



# Pressure Reducing Valves Technical Information

## Quick Reference

Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>CP230-2</b>	<b>SDC10-3</b>	Pressure Reducing, Non-Relieving,	40 l/min [11 US gal/min]	210 bar [3045 psi]	<b>PR - 4</b>
	<b>PRC 06</b>	<b>NCS06/3</b>	Direct Acting	40 l/min [11 US gal/min]	315 bar [4570 psi]	<b>PR - 5</b>
Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>CP230-1</b>	<b>SDC10-3</b>	Pressure Reducing, Relieving, Direct Acting	40 l/min [11 US gal/min]	210 bar [3045 psi]	<b>PR - 6</b>
Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>PRR10-PVG</b>	<b>SDC10-3</b>	Pressure Reducing, Relieving, Direct Acting, Designed for PVG Actuators	40 l/min [11 US gal/min]	210 bar [3045 psi]	<b>PR - 7</b>
Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>CP230-4</b>	<b>SDC10-3</b>	Pressure Reducing, Non-Relieving,	40 l/min [11 US gal/min]	350 bar [5075 psi]	<b>PR - 8</b>
	<b>PPRC 06</b>	<b>NCS06/3</b>	Pilot Operated	40 l/min [11 US gal/min]	315 bar [4570 psi]	<b>PR - 9</b>
Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>PRMP 064</b>	<b>SDC10-3</b>	Pressure Reducing, Relieving, Pilot Operated	40 l/min [11 US gal/min]	315 bar [4570 psi]	<b>PR - 10</b>
	<b>CP231-3</b>	<b>CP12-3S</b>	Pilot Operated	115 l/min [30 US gal/min]	350 bar [5075 psi]	<b>PR - 11</b>
Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	<b>PRR10-DRD</b>	<b>SDC10-4</b>	Pressure Reducing, Relieving, Direct Acting with Damping Port	38 l/min [10 US gal/min]	210 bar [3045 psi]	<b>PR - 12</b>

\* 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



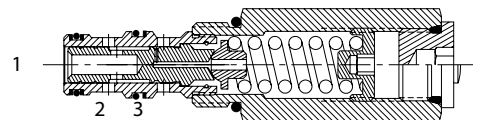
### DIRECT ACTING PRESSURE REDUCING / RELIEVING VALVES

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.



## Pressure Reducing Valves Technical Information

### Application Notes

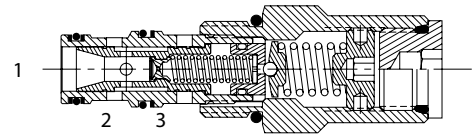
#### PILOT-OPERATED PRESSURE REDUCING / RELIEVING VALVES

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 its 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.



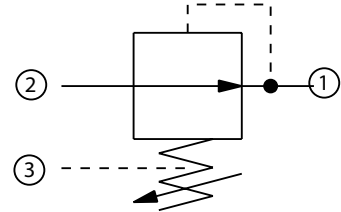
# Pressure Reducing Valves Technical Information

## Pressure Reducing, Non-Relieving, Direct Acting CP230-2

### OPERATION

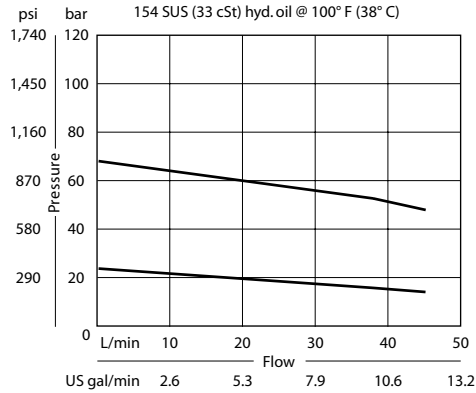
This is a direct-acting pressure-reducing (non-relieving) valve.

### Schematic



### SPECIFICATIONS

#### Theoretical performance



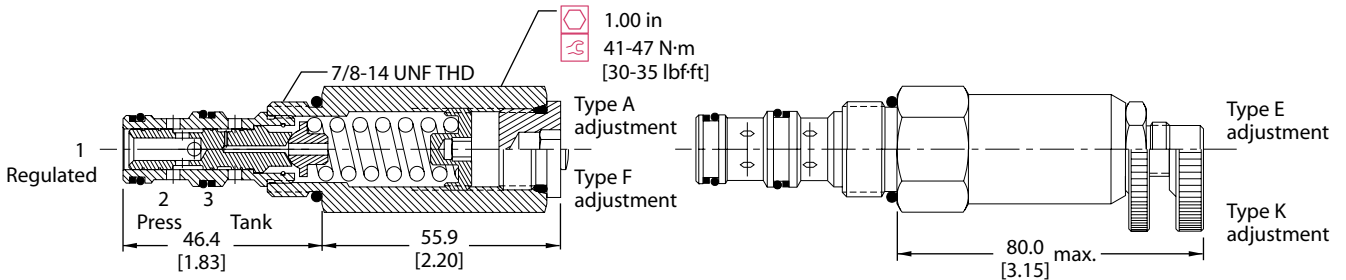
#### Specifications

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

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

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

**Pressure range**

Setting	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]



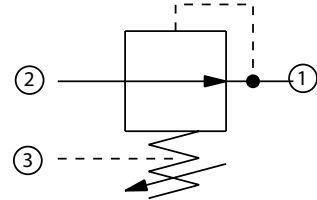
# Pressure Reducing Valves Technical Information

## Pressure Reducing, Non-Relieving, Direct Acting PRC 06

### OPERATION

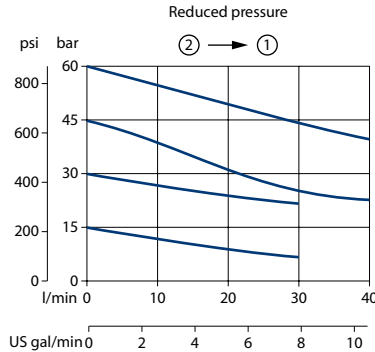
This is a direct-acting pressure reducing (non-relieving) valve.

### Schematic



### SPECIFICATIONS

#### Theoretical performance



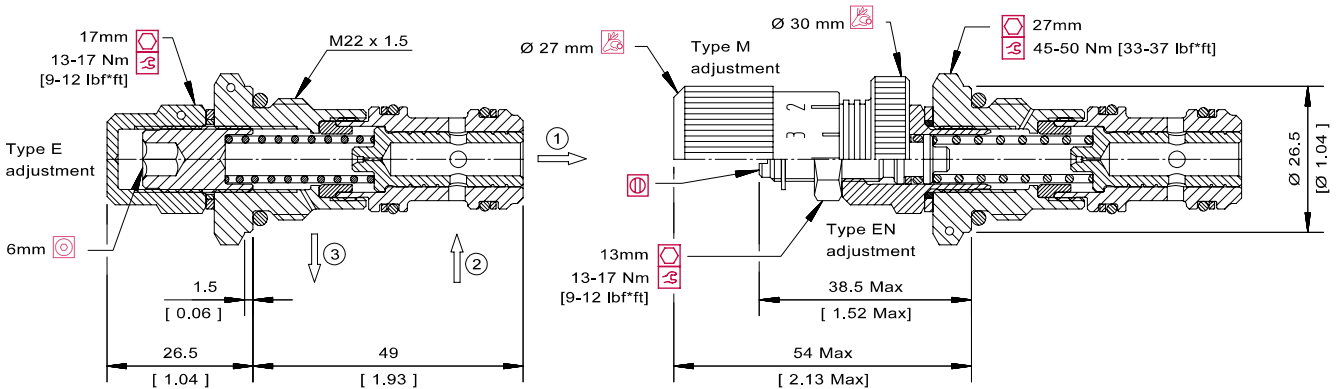
#### Specifications

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

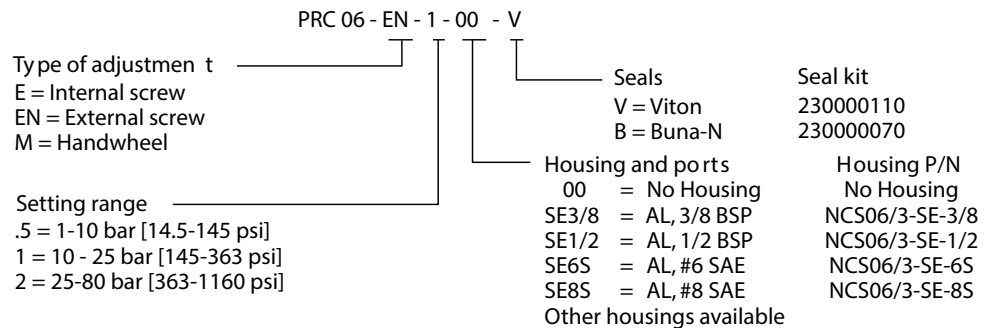
### DIMENSIONS

mm [in]

#### Cross-sectional view



### ORDERING INFORMATION



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



# Pressure Reducing Valves Technical Information

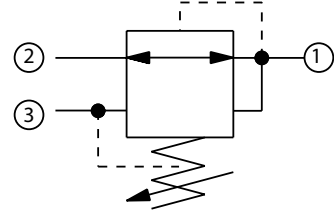
## Pressure Reducing, Relieving, Direct Acting

### CP230-1

#### OPERATION

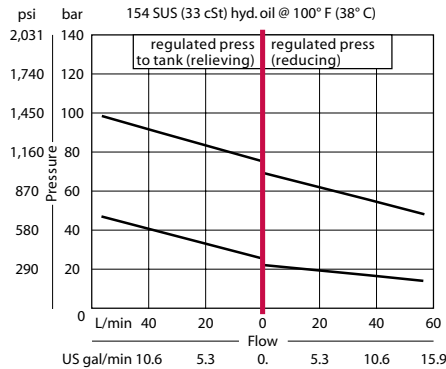
This is a direct-acting pressure reducing/relieving valve.

#### Schematic



#### SPECIFICATIONS

#### Theoretical performance



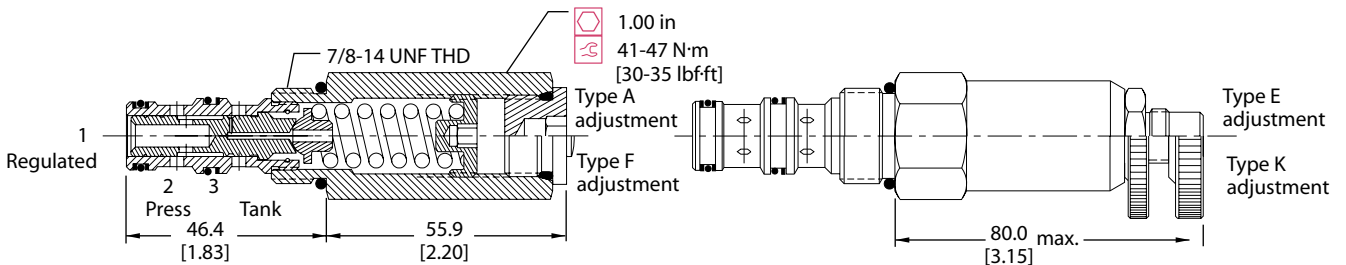
#### Specifications

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

#### 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, 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

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

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

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



# Pressure Reducing Valves Technical Information

Pressure Reducing, Relieving, Direct Acting, Designed for PVG Actuators  
PRR10-PVG

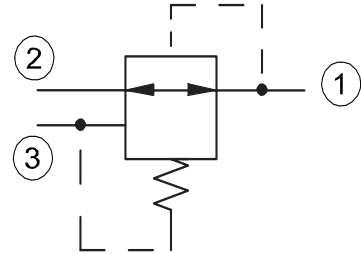
## OPERATION

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

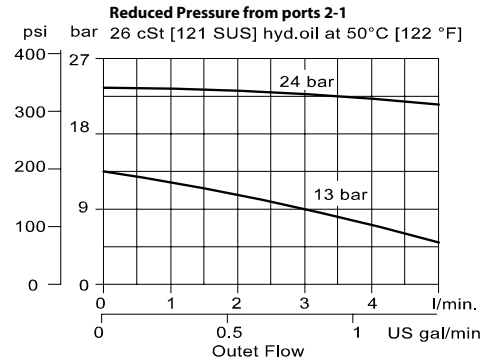
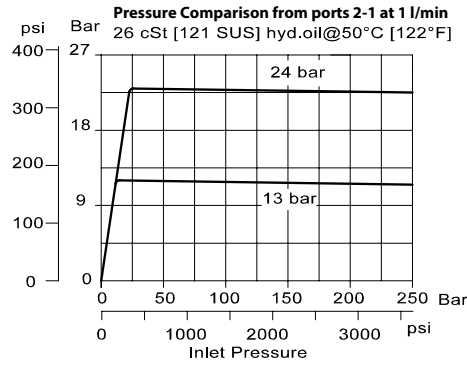
## SPECIFICATIONS

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



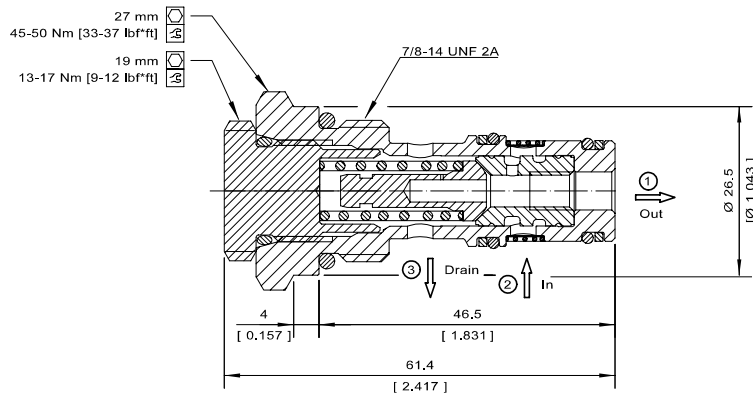
## Theoretical performance



## 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 230000650  
V = Viton 354001019



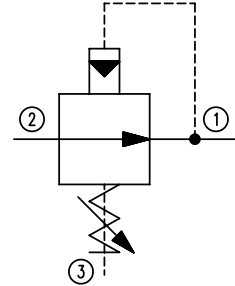
# Pressure Reducing Valves Technical Information

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

### OPERATION

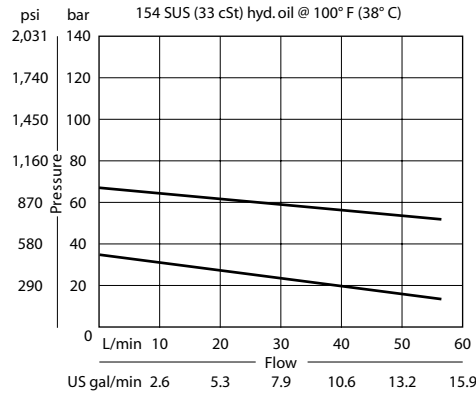
This is a pilot-operated pressure-reducing (non-relieving) valve.

### Schematic



### SPECIFICATIONS

#### Theoretical performance



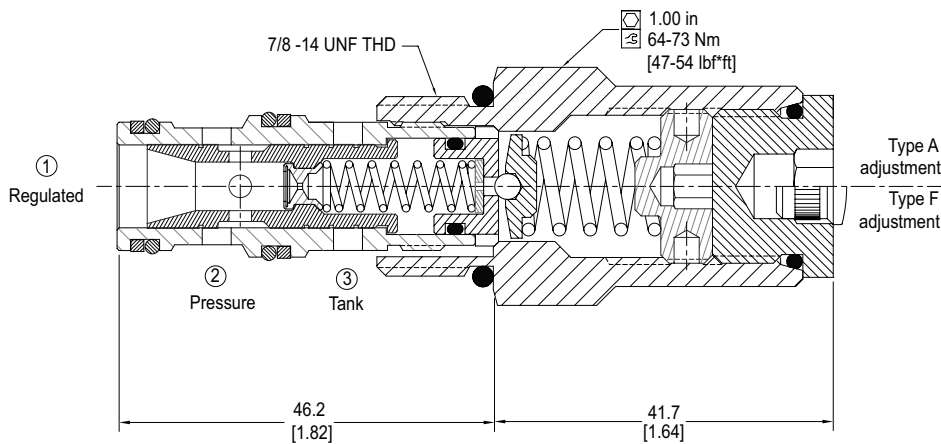
#### Specifications

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

### 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 = Standard	14-55	[200-800]
B = Standard	28	[400]
C = Standard	21-103	[300-1500]
D = Standard	69	[1000]
E = Standard	28-207	[400-3000]
F = Standard	103	[1500]
G = Standard	28-345	[400-5000]
H = Standard	103	[1500]





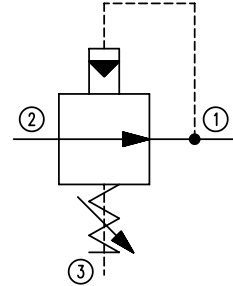
# Pressure Reducing Valves Technical Information

## Pressure Reducing, Non-Relieving, Pilot Operated PPRC 06

### OPERATION

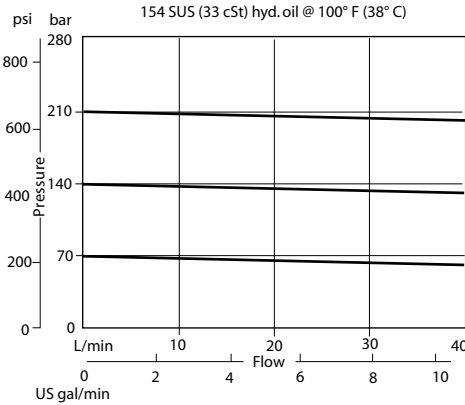
This is a pilot-operated pressure reducing (non-relieving) valve.

### Schematic



### SPECIFICATIONS

#### Theoretical performance



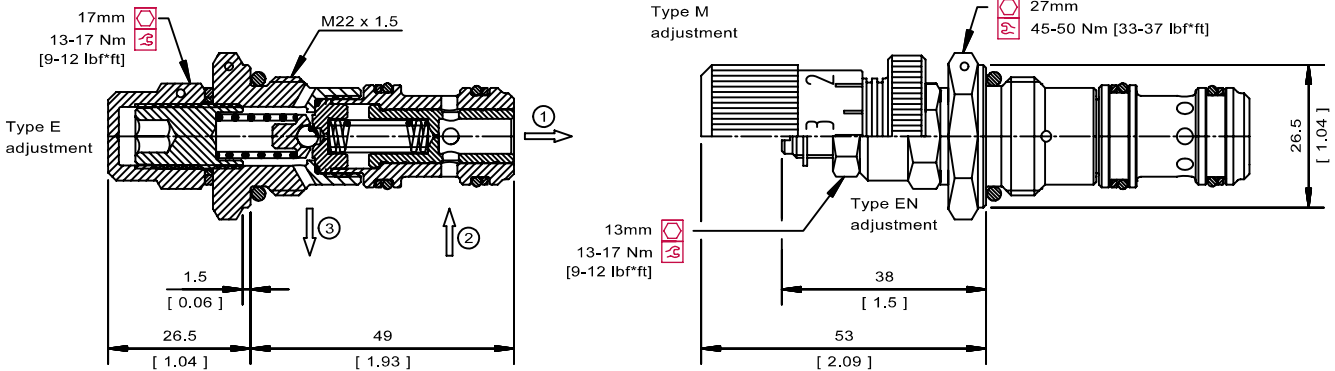
#### Specifications

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

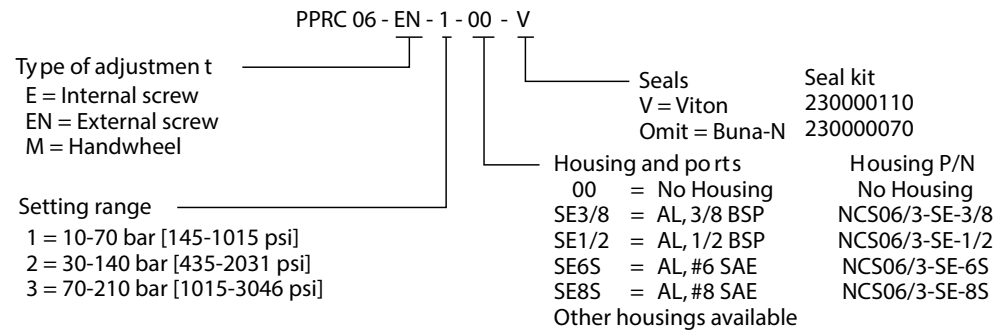
### DIMENSIONS

mm [in]

#### Cross-sectional view



### ORDERING INFORMATION



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



# Pressure Reducing Valves Technical Information

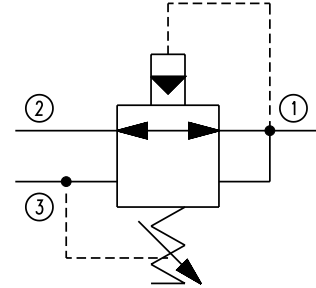
## Pressure Reducing, Relieving, Pilot Operated

### PRMP 064

#### OPERATION

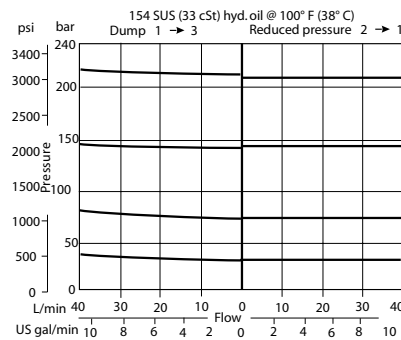
This is a pilot-operated pressure reducing/relieving valve.

#### Schematic



#### SPECIFICATIONS

#### Theoretical performance



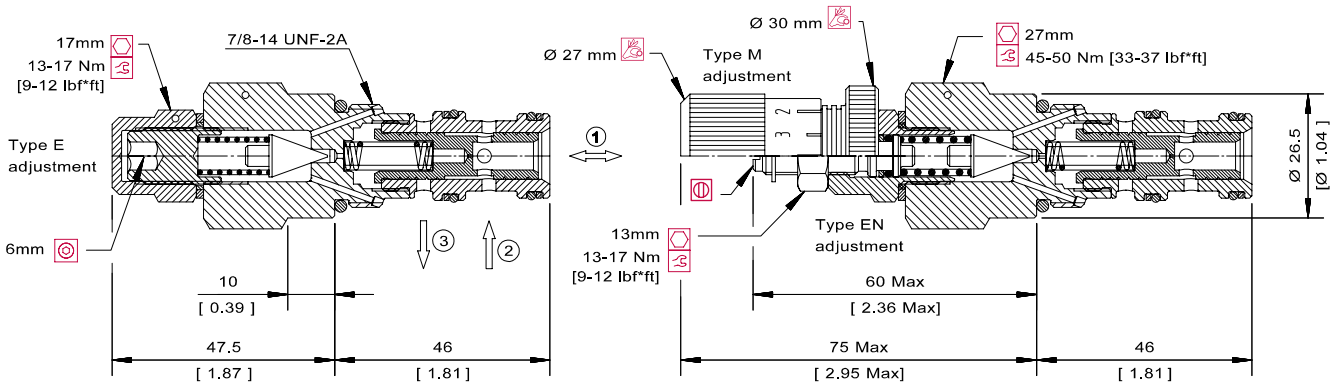
#### Specifications

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

#### 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



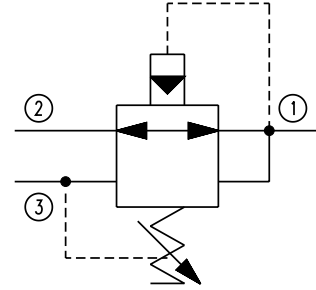
# Pressure Reducing Valves Technical Information

## Pressure Reducing, Relieving, Pilot Operated CP231-3

### OPERATION

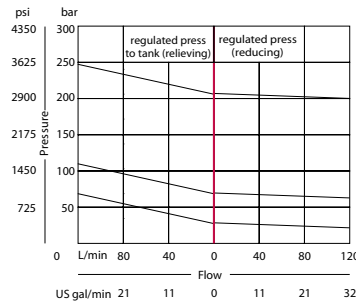
This is a pilot-operated pressure reducing/relieving valve.

### Schematic



### SPECIFICATIONS

#### Theoretical performance



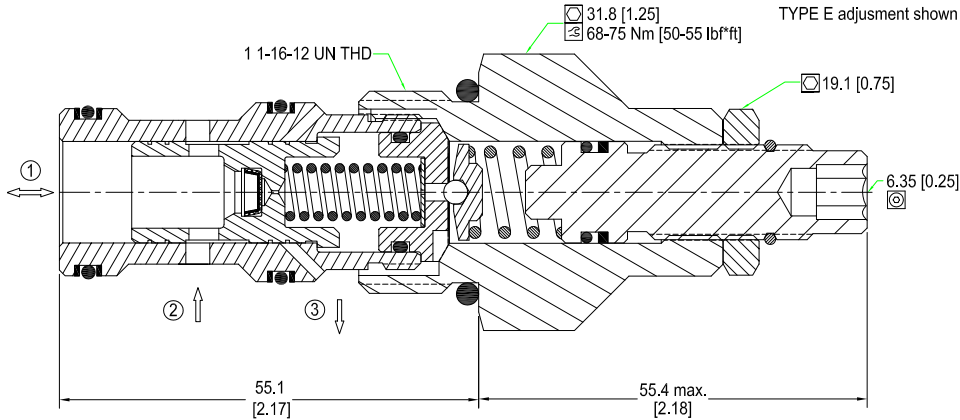
#### Specifications

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

### DIMENSIONS

mm [in.]

#### Cross-sectional view



### ORDERING INFORMATION

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

<b>Seals</b>	<b>Seal kit</b>	<b>Pressure range</b>	<b>Pressure setting</b>
B = Buna-N	120335	A = 14-55 bar [200-800 psi]	Code x 10psi (0.69 bar)
V = Viton	120336	B = 21-103 bar [300-1500 psi]	Example: 050 = 500 psi (34 bar)
		C = 27-207 bar [400-3000 psi]	
		D = 27-345 bar [400-5000 psi]	
		<b>Housing and ports</b>	<b>Housing P/N</b>
		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	



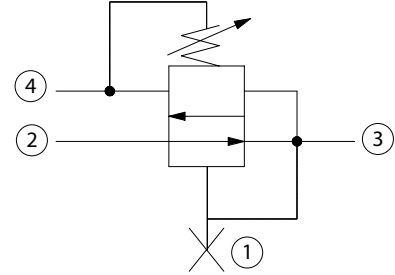
# Pressure Reducing Valves Technical Information

Pressure Reducing, Relieving, Direct Acting with Damping Port  
PRR10-DRD

## OPERATION

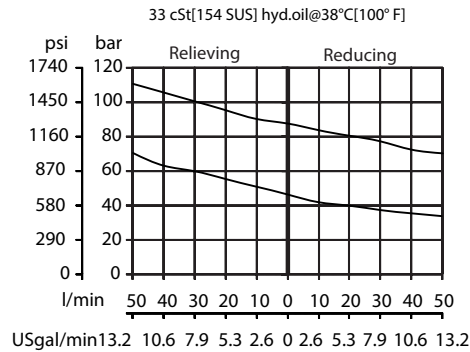
This is a direct-acting pressure reducing/relieving valve, with damping port.

## Schematic



## SPECIFICATIONS

### Theoretical performance



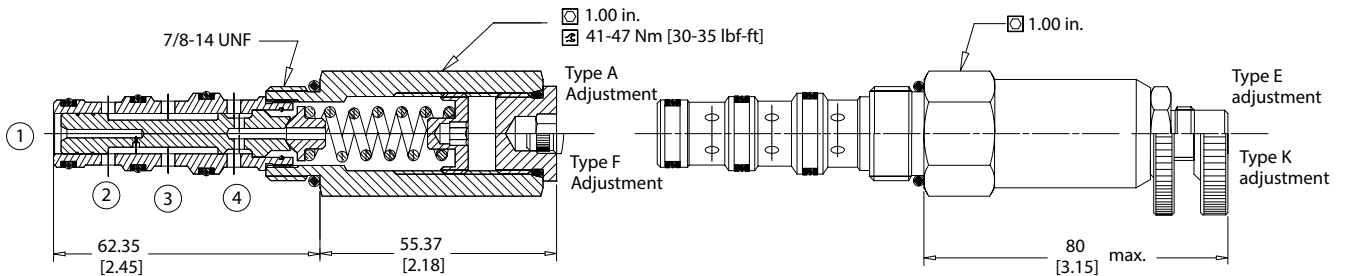
## Specifications

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	Housing and ports	Housing Part #
1 = 4-27 bar [50-400 psi]	00 = No Housing	No Housing
Standard Setting 21 bar [300 psi]	3B = Al, 3/8 BSP	CP10-4-3B
2 = 5-55 bar [70-800 psi]	4B = Al, 1/2 BSP	CP10-4-4B
Standard Setting 35 bar [500 psi]	6S = Al, #6 SAE	CP10-4-6S
3 = 7-96 bar [100-1400 psi]	8S = Al, #8 SAE	CP10-4-8S
Standard Setting 69 bar [1000 psi]	Seals	Seal Kit
4 = 35-165 bar [500-2400 psi]	B = Buna-N	120023
Standard Setting 104 bar [1500 psi]	V = Viton	120024
Adjustment Type	Pressure Setting	
A = Internal	104 = 104 bar [1500 psi]	
E = External	XXX = Standard Setting	
F = Tamper Resistant		
K = Knob		

P108 370E