE4B	=	Al, 1/2 BSP	SDC10-3-SE-4B
6S	=	Al, #6 SAE	CP10-3-6S
8S	=	Al, #8 SAE	CP10-3-8S

Other housings available

To order this valve with a specific factory setting, contact your Danfoss ICS representative

ENGINEERING TOMORROW

Pressure Reducing Valves Technical Information

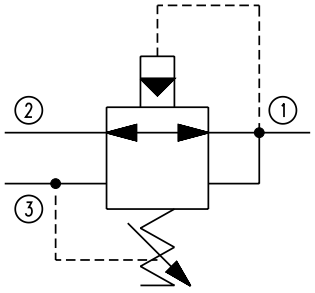
Pressure Reducing, Relieving, Pilot Operated

CP231-3

OPERATION

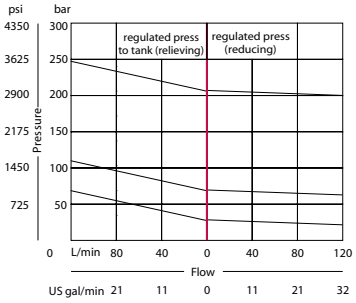
This is a pilot-operated pressure reducing/relieving valve.

Schematic



SPECIFICATIONS

Theoretical performance



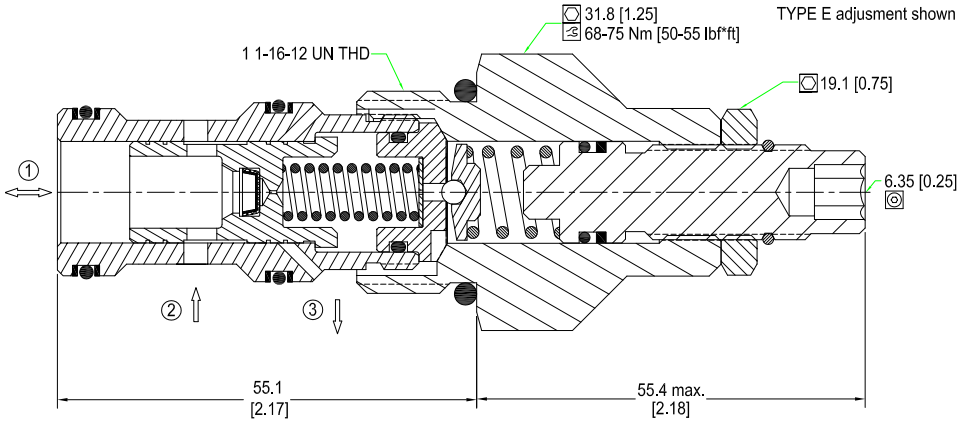
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Weight	0.27 kg [0.60 lb]
Cavity	**CP12-3S**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP231-3-B-10S-A-A-050

Pressure setting
Code x 10psi (0.69 bar)
Example: 050 = 500 psi (34 bar)

Pressure range
A = 14-55 bar [200-800 psi]
B = 21-103 bar [300-1500 psi]
C = 27-207 bar [400-3000 psi]
D = 27-345 bar [400-5000 psi]

Adjustment options
A = Internal
F = Tamper Resistant
E = External
K = Knob

Housing and ports

			Housing P/N
0	=	No Housing	No Housing
4B	=	Al, 1/2 BSP	CP12-3S-4B/2B
6B	=	Al, 3/4 BSP	CP12-3S-6B/2B
10S	=	Al, #10 SAE	CP12-3S-10S/4S
12S	=	Al, #12 SAE	CP12-3S-12S/4S

Other housings available

Seals
B = Buna-N
V = Viton

Seal kit
120335
120336

Pressure Reducing Valves Technical Information

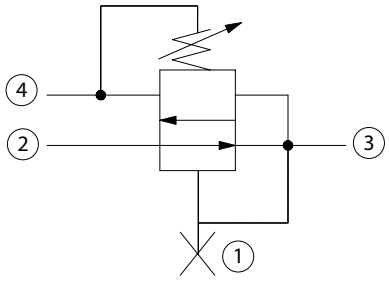
Pressure Reducing, Relieving, Direct Acting with Damping Port

PRR10-DRD

OPERATION

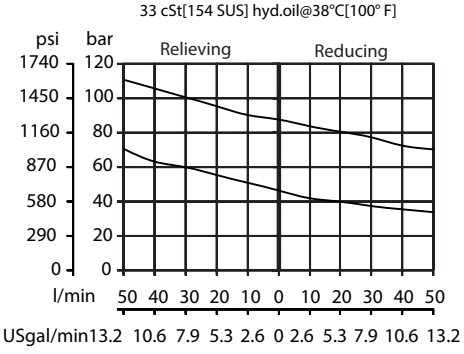
This is a direct-acting pressure reducing/ relieving valve, with damping port.

Schematic



SPECIFICATIONS

Theoretical performance



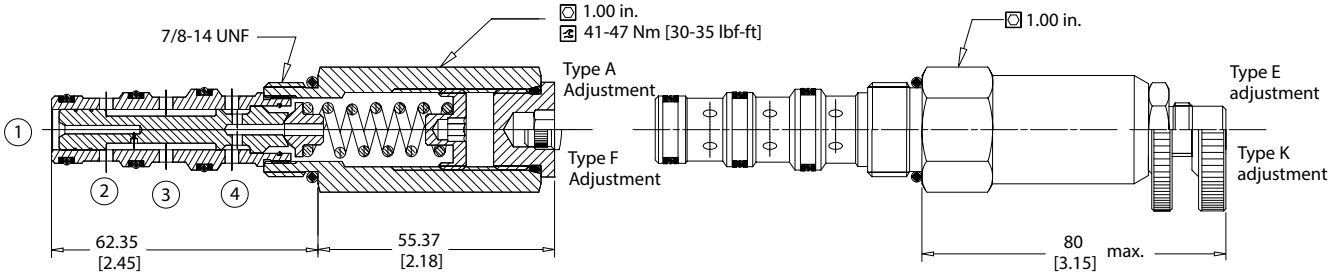
Specifications

Rated pressure	210 bar [3045 psi]
Rated Flow at 7 bar [100 psi]	38 l/min [10 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	**SDC10-4**

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

PRR10-DRD-4-E-104-B-00

Pressure Range
1 = 4-27 bar [50-400 psi]
Standard Setting 21 bar [300 psi]
2 = 5-55 bar [70-800 psi]
Standard Setting 35 bar [500 psi]
3 = 7-96 bar [100-1400 psi]
Standard Setting 69 bar [1000 psi]
4 = 35-165 bar [500-2400 psi]
Standard Setting 104 bar [1500 psi]

Adjustment Type
A = Internal
E = External
F = Tamper Resistant
K = Knob

Pressure Setting
104 = 104 bar [1500 psi]
XXX = Standard Setting

Seals
B = Buna-N
V = Viton

Seal Kit
120023
120024

Housing and ports
00 = No Housing
3B = Al, 3/8 BSP
4B = Al, 1/2 BSP
6S = Al, #6 SAE
8S = Al, #8 SAE

Housing Part #
No Housing
CP10-4-3B
CP10-4-4B
CP10-4-6S
CP10-4-8S

P108 370E