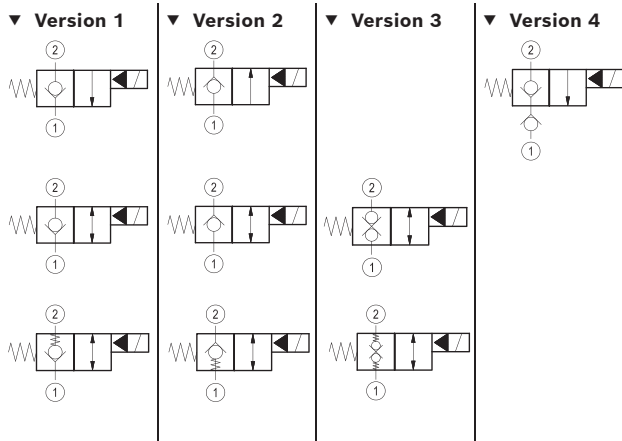
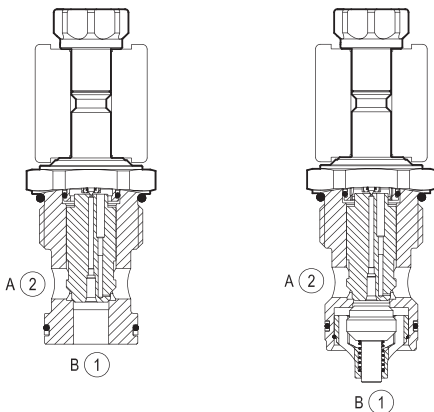


Sitzventilpatrone (230519) Cartouche de soupape à siège

VEI-8A-12-NC

OD.15 - X - 21- Y - Z

RE 18323-04

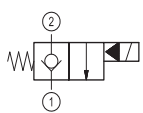
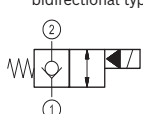
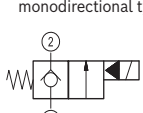
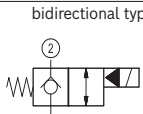
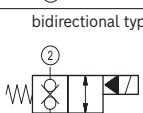
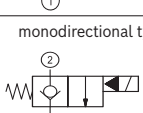
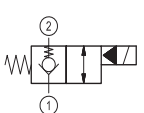
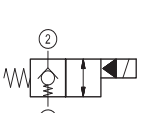
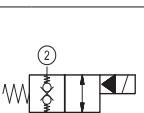
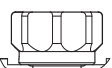
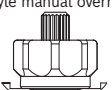


Technical data

General	
Weight	0.34 kg (0.75 lbs)
Installation orientation	Optional
Ambient temperature range	-30 to 60 °C (-22 to 140 °F)
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Max. proof pressure	420 bar (6000 psi)
Flow range	5 - 150 l/min (1 - 40 gpm)
Fatigue cycle life	1 million cycles at 350 bar
Max. internal leakage	20 drops/min.
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	130 - 150 Nm (96 - 111 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFd	150 years see RE 18350-51 except for codes marked with *
Special cavity	021-E see 18325-75
Lines bodies and standard assemblies	Please refer to section "Hydraulic integrated circuit" or consult factory
Seal kit – version 1	code RG21E201052010 material no. R934003566
Seal kit – version 2-3	code RG21E201053010 material no. R934003567
Seal kit coil	code RG12A1PNBR7010 material no. R934003958
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see 18325-90
Supply voltage	See data sheet 18325-90
Nominal voltage	± 10%
Power consumption	20 W
Duty cycle coil	See characteristic curves %
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (230519) Cartouche de soupape à siège

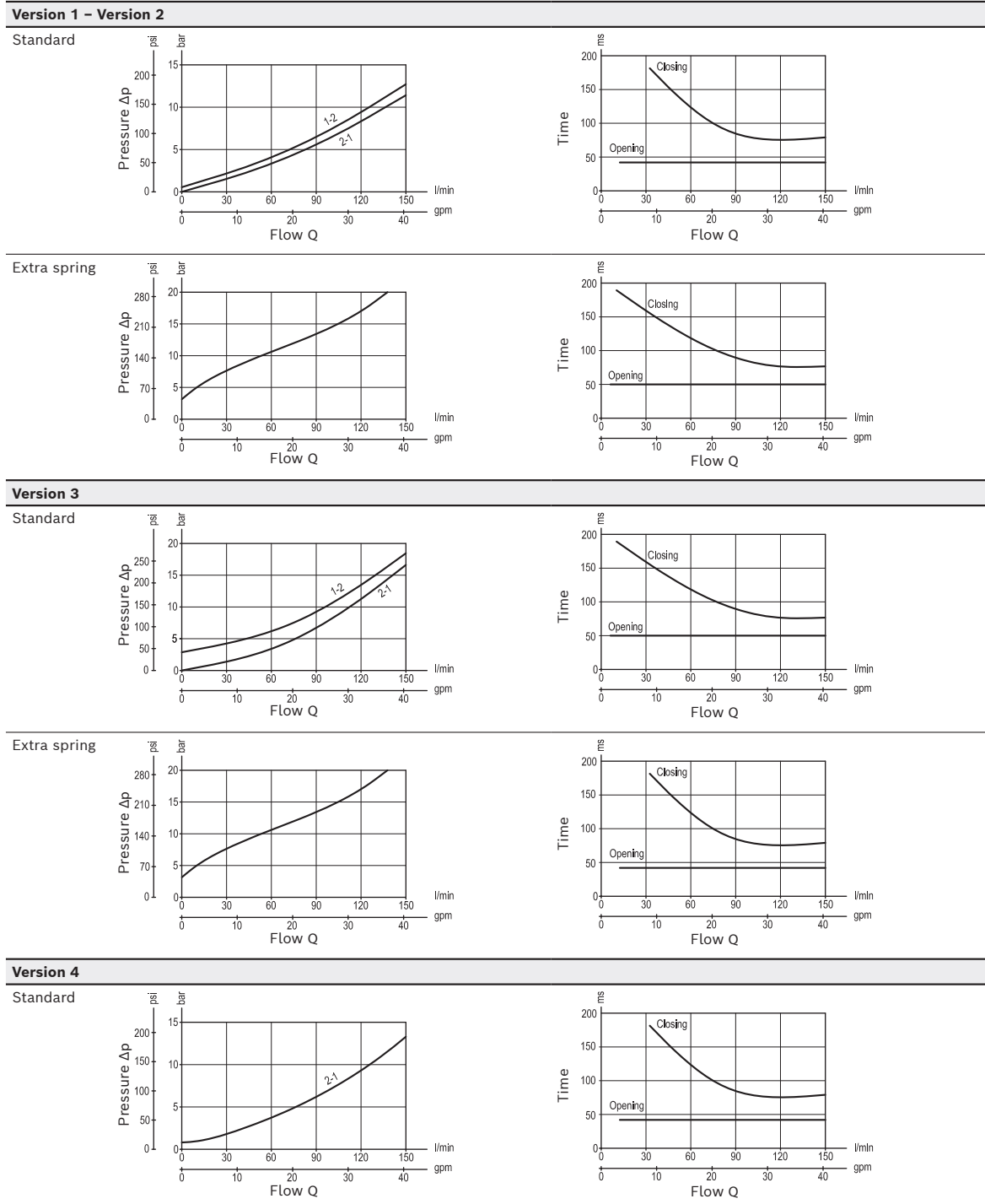
Ordering code

	OD.15	X	21	Y	Z
<p>Solenoid operated valves pilot operated poppet type 2-way normally closed</p>					
<p>monodirectional type</p>  <p style="text-align: right;">01</p>					
<p>bidirectional type</p>  <p style="text-align: right;">05</p>					
<p>monodirectional type</p>  <p style="text-align: right;">09</p>					
<p>bidirectional type</p>  <p style="text-align: right;">03</p>					
<p>bidirectional type</p>  <p style="text-align: right;">31</p>					
<p>monodirectional type</p>  <p style="text-align: right;">11</p>					
					<p>S0 = Tube not welded</p> <hr/> <p>S8 = Tube not welded with extra spring</p>  <p style="text-align: right;">for X= 05</p> <hr/>  <p style="text-align: right;">for X= 03</p> <hr/>  <p style="text-align: right;">for X= 31</p> <hr/> <p>standard type</p>  <p style="text-align: right;">3A</p> <hr/> <p>knob style manual override</p>  <p style="text-align: right;">3D</p> <hr/> <p>21 Special cavity: 021-E</p>

Type	Material number	Type	Material number
OD1501213AS000	R901144300	OD1505213DS000	R901119267
OD1501213AS800	R934000707	OD1509213AS000	R901132881
OD1501213DS000	R901085462	OD1511213AS000 *	R901138183
OD1503213AS000	R901113666	OD1511213AS800 *	R934001086
OD1503213AS800	R934003065	OD1531213AS000	R901104412
OD1503213DS000	R934000792	OD1531213AS800	R901119002
OD1503213DS800	R934003066	OD1531213DS000	R901132876
OD1505213AS000	R901104395	OD1531213DS800	R901125793
OD1505213AS800	R901119221		

Sitzventilpatrone (230519) Cartouche de soupape à siège

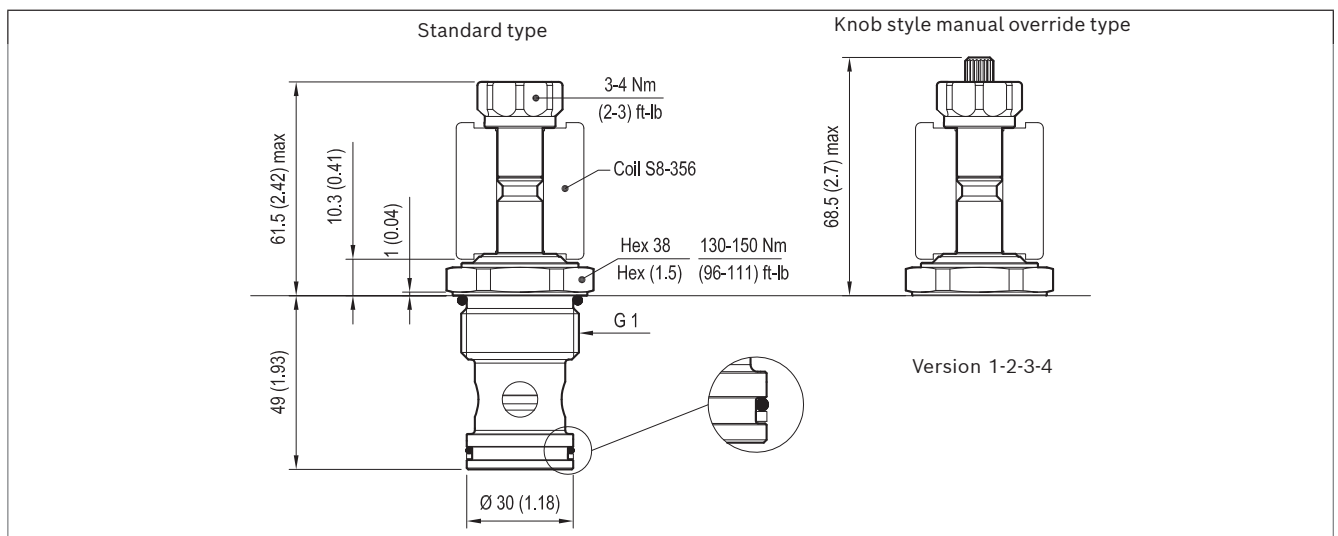
Characteristic curves



Sitzventilpatrone (230519) Cartouche de soupape à siège

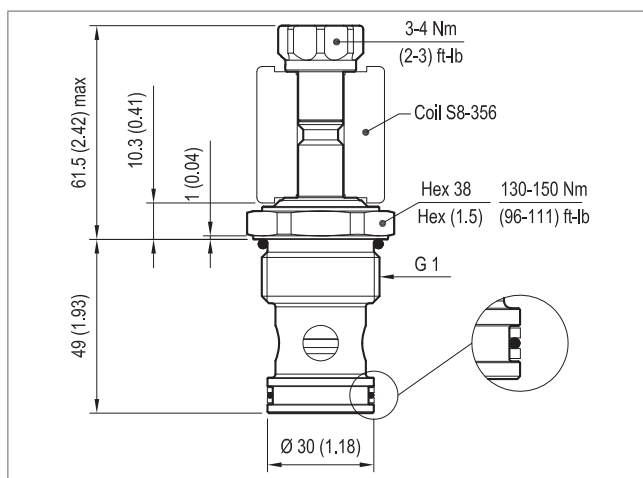
Dimensions

- ▼ **Version 01: Solenoid operated valves, poppet 2-way normally closed**

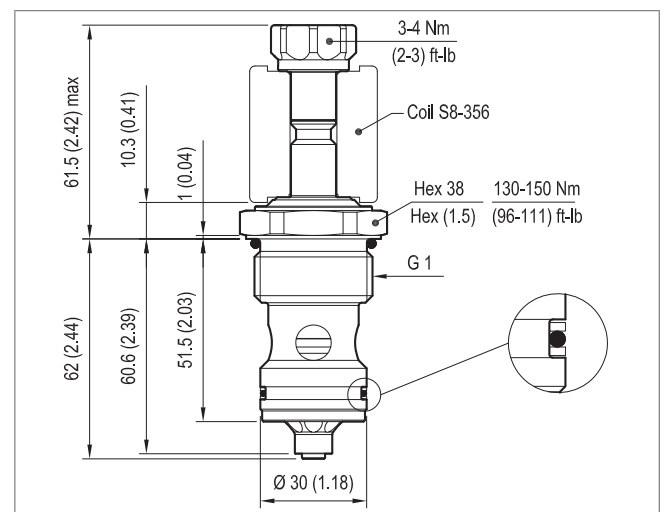


- ▼ **Version 02: Solenoid operated valves, poppet 2-way normally closed**

- ▼ **Version 03: Solenoid operated valves, poppet 2-way double lock normally closed**



- ▼ **Version 4: Solenoid operated valves, poppet 2-way normally closed**

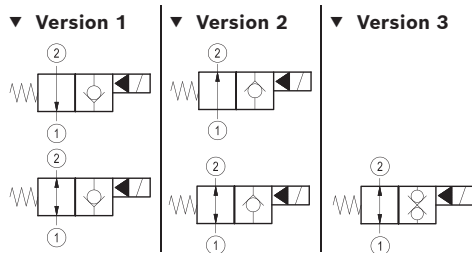
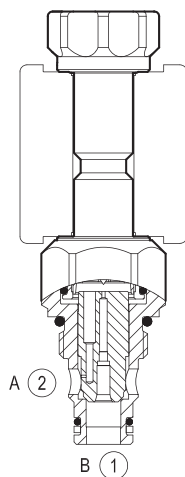


Sitzventilpatrone (230526) Cartouche de soupape à siège

VEI-8A-06-NA

OD.15 - X - Y - Z - SO

RE 18323-06

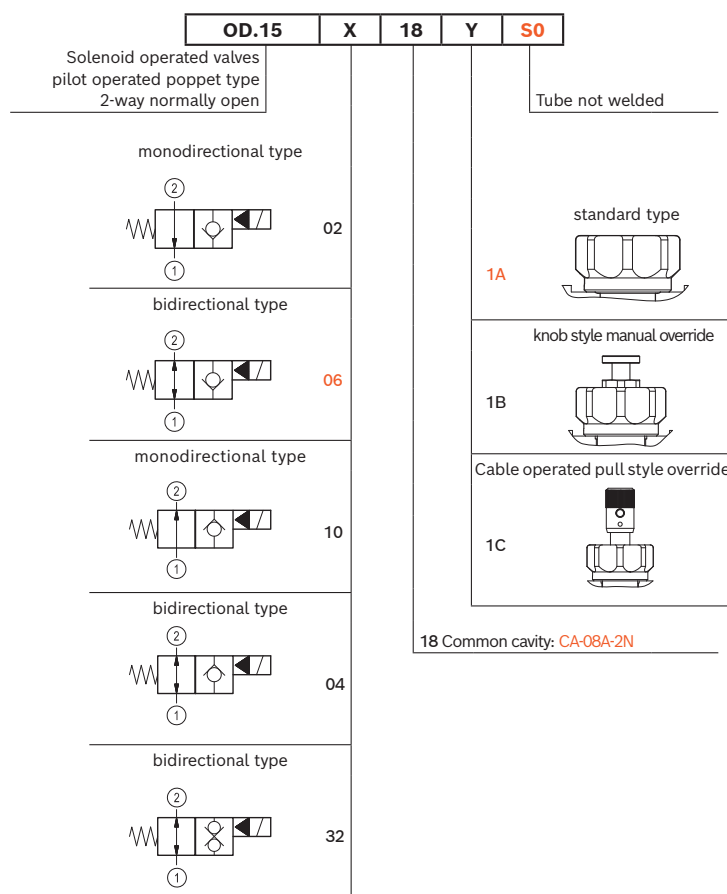


Technical data

General	
Weight	0.12 kg (0.26 lbs)
Installation orientation	Optional
Ambient temperature range	-30 to 60 °C (-22 to 140 °F)
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Max. proof pressure	420 bar (6000 psi)
Flow range	1.5 - 40 l/min (0.4 - 11 gpm)
Fatigue cycle life	1 million cycles at 350 bar
Max. internal leakage	20 drops/min.
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	39 - 51 Nm (29 - 38 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFd	150 years see RE 18350-51
Cavity	CA-08A-2N see 18325-70
Lines bodies and standard assemblies	Please refer to section "Hydraulic integrated circuit" or consult factory
Seal kit – version 1	code RG08A2010520100 material no. R901101437
Seal kit – version 2-3	code RG08A2010530100 material no. R901101544
Seal kit coil	code RG12A1PNBR7010 material no. R934003958
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see 18325-90
Supply voltage	See data sheet 18325-90
Nominal voltage	± 10%
Power consumption	20 W
Duty cycle coil	See characteristic curves %
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (230526) Cartouche de soupape à siège

Ordering code



Type	Material number
OD1502181AS000	R901091102
OD1502181BS000	R901091105
OD1502181CS000	R901091106
OD1506181AS000	R901091130
OD1506181BS000	R901091131
OD1506181CS000	R901091132
OD1504181AS000	R901091121
OD1504181BS000	R901091122

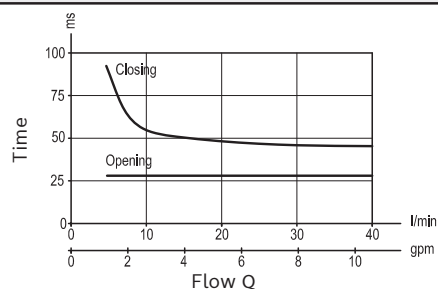
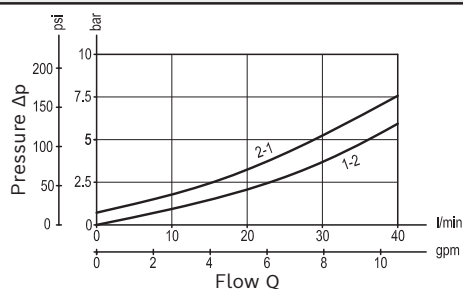
Type	Material number
OD1504181CS000	R901091123
OD1510181AS000	R901091152
OD1510181BS000	R901091154
OD1510181CS000	R901091155
OD1532181AS000	R901091171
OD1532181BS000	R901091173
OD1532181CS000	R901091174

Sitzventilpatrone (230526) Cartouche de soupape à siège

Characteristic curves

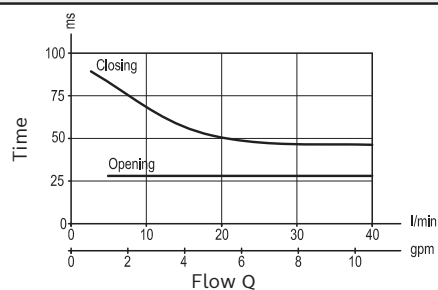
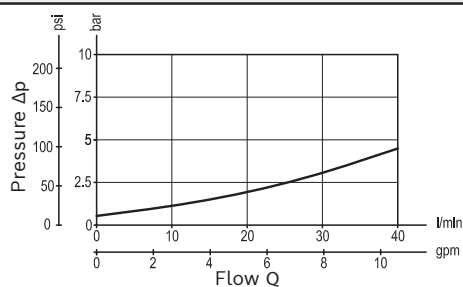
Version 1-2

Standard



Version 3

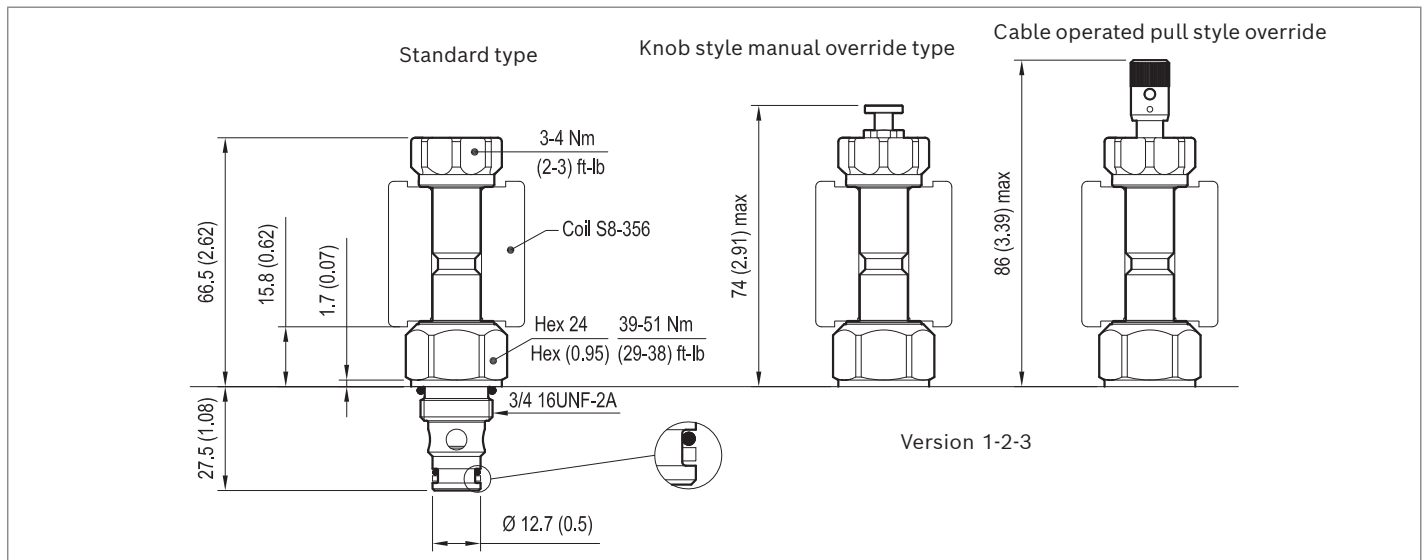
Standard



Sitzventilpatrone (230526) Cartouche de soupape à siège

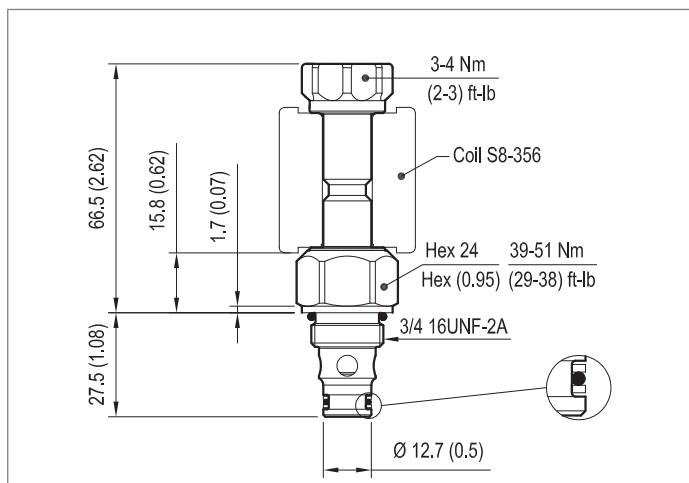
Dimensions

- ▼ **Version 1: Solenoid operated valve, poppet 2-way normally open**



- ▼ **Version 2: Solenoid operated valve, poppet 2-way normally open**

- ▼ **Version 3: Solenoid operated valve, poppet 2-way double lock normally open**

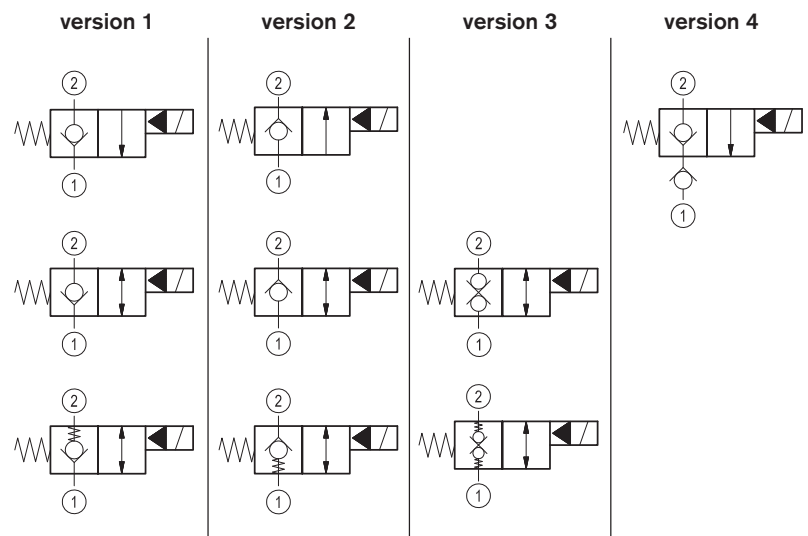
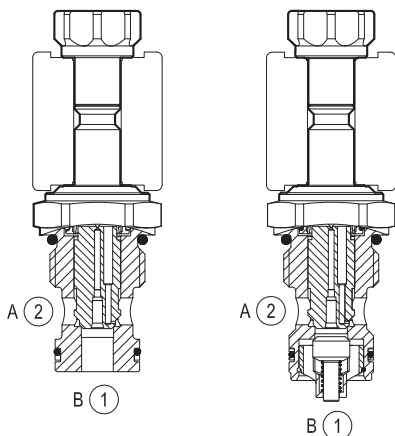


Sitzventilpatrone (230530) Cartouche de soupape à siège

VEI-8A-09-NC

OD.15 - X - 17 - Y - Z

RE 18323/01.10



General

Weight	kg (lbs)	0.24 (0.53)
Installation orientation		Optional
Ambient temperature range	°C (°F)	-30 to 60 (-22 to 140)

Hydraulic

Max. operating pressure	bar (psi)	350 (5000)
Flow range	l/min. (gpm)	2-70 (0.5-18)
Max. internal leakage	drops/min.	20
Fluid temperature range	°C (°F)	-20 to 80 (-4 to 176)

Fluids	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	Nm (ft-lbs)	54-66 (40-49)
Filtration	Nominal value max. 10µm (NAS 8) ISO 4406 19/17/14	
Cavity	017-E see RE 18325-75	
Line bodies	See data sheet RE 18325-85	
Seal kit - version 1	code material no.	RG17E201052010 R934003562
Seal kit - version 2-3-4	code material no.	RG17E201053010 R934003563
Seal kit coil	code material no.	RG12A1PNBR7000 R934003591
Other technical data	See data sheet RE 18350-50	

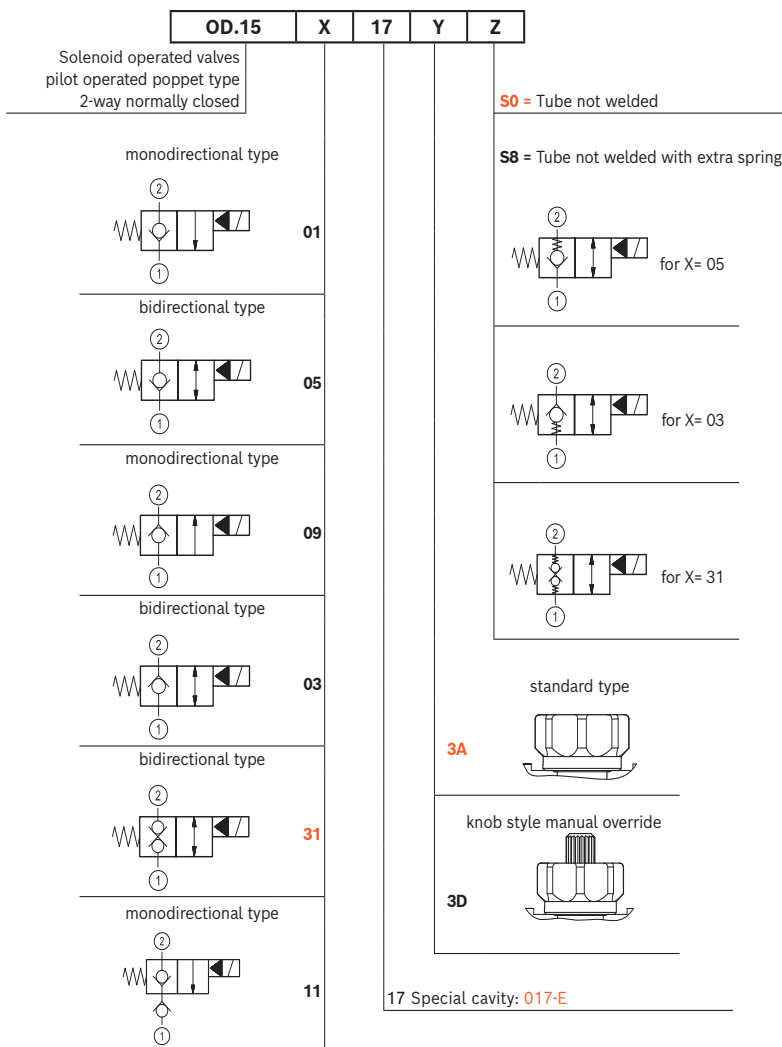
Electrical

Type of voltage	DC voltage
Coil type	S8-356 see RE 18325-90
Supply voltage	See data sheet RE 18325-90
Nominal voltage	± 10%
Power consumption	W 20
Duty cycle coil	% See performance graphs
Type of protection	See data sheet RE 18325-90

Note: Coils must be ordered separately.



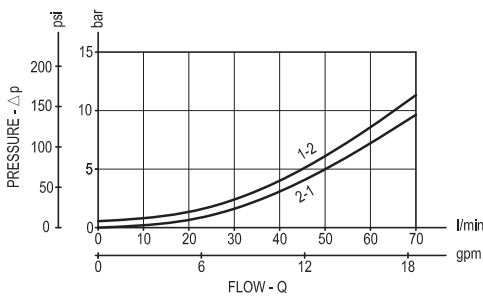
Sitzventilpatrone (230530) Cartouche de soupape à siège



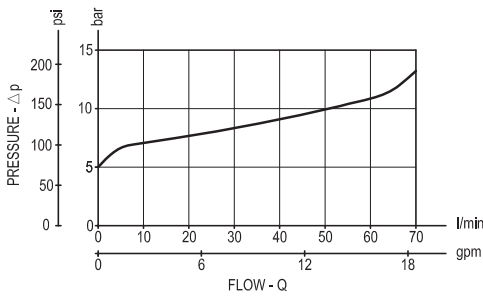
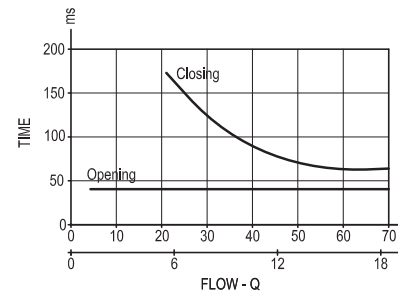
Type	Material number
OD1501173AS000	R901176045
OD1501173DS000	R934000679
OD1503173AS000	R901113664
OD1503173AS800	R934000773
OD1503173DS000	R901180257
OD1503173DS800	R934003061
OD1505173AS000	R901113673
OD1505173AS800	R901119220
OD1505173DS000	R901125249

Type	Material number
OD1505173DS800	R934000846
OD1509173AS000	R934001038
OD1509173DS000	R934001039
OD1511173AS000	R934001072
OD1511173DS000	R934001075
OD1531173AS000	R901113682
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OD1531173DS800	R934003111

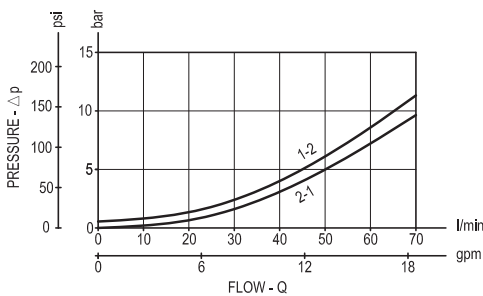
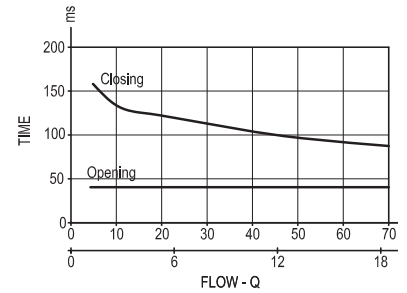
Sitzventilpatrone (230530) Cartouche de soupape à siège



Standard

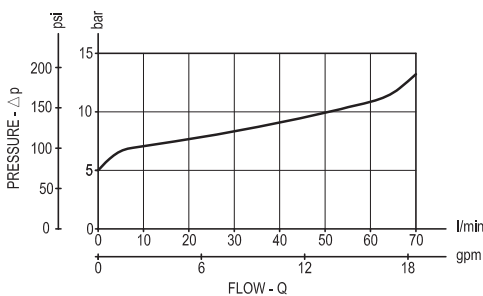
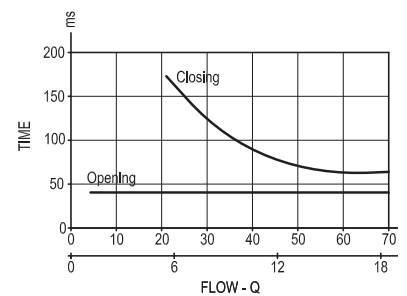


Extra spring

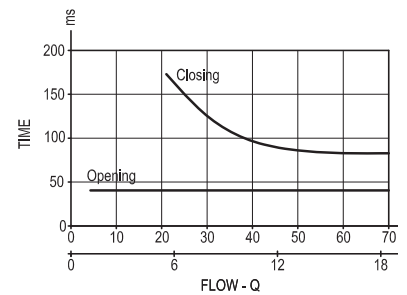


Version 3

Standard

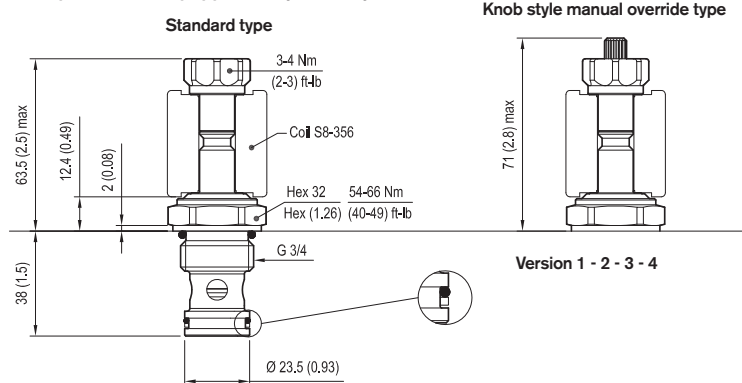


extra spring



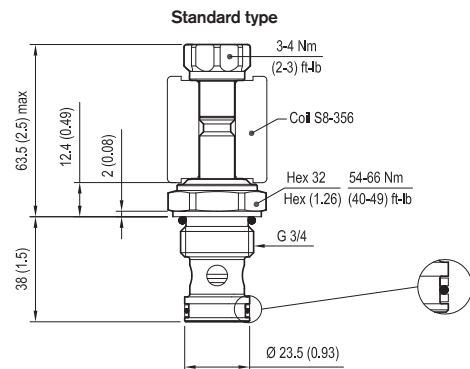
Sitzventilpatrone (230530) Cartouche de soupape à siège

Version 1: Solenoid operated valve, poppet 2-way normally closed

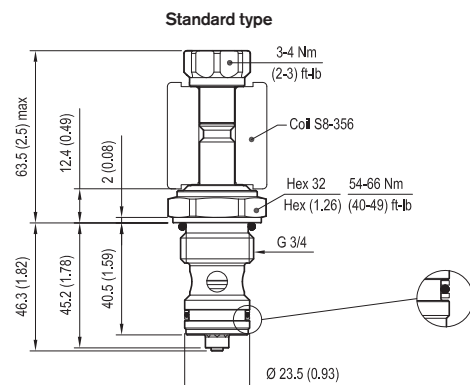


Version 2: Solenoid operated valve, poppet 2-way normally closed

Version 3: Solenoid operated valve, poppet 2-way double lock normally closed



Version 4: Solenoid operated valve, poppet 2-way normally closed



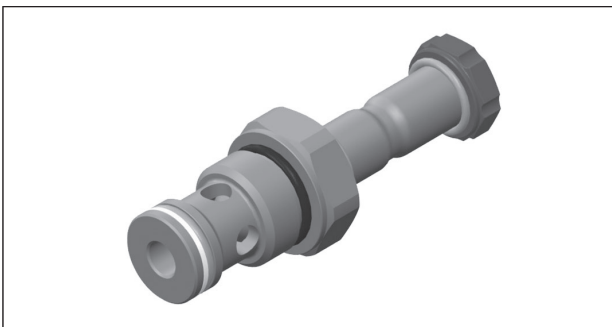
mm (Inches)

Sitzventilpatrone (230959) Cartouche de soupape à siège

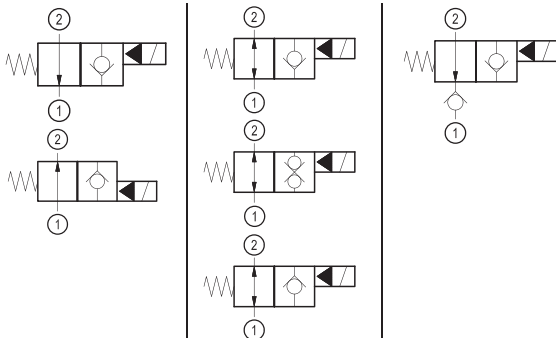
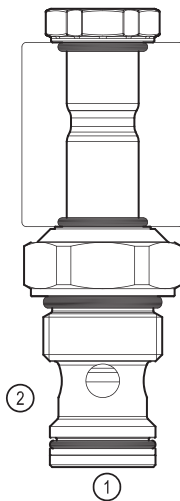
VEI-16-NA

OD.15 - X - 17 - Y - Z - 00

RE 18323-35



PATENT PENDING



Technical data

New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

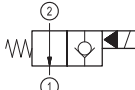
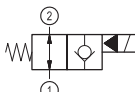
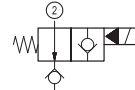
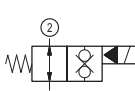
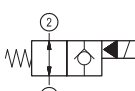
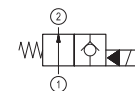
Technical data

General	
Weight	0.25 kg (0.55 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90 °C (-22 to 194 °F)
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	2 - 70 l/min (0.53 - 18 gpm)
Fatigue cycle life	2 million cycles at 350 bar
Max. internal leakage	5 drops/min. for X=02,06,12 20 drops/min. for X=04,10,32
Installation torque	54 - 66 Nm (40 - 49 ft-lbs)
Switching time	Opening ≤ 50 ms Closing ≤ 100 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFd	150 years see RE 18350-51
Special cavity	017-E see 18325-75
Seal kit for X= 02,06,12	code RG17E201052010 material no. R934003562
Seal kit for X= 04,32	code RG17E201053010 material no. R934003563
Seal kit coil and standard cap	code RG02Z0010000100 material no. R930067869
Seal kit coil and protective cap only for Y=B	code RG03Z0010000100 material no. R930067870
Seal kit coil and protective cap only for Y=C	code RG04Z0010000100 material no. R930069171
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against ambient temperature	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90

Note: Coils must be ordered separately

Sitzventilpatrone (230959) Cartouche de soupape à siège

Ordering code

OD.15	X	17	Y	Z	0000	*	
Solenoid operated valves pilot operated poppet type 2-way normally open						Series 0/A to L unchanged performances and dimensions	
monodirectional type 						0 = With buna seal V = With Viton seal P = With buna seal and protective cap for override version B and C T = With Viton seal and protective cap for override version B and C	
bidirectional type 							
monodirectional type with check 						A = Standard B = Push style manual override C = Push and twist style manual override	
bidirectional type 						Special cavity: 017-E	
bidirectional type 							
monodirectional type 							

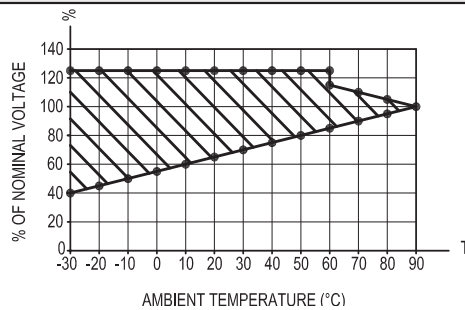
Preferred types

Type	Material number	Type	Material number
OD150217A000000	R930063870	OD153217BP00000	R930067159
OD150217C000000	R930065471	OD153217C000000	R930067160
OD150617A000000	R930064265	OD153217CP00000	R930067157
OD150617B000000	R930064334	OD150417A000000	R930066966
OD150617C000000	R930063423	OD151017A000000	R930076206
OD151217A000000	R930063907		
OD153217A000000	R930064102		
OD153217B000000	R930067161		

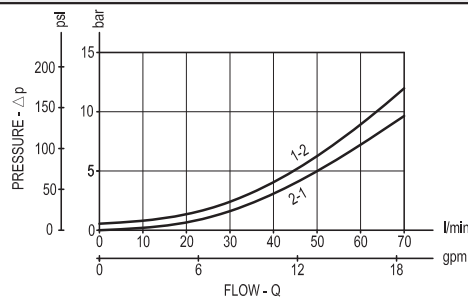
Sitzventilpatrone (230959) Cartouche de soupape à siège

Characteristic curves

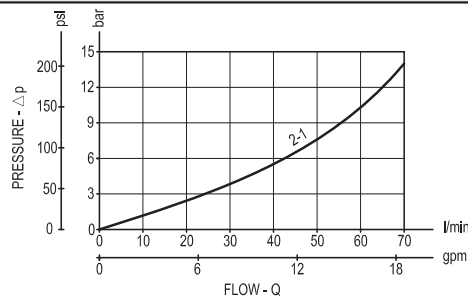
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



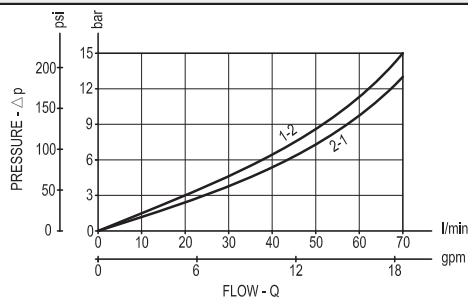
Versions 02, 06



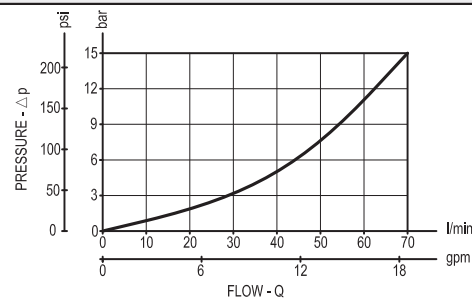
Version 12



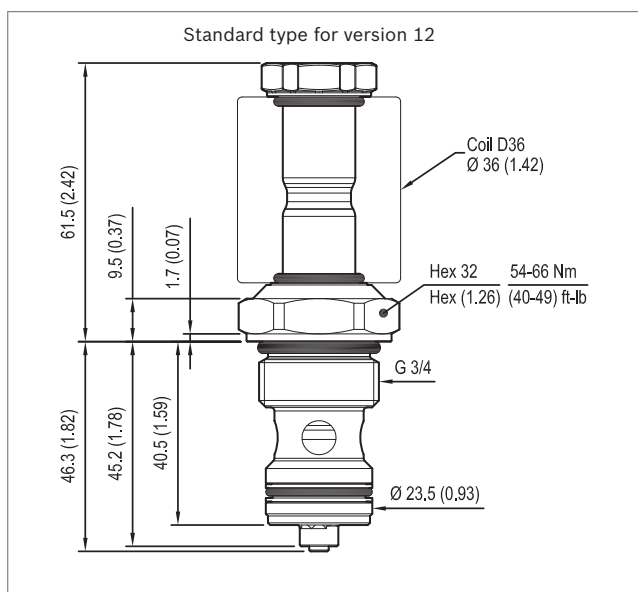
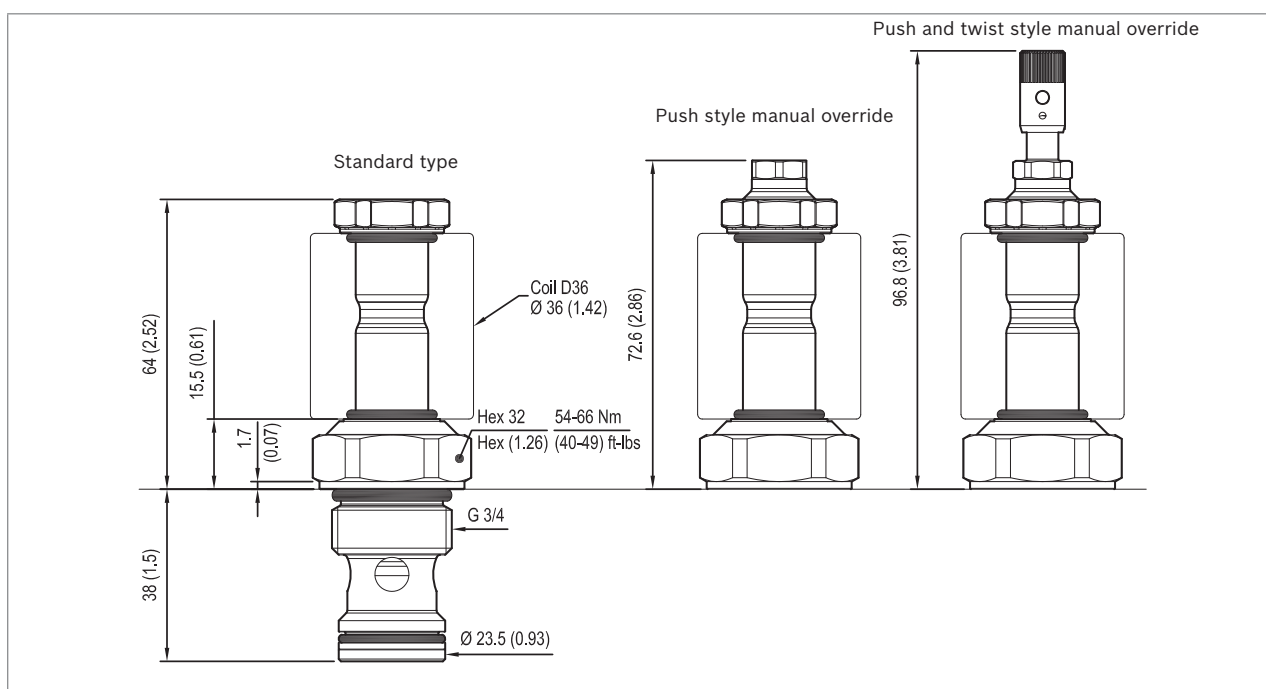
Version 32



Versions 04,10



Sitzventilpatrone (230959) Cartouche de soupape à siège

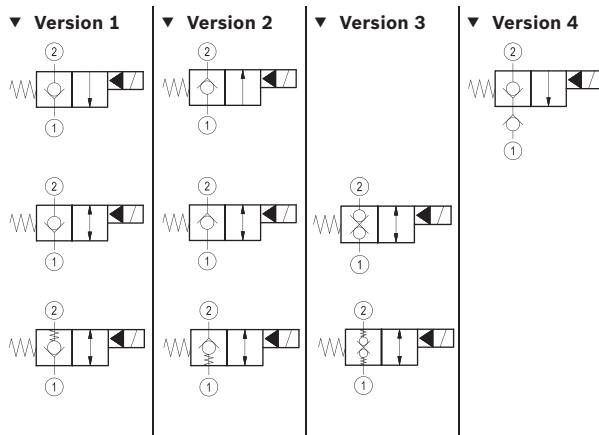
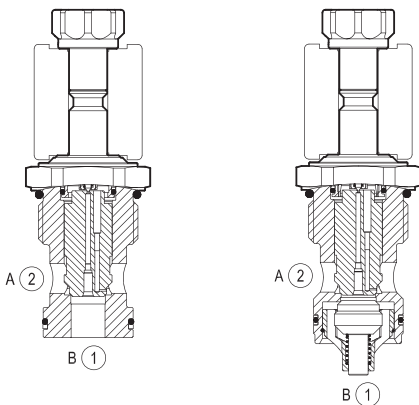


Sitzventilpatrone (230960) Cartouche de soupape à siège

VEI-8A-12-NC

OD.15 - X - 21 - Y - Z

RE 18323-04

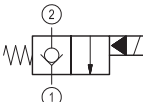
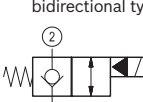
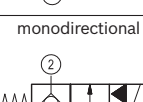
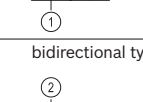
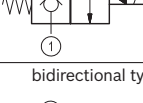
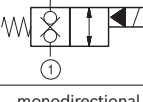
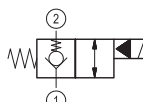
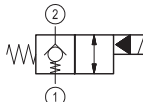
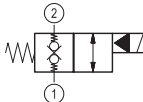

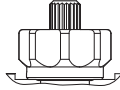


Technical data

General	
Weight	0.34 kg (0.75 lbs)
Installation orientation	Optional
Ambient temperature range	-30 to 60 °C (-22 to 140 °F)
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Max. proof pressure	420 bar (6000 psi)
Flow range	5 - 150 l/min (1 - 40 gpm)
Fatigue cycle life	1 million cycles at 350 bar
Max. internal leakage	20 drops/min.
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	130 - 150 Nm (96 - 111 ft·lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFd	150 years see RE 18350-51 except for codes marked with *
Special cavity	O21-E see 18325-75
Lines bodies and standard assemblies	Please refer to section "Hydraulic integrated circuit" or consult factory
Seal kit – version 1	code material no. RG21E201052010 R934003566
Seal kit – version 2-3	code material no. RG21E201053010 R934003567
Seal kit coil	code material no. RG12A1PNBR7010 R934003958
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	S8-356 see 18325-90
Supply voltage	See data sheet 18325-90
Nominal voltage	± 10%
Power consumption	20 W
Duty cycle coil	See characteristic curves %
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (230960) Cartouche de soupape à siège

Ordering code

OD.15	X	21	Y	Z
Solenoid operated valves pilot operated poppet type 2-way normally closed				
monodirectional type 	01			
bidirectional type 	05			
monodirectional type 	09			
bidirectional type 	03			
bidirectional type 	31			
monodirectional type 	11			
				S0 = Tube not welded
				S8 = Tube not welded with extra spring
				 for X= 05
				 for X= 03
				 for X= 31
				standard type 
				knob style manual override 
				21 Special cavity: 021-E

Type	Material number
OD1501213AS000	R901144300
OD1501213AS800	R934000707
OD1501213DS000	R901085462
OD1503213AS000	R901113666
OD1503213AS800	R934003065
OD1503213DS000	R934000792
OD1503213DS800	R934003066
OD1505213AS000	R901104395
OD1505213AS800	R901119221

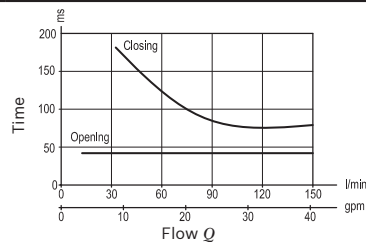
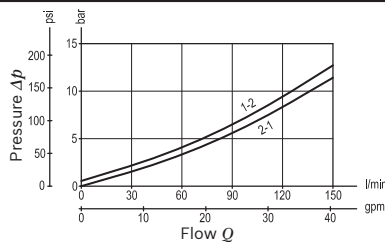
Type	Material number
OD1505213DS000	R901119267
OD1509213AS000	R901132881
OD1511213AS000 *	R901138183
OD1511213AS800 *	R934001086
OD1531213AS000	R901104412
OD1531213AS800	R901119002
OD1531213DS000	R901132876
OD1531213DS800	R901125793

Sitzventilpatrone (230960) Cartouche de soupape à siège

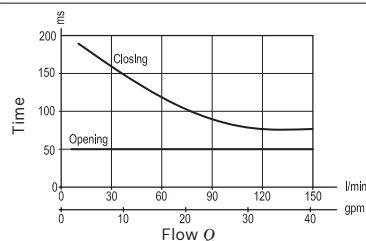
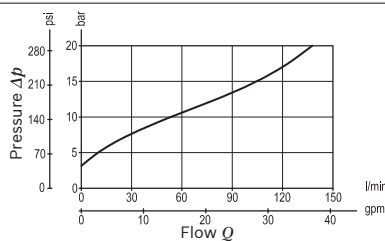
Characteristic curves

Version 1 – Version 2

Standard

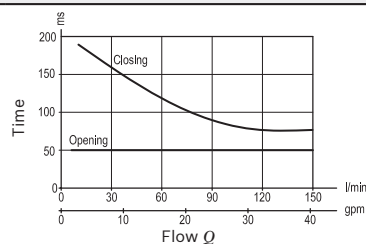
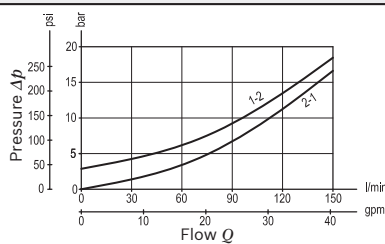


Extra spring

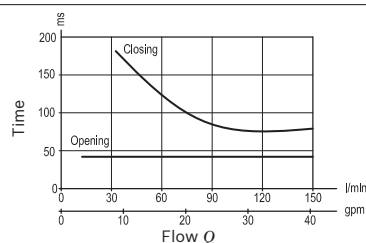
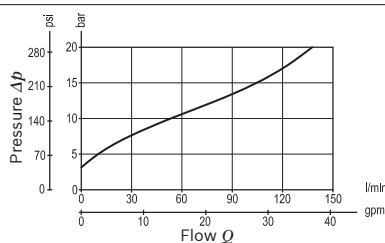


Version 3

Standard

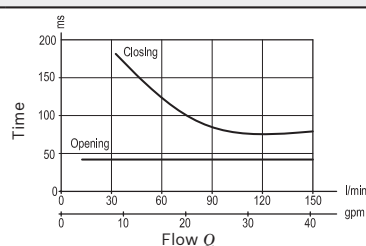
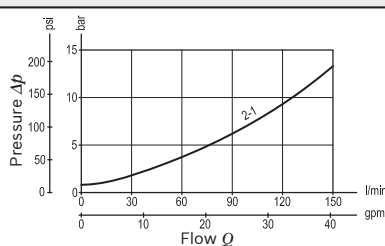


Extra spring



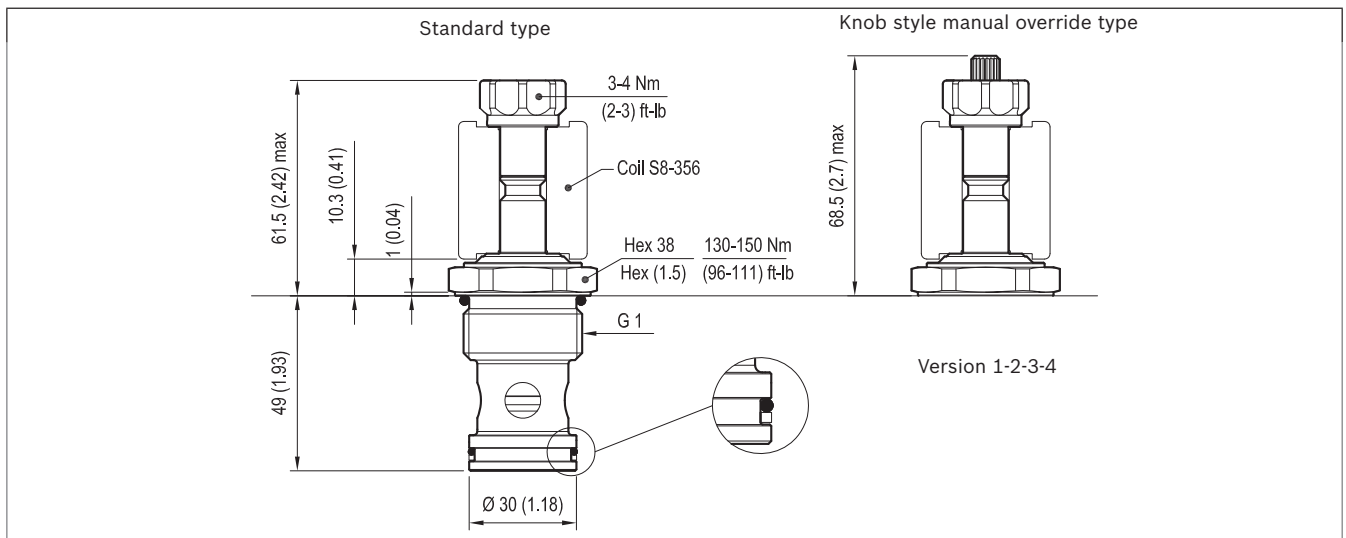
Version 4

Standard



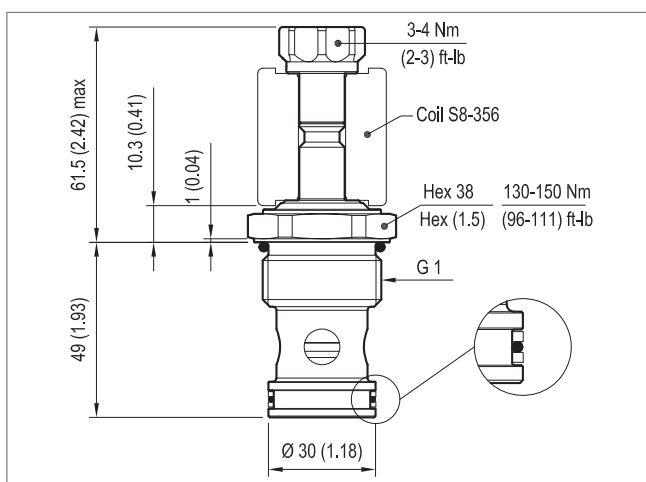
Sitzventilpatrone (230960) Cartouche de soupape à siège

▼ **Version 01: Solenoid operated valves, poppet 2-way normally closed**

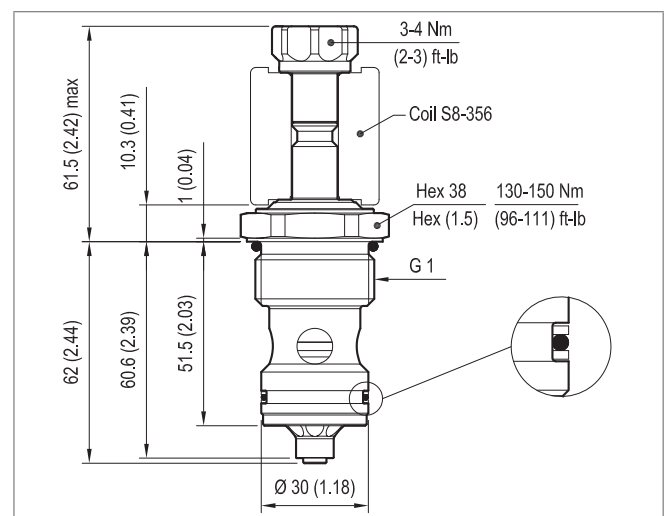


▼ **Version 02: Solenoid operated valves, poppet 2-way normally closed**

▼ **Version 03: Solenoid operated valves, poppet 2-way double lock normally closed**



▼ **Version 4: Solenoid operated valves, poppet 2-way normally closed**



Sitzventilpatrone (231012) Cartouche de soupape à siège

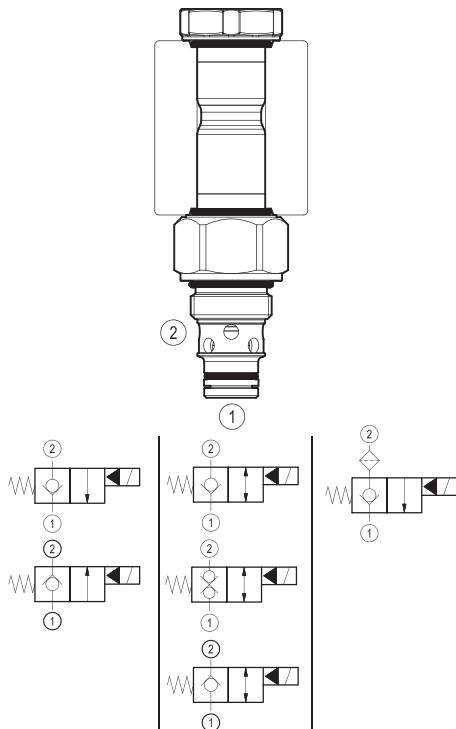
VEI-16-08A-NC

OD.15 - X - 18 - Y - Z

RE 18323-25



PATENT PENDING



Application note:

In case of low flow function or low volumes actuators, VEI-16-08A with W=000T fast response version is especially recommended. Direct acting solenoid valves (VEDT-16-08A) are also recommended for low flow, low volume function, low volume actuators.

Technical data

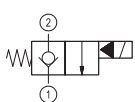
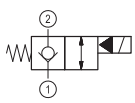
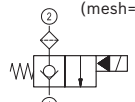
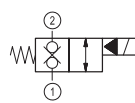
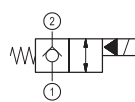
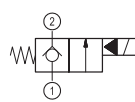
New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

Technical data

General	
Weight	0.15 kg (0.33 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90°C (-22 to 194°F) for W=0000 -30 to 75°C (-22 to 167°F) for W=000T
Salt spray test to DIN EN ISO 9227:2017-07	500h
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	0.5 - 40 l/min. (0.1 - 11 gpm) for W=0000 0.5 - 30 l/min. (0.1 - 8 gpm) for W=000T
Fatigue cycle life	2 million cycles at 350 bar 150000 cycles at 420 bar
Max. internal leakage:	5 drops/min. for X= 01,05,07 20 drops/min. for X= 31,03,09
Switching time for W=0000	Opening ≤ 50 ms Closing ≤ 100 ms
Switching time for W=000T	Opening ≤ 50 ms Closing ≤ 50 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids:	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	35 - 43 Nm (26 - 32 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFD	150 years see RE 18350-51
Cavity	CA-08A-2N see 18325-70
Seal kit for X=01,05,07	code RG08A2010520100 material no. R901101437
Seal kit for X=31,03,09	code RG08A2010530100 material no. R901101544
Seal kit coil and standard cap	code RG02Z0010000100 material no. R930067869
Seal kit coil and protective cap only for Y=D	code RG03Z0010000100 material no. R930067870
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against amb.temp.	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (231012) Cartouche de soupape à siège

Ordering code

OD.15	X	18	Y	Z	W	*
Solenoid operated valves pilot operated poppet type 2-way normally closed						Series O/A to L unchanged performances and dimensions
monodirectional type						0000 = Standard 000T = Low flow - fast response only for 01, 05
 01						
bidirectional type						O = With buna seal 8 = With buna seal and extra spring only for 03, 05, 31 V = With Viton seal P = With buna seal and protective cap for override version D T = With Viton seal and protective cap for override version D
 05						
monodirectional type with filter (mesh= 300 µm)						A = Standard D = Knob style manual override E = Pull style manual override F = Hand operated pull style manual override
 07						
bidirectional type						Common cavity: CA-08A-2N
 31						
bidirectional type						
 03						
monodirectional type						
 09						

Preferred types

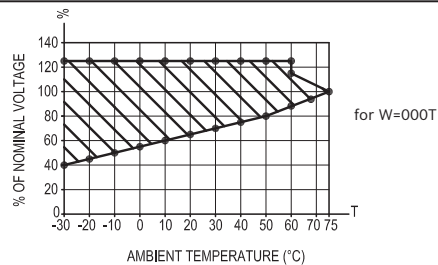
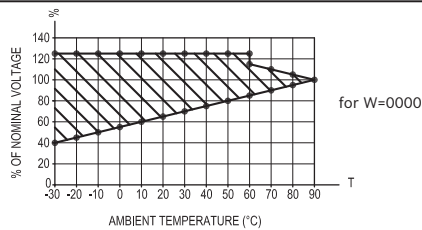
Type	Material number
OD150118A000000	R930058697
OD150118D000000	R930059941
OD150518A000000	R930058427
OD150518D000000	R930058344
OD150518DP00000	R930059757
OD150718A000000	R930058338
OD150718D000000	R930058336
OD150718DP00000	R930058529
OD150118E000000	R930060958
OD150518E000000	R930060966
OD150718E000000	R930060973
OD153118A000000	R930058334

Type	Material number
OD153118D000000	R930058898
OD153118E000000	R930065030
OD150518A800000	R930063229
OD150318A000000	R930062828
OD150918A000000	R930064361
OD153118DP00000	R930066685
OD150518D800000	R930063959
OD150318D000000	R930065238
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OD150318A800000	R930065856
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OD153118A800000	R930066547

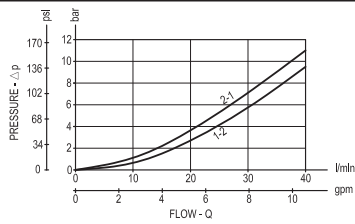
Sitzventilpatrone (231012) Cartouche de soupape à siège

Characteristic curves

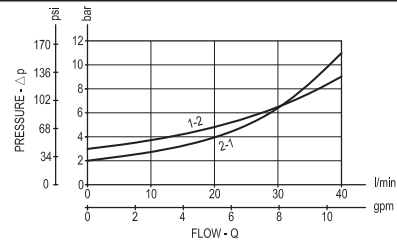
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



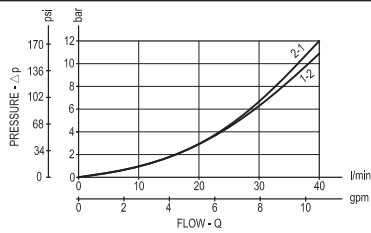
Versions 01, 05, 07 for W=0000



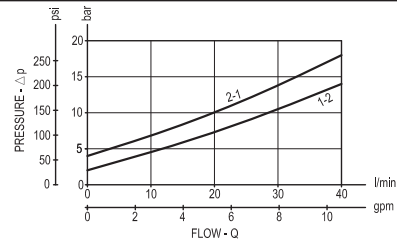
Version 05 with extra spring for W=0000



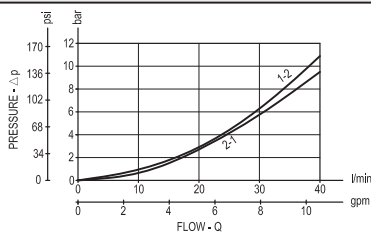
Version 31 for W=0000



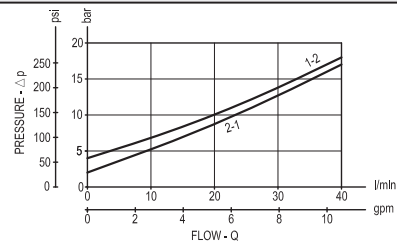
Version 31 with extra spring for W=0000



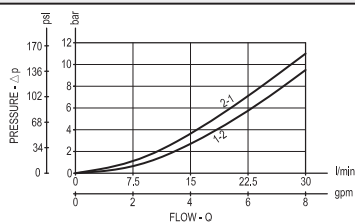
Versions 03, 09 for W=0000



Version 03 with extra spring for W=0000

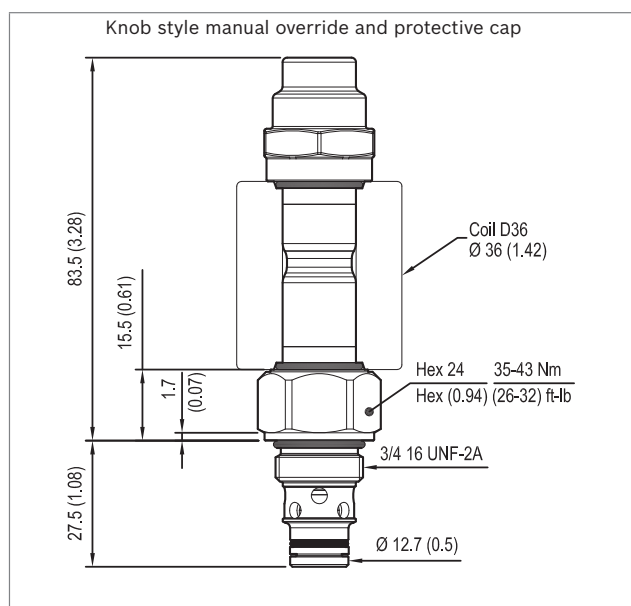
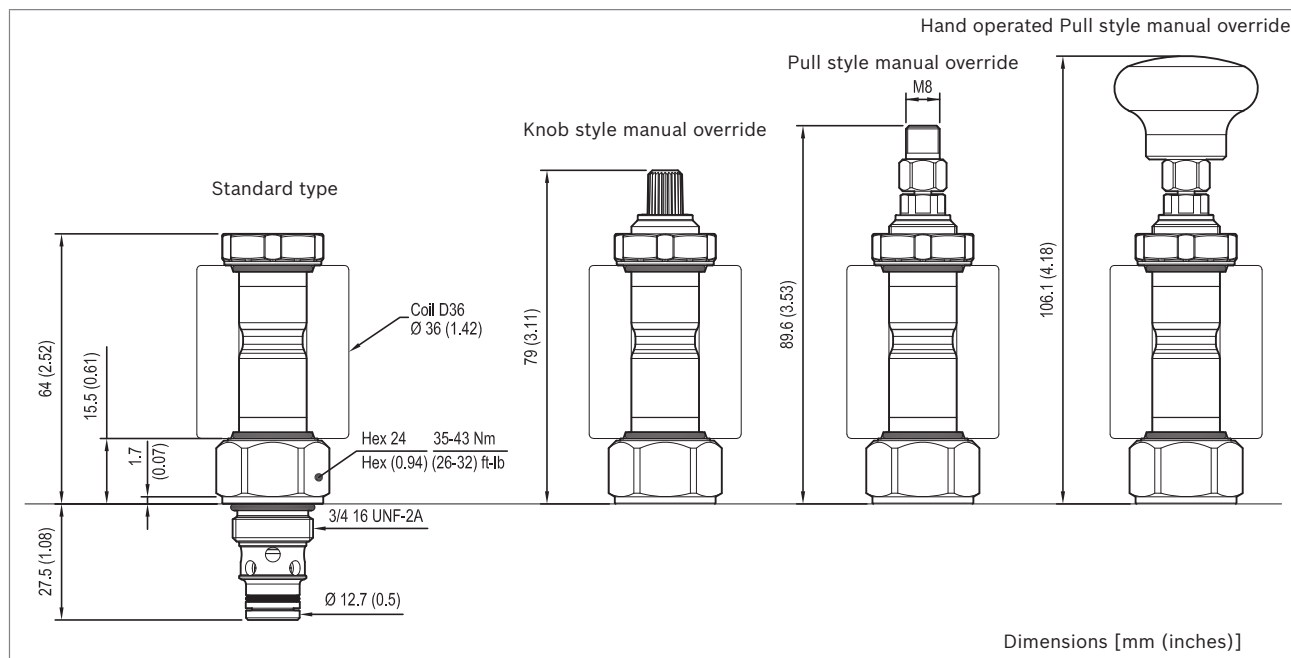


Version 5 for W=000T



Sitzventilpatrone (231012) Cartouche de soupape à siège

Solenoid operated valves, poppet 2-way
normally closed

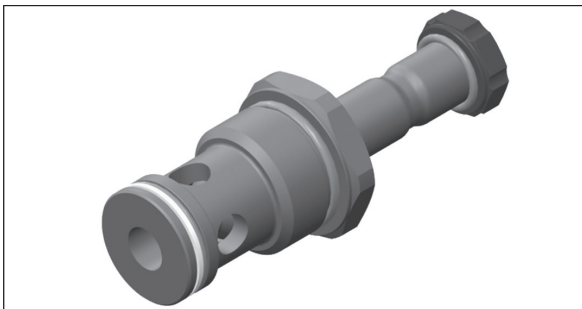


Sitzventilpatrone (231016) Cartouche de soupape à siège

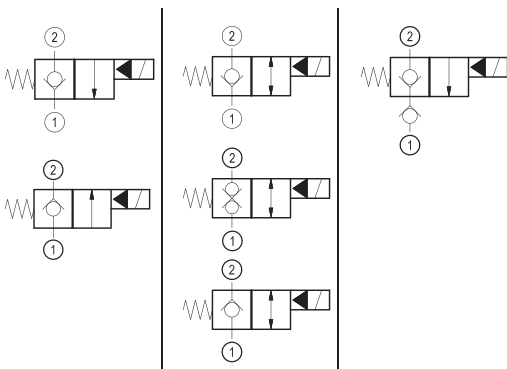
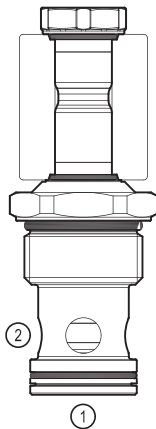
VEI-16-021-NC

OD.15 - X - 21 - Y - Z

RE 18323-37



PATENT PENDING



Technical data

New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

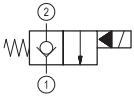
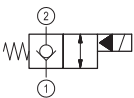
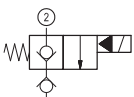
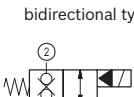
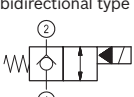
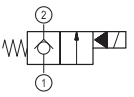
Technical data

General	
Weight	0.35 kg (0.77 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90 °C (-22 to 194 °F)
Salt spray test to DIN EN ISO 9227:2017-07	500h
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	5 - 150 l/min (1 - 40 gpm)
Fatigue cycle life	1 million cycles at 350 bar
Max. internal leakage:	20 drops/min.
Switching time	Closing ≤ 100 ms Opening ≤ 50 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids:	Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)
Installation torque	130 - 150 Nm (96 - 111 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFD	150 years see RE 18350-51
Special cavity	021-E see 18325-75
Seal kit for X=01,05	code RG21E201052010 material no. R934003566
Seal kit for X=03,09,11,31	code RG21E201053010 material no. R934003567
Seal kit coil and standard cap	code RG02Z00100000100 material no. R930067869
Seal kit coil and protective cap only for Y=D	code RG03Z00100000100 material no. R930067870
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against ambient temperature	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90

Note: Coils must be ordered separately

Sitzventilpatrone (231016) Cartouche de soupape à siège

Ordering code

	OD.15	X	21	Y	Z	0000	*
Solenoid operated valves pilot operated poppet type 2-way normally closed							Series 0/A to L unchanged performances and dimensions
monodirectional type 							0 = With buna seal 8 = With buna seal and extra spring V = With Viton seal P = With buna seal and protective cap for override version D T = With Viton seal and protective cap for override version D
bidirectional type 							
monodirectional type with check 							A = Standard D = Knob style manual override E = Pull style manual override F = Hand operated pull style manual override
bidirectional type 							Special cavity: 021-E
bidirectional type 							
monodirectional type 							

Preferred types

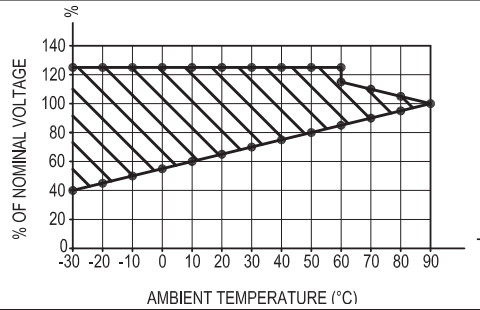
Type	Material number
OD150121A000000	R930064100
OD150521A000000	R930064472
OD150521A800000	R930065846
OD150521D000000	R930066968
OD151121A000000	R930068693
OD151121D000000	R930065027
OD153121A000000	R930068523
OD153121A800000	R930069360
OD153121D000000	R930068526

Type	Material number
OD153121D800000	R930069505
OD150521D800000	R930070647
OD150321A000000	R930070069
OD150321D000000	R930069699
OD150321D800000	R930070199
OD150921A000000	R930068524
OD150121A800000	R930068927

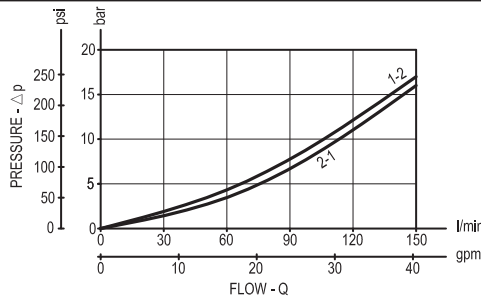
Sitzventilpatrone (231016) Cartouche de soupape à siège

Characteristic curves

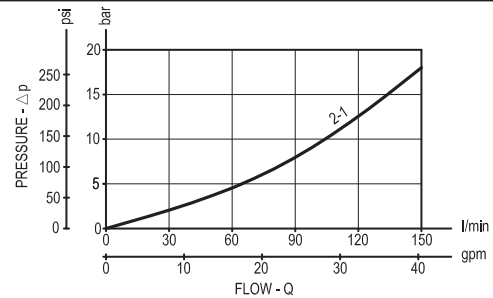
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



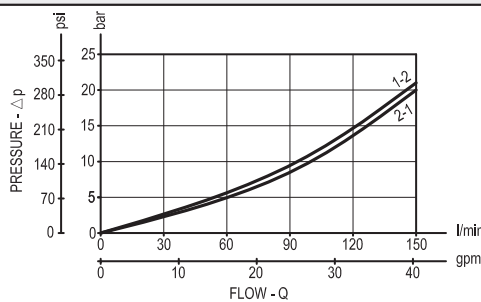
Versions 01, 05



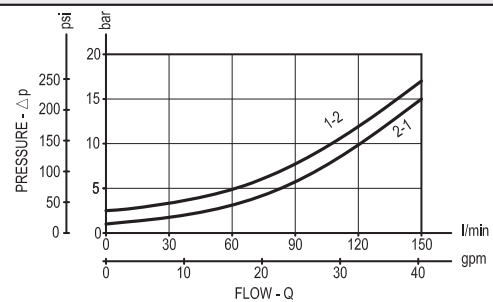
Version 11



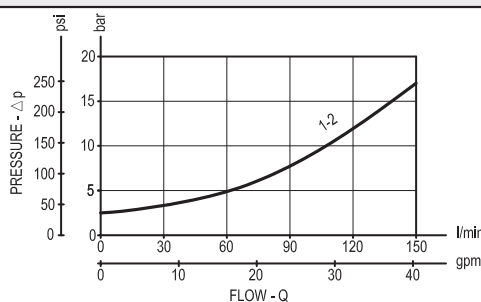
Version 31



Version 03

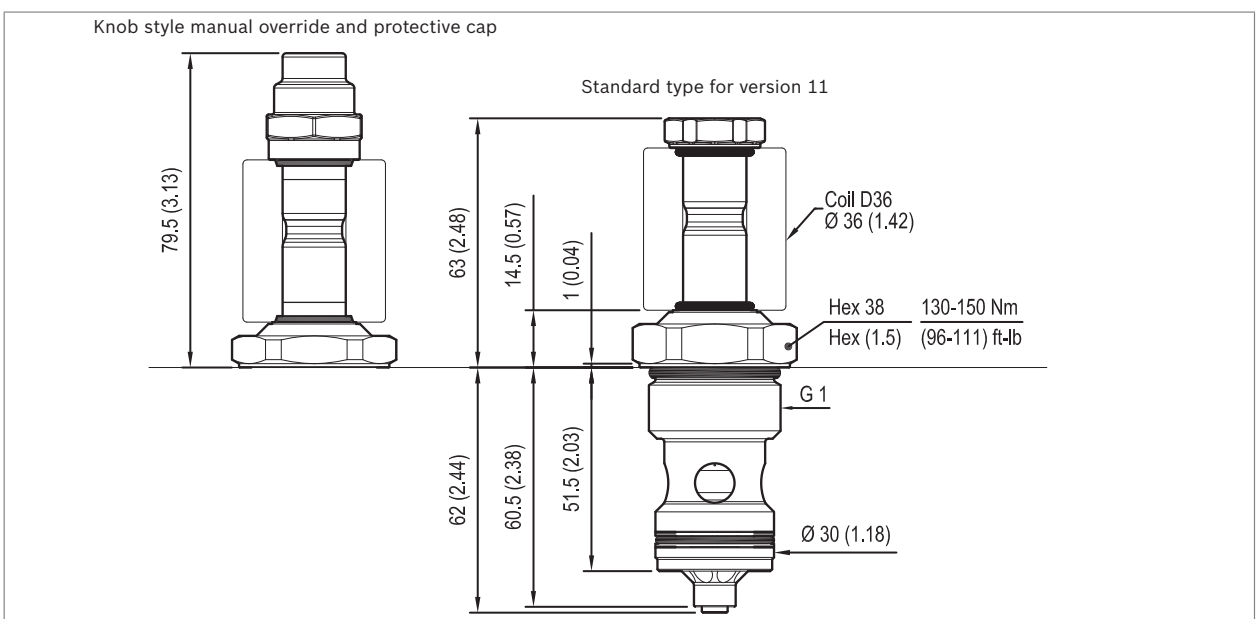
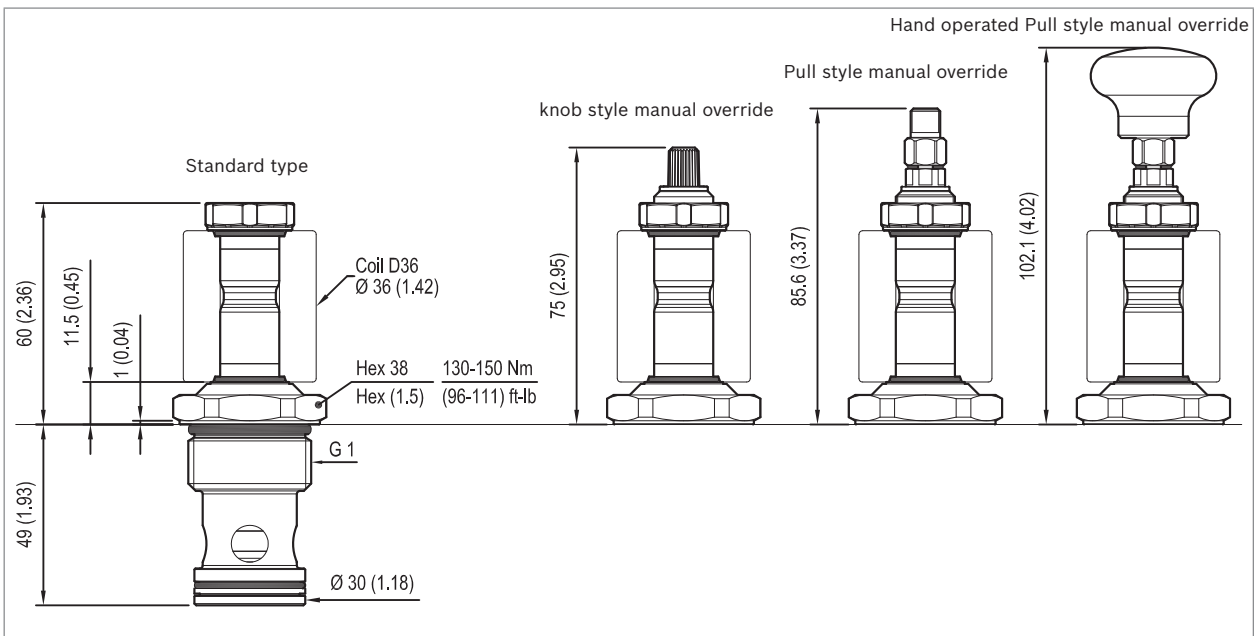


Version 09



Sitzventilpatrone (231016) Cartouche de soupape à siège

Solenoid operated valves, poppet 2-way
normally closed

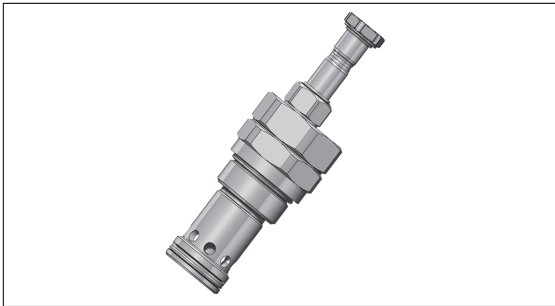


Sitzventilpatrone (231019) Cartouche de soupape à siège

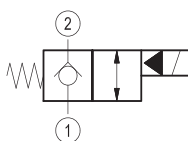
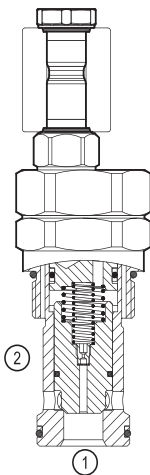
VEI-16-NC_004

OD.15.03.04 - Y - Z

RE 18323-30



PATENT PENDING



Technical data

New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

Technical data

General		
Weight		1.13 kg (2.5 lbs)
Installation orientation		Optional
Storage ambient temperature range		-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range		-30 to 90 °C (-22 to 194 °F)
Salt spray test to DIN EN ISO 9227:2017-07		500h
Hydraulic		
Max. operating pressure		350 bar (5000 psi)
Max. proof pressure		420 bar (6000 psi)
Rated flow		260 l/min (69 gpm)
Fatigue cycle life		1 million cycles at 350 bar
Max. internal leakage		20 drops/min.
Fluid temperature range		-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)		
Installation torque		110 - 130 Nm (81 - 96 ft-lbs)
Recommended degree of fluid contamination		Nominal value max. 25 µm (NAS 8) ISO 4406 19/17/14
MTTFD		150 years see RE 18350-51
Special cavity		004 see 18325-75
Lines bodies and standard assemblies		Please refer to section "Hydraulic integrated circuit" or consult factory
Seal kit	code material no.	RG0004020520100 R930001696
Seal kit coil and standard cap	code material no.	RG02Z0010000100 R930067869
Other technical data		See data sheet 18350-50
Electrical		
Type of voltage		DC voltage
Coil type		D36 see 18325-90
Supply voltage		See data sheet 18325-90
Voltage tolerance against ambient temperature		See characteristic curve
Power consumption		20 W
Duty cycle coil		See characteristic curves %
Type of protection		See data sheet 18325-90
Note: Coils must be ordered separately		

Sitzventilpatrone (231019) Cartouche de soupape à siège

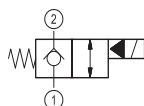
Ordering code

OD.15	03	04	Y	Z	0000	*
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Solenoid operated valves
pilot operated poppet type
2-way normally closed

Series 0/A to L
unchanged performances and dimensions

monodirectional type



03

0 = With buna seal
V = With Viton seal

A = Standard
D = Knob style manual override

Special cavity: 004

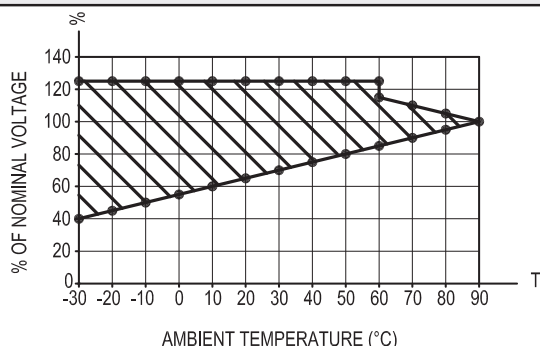
Type	Material number
OD150304A000000	R930064807
OD150304D000000	R930064862

Type	Material number

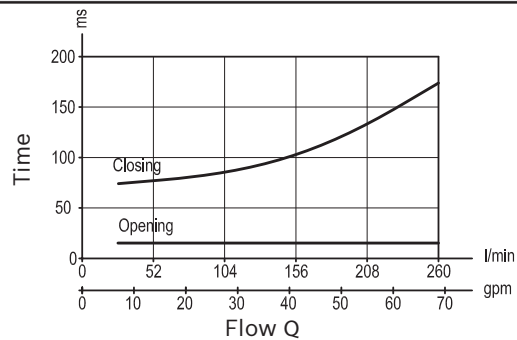
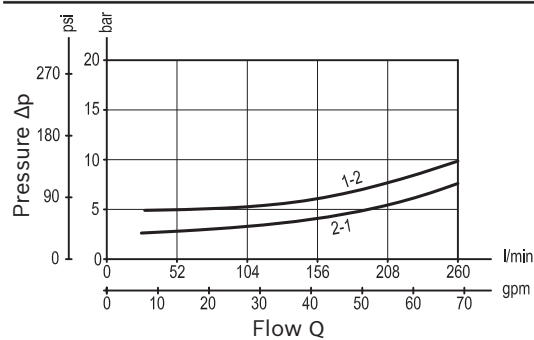
Sitzventilpatrone (231019) Cartouche de soupape à siège

Characteristic curves

All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle

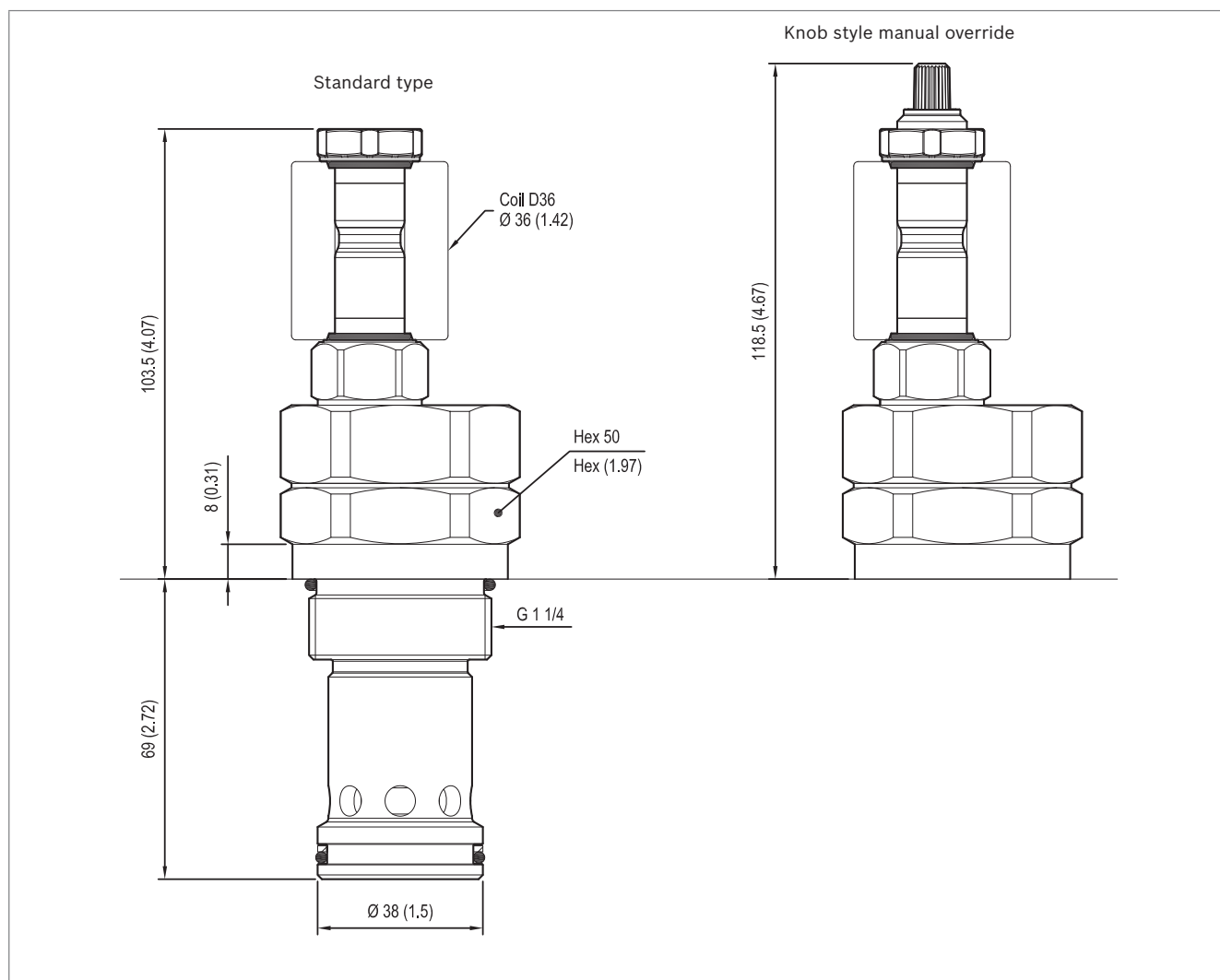


Version 03



Sitzventilpatrone (231019) Cartouche de soupape à siège

Solenoid operated valves, poppet 2-way
normally closed



Sitzventilpatrone (231060) Cartouche de soupape à siège

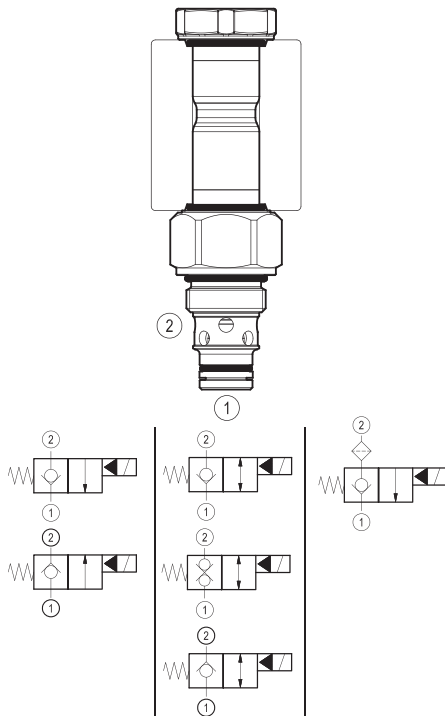
VEI-16-08A-NC

OD.15 - X - 18 - Y - Z

RE 18323-25



PATENT PENDING



Application note:

In case of low flow function or low volumes actuators, VEI-16-08A with W=000T fast response version is especially recommended. Direct acting solenoid valves (VEDT-16-08A) are also recommended for low flow, low volume function, low volume actuators.

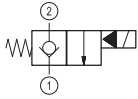
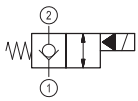
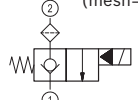
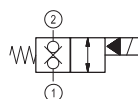
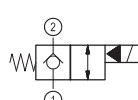
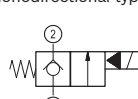
Technical data

New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

Technical data

General	
Weight	0.15 kg (0.33 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90°C (-22 to 194°F) for W=0000 -30 to 75°C (-22 to 167°F) for W=000T
Salt spray test to DIN EN ISO 9227:2017-07	500h
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	0.5 - 40 l/min. (0.1 - 11 gpm) for W=0000 0.5 - 30 l/min. (0.1 - 8 gpm) for W=000T
Fatigue cycle life	2 million cycles at 350 bar 150000 cycles at 420 bar
Max. internal leakage:	5 drops/min. for X= 01,05,07 20 drops/min. for X= 31,03,09
Switching time for W=0000	Opening ≤ 50 ms Closing ≤ 100 ms
Switching time for W=000T	Opening ≤ 50 ms Closing ≤ 50 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	35 - 43 Nm (26 - 32 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFD	150 years see RE 18350-51
Cavity	CA-08A-2N see 18325-70
Seal kit for X=01,05,07	code RG08A2010520100 material no. R901101437
Seal kit for X=31,03,09	code RG08A2010530100 material no. R901101544
Seal kit coil and standard cap	code RG02Z0010000100 material no. R930067869
Seal kit coil and protective cap only for Y=D	code RG03Z0010000100 material no. R930067870
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against amb.temp.	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (231060) Cartouche de soupape à siège

	OD.15	X	18	Y	Z	W	*
Solenoid operated valves pilot operated poppet type 2-way normally closed							Series 0/A to L unchanged performances and dimensions
monodirectional type							0000 = Standard 000T = Low flow - fast response only for 01, 05
							0 = With buna seal 8 = With buna seal and extra spring only for 03, 05, 31 V = With Viton seal P = With buna seal and protective cap for override version D T = With Viton seal and protective cap for override version D
bidirectional type							
							
monodirectional type with filter (mesh= 300 µm)							
							A = Standard D = Knob style manual override E = Pull style manual override F = Hand operated pull style manual override
bidirectional type							
							Common cavity: CA-08A-2N
bidirectional type							
							
monodirectional type							
							

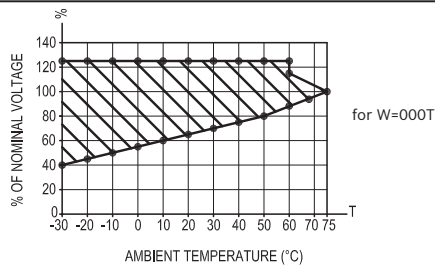
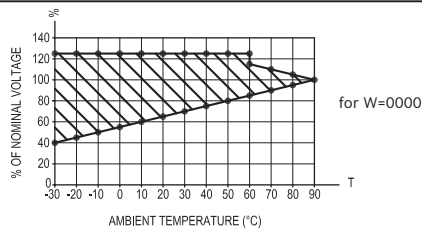
Preferred types

Type	Material number	Type	Material number
OD150118A000000	R930058697	OD153118D000000	R930058898
OD150118D000000	R930059941	OD153118E000000	R930065030
OD150518A000000	R930058427	OD150518A800000	R930063229
OD150518D000000	R930058344	OD150318A000000	R930062828
OD150518DP00000	R930059757	OD150918A000000	R930064361
OD150718A000000	R930058338	OD153118DP00000	R930066685
OD150718D000000	R930058336	OD150518D800000	R930063959
OD150718DP00000	R930058529	OD150318D000000	R930065238
OD150118E000000	R930060958	OD150918D000000	R930066189
OD150518E000000	R930060966	OD150318A800000	R930065856
OD150718E000000	R930060973	OD150518A800000	R930063229
OD153118A000000	R930058334	OD153118A800000	R930066547

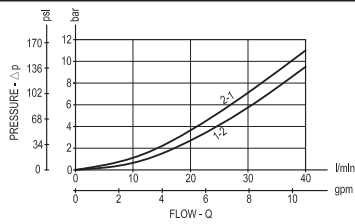
Sitzventilpatrone (231060) Cartouche de soupape à siège

Characteristic curves

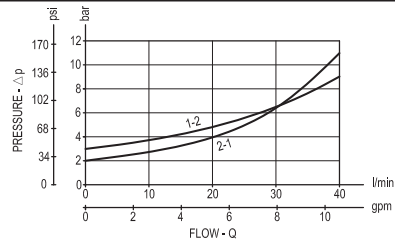
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



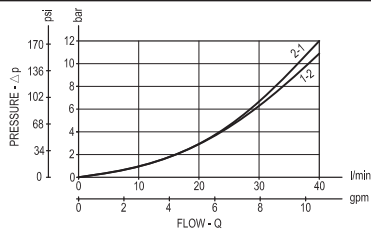
Versions 01, 05, 07 for W=0000



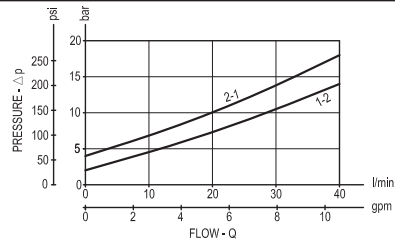
Version 05 with extra spring for W=0000



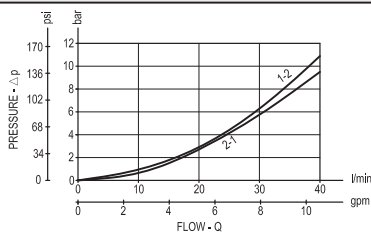
Version 31 for W=0000



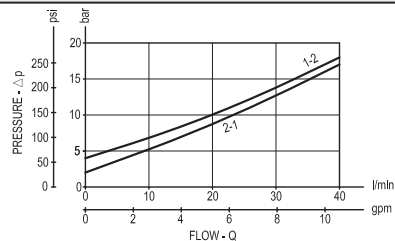
Version 31 with extra spring for W=0000



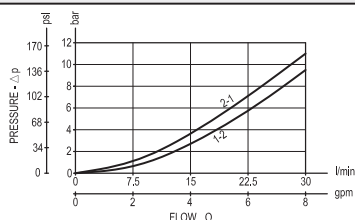
Versions 03, 09 for W=0000



Version 03 with extra spring for W=0000

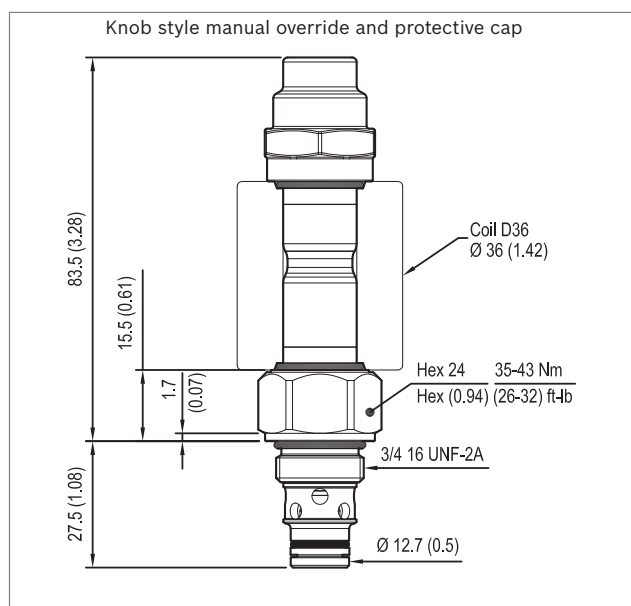
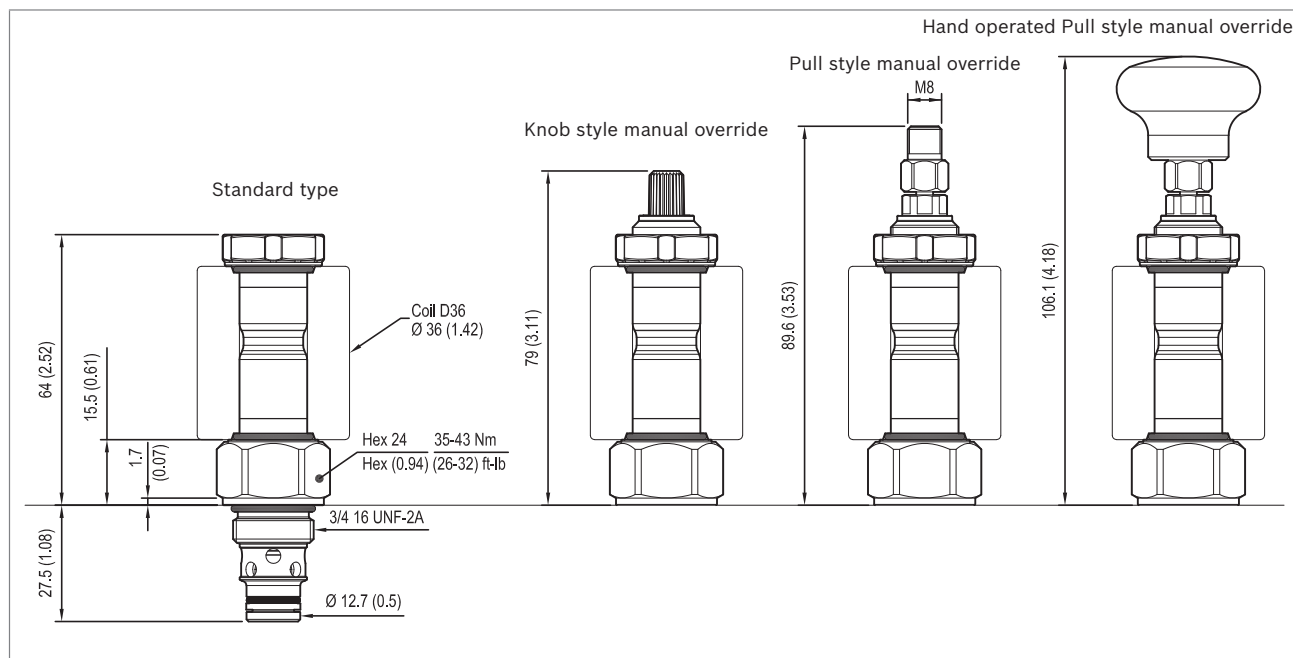


Version 5 for W=000T



Sitzventilpatrone (231060) Cartouche de soupape à siège

Solenoid operated valves, poppet 2-way
normally closed



Sitzventilpatrone (231081) Cartouche de soupape à siège

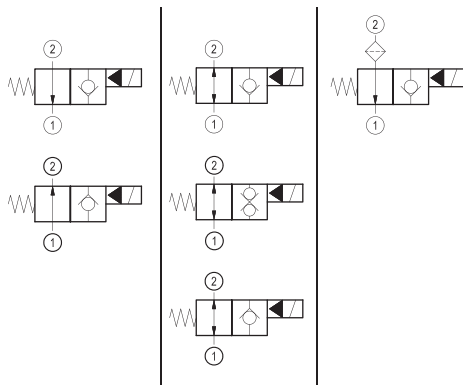
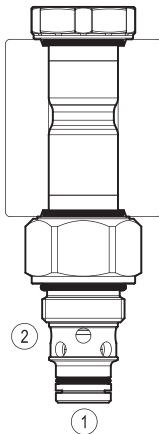
VEI-16-08A-NA

OD.15 - X - 18 - Y - Z - 00

RE 18323-26



PATENT PENDING



Technical data

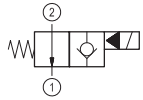
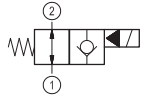
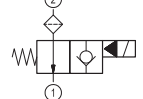
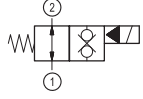
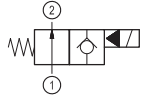
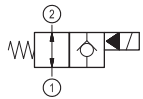
New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

Technical data

General	
Weight	0.15 kg (0.33 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90 °C (-22 to 194 °F)
Salt spray test to DIN EN ISO 9227:2017-07	500h
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	0.5 - 40 l/min (0.1 - 11 gpm)
Fatigue cycle life	2 million cycles at 350 bar 150000 cycles at 420 bar
Max. internal leakage:	5 drops/min. for X= 02,06,08 20 drops/min. for X= 32,10,04
Switching time	Closing ≤ 100 ms Opening ≤ 30 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	35 - 43 Nm (26 - 32 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFd	150 years see RE 18350-51
Cavity	CA-08A-2N see 18325-70
Seal kit for X=02,06,08	code RG08A2010520100 material no. R901101437
Seal kit for X=32,10,04	code RG08A2010530100 material no. R901101544
Seal kit coil and standard cap	code RG02Z0010000100 material no. R930067869
Seal kit coil and protective cap only for Y=B	code RG03Z0010000100 material no. R930067870
Seal kit coil and protective cap only for Y=C	code RG04Z0010000100 material no. R930069171
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against ambient temperature	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90
Note: Coils must be ordered separately	

Sitzventilpatrone (231081) Cartouche de soupape à siège

Ordering code

	OD.15	X	18	Y	Z	0000	*
Solenoid operated valves pilot operated poppet type 2-way normally open							Series 0/A to L unchanged performances and dimensions
monodirectional type							0 = With buna seal V = With Viton seal P = With buna seal and protective cap for override version B and C T = With Viton seal and protective cap for override version B and C
 02							
bidirectional type							
 06							
monodirectional type with filter (mesh= 300 µm)							A = Standard B = Push style manual override C = Push and twist style manual override
 08							
bidirectional type							Common cavity: CA-08A-2N
 32							
monodirectional type							
 10							
bidirectional type							
 04							

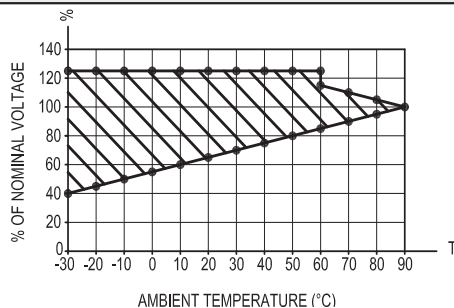
Preferred types

Type	Material number	Type	Material number
OD150218A000000	R930059442	OD153218A000000	R930064101
OD150218B000000	R930060895	OD153218B000000	R930063422
OD150218BP00000	R930060113	OD153218C000000	R930065002
OD150218C000000	R930060584	OD150418A000000	R930065329
OD150218CP00000	R930060090	OD150418B000000	R930066184
OD150618A000000	R930058435	OD150418C000000	R930066185
OD150618B000000	R930058438	OD150618CP00000	R930060905
OD150618C000000	R930060128	OD153218CP00000	R930065328
OD150818A000000	R930058337	OD151018B000000	R930066186
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OD150818C000000	R930060583	OD150618AV00000	R930060900

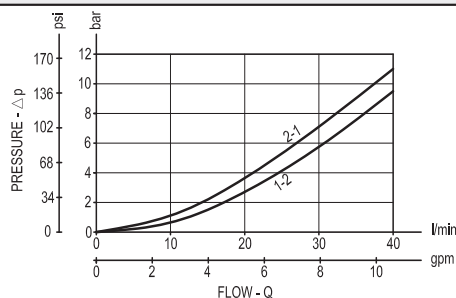
Sitzventilpatrone (231081) Cartouche de soupape à siège

Characteristic curves

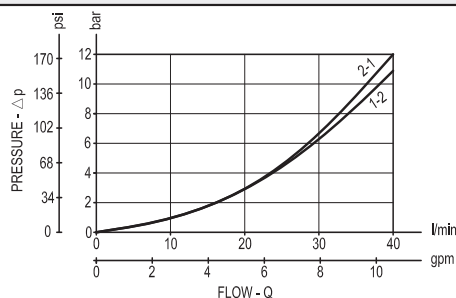
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



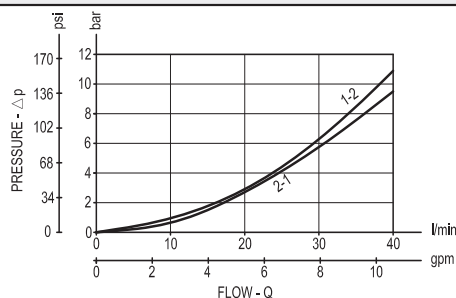
Versions 02, 06, 08



Version 32



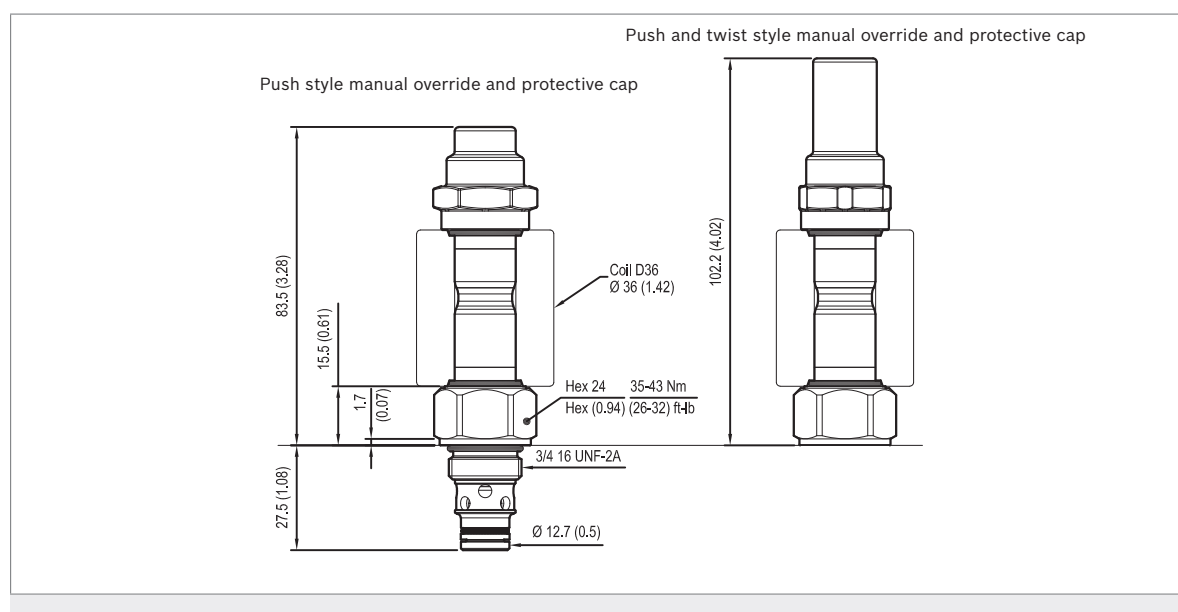
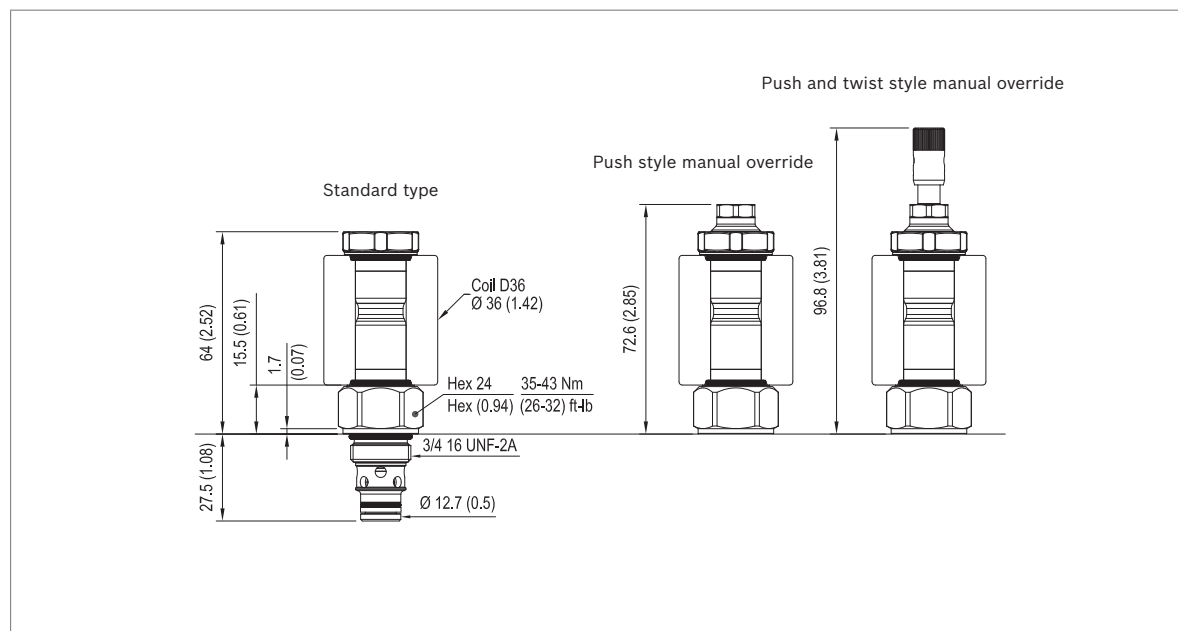
Version 04, 10



Sitzventilpatrone (231081) Cartouche de soupape à siège

Dimensions

Solenoid operated valves, poppet 2-way
normally open

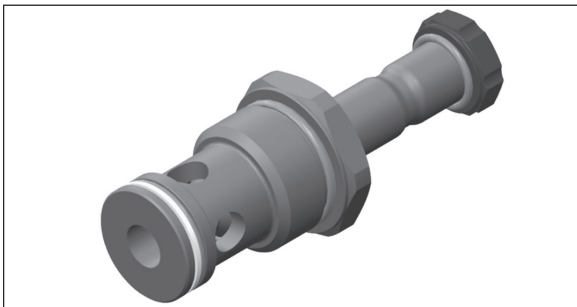


Sitzventilpatrone (231082) Cartouche de soupape à siège

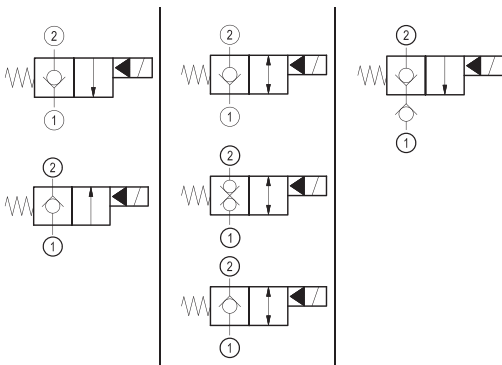
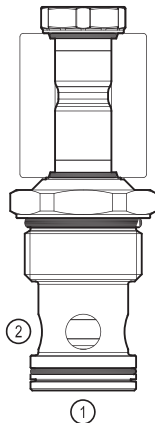
VEI-16-021-NC

OD.15 - X - 21- Y - Z

RE 18323-37



PATENT PENDING



Technical data

New VEI-16 family incorporates a new solenoid concept providing excellent performance and enables cartridges to work in severe environment. Cartridges also incorporates advanced design of hydraulic parts providing excellent hydraulic performance.

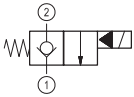
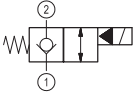
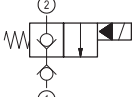
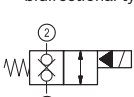
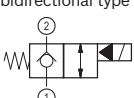
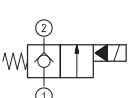
Technical data

General	
Weight	0.35 kg (0.77 lbs)
Installation orientation	Unrestricted
Storage ambient temperature range	-40 to 100 °C (-40 to 212 °F)
Operating ambient temperature range	-30 to 90 °C (-22 to 194 °F)
Salt spray test to DIN EN ISO 9227:2017-07	500h
Hydraulic	
Max. operating pressure	350 bar (5000 psi)
Flow range	5 - 150 l/min (1 - 40 gpm)
Fatigue cycle life	1 million cycles at 350 bar
Max. internal leakage:	20 drops/min.
Switching time	Closing ≤ 100 ms Opening ≤ 50 ms
Fluid temperature range	-20 to 80 °C (-4 to 176 °F)
Fluids: Mineral-based or synthetics with lubricating properties at viscosities of 20 to 380 mm ² /s (cSt)	
Installation torque	130 - 150 Nm (96 - 111 ft-lbs)
Recommended degree of fluid contamination	Nominal value max. 10 µm (NAS 8) ISO 4406 19/17/14
MTTFD	150 years see RE 18350-51
Special cavity	021-E see 18325-75
Seal kit for X=01,05	code RG21E201052010 material no. R934003566
Seal kit for X=03,09,11,31	code RG21E201053010 material no. R934003567
Seal kit coil and standard cap	code RG02Z0010000100 material no. R930067869
Seal kit coil and protective cap only for Y=D	code RG03Z0010000100 material no. R930067870
Other technical data	See data sheet 18350-50
Electrical	
Type of voltage	DC voltage
Coil type	D36
Supply voltage	See data sheet 18325-90
Voltage tolerance against ambient temperature	See characteristic curve
Power consumption	20 W
Type of protection	See data sheet 18325-90

Note: Coils must be ordered separately

Sitzventilpatrone (231082) Cartouche de soupape à siège

Ordering code

	OD.15	X	21	Y	Z	0000	*
Solenoid operated valves pilot operated poppet type 2-way normally closed							Series 0/A to L unchanged performances and dimensions
monodirectional type 							0 = With buna seal 8 = With buna seal and extra spring V = With Viton seal P = With buna seal and protective cap for override version D T = With Viton seal and protective cap for override version D
bidirectional type 							
monodirectional type with check 							A = Standard D = Knob style manual override E = Pull style manual override F = Hand operated pull style manual override
bidirectional type 							Special cavity: 021-E
bidirectional type 							
monodirectional type 							

Preferred types

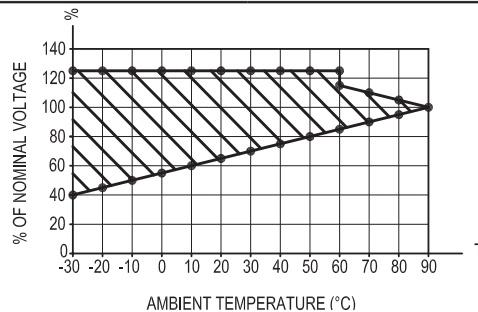
Type	Material number
OD150121A000000	R930064100
OD150521A000000	R930064472
OD150521A800000	R930065846
OD150521D000000	R930066968
OD151121A000000	R930068693
OD151121D000000	R930065027
OD153121A000000	R930068523
OD153121A800000	R930069360
OD153121D000000	R930068526

Type	Material number
OD153121D800000	R930069505
OD150521D800000	R930070647
OD150321A000000	R930070069
OD150321D000000	R930069699
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OD150921A000000	R930068524
OD150121A800000	R930068927

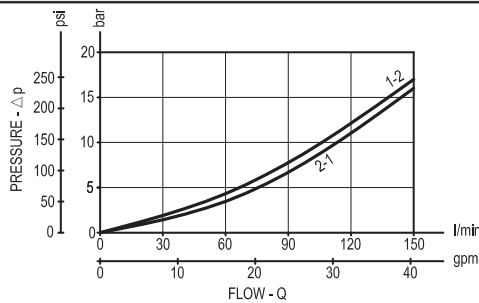
Sitzventilpatrone (231082) Cartouche de soupape à siège

Characteristic curves

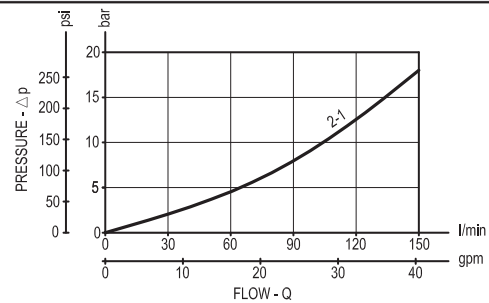
All Versions - Admissible supply voltage Vs. Ambient temperature at 100% duty cycle



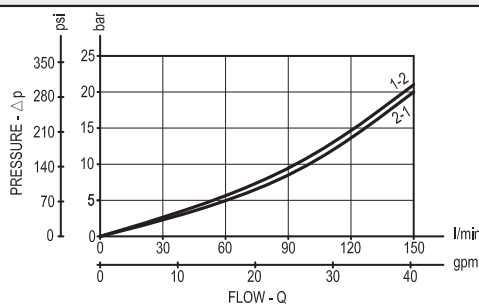
Versions 01, 05



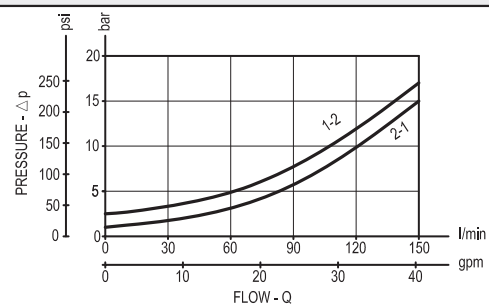
Version 11



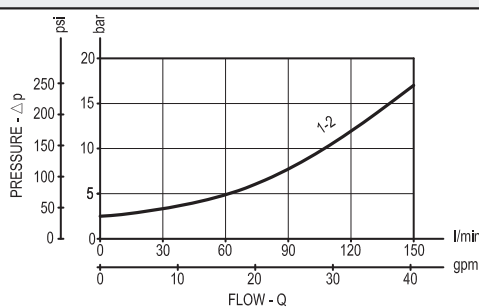
Version 31



Version 03



Version 09



Sitzventilpatrone (231082) Cartouche de soupape à siège

Solenoid operated valves, poppet 2-way
normally closed

