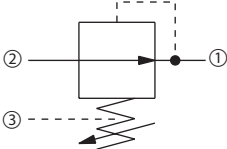
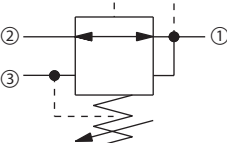


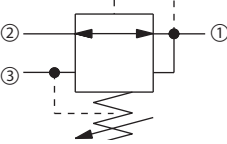
Cartridge Valves Technical Information

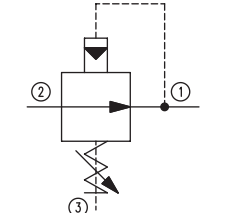
Pressure Reducing Valves

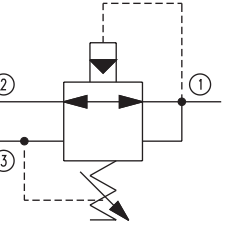
Quick Reference

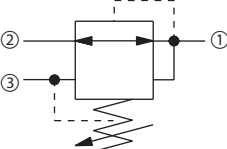
Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP230-2	SDC10-3	Pressure Reducing, Non-Relieving,	40 l/min [10 US gal/min]	210 bar [3000 psi]	05.4
	PRC 06	NCS06/3	Direct Acting	40 l/min [10 US gal/min]	315 bar [4500 psi]	05.5

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP230-1	SDC10-3	Pressure Reducing, Relieving, Direct Acting	40 l/min [10 US gal/min]	210 bar [3000 psi]	05.6

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	PRR10-PVG	SDC10-3	Pressure Reducing, Relieving,	40 l/min [10 US gal/min]	210 bar [3000 psi]	05.7
			Direct Acting, Designed for PVG Actuators			

Pressure Reducing, Non-Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP230-4	SDC10-3	Pressure Reducing, Non-Relieving,	40 l/min [10 US gal/min]	350 bar [5000 psi]	05.8
	PPRC 06	NCS06/3	Pilot Operated	40 l/min [10 US gal/min]	315 bar [4500 psi]	05.9

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	PRMP 064	SDC10-3	Pressure Reducing, Relieving,	40 l/min [10 US gal/min]	315 bar [4500 psi]	05.10
	CP231-3	CP12-3S	Pilot Operated	115 l/min [30 US gal/min]	350 bar [5000 psi]	05.11

Pressure Reducing, Relieving	Model No.	Cavity	Description	Flow*	Pressure	Page
	PRR10-DRD	SDC10-4	Pressure Reducing, Relieving,	38 l/min [10 US gal/min]	207 bar [3000 psi]	05.12
			Direct Acting with Dampening Port			

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

Cartridge Valves Technical Information

Pressure Reducing Valves

Application Notes

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



F102 010

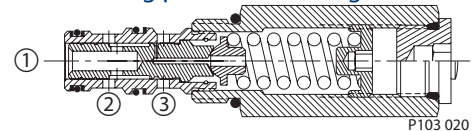
DIRECT ACTING PRESSURE REDUCING / RELIEVING VALVES

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



P103 020

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.

Cartridge Valves Technical Information

Pressure Reducing Valves

Application Notes

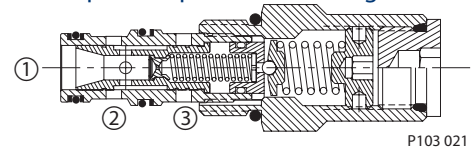
PILOT-OPERATED PRESSURE REDUCING / RELIEVING VALVES

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.

Cartridge Valves Technical Information

Pressure Reducing Valves

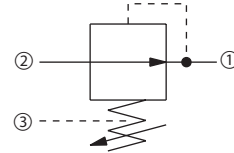
Pressure Reducing, Non-Relieving

CP230-2

OPERATION

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

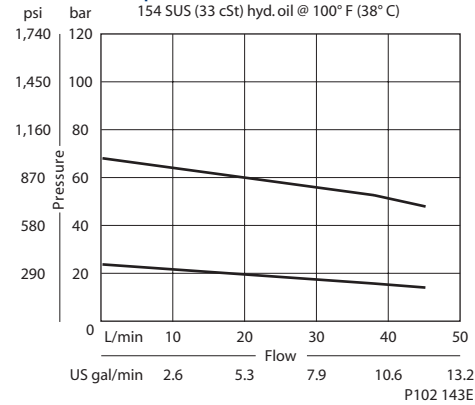
Schematic



P102 140E

SPECIFICATIONS

Theoretical performance



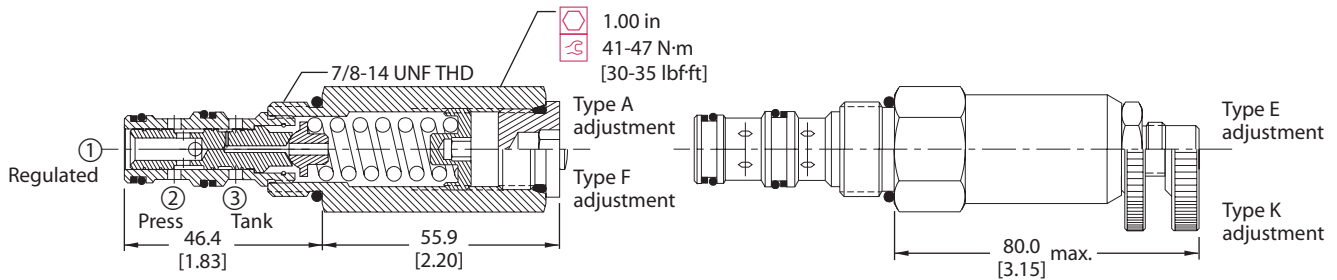
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [10 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

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

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

Seal kit
 120027
 120028

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

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]

P102 144E

Cartridge Valves Technical Information

Pressure Reducing Valves

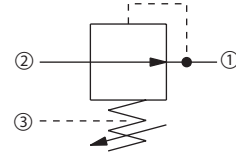
Pressure Reducing, Non-Relieving

PRC 06

OPERATION

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

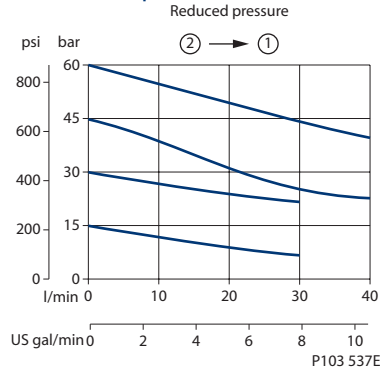
Schematic



P102 140E

SPECIFICATIONS

Theoretical performance



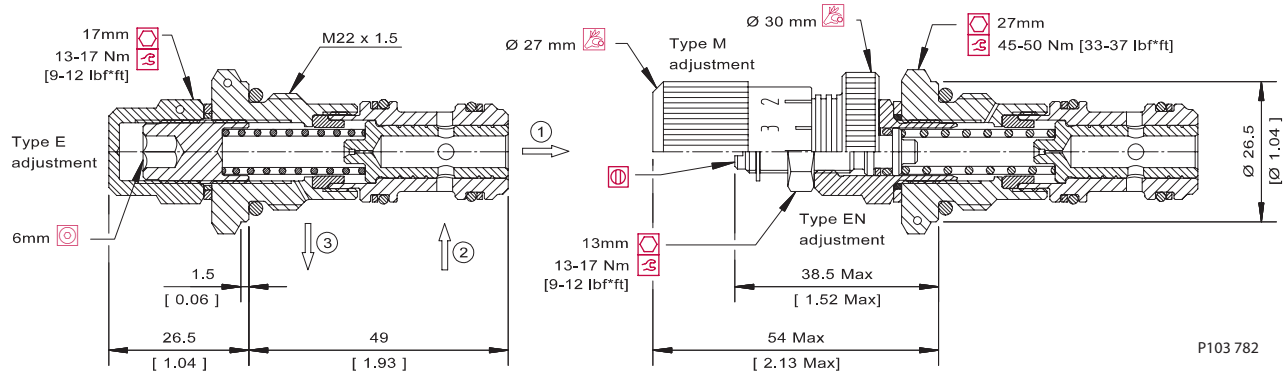
Specifications

Rated pressure	315 bar [4500 psi]
Rated Flow	40 l/min [10 US gal/min]
Weight	0.14 kg [0.31 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]

Cross-sectional view



P103 782

ORDERING INFORMATION

PRC 06 - EN - 1 - 00 - V

Type of adjustment

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

Housing and ports

00 = No Housing
 SE3/8 = AL, 3/8 BSP
 SE1/2 = AL, 1/2 BSP
 SE6S = AL, #6 SAE
 SE8S = AL, #8 SAE
 Other housings available

Seal kit
 230000110
 230000070

Housing P/N

No Housing
 NCS06/3-SE-3/8
 NCS06/3-SE-1/2
 NCS06/3-SE-6S
 NCS06/3-SE-8S

To order this valve with a specific factory setting, contact your Sauer-Danfoss representative P103 784E

Cartridge Valves Technical Information

Pressure Reducing Valves

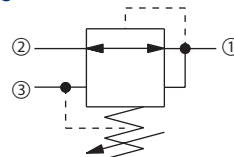
Pressure Reducing, Relieving

CP230-1

OPERATION

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

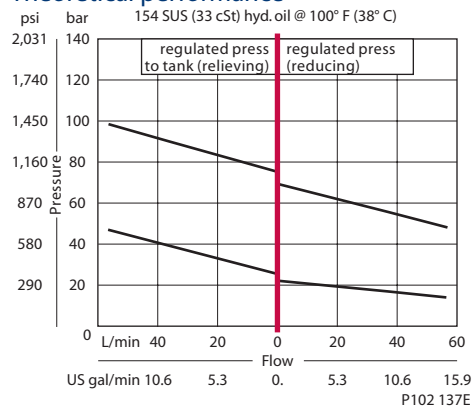
Schematic



P102 135E

SPECIFICATIONS

Theoretical performance



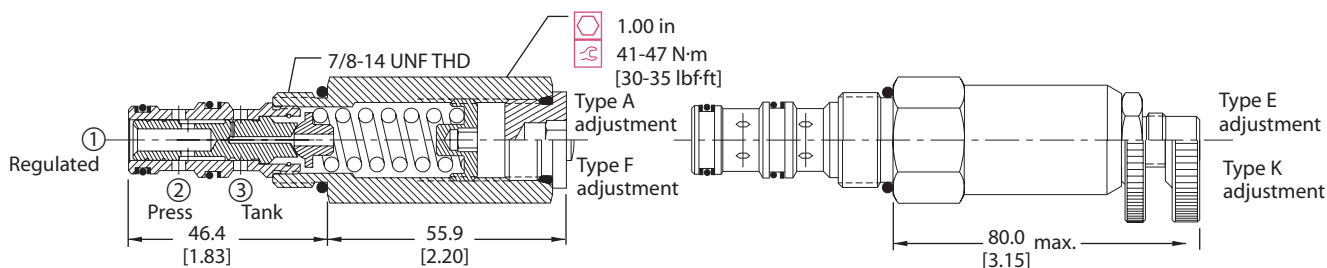
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [10 US gal/min]
Weight	0.23 kg [0.51 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 136E

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

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

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	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]

P102 139E

Cartridge Valves Technical Information

Pressure Reducing Valves

Pressure Reducing, Relieving

PRR10-PVG

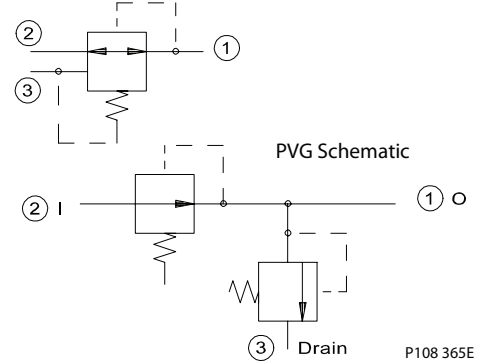
OPERATION

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

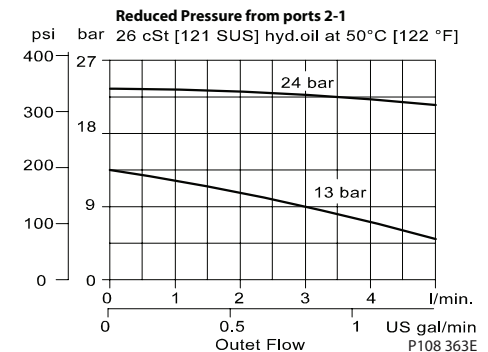
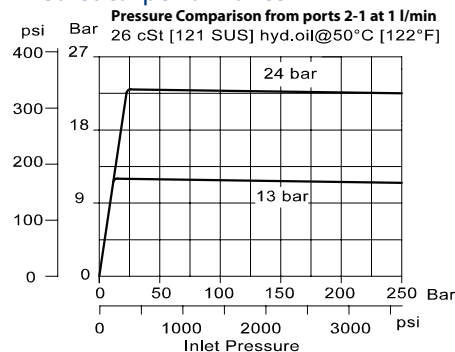
SPECIFICATIONS

Max. pressure in port 2	210 bar [3000 psi]
Maximum flow	5 l/min [1.3 US gal/min]
Cartridge Weight	0.23 kg [0.51 lb]
Cavity	SDC10-3

Schematics



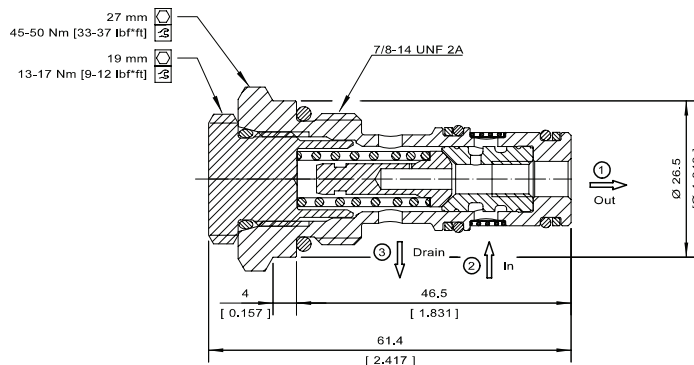
Theoretical performance



DIMENSIONS

Cross-sectional view

mm [in]



ORDERING INFORMATION

PRR10-PVG-E-13-B-F-00			
TYPE:		Body and ports	Body Nomenclature
E = Electrical (PVE)		00 = Cartridge only	No Body
H = Hydraulic (PVH) or High Current (PVHC)		6S = Al, #6 SAE	CP10-3-6S
		8S = Al, #8 SAE	CP10-3-8S
		SE3B = Al, 3/8 BSP	SDC10-3-SE3B
		SE4B = Al, 1/2 BSP	SDC10-3-SE4B
		Other housings available	
Pressure setting:		F = FILTER 300µm (Omit if not required) (Not available for low leakage versions)	
13 = 13 Bar for Electrical (PVE)		SEALS	SEAL KIT
24 = 24 Bar for Hydraulic (PVH) or High Current (PVHC)		Omit = Buna	230000650
		V = Viton	354001019

P108 364E

Cartridge Valves Technical Information

Pressure Reducing Valves

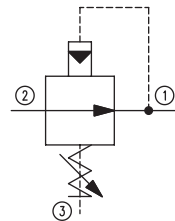
Pressure Reducing, Non-Relieving

CP230-4

OPERATION

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

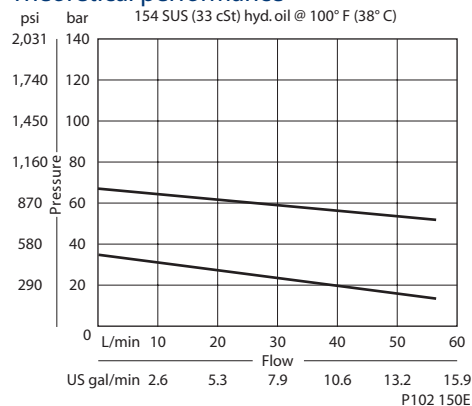
Schematic



P103 231

SPECIFICATIONS

Theoretical performance



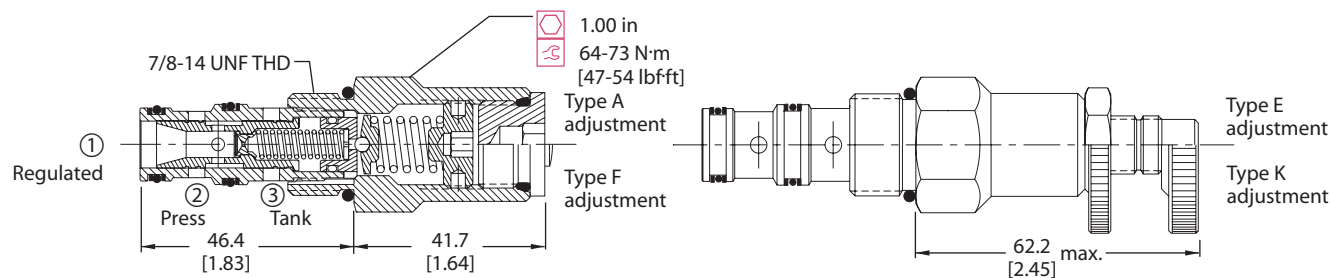
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [10 US gal/min]
Weight	0.20 kg [0.43 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 149E

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

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

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: 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]

P102 152E

Cartridge Valves Technical Information

Pressure Reducing Valves

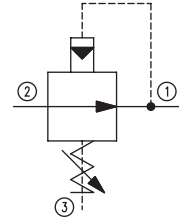
Pressure Reducing, Non-Relieving

PPRC 06

OPERATION

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

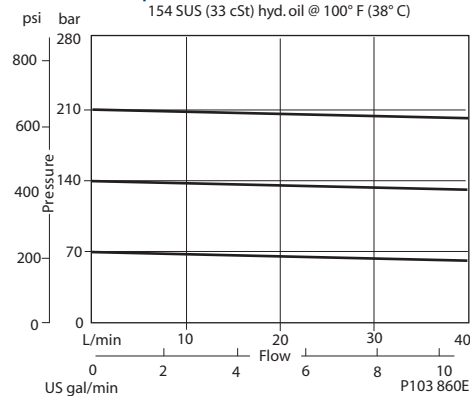
Schematic



P103 231

SPECIFICATIONS

Theoretical performance



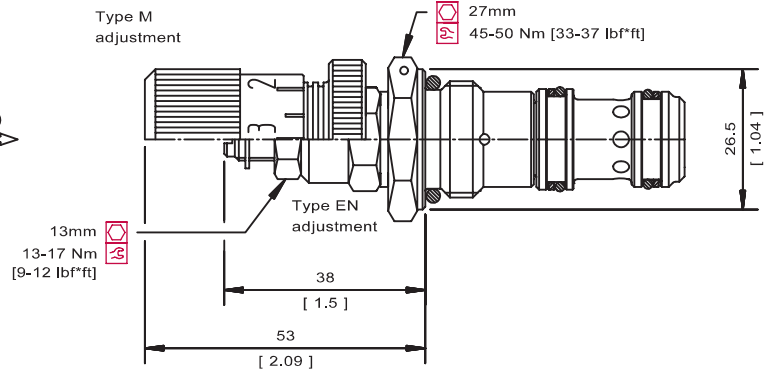
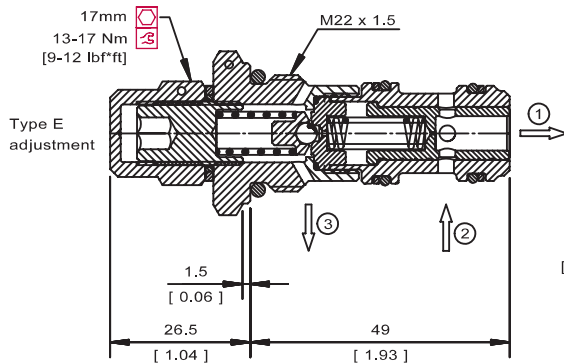
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	40 l/min [10 US gal/min]
Weight	0.14 kg [0.31 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]

Cross-sectional view



P103 913E

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

Housing and ports

00 = No Housing
 SE3/8 = AL, 3/8 BSP
 SE1/2 = AL, 1/2 BSP
 SE6S = AL, #6 SAE
 SE8S = AL, #8 SAE
 Other housings available

Seal kit

230000110
 230000070

Housing P/N

No Housing
 NCS06/3-SE-3/8
 NCS06/3-SE-1/2
 NCS06/3-SE-6S
 NCS06/3-SE-8S

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

P103 794E

Cartridge Valves Technical Information

Pressure Reducing Valves

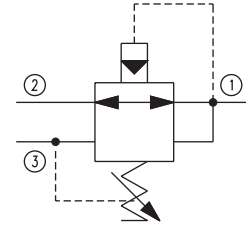
Pressure Reducing, Relieving

PRMP 064

OPERATION

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

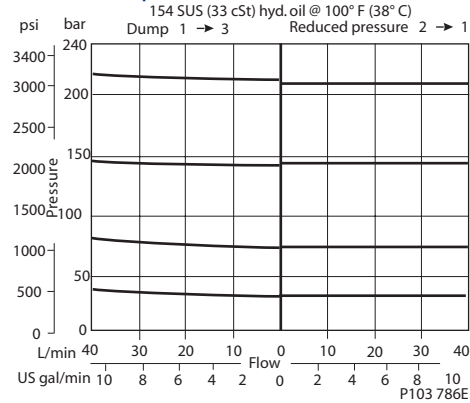
Schematic



P103 230

SPECIFICATIONS

Theoretical performance



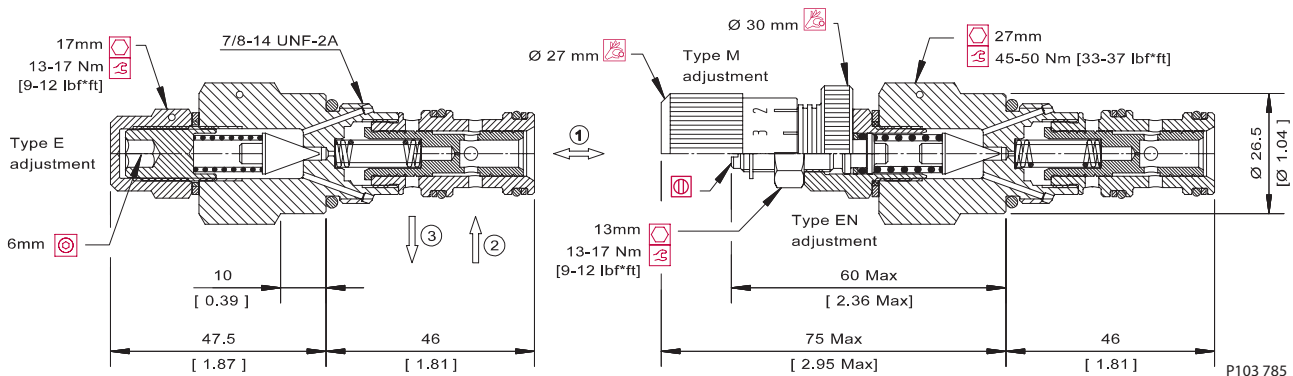
Specifications

Rated pressure	315 bar [4500 psi]
Rated Flow	40 l/min [10 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
 V = Viton
 Omit = Buna-N

Seal Kit
 354003719
 230000070

Housing and ports
 00 = 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

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

P103 787E

Cartridge Valves Technical Information

Pressure Reducing Valves

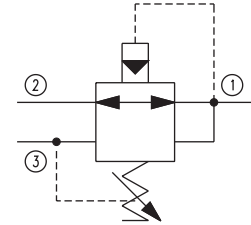
Pressure Reducing, Relieving

CP231-3

OPERATION

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

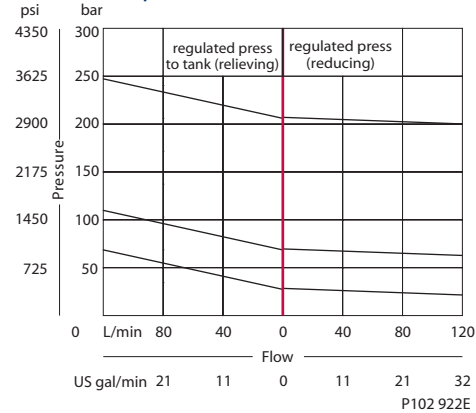
Schematic



P103 230

SPECIFICATIONS

Theoretical performance



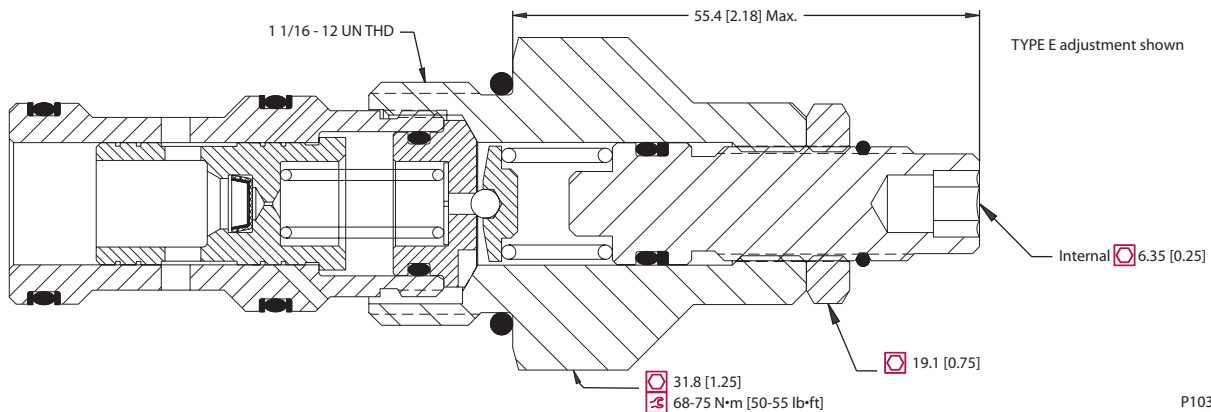
Specifications

Rated pressure	350 bar [5000 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



P103 621E

ORDERING INFORMATION

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

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

Seals
 B = Buna-N
 V = Viton

Seal kit
 120335
 120336

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]

Housing and ports

0 = No Housing
 4B = Al, 1/2 BSP
 6B = Al, 3/4 BSP
 10S = Al, #10 SAE
 12S = Al, #12 SAE
 Other housings available

Housing P/N

No Housing
 CP12-3S-4B/2B
 CP12-3S-6B/2B
 CP12-3S-10S/4S
 CP12-3S-12S/4S

P102 622E

Cartridge Valves Technical Information

Pressure Reducing Valves

Pressure Reducing, Relieving

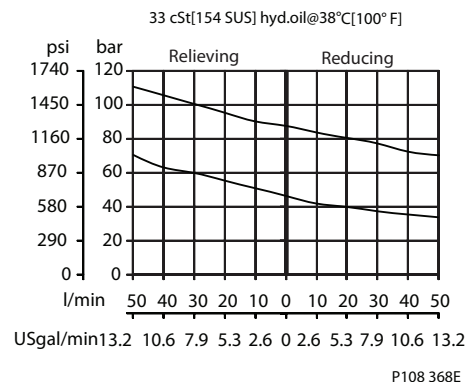
PRR10-DRD

OPERATION

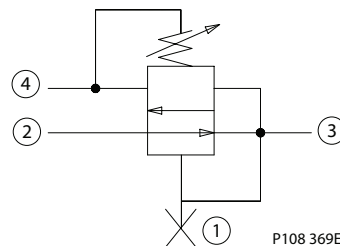
This is a pilot-operated pressure reducing/relieving valve.

SPECIFICATIONS

Theoretical performance



Schematic



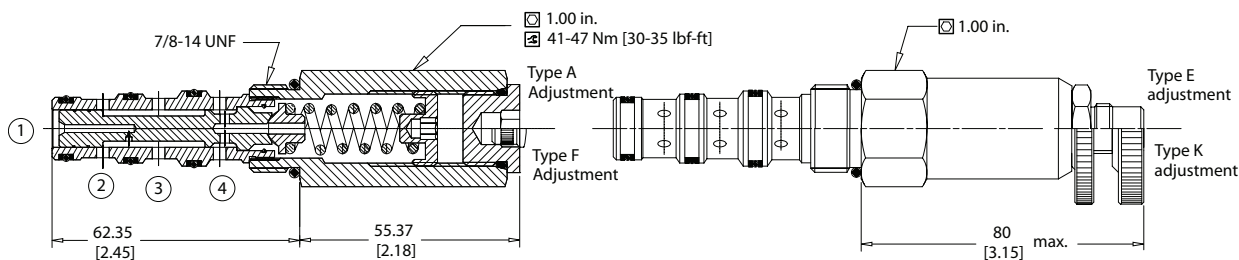
Specifications

Rated pressure	105 bar [1522 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

Housing and ports
 00 = No Housing
 DG3B = Al, 3/8 BSP
 DG4B = Al, 1/2 BSP
 6S = Al, #6 SAE
 8S = Al, #8 SAE

Seals
 B = Buna-N
 V = Viton

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

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

Seal Kit
 120023
 120024

P108 370E