

WANNER *Hydra-Cell*[®] Seal-less Pump Technology

C Series Pressure Regulating Valves - BSPT

Designed for Hydra-Cell or any Positive Displacement Pump



Economical C20 Series Valves.



In-line and Off-line C46 Series Valves.



Seal-less C60 Series Valves.

C Series Pressure Regulating Valves

Versatile Application for Positive Displacement Pumps

Designed for use with any positive displacement pump, Hydra-Cell C Series pressure regulating valves bypass system fluid to prevent excess pressure. They can also be used as pressure relief valves.

When a system discharge is completely closed (e.g. closed spray gun, closed valve, plugged nozzle) the Hydra-Cell valve bypasses the total system fluid flow. The valves also balance system pressure for multiple-gun operations.

Design Advantages



Tapered design of the C20 Series valves plunger.

The valve design is based on using a simple tapered plunger with a valve seat. When excess pressure overcomes the adjustable spring pressure on the plunger, the plunger lifts off the seat, allowing fluid to bypass and reduce system pressure. When the valve is mounted in the discharge line, its modified flow-through design reduces wear on the plunger and seat. Baffles on either side of the plunger and seat extend valve life by directing flow around these critical components.

Seal-less Diaphragm



C60 Series valves feature a seal-less diaphragm with a tapered plunger, making the valves ideal for high-pressure requirements and handling dirty fluids.

Performance Advantages

- Accurate and repeatable.
- Adjustable.
- Immediate response.
- Smooth, chatter-free bypass.
- No external springs or moving parts.
- Flow-through design with minimal pressure surge.
- Heavy-duty construction.

Easy to Service

Hydra-Cell C Series valves can be serviced in place without removing any fittings or plumbing. Simply remove the top of the body and replace any worn internal components.



The model C62 seal-less valve is the most frequently specified pressure regulating valve in a Hydra-Cell pumping system.

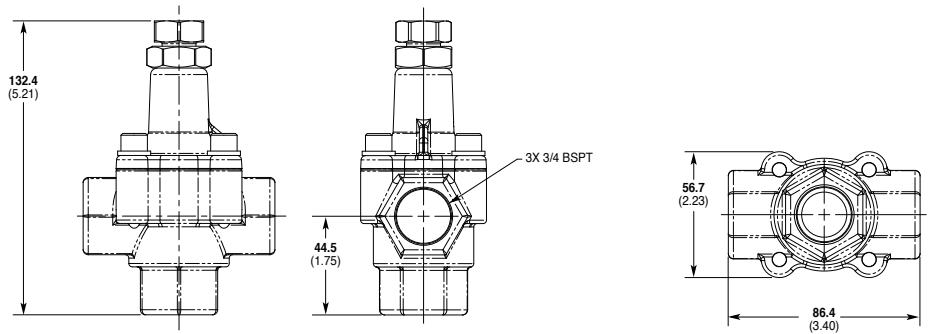
C20 Series Valves

Dimensions

C22 with 3/4" BSPT Ports mm (Inches)



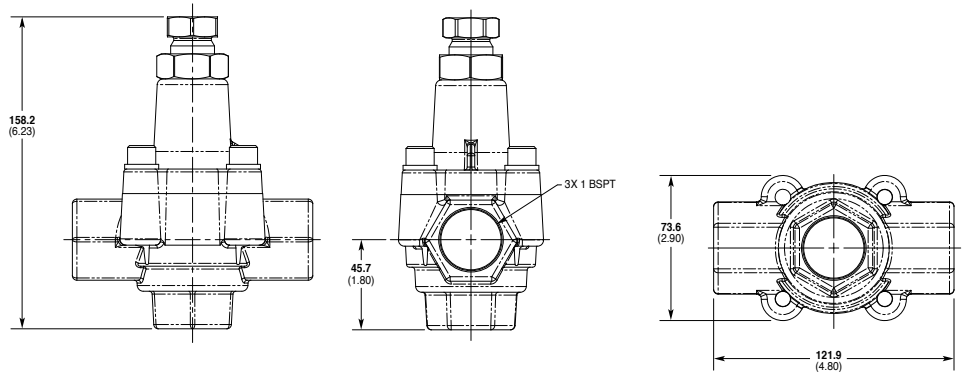
C22 valve with Brass body



C23 with 1" BSPT mm (Inches)



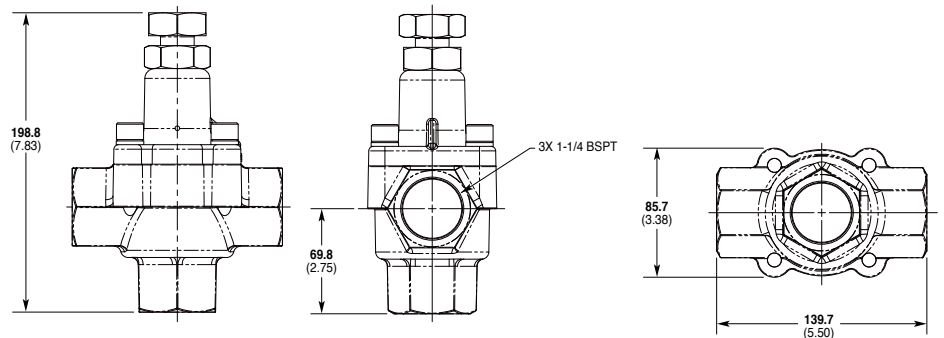
C23 valve with Stainless Steel body



C24 with 1-1/4" BSPT Ports mm (Inches)



C24 valve with Brass body



C20 Series Valves How to Order

Ordering Information

1	C	2	2	3		4	D	5		6		7		8		9		10		11	
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A complete C22, C23 or C24 Model Number contains 11 digits, including 8 customer-specified design and material options, for example: C22DABNSSEF.

Digit	Order Code	Description
1-4		Valve Configuration & Capacities
	C22D	11.3-37.8 l/min (3-10 gpm) BSPT Ports
	C23D	11.3-75.7 l/min (3-20 gpm) BSPT Ports
	C24D	18.9-151.4 l/min (5-40 gpm) BSPT Ports
5		Pressure Range (Spring Selection)
	A	5-34 bar (75-500 psi)
	B	34-69 bar (500-1000 psi)
	C	69-103 bar (1000-1500 psi)
6		Body/Top Material
	B	Brass/Plated Steel
	H	Hastelloy CW12MW/Plated Steel
	S	316L Stainless Steel/Plated Steel
7		Seals/Back-up Seals
	A	Urethane/UHMW Polyethylene
	B	FKM/UHMW Polyethylene
	E	EPDM/PTFE
	N	Buna-N/Buna-N
	V	FKM/PTFE
8		Valve Seats
	H	Hastelloy C
	R	316L Stainless Steel
	S	17-4 Stainless Steel
	T	Tungsten Carbide
9		Plungers
	H	Hastelloy C
	R	316L Stainless Steel
	S	17-4 Stainless Steel
	T	Tungsten Carbide
10		Seat Size
	E	For C22 Models
	J	For C23 Models
	N	For C24 Models
11		Port Size
	F	For C22 Models (3/4")
	G	For C23 Models (1")
	H	For C24 Models (1-1/4")

Ratings and Specifications

Flow Capacity Model	Maximum		Minimum	
	gpm	l/min	gpm	l/min
C22	10.0	37.8	3.0	11.3
C23	20.0	75.7	3.0	11.3
C24	40.0	151.4	5.0	18.9

Pressure Range (All Models)	Model Configuration		
	DA	DB	DC
psi	75-500	500-1000	1000-1500
bar	5-34	34-69	69-103

Max. Temperature 93 °C (200 °F)

Inlet & Outlet Ports

C22	3/4" BSPT
C23	1" BSPT
C24	1-1/4" BSPT

Weight

C22	1.3 kg (3 lbs.)
C23	2.7 kg (6 lbs.)
C24	4.5 kg (10 lbs.)

C22 valves are used with Hydra-Cell models G10 and G12.

C23 valves are used with Hydra-Cell model G25.

C24 valves are used with Hydra-Cell models G35 and G66.

C20 Series valves can be used as a lower-cost alternative to C60 Series seal-less valves when higher discharge pressures are not required.

For Installation Guidelines, and reference on identifying metallic components of C20 Series plungers and plunger valve seats, see page 9.

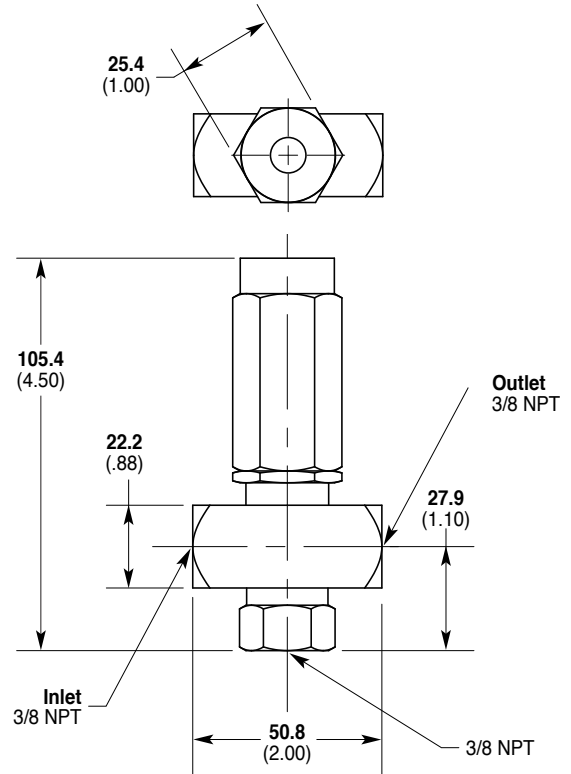
C46 Series Valves - only available in NPT Ports

Dimensions

C46 for In-Line Mount with 3/8" NPT Ports mm (Inches)



C46 In-line with Brass body.

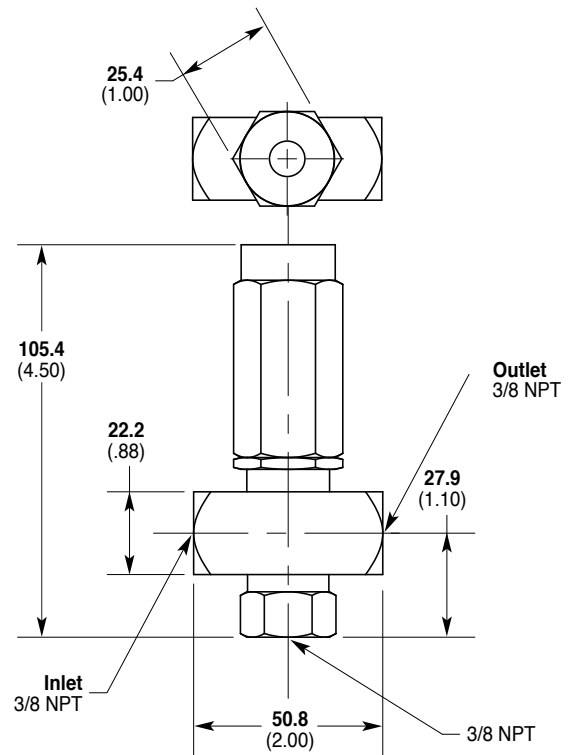


C46 Off-line with Stainless Steel body.

C46 for Off-Line Mount with 3/8" NPT Ports mm (Inches)



C46 Off-line with Brass body.



C46 Series Valves How to Order

Ordering Information



A complete C46 Model Number contains 11 digits, including 4 customer-specified design and material options, for example: C46AABESSEE

Digit	Order Code	Description
1-3		Valve Configuration & Capacities
	C46	1-37.8 l/min (0.2-10 gpm) NPT Ports
4		Mounting Design
	A	In-line (Brass only)
	B	Off-line (Brass or Stainless Steel)
5		Pressure Range (Spring Selection)
	A	Low Spring: 3-34 bar (50-500 psi)
	B	Medium Spring: 7-62 bar (100-900 psi)
	C	Standard Spring: 13-103 bar (200-1500 psi)
6		Body Material
	B	Brass
	S	316L Stainless Steel (Off-line models only)
7		O-rings
	E	EPDM
	N	Buna-N
	V	FKM
8		Piston
	S	316L Stainless Steel
9		Seat
	S	316L Stainless Steel
10		Seat Size
	E	For C46 Models
11		Port Size
	E	For C46 Models (3/8" NPT)

For Installation Guidelines, see page 9.

Ratings and Specifications

Flow Capacity Model	Maximum		Minimum	
	gpm	l/min	gpm	l/min
C46 In-line	7.0	26.5	0.2	1.0
C46 Off-line	10.0	37.8	0.2	1.0
Pressure Range				
Low Spring	3-34 bar (50-500 psi)			
Medium Spring	7-62 bar (100-900 psi)			
Standard Spring	13-103 bar (200-1500 psi)			
Max. Temperature	93 °C (200 °F)			
Inlet & Outlet Ports	3/8" NPT			
Weight	0.33 kg (12 oz.)			

C46 Series valves are used with Hydra-Cell models G20, G21, G22, G03/G13, and G03/G13 Mono-Block.

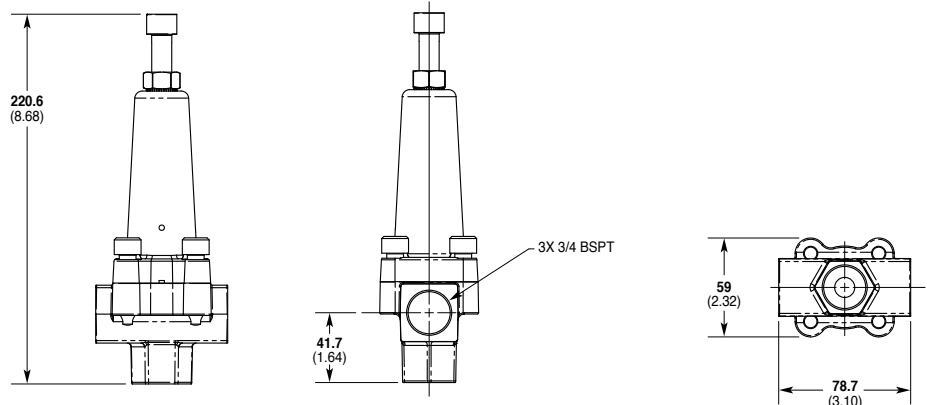
C60 Series Valves

Dimensions



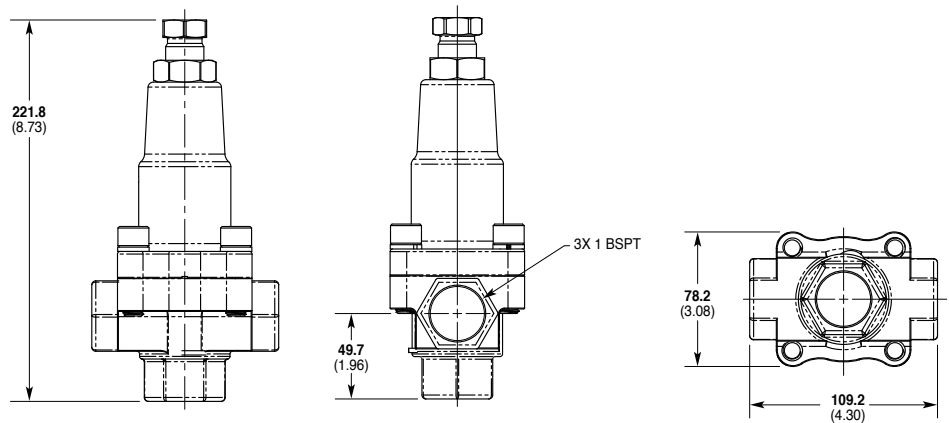
C62 valve with Stainless Steel body

C62 with 3/4" BSPT Ports mm (Inches)



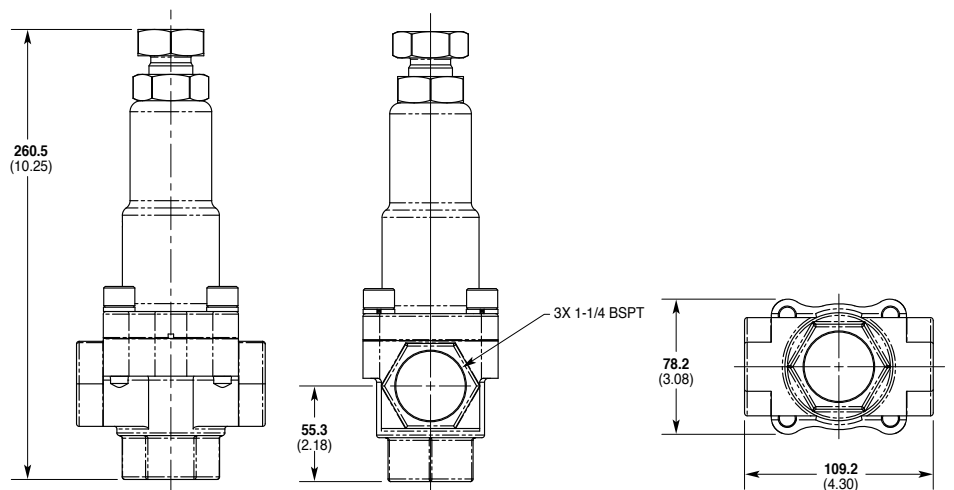
C63 valve with Brass body

C63 with 1" BSPT Ports mm (Inches)



C64 valve with Stainless Steel body

C64 with 1-1/4" BSPT Ports mm (Inches)



C60 Series Valves How to Order

Ordering Information



A complete C62, C63 or C64 Model Number contains 11 digits, including 8 customer-specified design and material options, for example: C62DBBVSSEF.

Digit	Order Code	Description
1-3		Valve Configuration & Capacities
	C62	3-53.0 l/min (1-14 gpm)
	C63	3-94.6 l/min (1-25 gpm)
	C64	3-151.4 l/min (1-40 gpm)
4		Inlet/Outlet Ports
	D	BSPT Threaded Ports
5		Pressure Range (Spring Selection)
	A	C62: 5-34 bar (75-500 psi) C63: 5-69 bar (75-1000 psi) C64: 5-69 bar (75-1000 psi)
	B	C62: 34-172 bar (500-2500 psi) C63: 69-172 bar (1000-2500 psi) C64: 69-172 bar (1000-2500 psi)
6		Body/Top Material
	B	Brass/Plated Steel
	H	Hastelloy C/Plated Steel (available for C62 only)
	S	316L Stainless Steel/Plated Steel
7		O-rings/Diaphragm
	J	PTFE/PTFE
	V	FKM/PTFE
8		Valve Seats
	H	Hastelloy C (available for C62 only)
	R	316L Stainless Steel
	S	17-4 Stainless Steel
	T	Tungsten Carbide (available for C62 only)
9		Plungers
	H	Hastelloy C (available for C62 only)
	R	316L Stainless Steel
	S	17-4 Stainless Steel
	T	Tungsten Carbide (available for C62 only)
10		Seat Size
	E	For C62 Models
	J	For C63 Models
	N	For C64 Models
11		Port Size
	F	For C62 Models (3/4")
	G	For C63 Models (1")
	H	For C64 Models (1-1/4")

Hastelloy C Body available only for C62 models.

Hastelloy C and Tungsten Carbide Valve Seat/Plunger options available only for C62 models.

C62 models fitted with Tungsten Carbide Valve Seats/Plungers rated to 124 psi (1800 psi) maximum.

For Installation Guidelines, see page 9.

Ratings and Specifications

Flow Capacity Model	Maximum		Minimum	
	gpm	l/min	gpm	l/min
C62	14.0	53.0	1.0	3.8
C63	25.0	94.6	1.0	3.8
C64	40.0	151.4	1.0	3.8

Pressure Range	Model Configuration	Model Configuration	
		DA	DB
C62	psi	75-500	500-2500
		5-34	34-172
C63	psi	75-1000	1000-2500
		5-69	69-172
C64	psi	75-1000	1000-2500
		5-69	69-172

Max. Temperature 93°C (200°F)

Inlet & Outlet Ports

C62	3/4" BSPT
C63	1" BSPT
C64	1-1/4" BSPT

Weight

C62	4.0 lbs. (1.8 kg)
C63	6.2 lbs. (2.8 kg)
C64	7.2 lbs. (3.3 kg)

C62 valves are used with Hydra-Cell models G04, G10, G12, G15, and G17.

C63 valves are used with Hydra-Cell model G25.

C64 Valves are used with Hydra-Cell model G35.

The model C62 seal-less valve is the most frequently specified pressure regulating valve in a Hydra-Cell pumping system.

Hydra-Cell® C Series Valves Reference

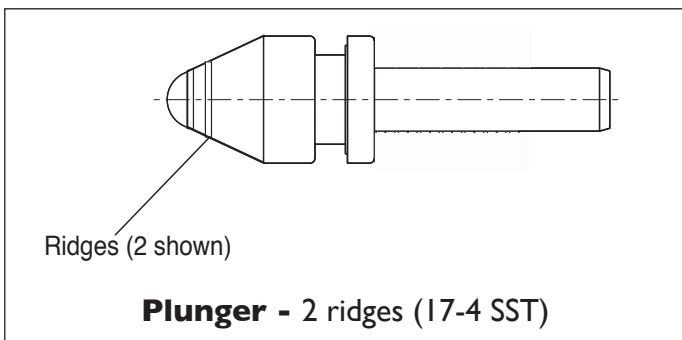
Identifying Metallic Components

Since it is often difficult to distinguish between metallic materials used, identification marks have been added to several machined metallic components of Hydra-Cell pumps and valves.

Plunger (C22/C23/C24 Valves)

Identified by ridges (or no ridges) around the tapered end.

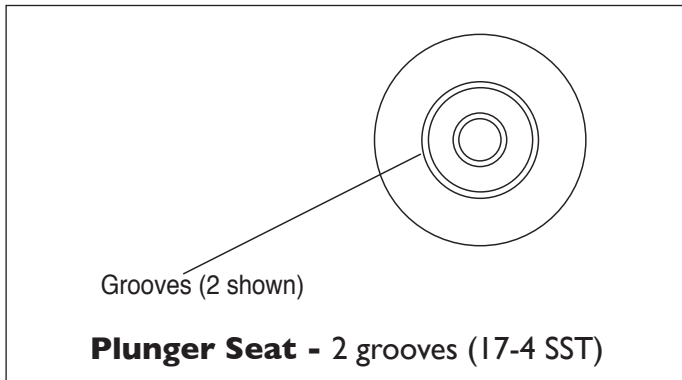
17-4 SST	2 ridges
316L SST	1 ridge
Hastelloy C	No ridges



Plunger Seat (C22/C23/C24 Valves)

Identified by circular V-shaped grooves (or no grooves) on one face.

17-4 SST	2 grooves
316L SST	1 groove
Hastelloy C	No groove



Installation Guidelines

Hydra-Cell C Series pressure regulating valves are installed on the discharge side of the pump to regulate the pressure of downstream process or equipment.

Pressure Regulator (Relief Valve) Guidelines

1. Size the pressure regulator valve so that when fully open, it will be large enough to relieve the full capacity of the pump without excessive over-pressurising of the system.
2. Locate the valve as close to the pump as possible and ahead of any other valves.
3. Adjust the pressure regulating valve to no more than 10% over the maximum working pressure of the system. Do not exceed the manufacturer's pressure rating for the pump and/or regulator.

C Series Valves



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