

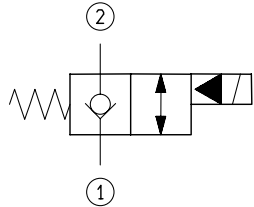
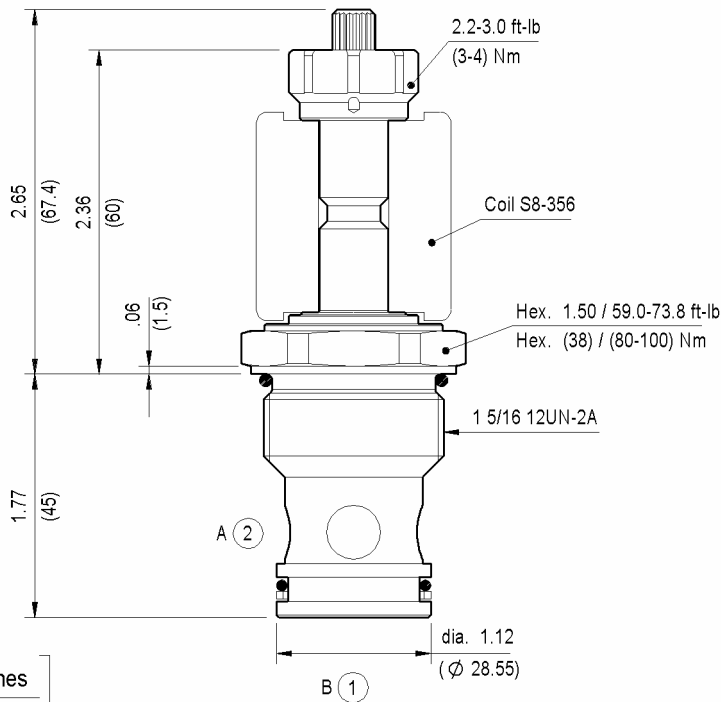
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2A-16A-NC-S-NSS

SIZE 16

OD.15.05.75 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-16A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

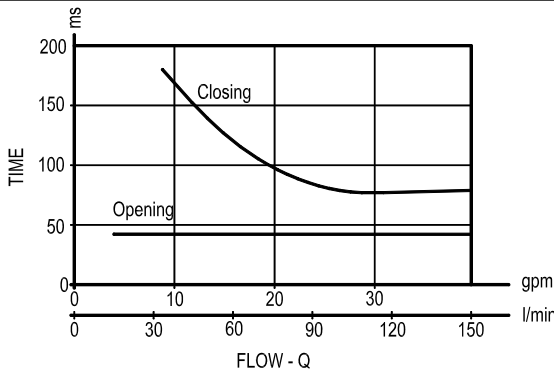
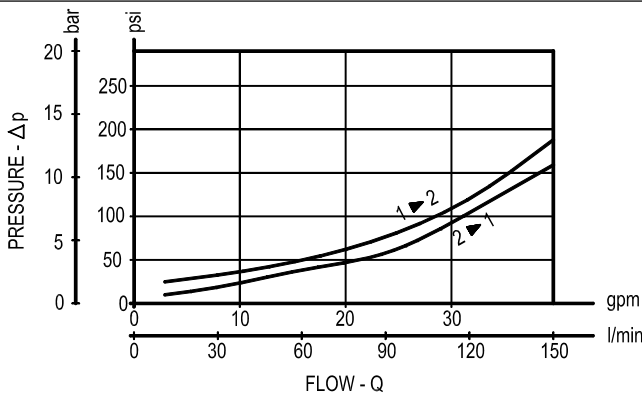
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

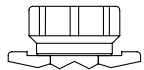


Y

ORDERING OPTIONS

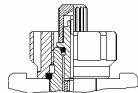
3A

Standard



3D

Knob Style Manual Override

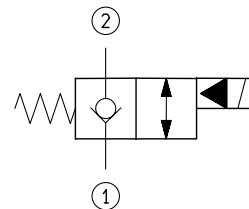
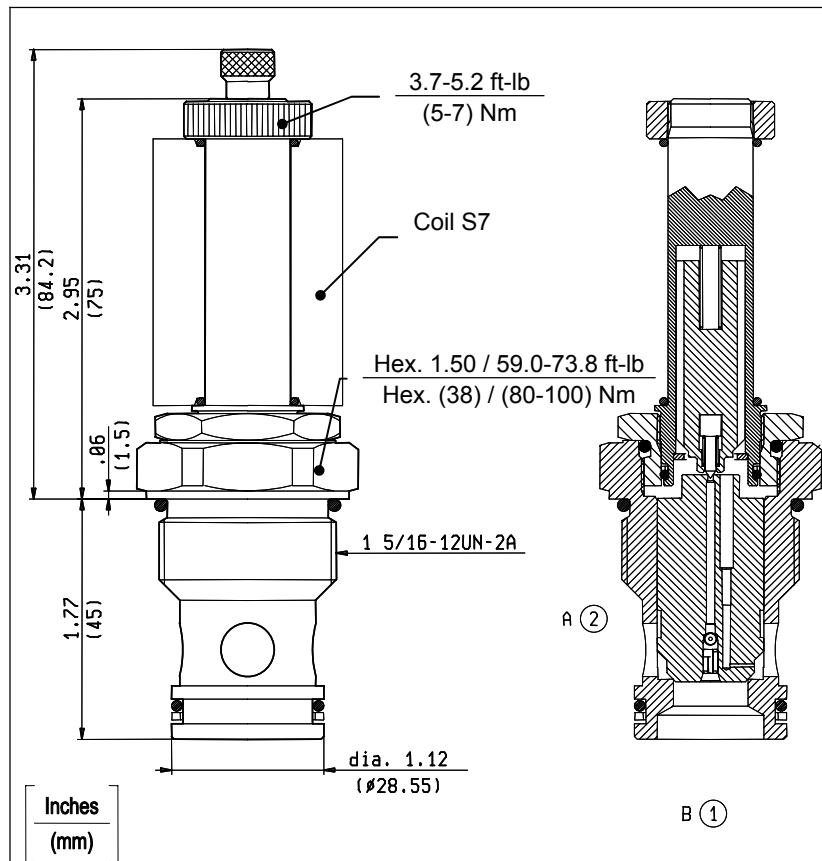


**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY**

VEI-7A-2A-16A-NC-S

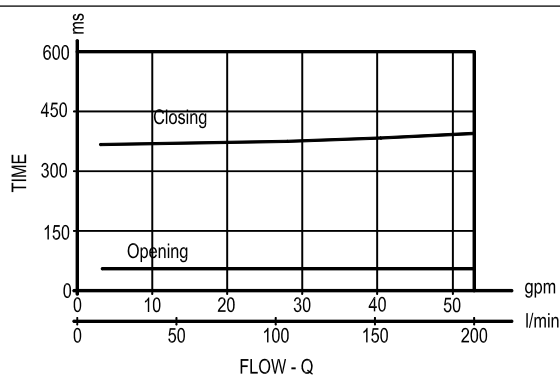
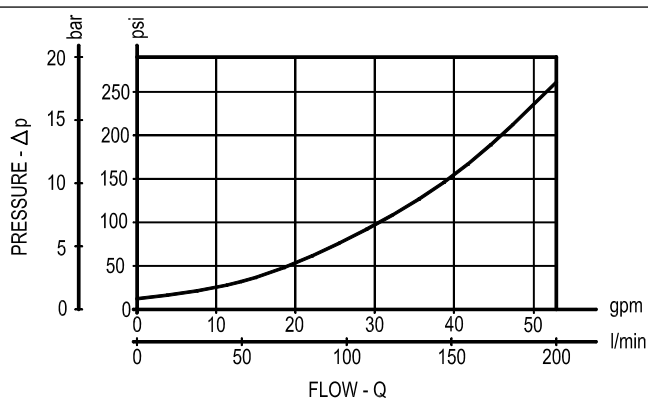
SIZE 16

OD.15.05.75 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



Y

ORDERING OPTIONS

75 Standard

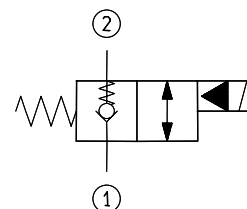


76 Knob Style Manual Override



Rexroth
Bosch Group

OD.15.05.75 - Y - 80



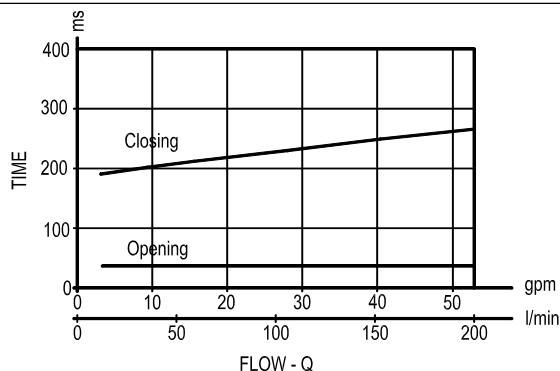
Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 μ m nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal

Mounting Position	unrestricted
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The only difference between this valve and the standard model is a spring placed between pilot section and poppet.

This design allows faster response times with very small flow or even virtually zero flow.

A pressure of approximately 29 psi (2 bar) is required to open the main poppet.



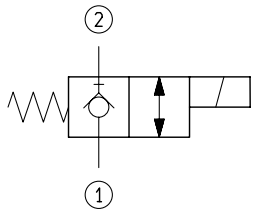
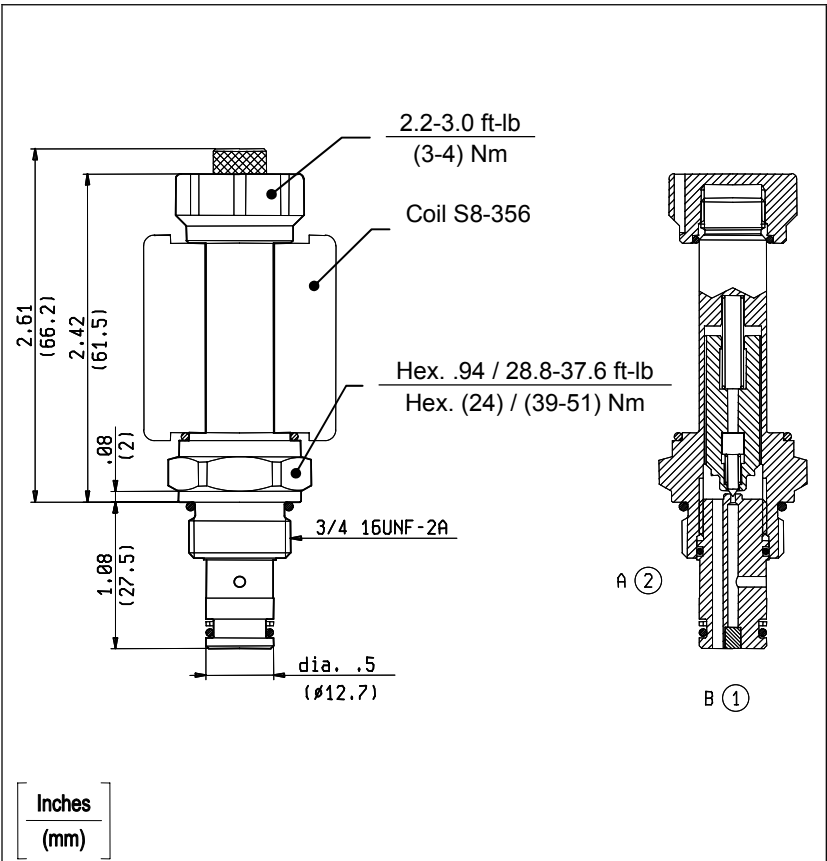
Technical drawing of a mechanical assembly. It shows a cross-section of a component with a threaded hole. A bolt is inserted into the hole, and a nut is tightened onto it. The drawing uses standard engineering conventions, including hatching for cross-sections and dimension lines for measurements.

SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VED-8I-2B-01-NC

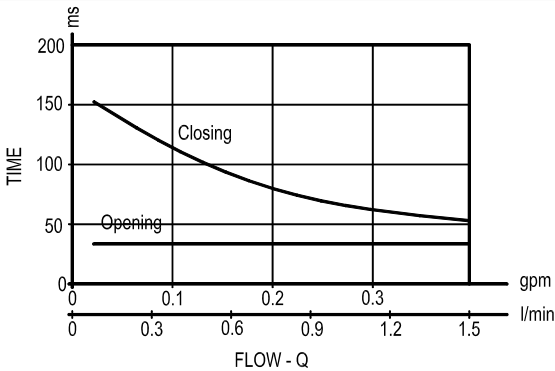
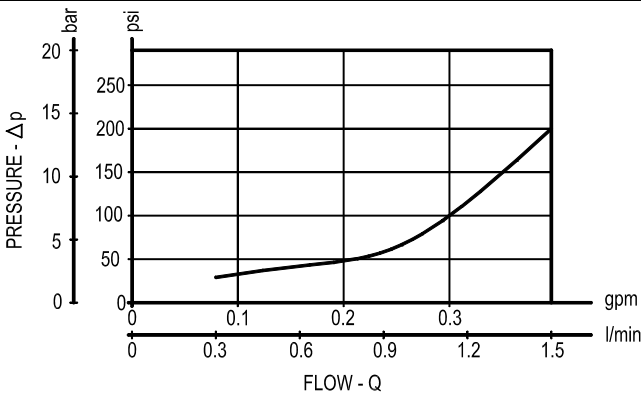
SIZE 08

OD.11.03.18 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	0.4 gpm (1.5 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted

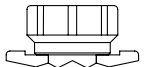


Y

ORDERING OPTIONS

31

Standard

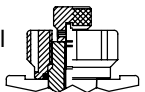


32

Knob
Override

Style

Manual



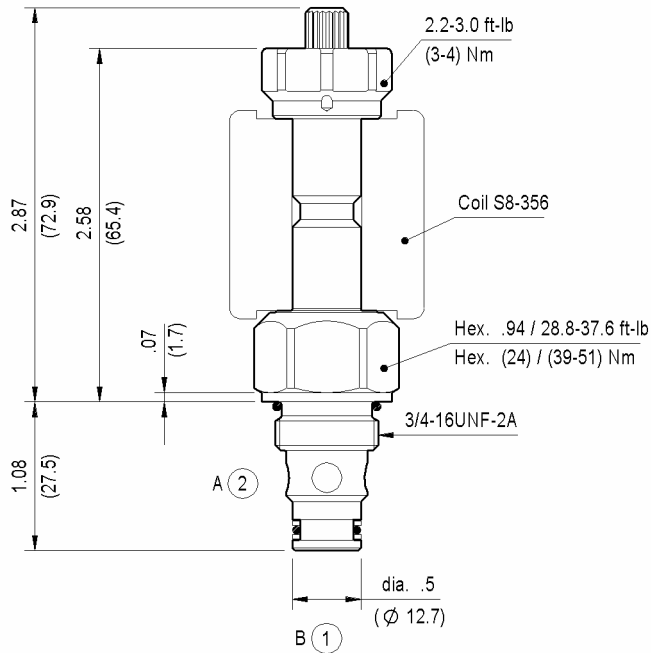
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2B-06-NC-S-NSS

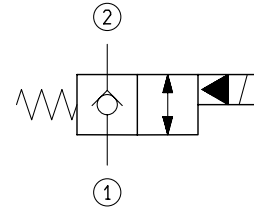
SIZE 08

OD.15.03.18 - Y - S0

PATENT PENDING

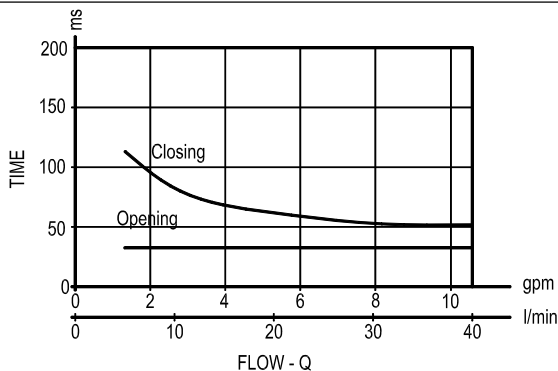
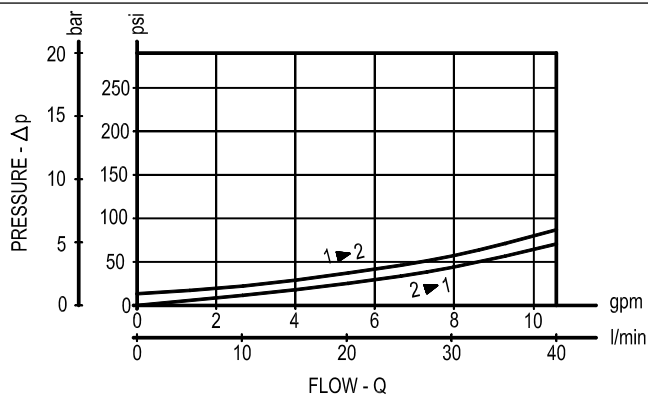


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted

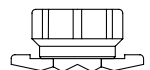


Y

ORDERING OPTIONS

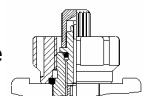
3A

Standard



3D

Knob Style Manual Override

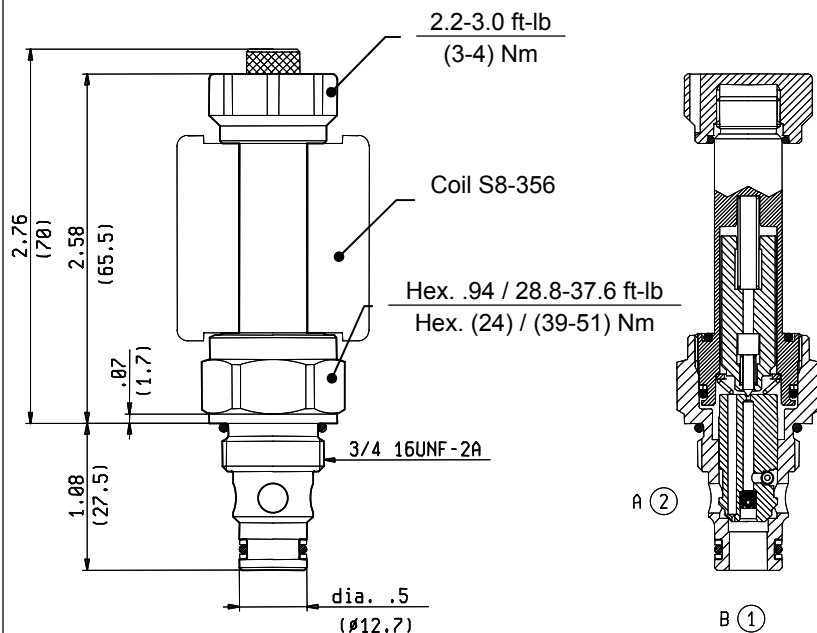


SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED - EXTRA SPRING
COMMON CAVITY

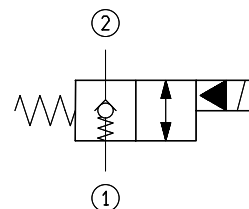
VEI-8A-2B-06-NC-S-X

SIZE 08

OD.15.03.18 - Y - 80



Inches
(mm)



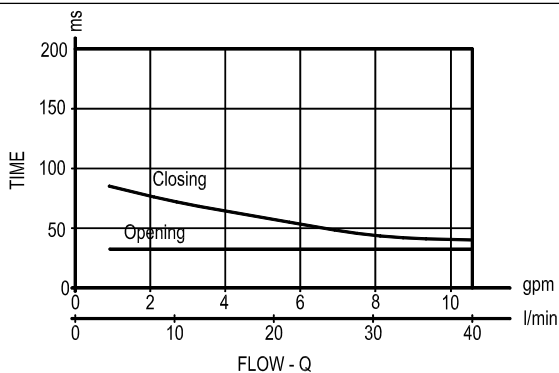
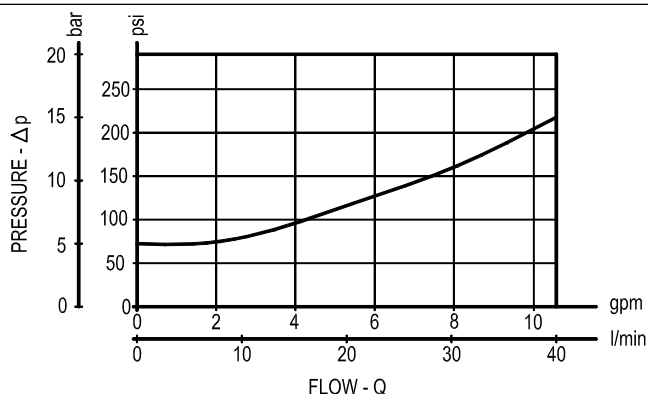
TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

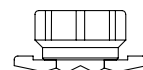
The only difference between this valve and the standard model is a spring placed between pilot section and poppet.
This design allows faster response times with very small flow or even virtually zero flow.
A pressure of approximately 73 psi (5 bar) is required to open the main poppet.



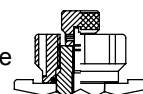
Y

ORDERING OPTIONS

37 Standard



47 Knob Style Manual Override



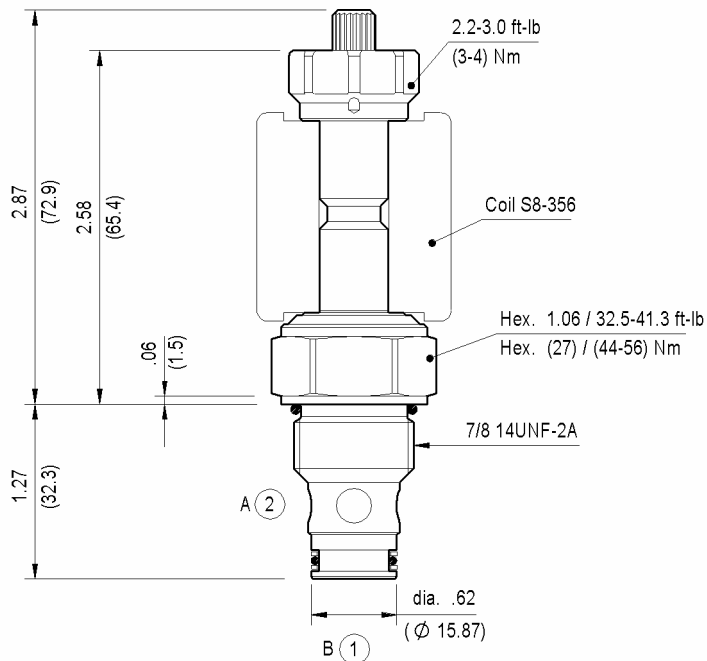
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2B-10A-NC-S-NSS

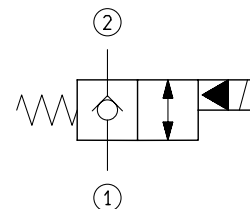
SIZE 10

OD.15.03.36 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

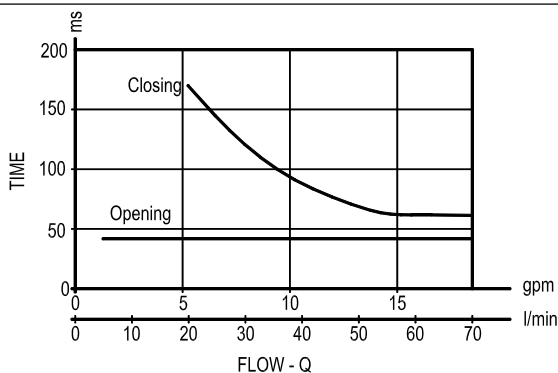
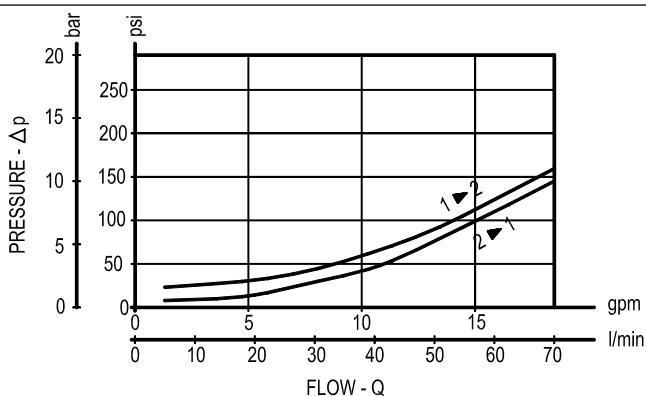
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

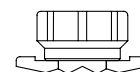
Mounting Position unrestricted



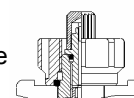
Y

ORDERING OPTIONS

3A Standard



3D Knob Style Manual Override



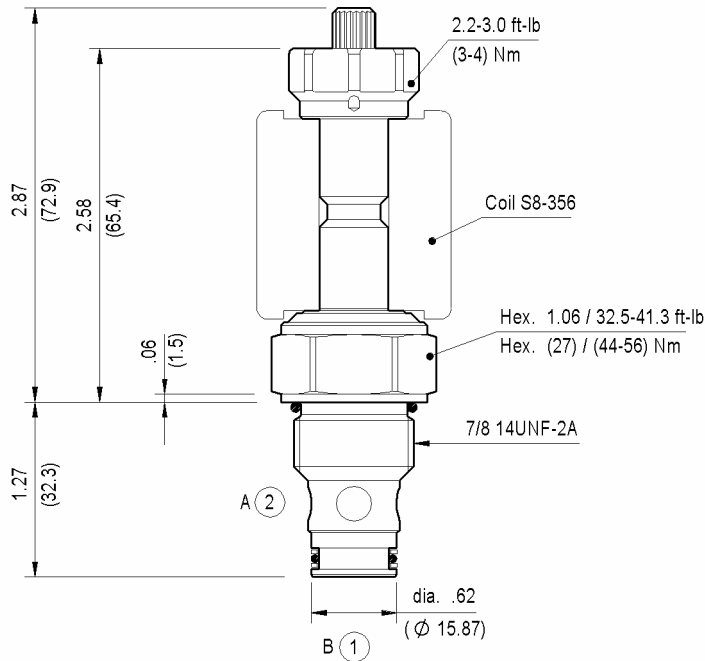
**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED - EXTRA SPRING
COMMON CAVITY**

VEI-8A-2B-10A-NC-S-X-NSS

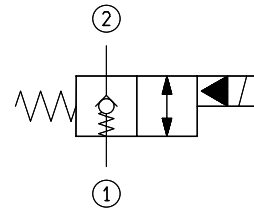
SIZE 10

OD.15.03.36 - Y - S8

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage page 7.01.040

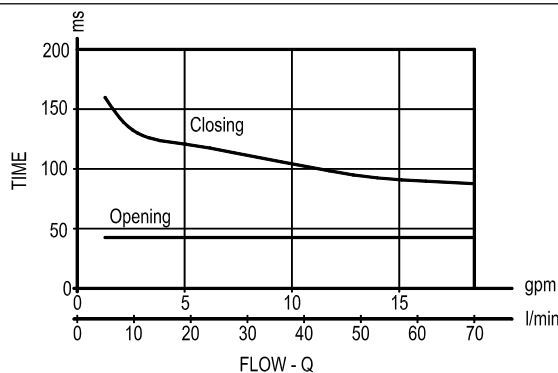
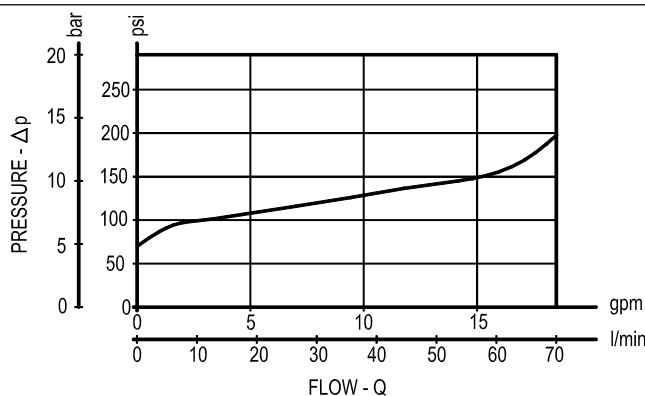
Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

The only difference between this valve and the standard model is a spring placed between pilot section and poppet. This design allows faster response times with very small flow or even virtually zero flow. A pressure of approximately 58psi (4 bar) is required to open the main poppet.

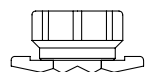


Y

ORDERING OPTIONS

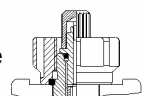
3A

Standard



3D

Knob Style Manual Override



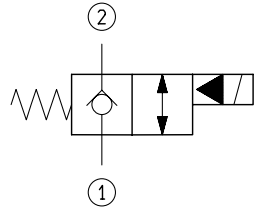
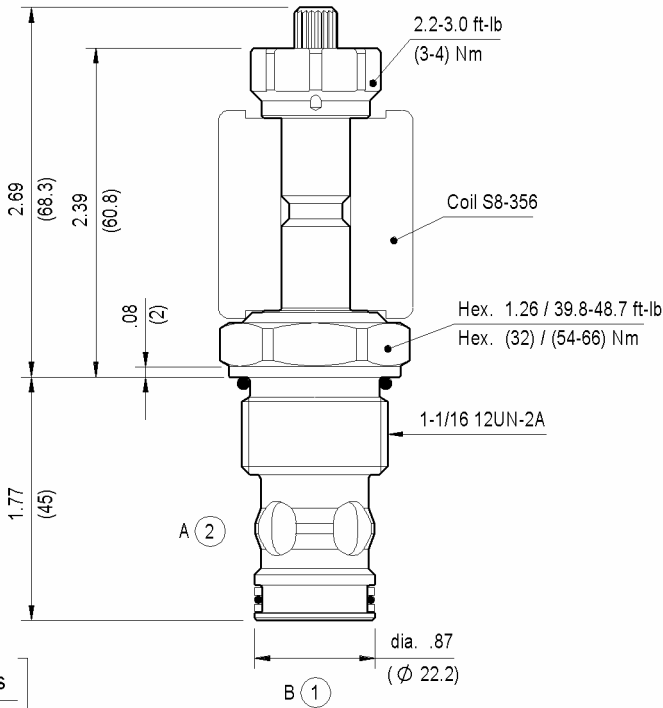
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2B-12A-NC-S-NSS

SIZE 12

OD.15.03.89 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

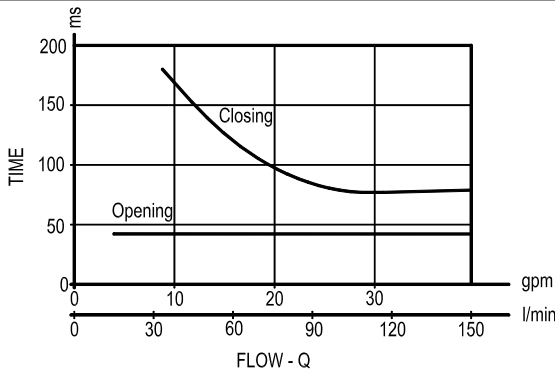
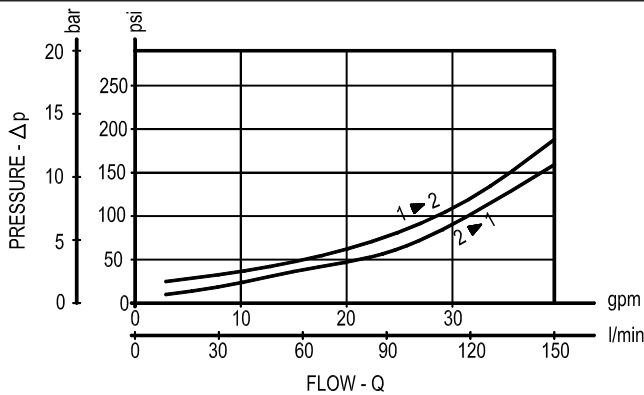
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

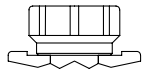


Y

ORDERING OPTIONS

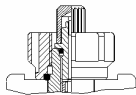
3A

Standard



3D

Knob Style Manual Override



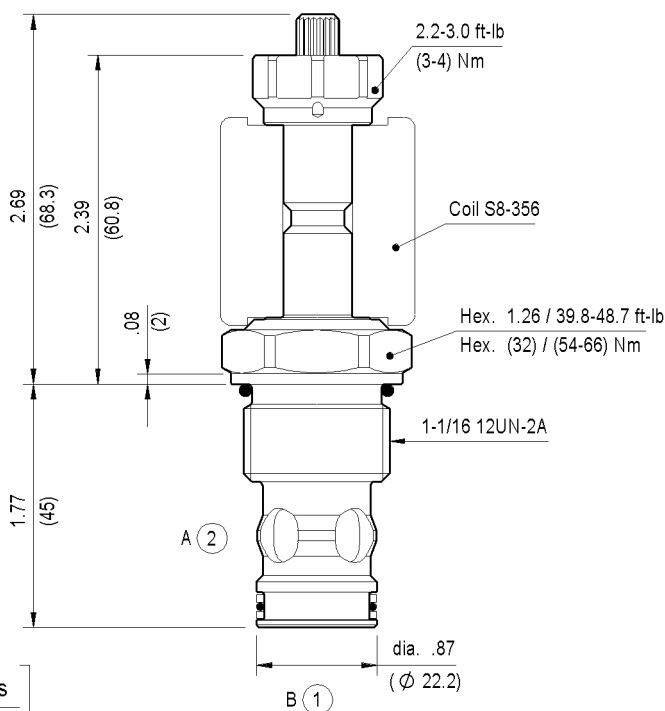
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED - EXTRA SPRING
COMMON CAVITY

VEI-8A-2B-12A-NC-S-X-NSS

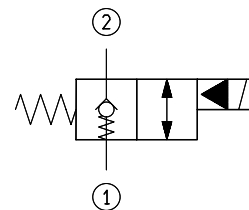
SIZE 12

OD.15.03.89 - Y - S8

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

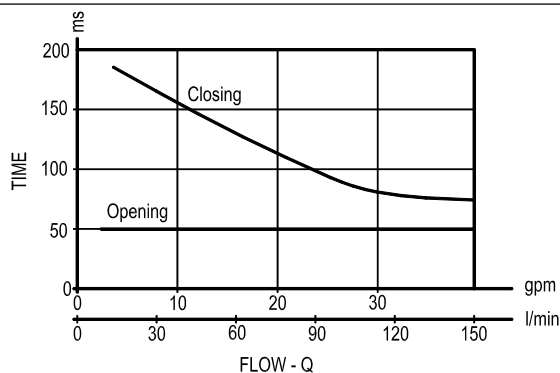
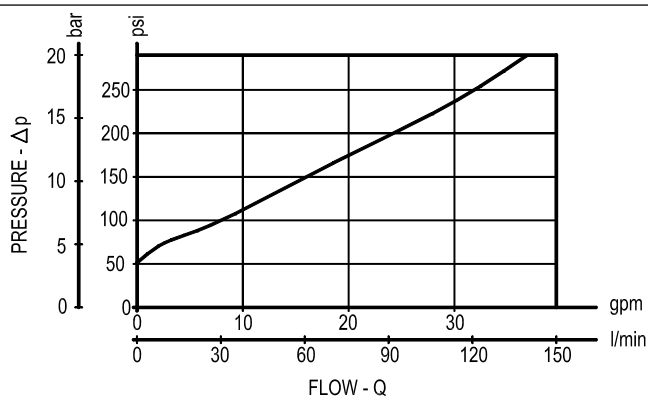
Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

The only difference between this valve and the standard model is a spring placed between pilot section and poppet.

This design allows faster response times with very small flow or even virtually zero flow.

A pressure of approximately 44 psi (3 bar) is required to open the main poppet.

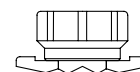


Y

ORDERING OPTIONS

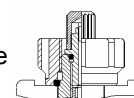
3A

Standard



3D

Knob Style Manual Override



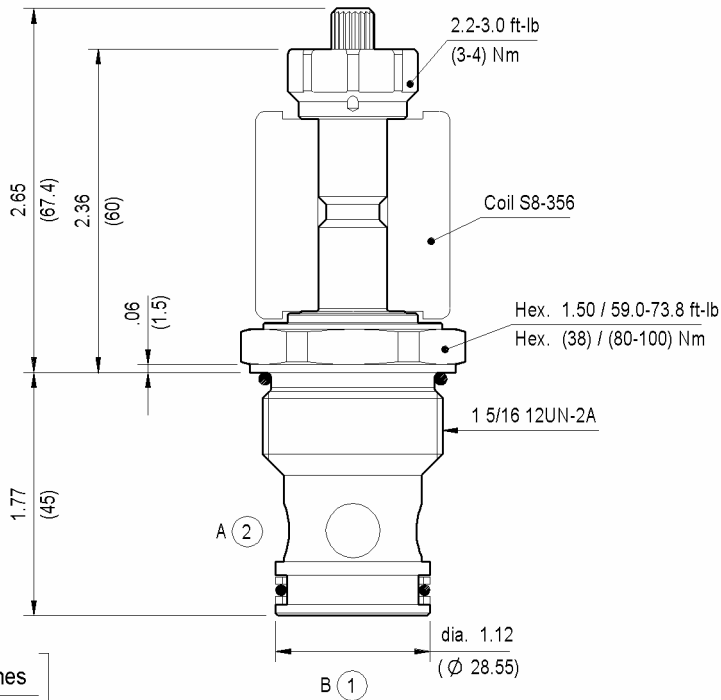
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2B-16A-NC-S-NSS

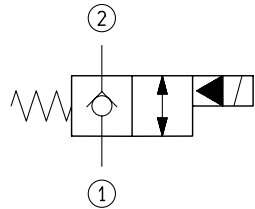
SIZE 16

OD.15.03.75 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-16A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

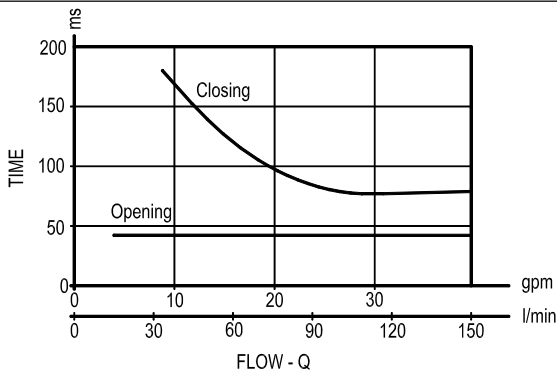
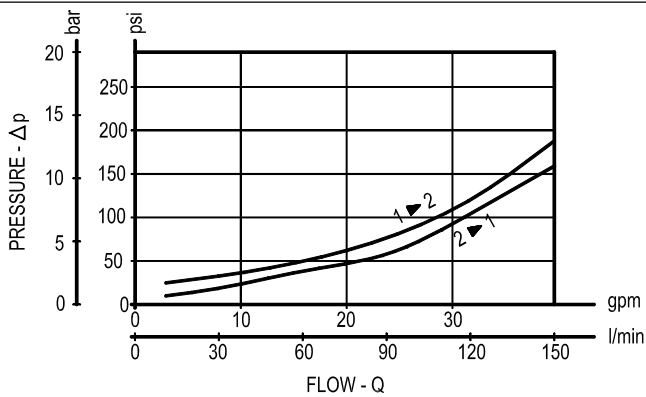
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

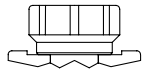


Y

ORDERING OPTIONS

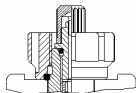
3A

Standard



3D

Knob Style Manual Override

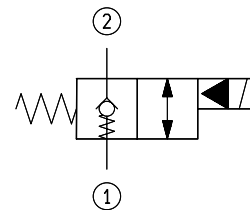
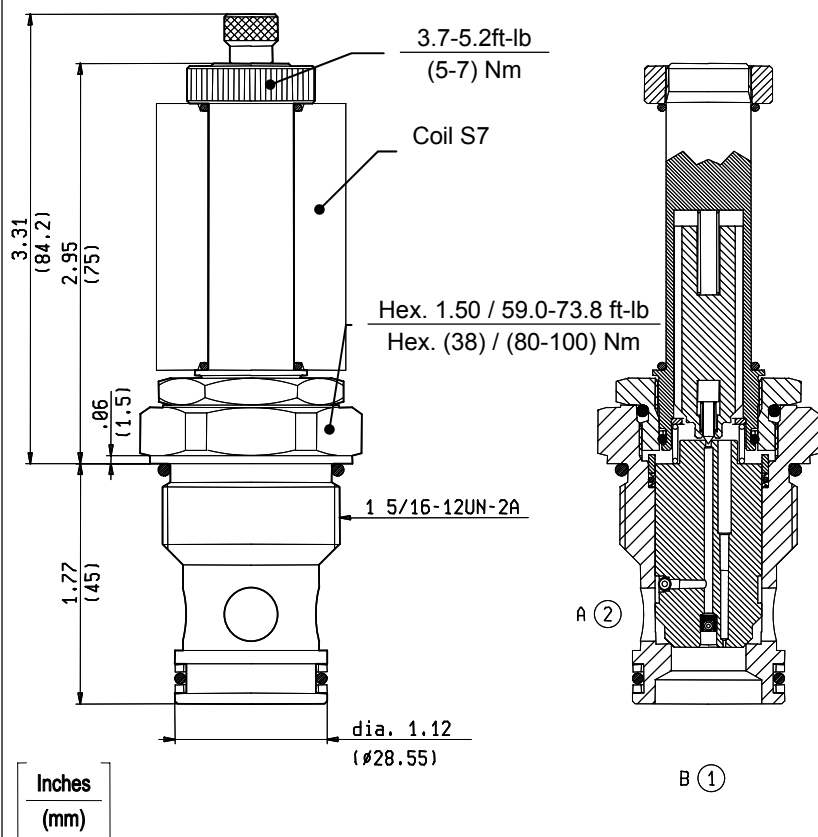


SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED - EXTRA SPRING
COMMON CAVITY

VEI-7A-2B-16A-NC-S-X

SIZE 16

OD.15.03.75 - Y - 80



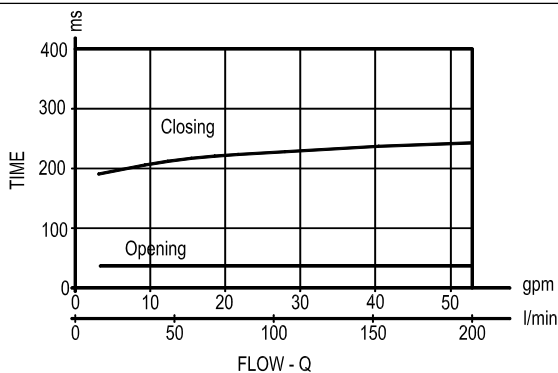
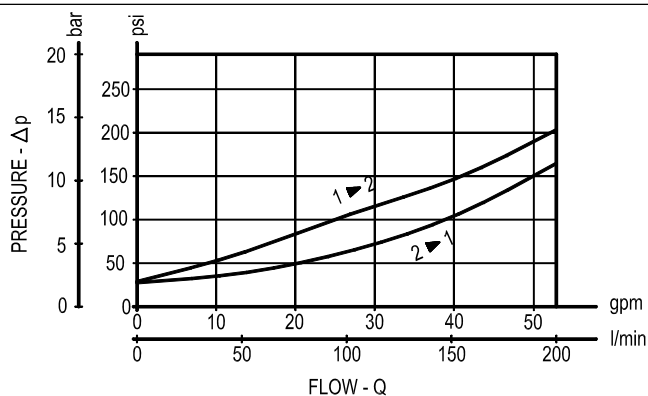
TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal

Coils must be ordered separately page 1.71.070

Mounting Position unrestricted

The only difference between this valve and the standard model is a spring placed between pilot section and poppet.
This design allows faster response times with very small flow or even virtually zero flow.
A pressure of approximately 29 psi (2 bar) is required to open the main poppet.



Y ORDERING OPTIONS

75 Standard



76 Knob Style Manual Override

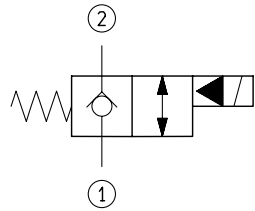
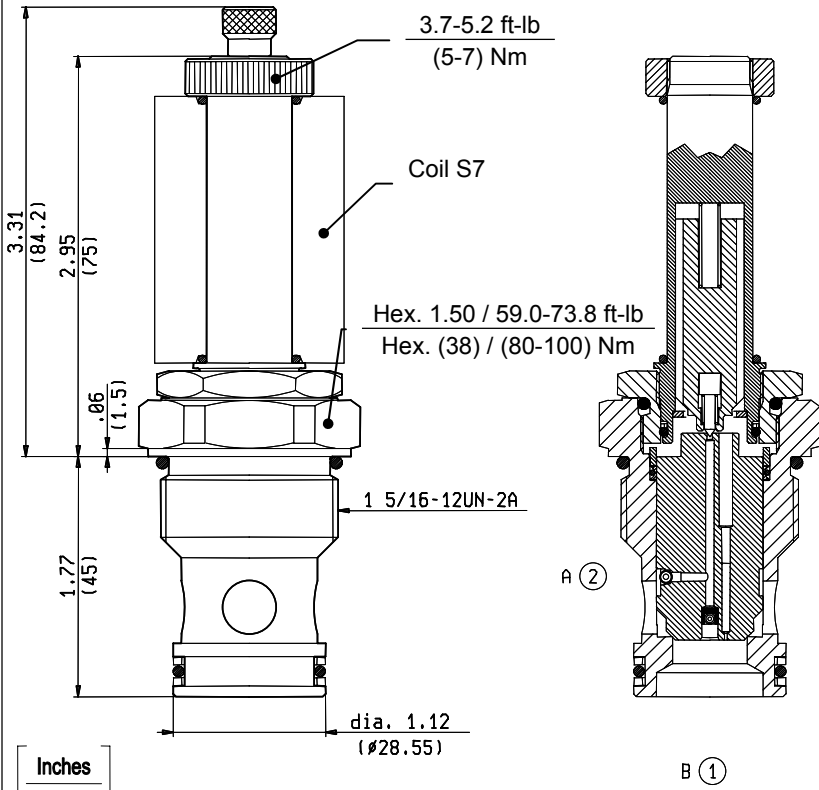


SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
COMMON CAVITY

VEI-7A-2B-16A-NC-S

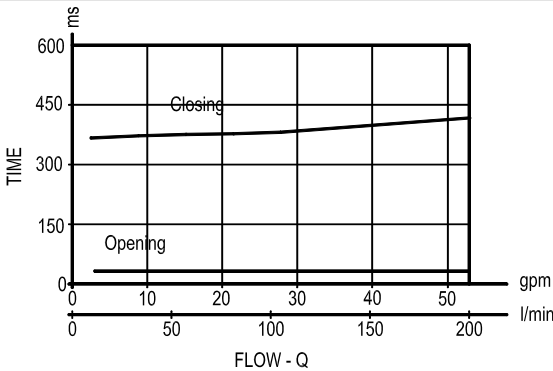
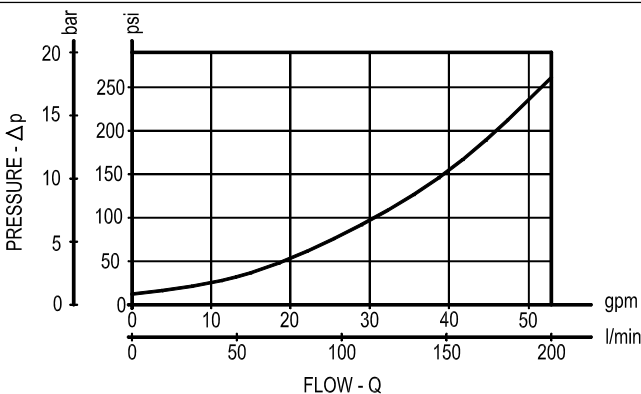
SIZE 16

OD.15.03.75 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



Y ORDERING OPTIONS

75 Standard



76 Knob Style Manual Override



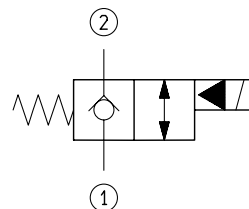
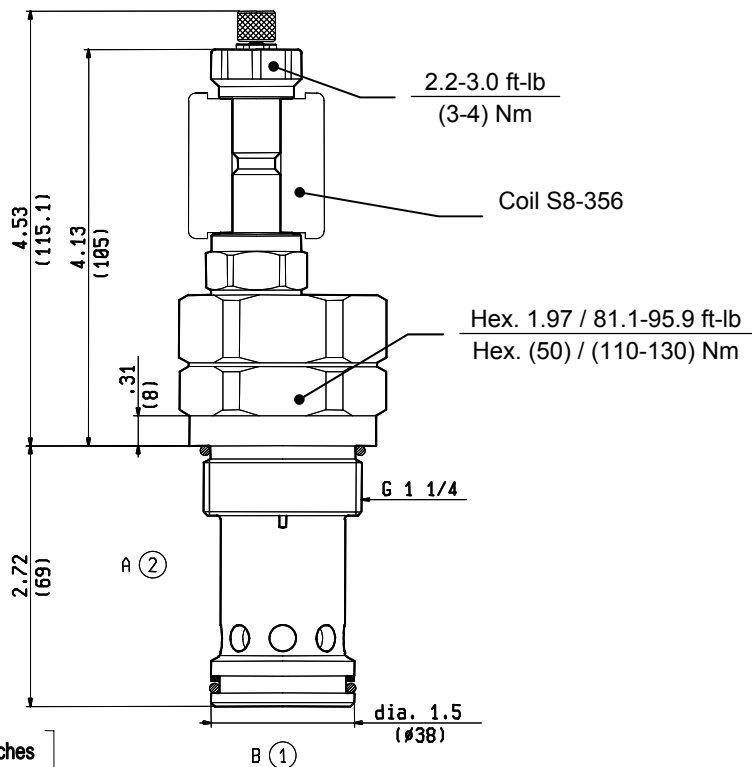
**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY CLOSED
SPECIAL CAVITY**

VEI-8A-2B-16-NC-NSS

004

OD.15.03.04 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 69 gpm (260 l/min)

Cavity (004) page CT.S.001.U

Weight 2.491 lbs (1.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

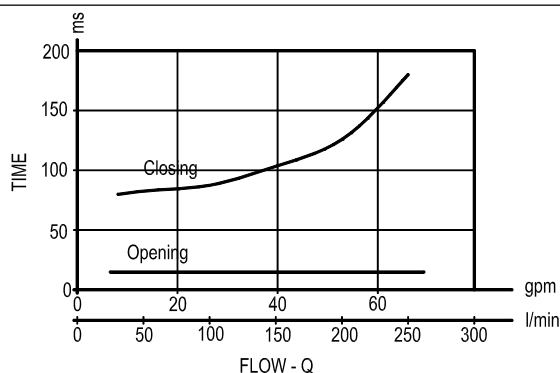
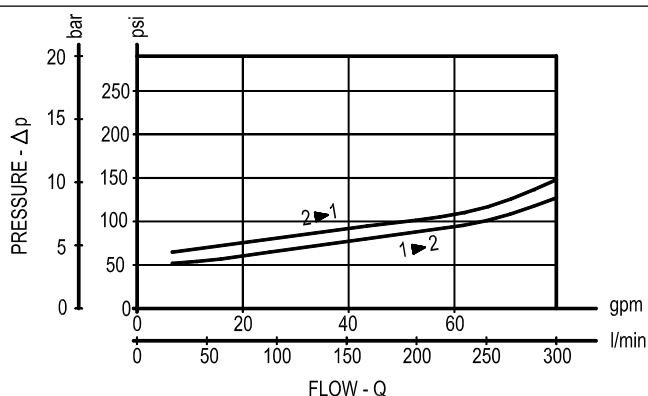
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

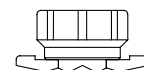
Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

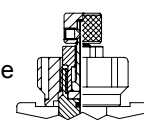


Y ORDERING OPTIONS

3A Standard



3B Knob Style Manual Override

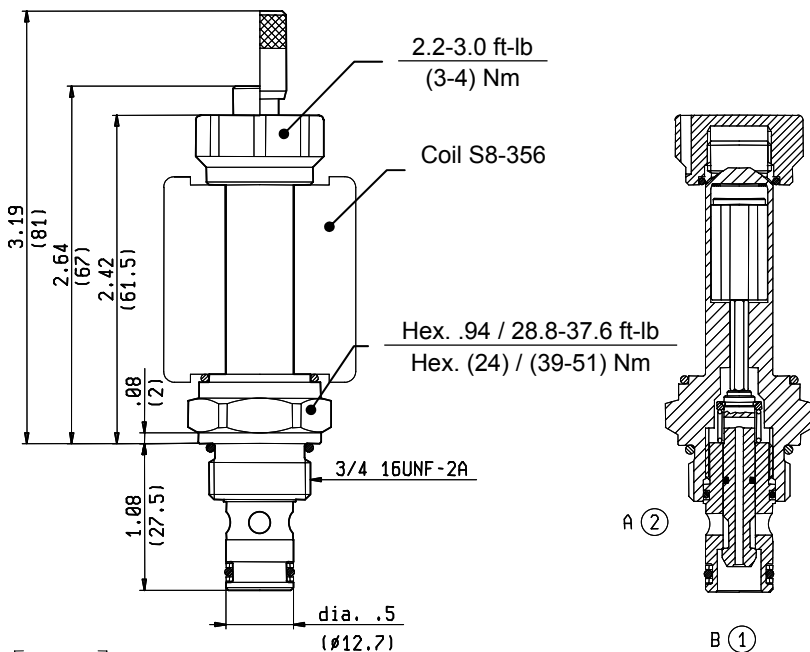


SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

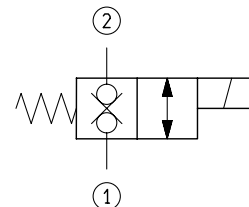
VED-8I-2T-06-NC

SIZE 08

OD.11.31.18 - Y - 00

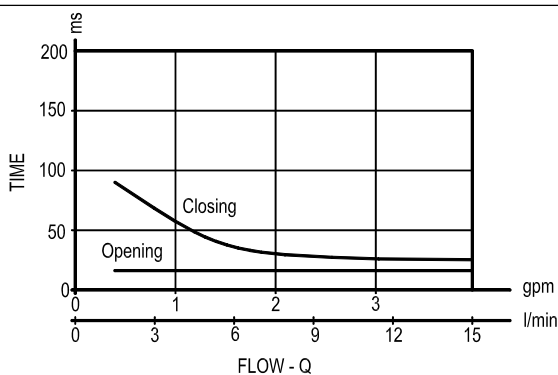
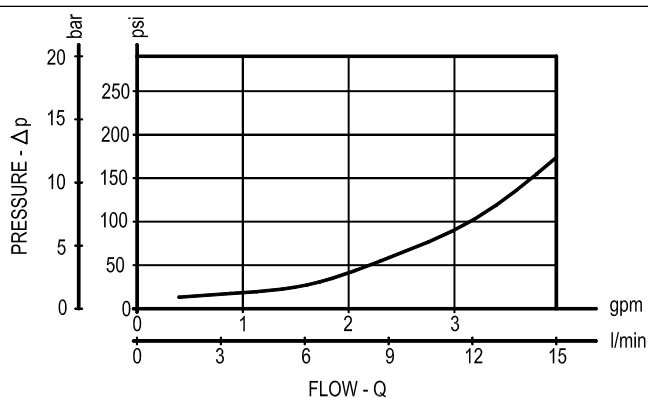


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	4 gpm (15 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

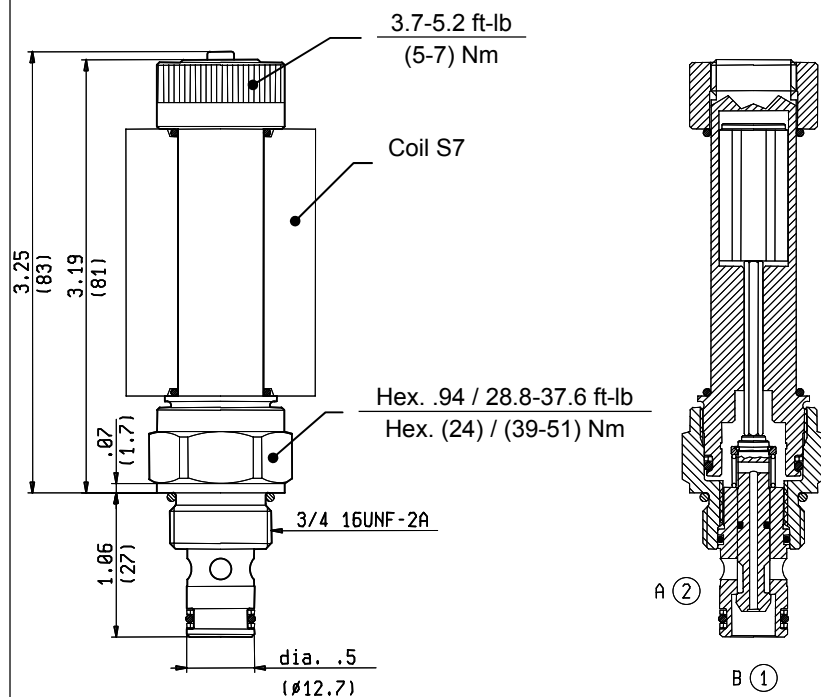
14	Standard	
15	Push Style Manual Override	
16	Push and Twist Style Manual Override	

SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

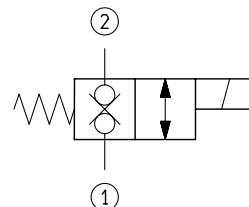
VED-7A-2T-06-NC

SIZE 08

OD.11.31.18 - Y - 00

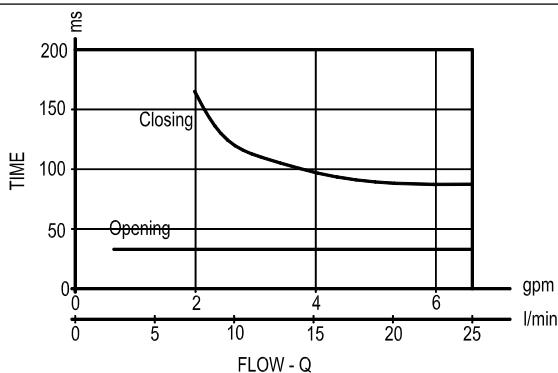
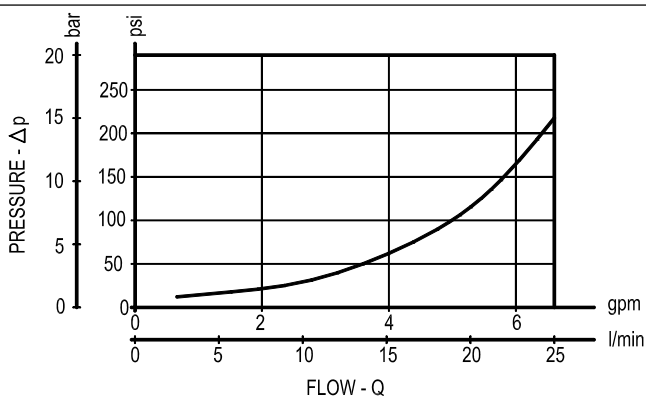


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	7 gpm (25 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.386 lbs (0.175 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted

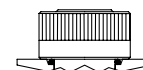


Y

ORDERING OPTIONS

50

Standard



51

Push
Override

Style

Manual



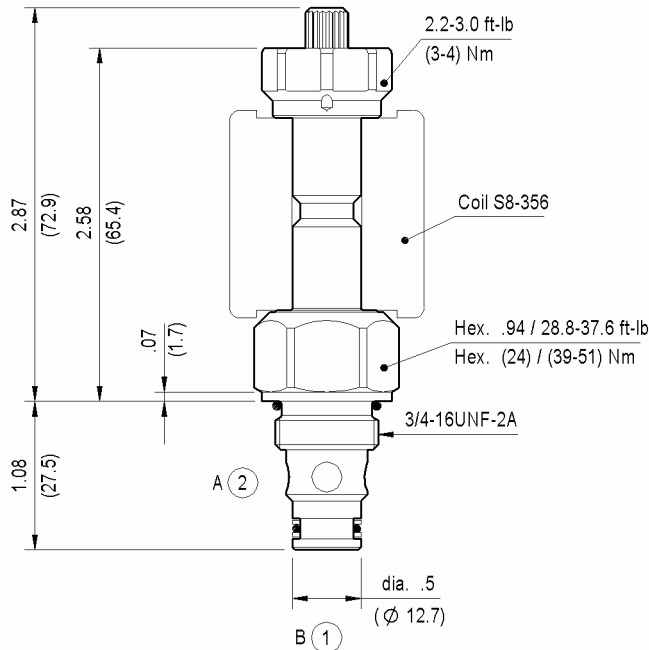
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2T-06-NC-S-NSS

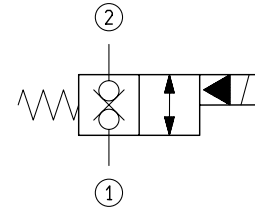
SIZE 08

OD.15.31.18 - Y - S0

PATENT PENDING

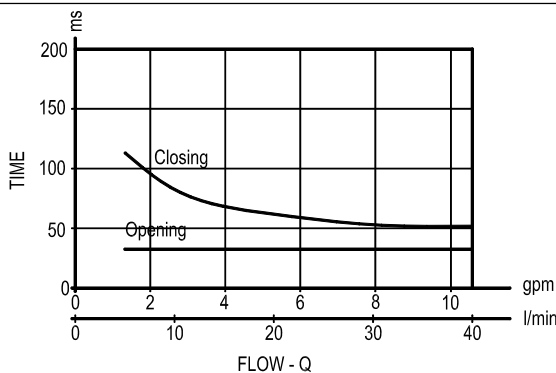
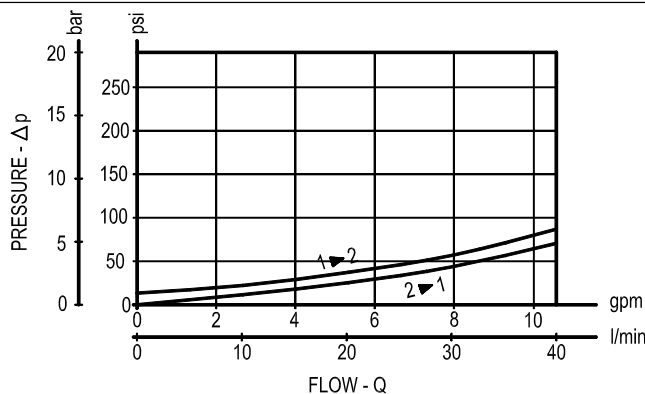


Inches
(mm)



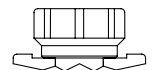
TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted

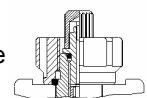


Y ORDERING OPTIONS

3A Standard



3D Knob Style Manual Override

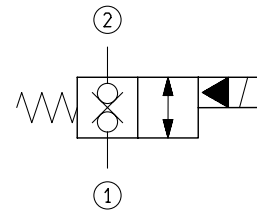
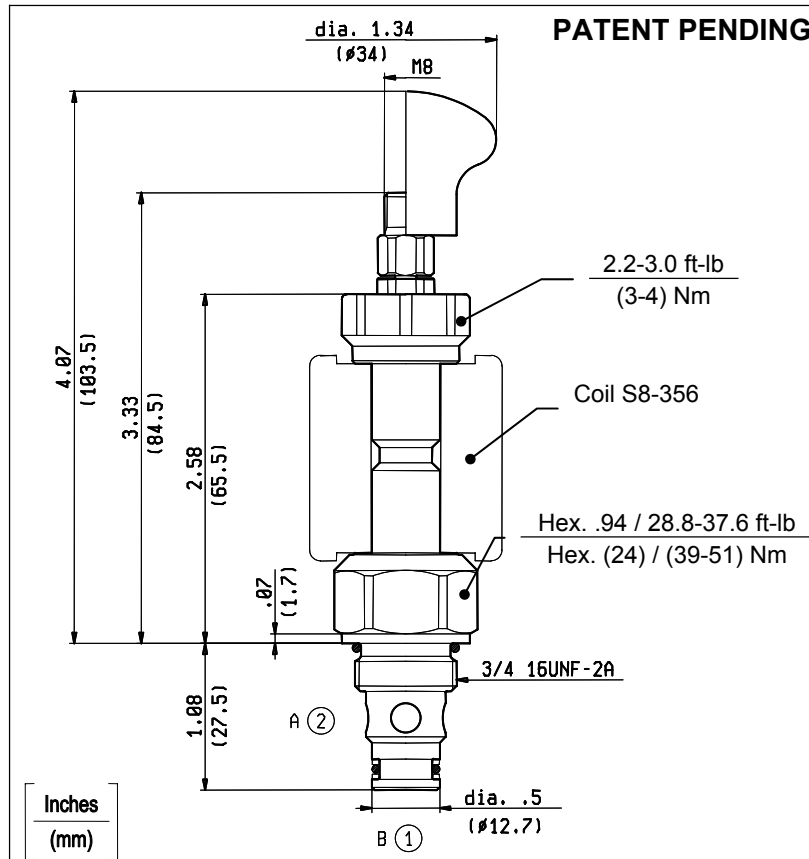


SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2T-06-NC-S-ET-NSS

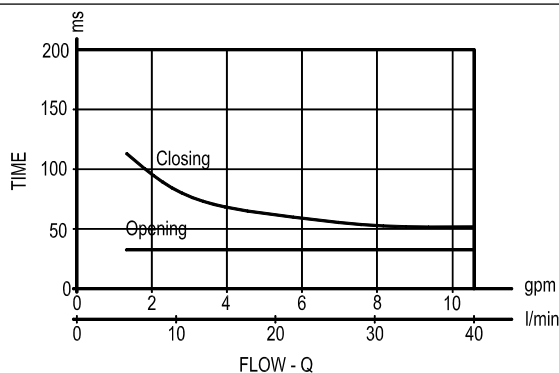
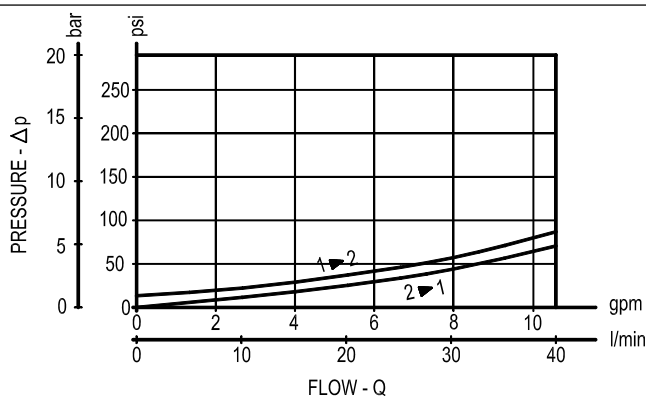
SIZE 08

OD.15.31.18.3C - Z



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted
Operation of manual override	page 7.01.030
The knob can be ordered separately (part number 13.01.03.003)	



Z

ORDERING OPTIONS

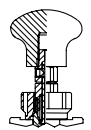
S0

Cable Operated Pull Style Override



S1

Hand Operated Pull Style Override

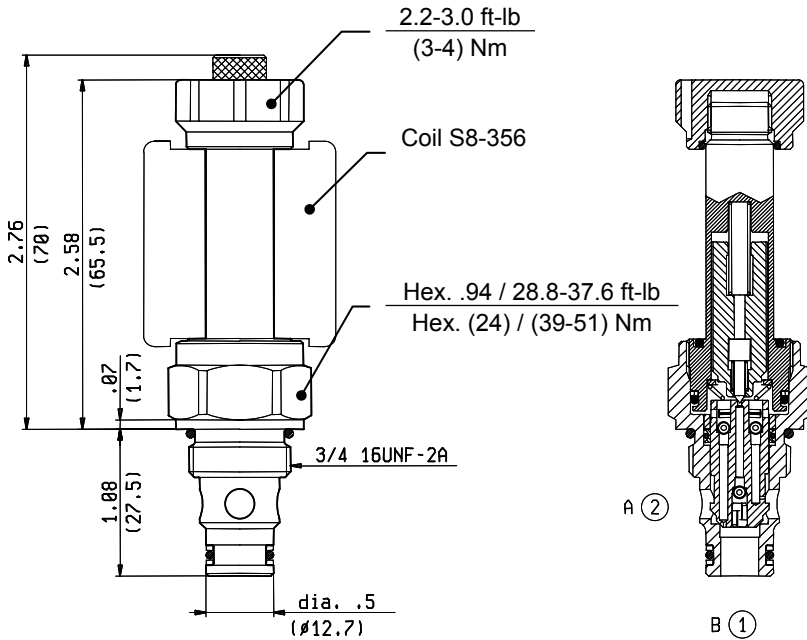


SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
EXTRA SPRING - COMMON CAVITY

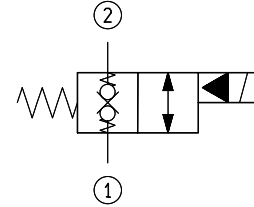
VEI-8A-2T-06-NC-S-X

SIZE 08

OD.15.31.18 - Y - 80



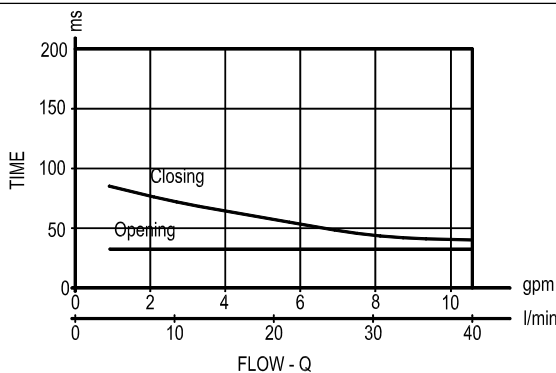
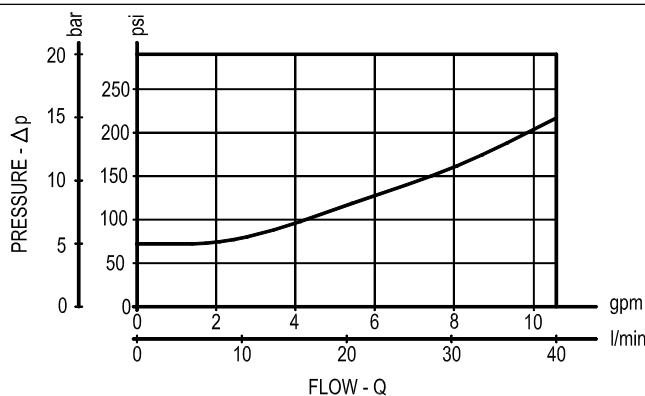
Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted

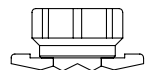
The only difference between this valve and the standard model is a spring placed between pilot section and poppet. This design allows faster response times with very small flow or even virtually zero flow. A pressure of approximately 73psi (5 bar) is required to open the main poppet.



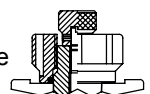
Y

ORDERING OPTIONS

37 Standard



47 Knob Style Manual Override



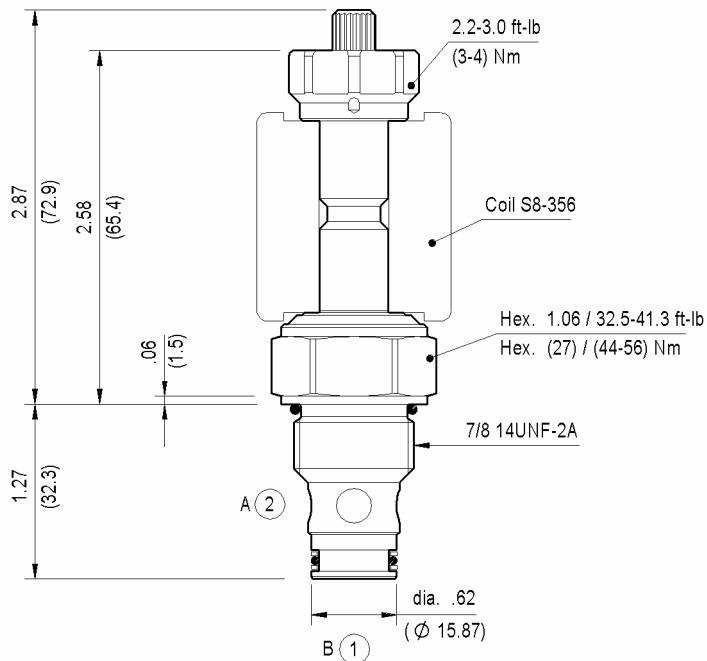
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2T-10A-NC-S-NSS

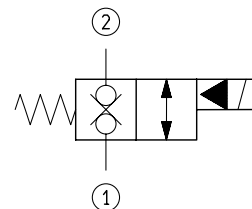
SIZE 10

OD.15.31.36 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

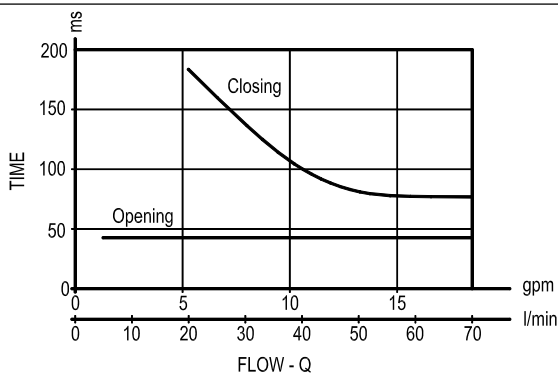
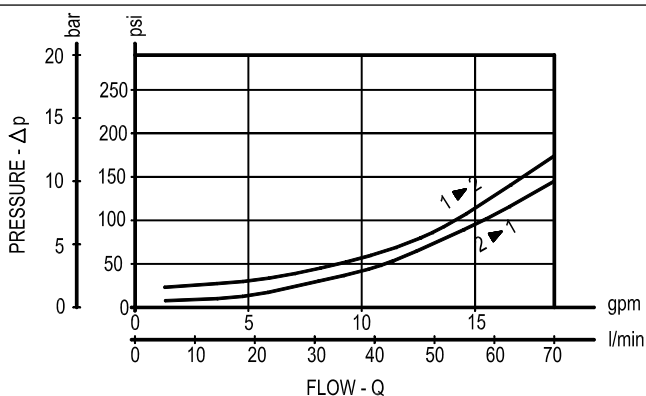
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

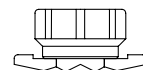


Y

ORDERING OPTIONS

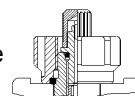
3A

Standard



3D

Knob Style Manual Override



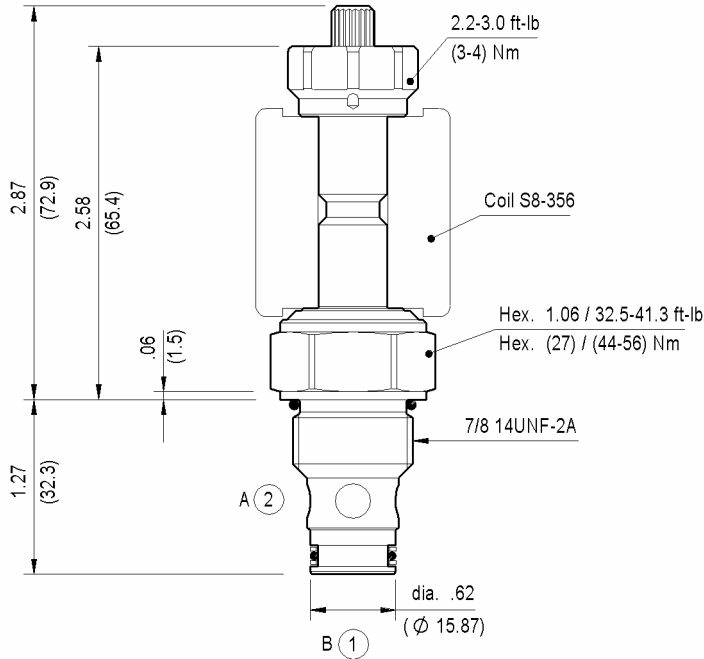
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
EXTRA SPRING - COMMON CAVITY

VEI-8A-2T-10A-NC-S-X-NSS

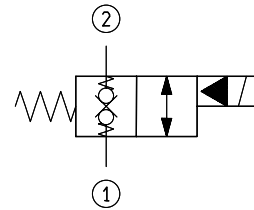
SIZE 10

OD.15.31.36 - Y - S8

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

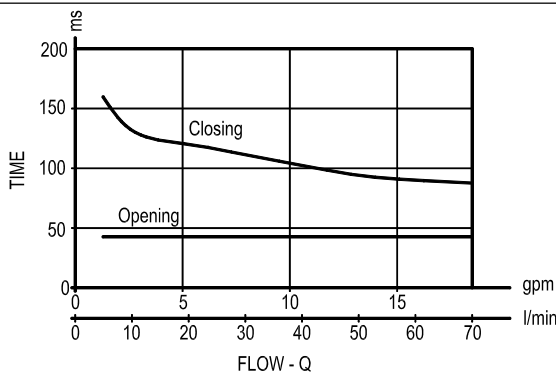
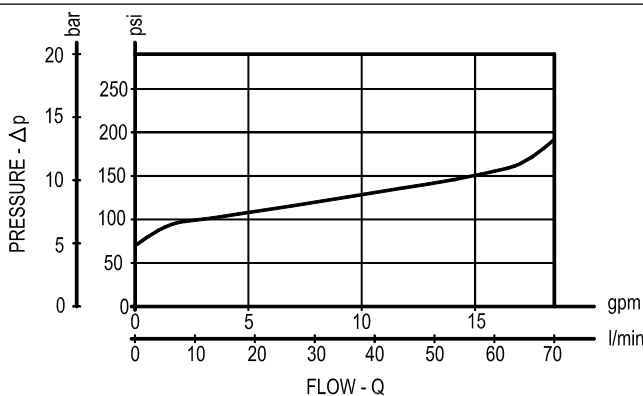
Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

The only difference between this valve and the standard model is a spring placed between pilot section and poppet.

This design allows faster response times with very small flow or even virtually zero flow.

A pressure of approximately 58 psi (4 bar) is required to open the main poppet.

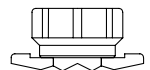


Y

ORDERING OPTIONS

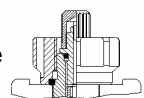
3A

Standard



3D

Knob Style Manual Override



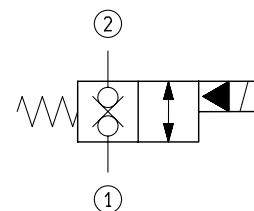
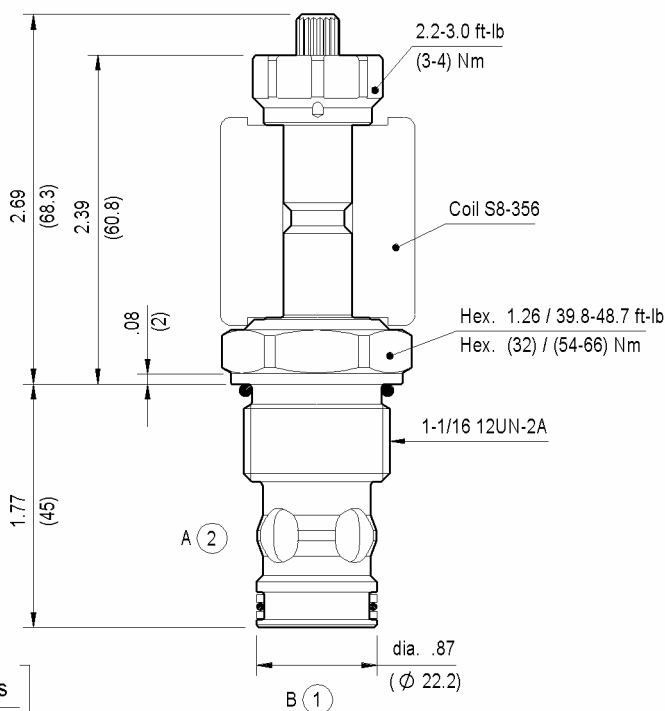
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2T-12A-NC-S-NSS

SIZE 12

OD.15.31.89 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

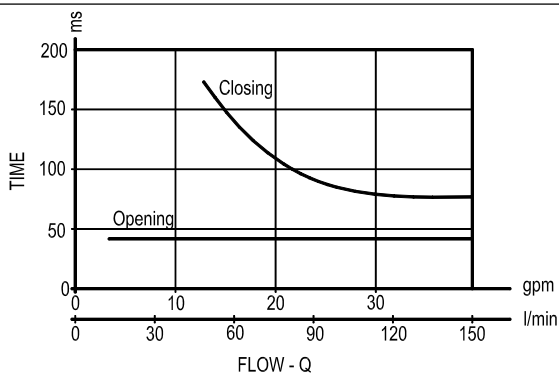
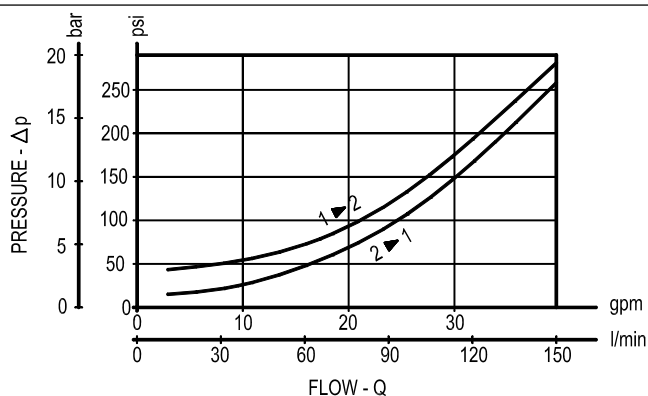
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

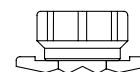


Y

ORDERING OPTIONS

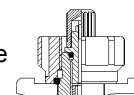
3A

Standard



3D

Knob Style Manual Override



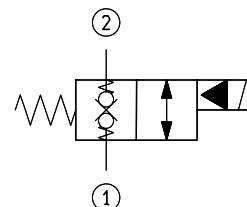
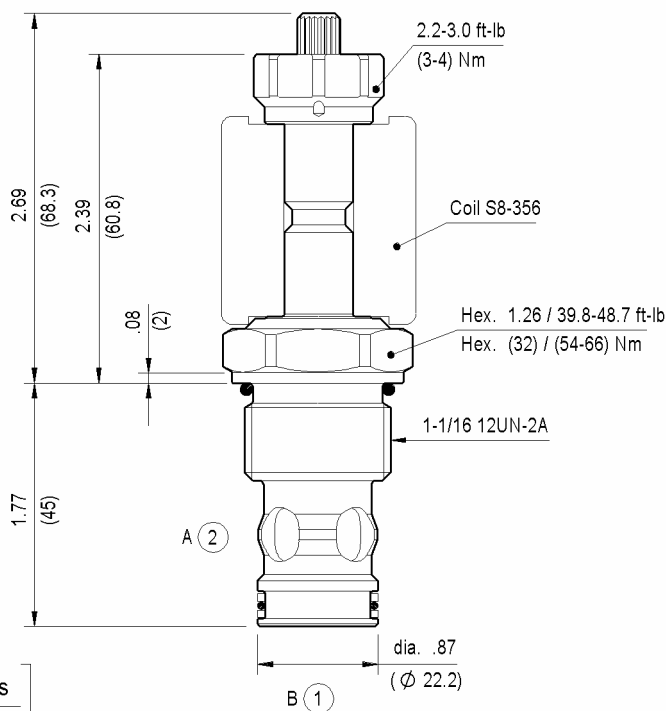
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
EXTRA SPRING - COMMON CAVITY

VEI-8A-2T-12A-NC-S-X-NSS

SIZE 12

OD.15.31.89 - Y - S8

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage page 7.01.040

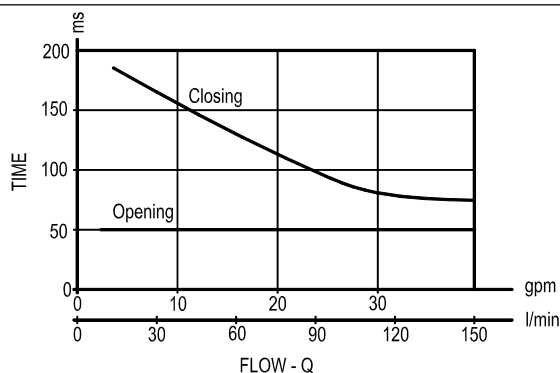
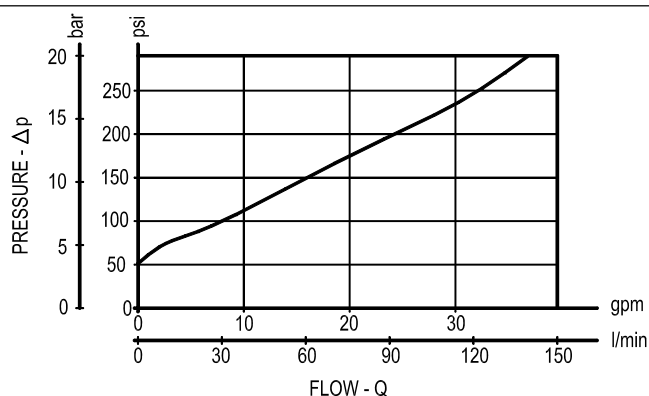
Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

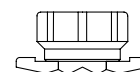
The only difference between this valve and the standard model is a spring placed between pilot section and poppet. This design allows faster response times with very small flow or even virtually zero flow. A pressure of approximately 44 psi (3 bar) is required to open the main poppet.



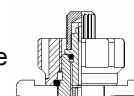
Y

ORDERING OPTIONS

3A Standard



3D Knob Style Manual Override



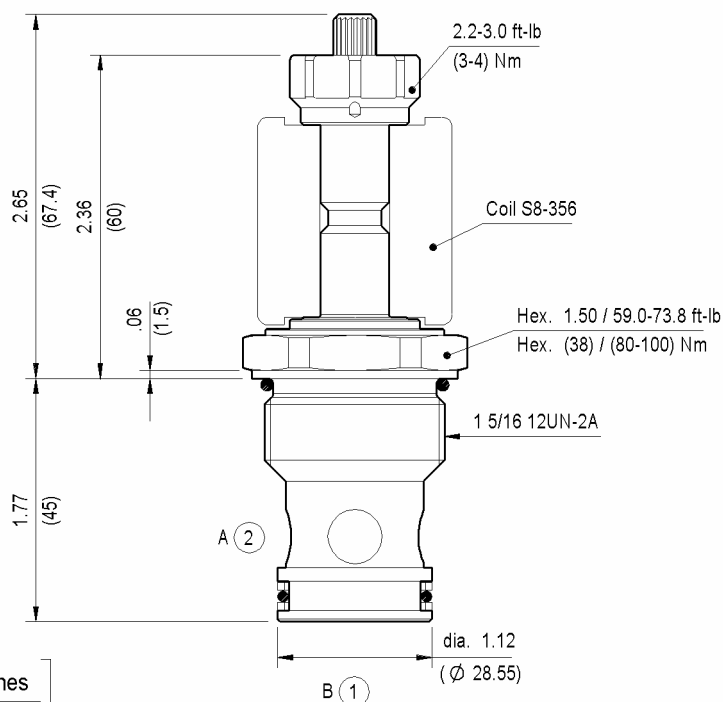
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

VEI-8A-2T-16A-NC-S-NSS

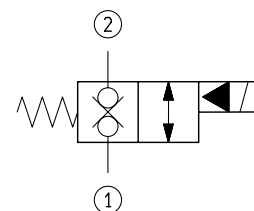
SIZE 16

OD.15.31.75 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-16A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

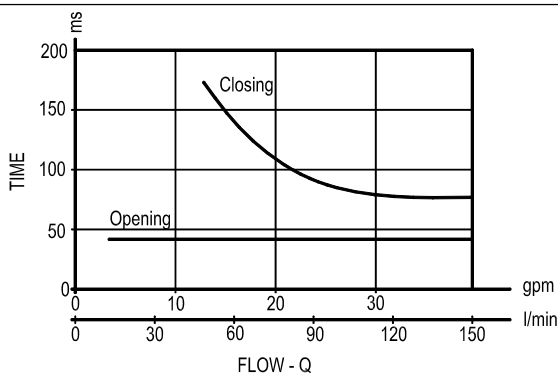
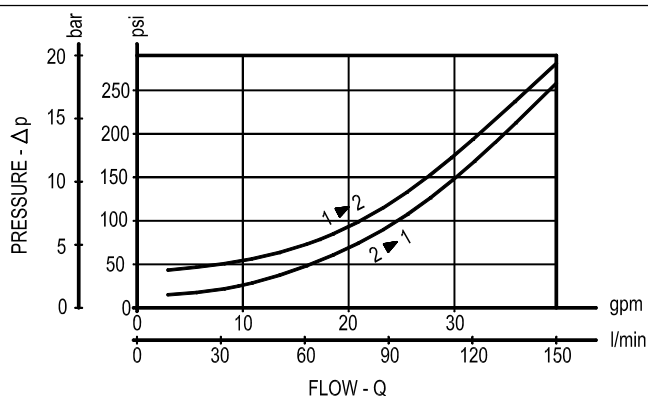
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

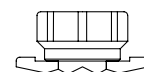


Y

ORDERING OPTIONS

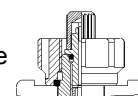
3A

Standard



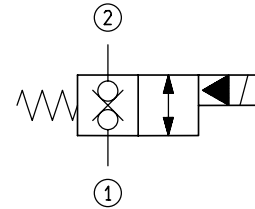
3D

Knob Style Manual Override

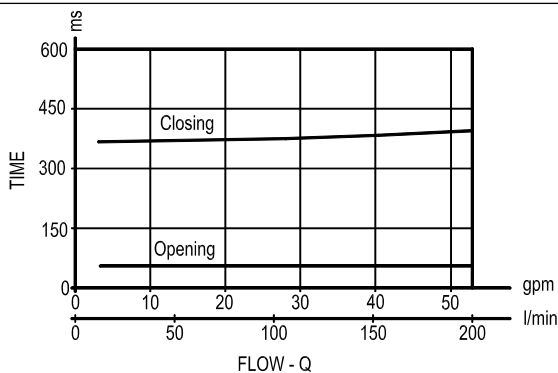


Rexroth
Bosch Group

OD.15.31.75 - Y - 00



Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 μ m nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



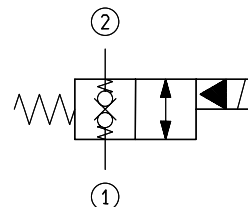
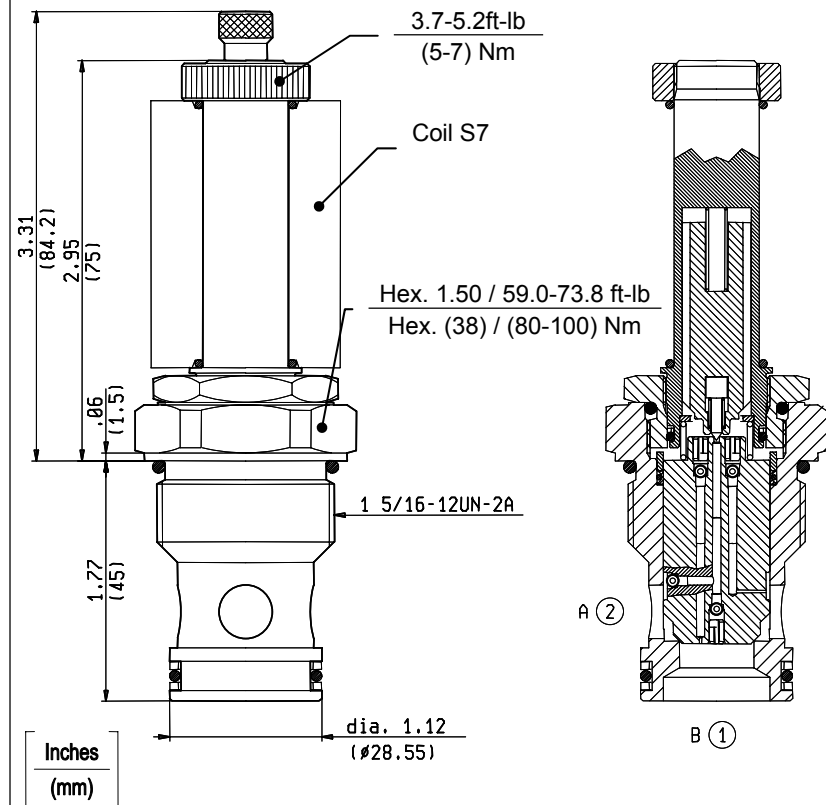
A cross-sectional diagram of a bolted joint. It shows a bolt with a hexagonal head and a lock nut. A lock washer is positioned between the bolt head and the lock nut. The lock washer has a circular shape with a central hole and a raised rim. The lock nut has a hexagonal shape with a raised rim. The bolt is threaded through the lock washer and the lock nut. The lock washer is shown with a cross-hatched pattern, and the lock nut is shown with a solid black pattern.

SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY CLOSED
EXTRA SPRING - COMMON CAVITY

VEI-7A-2T-16A-NC-S-X

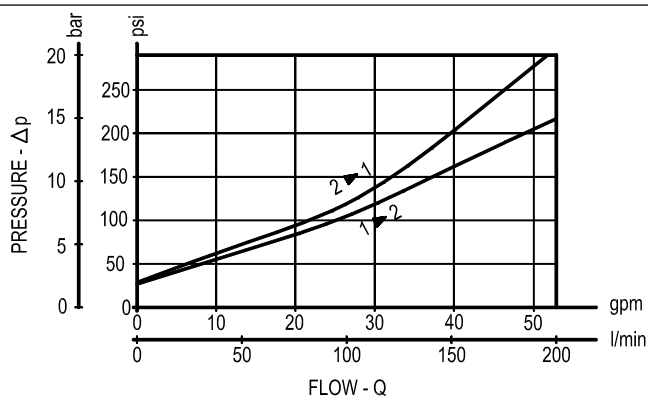
SIZE 16

OD.15.31.75 - Y - 80

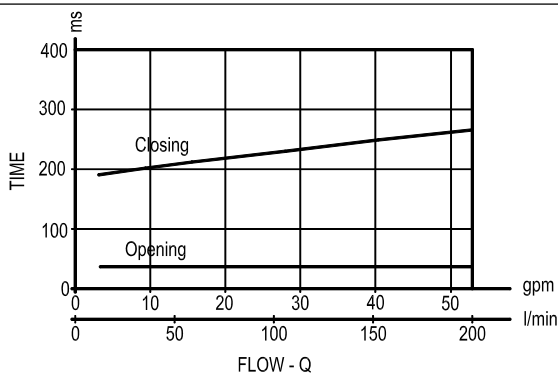


TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



The only difference between this valve and the standard model is a spring placed between pilot section and poppet. This design allows faster response times with very small flow or even virtually zero flow. A pressure of approximately 29 psi (2 bar) is required to open the main poppet.



Y

ORDERING OPTIONS

75

Standard



76

Knob Style Manual Override

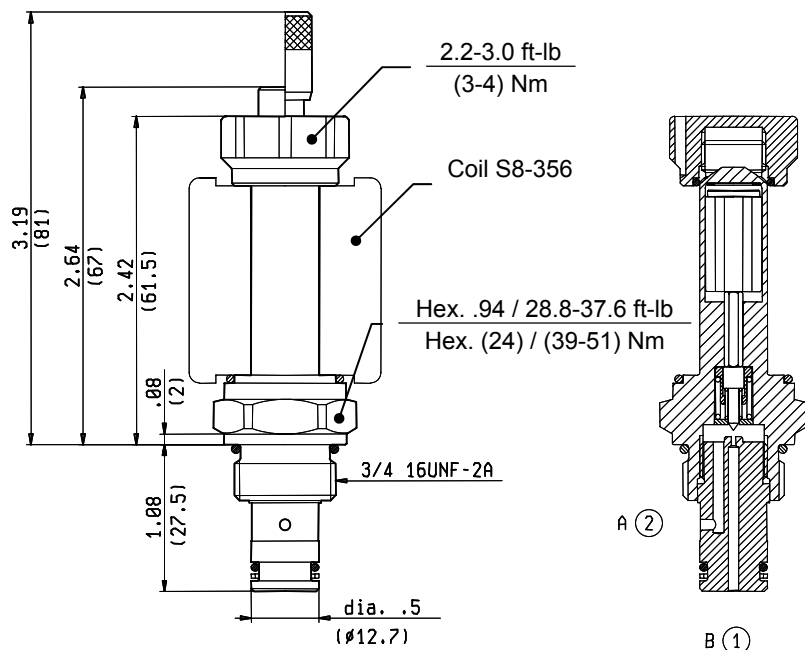


SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

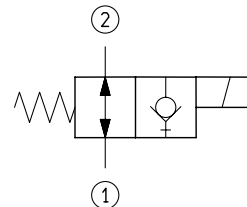
VED-8I-2A-01-NA

SIZE 08

OD.11.02.18 - Y - 00

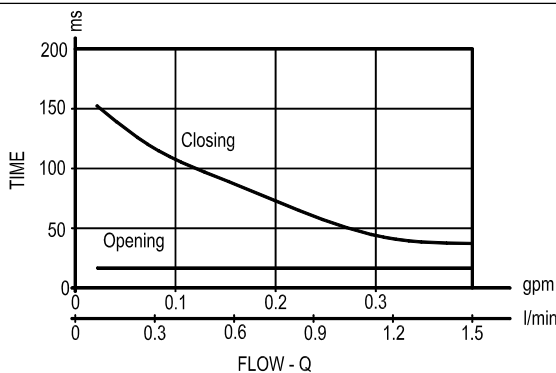
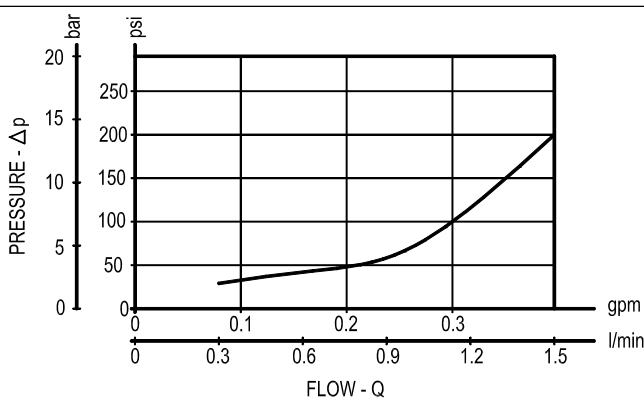


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	0.4 gpm (1.5 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

20	Standard	
21	Push Style Manual Override	
22	Push and Twist Style Manual Override	

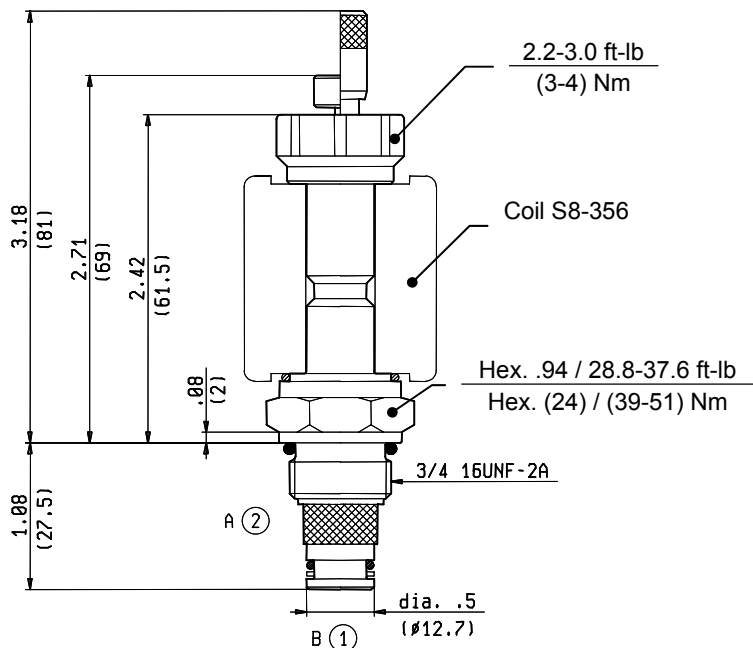
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN - FILTER
COMMON CAVITY

VEI-8I-2A-06-NA-S1-F-NSS

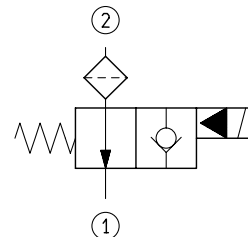
SIZE 08

OD.15.08.18 - Y - S0

PATENT PENDING

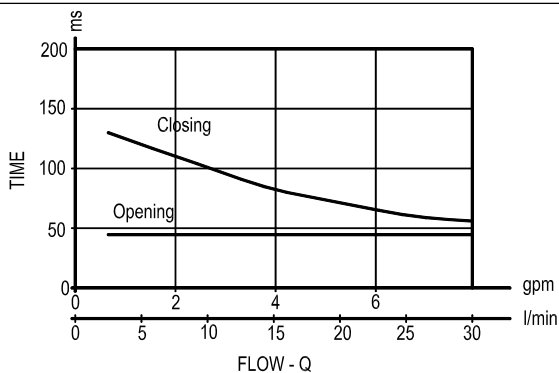
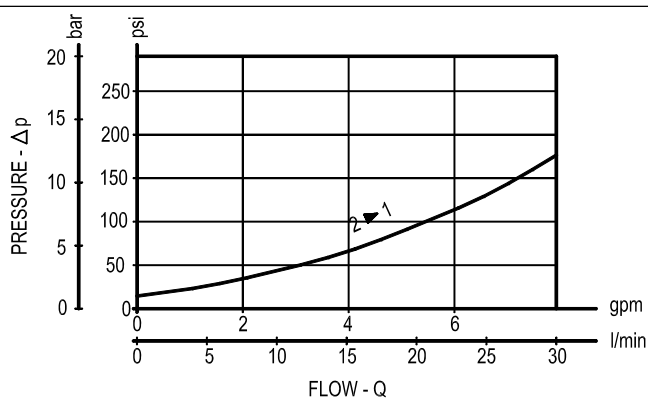


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	8 gpm (30 l/min)
Filter Screen	280 μm mesh ~60
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 μm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

1I	Standard	
1L	Push Style Manual Override	
1M	Push and Twist Style Manual Override	

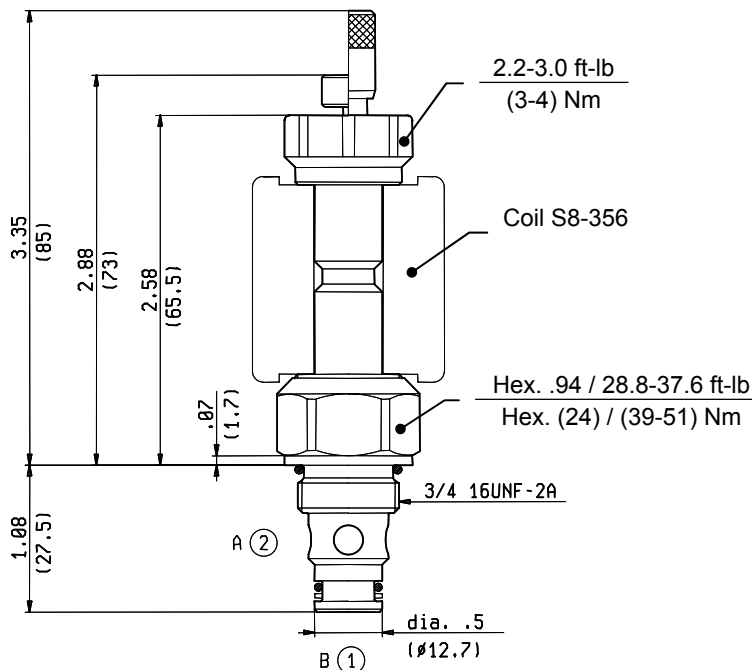
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

VEI-8A-2A-06-NA-S-NSS

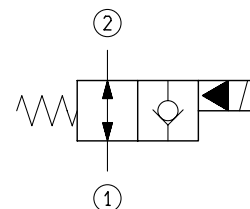
SIZE 08

OD.15.06.18 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 11 gpm (40 l/min)

Cavity - Tooling (CA-08A-2N) page CT.A.001.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

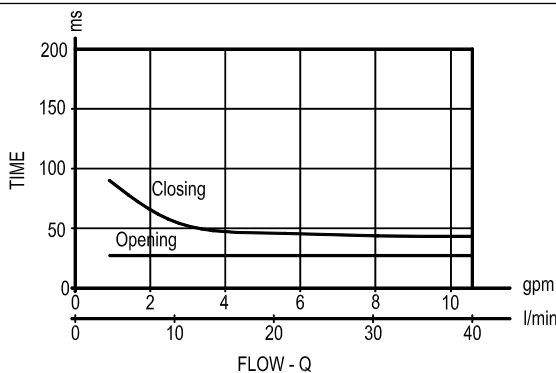
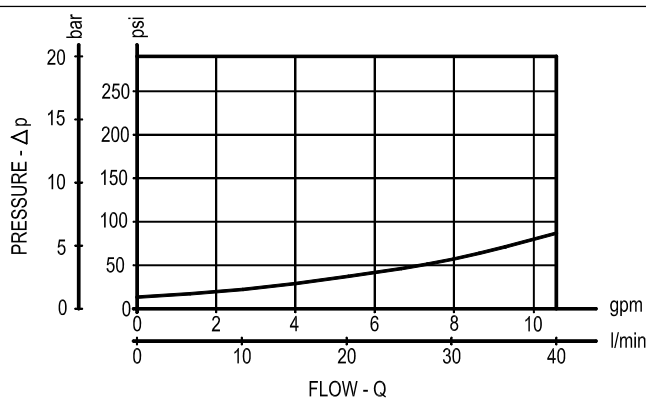
Internal Leakage page 7.01.040

Filtration : 25 μ m nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



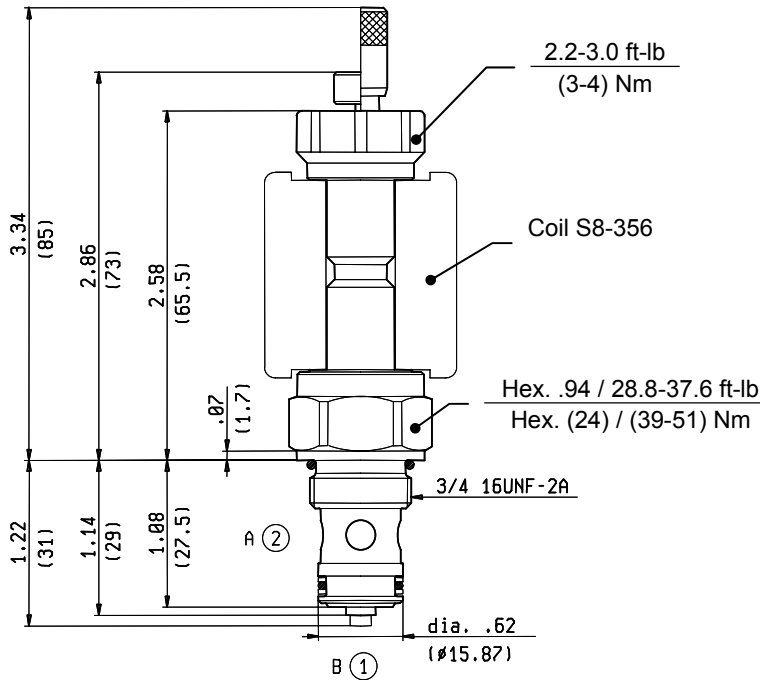
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
SPECIAL CAVITY

VEI-8A-2A-06-NA-VU-S1-NSS

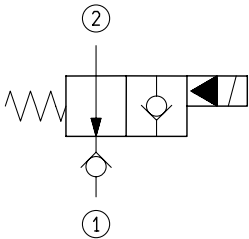
019-E

OD.15.12.19 - Y - S0

PATENT PENDING

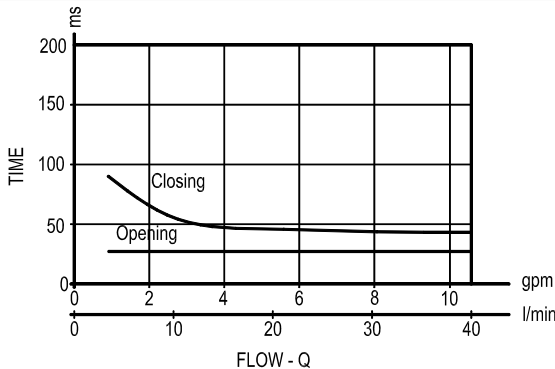
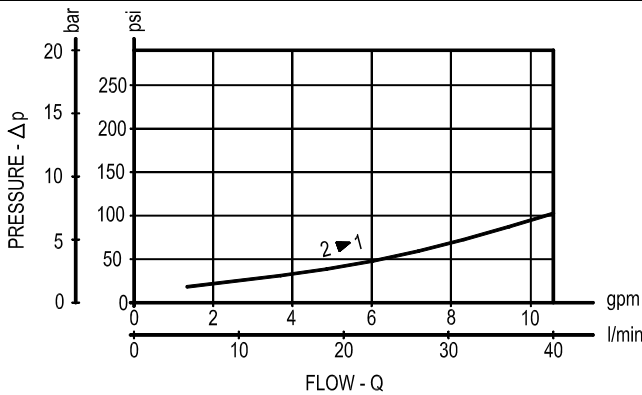


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (019-E)	page CT.S.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



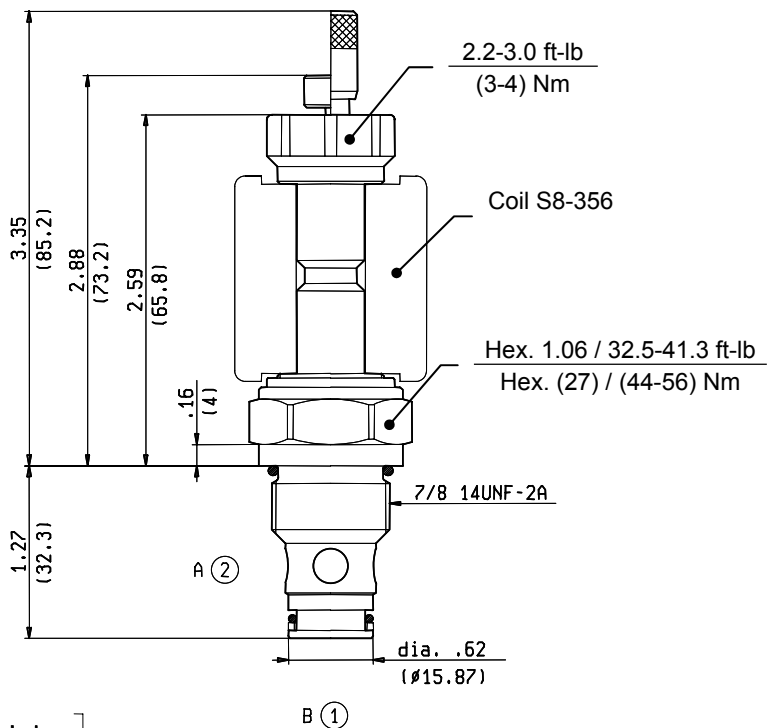
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

VEI-8A-2A-10A-NA-S-NSS

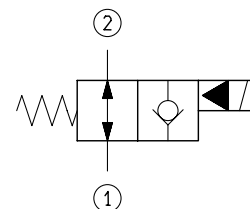
SIZE 10

OD.15.06.36 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

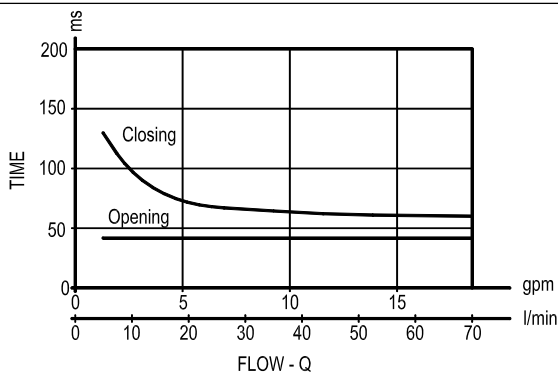
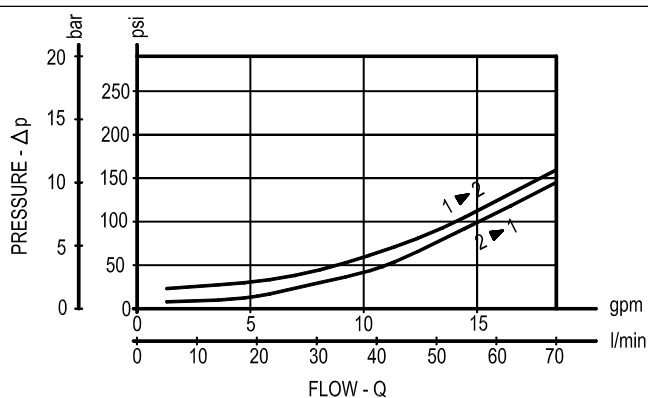
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



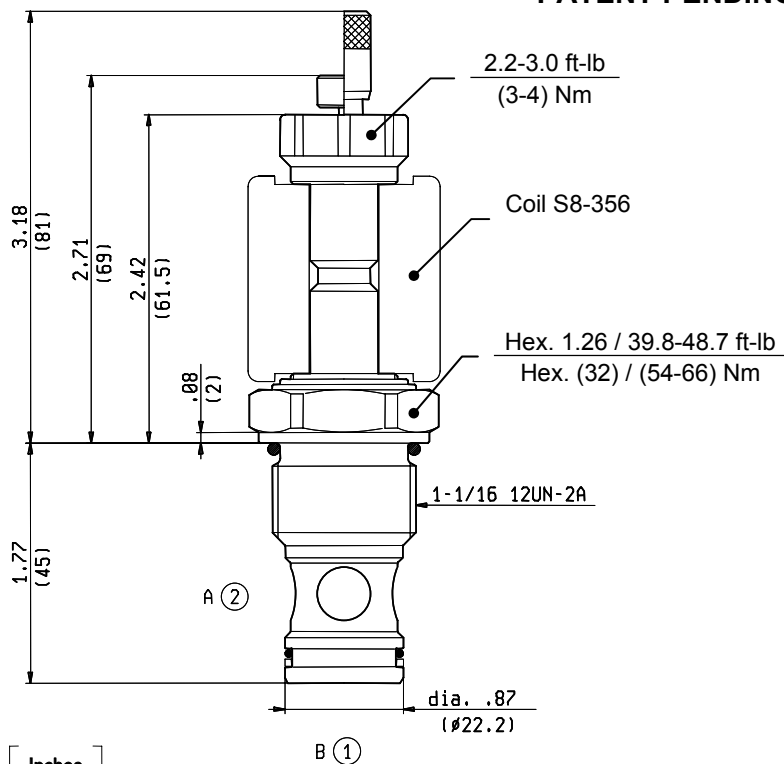
**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY**

VEI-8A-2A-12A-NA-S-NSS

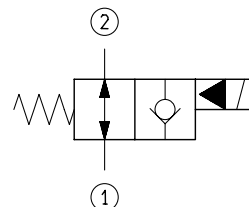
SIZE 12

OD.15.06.89 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

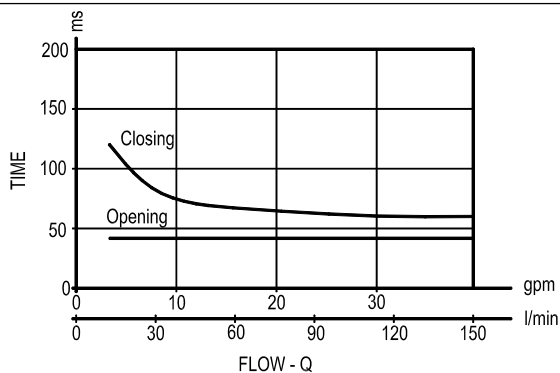
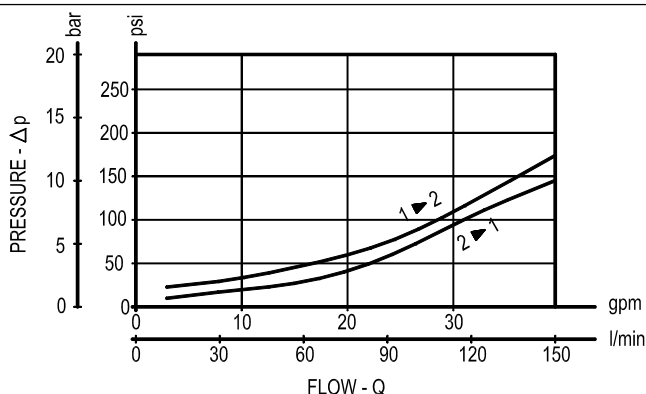
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y

ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



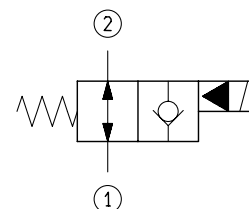
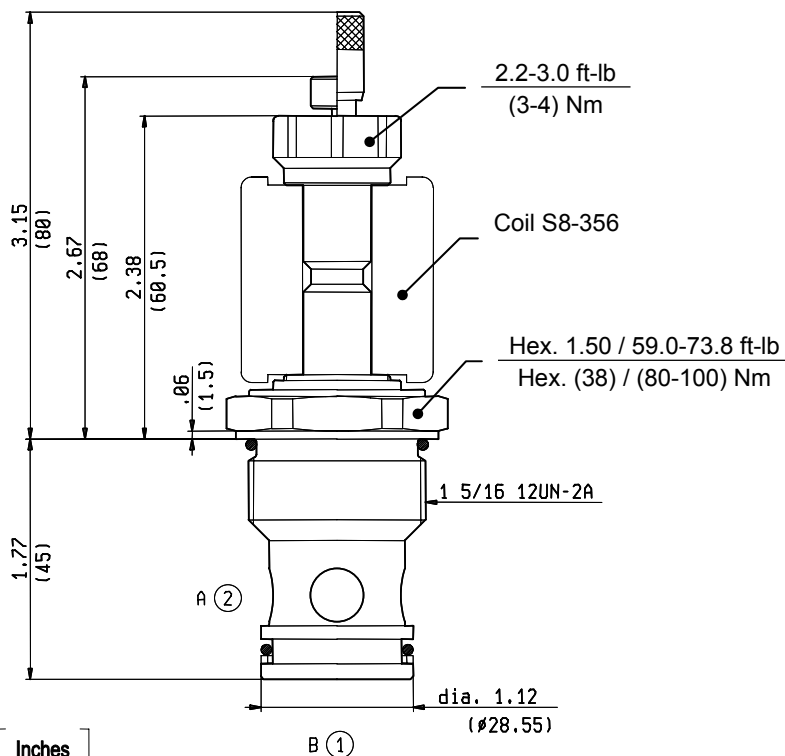
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

VEI-8A-2A-16A-NA-S-NSS

SIZE 16

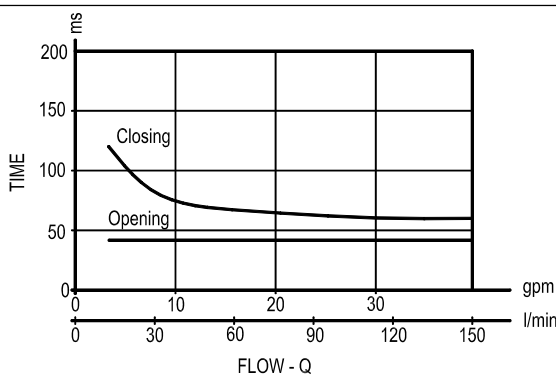
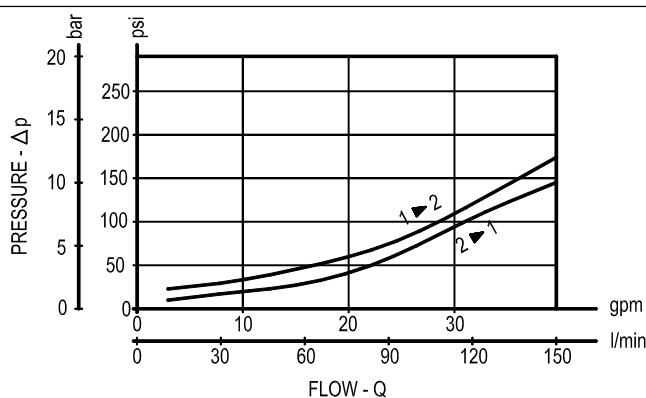
OD.15.06.75 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	39 gpm (150 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.772 lbs (0.350 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

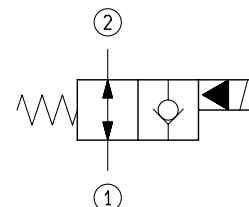
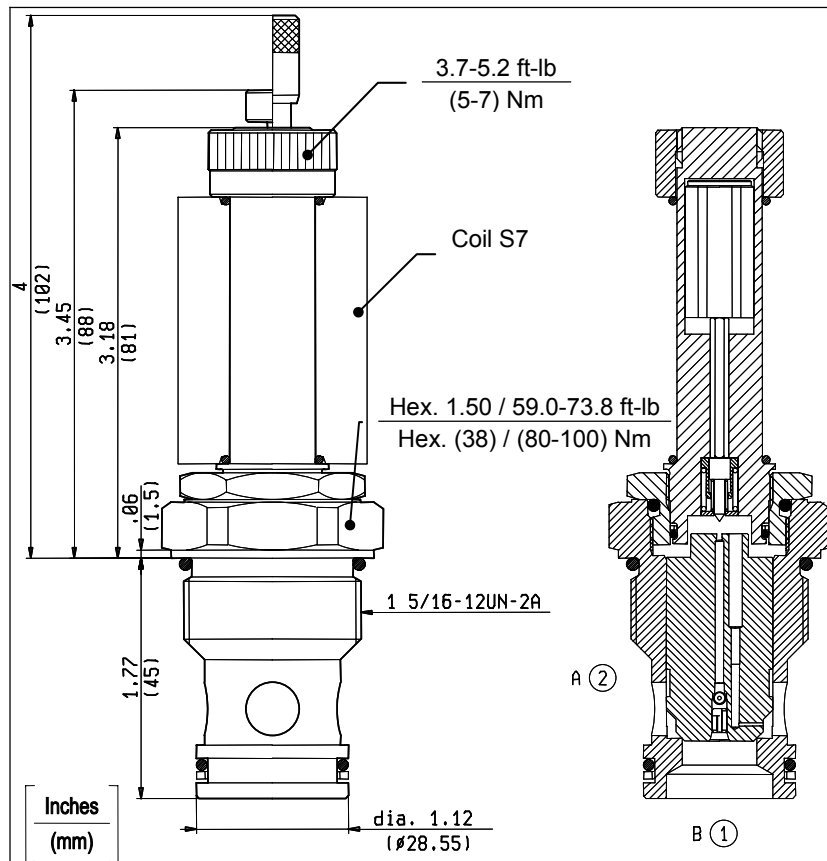
1A	Standard	
1B	Push Style Manual Override	
1C	Push and Twist Style Manual Override	

**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY**

VEI-7A-2A-16A-NA-S

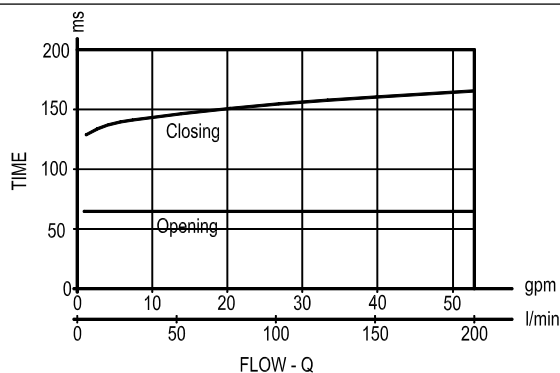
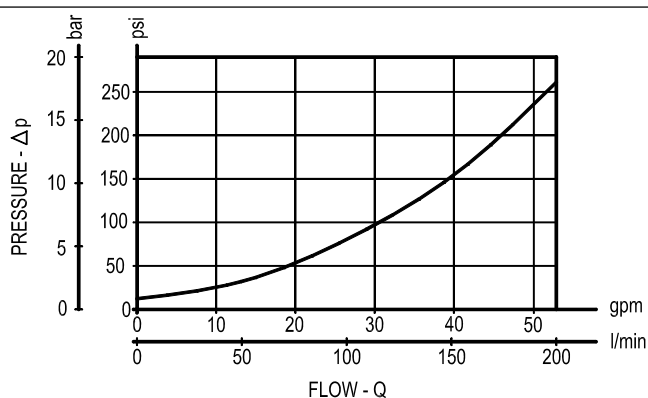
SIZE 16

OD.15.06.75 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



Y ORDERING OPTIONS

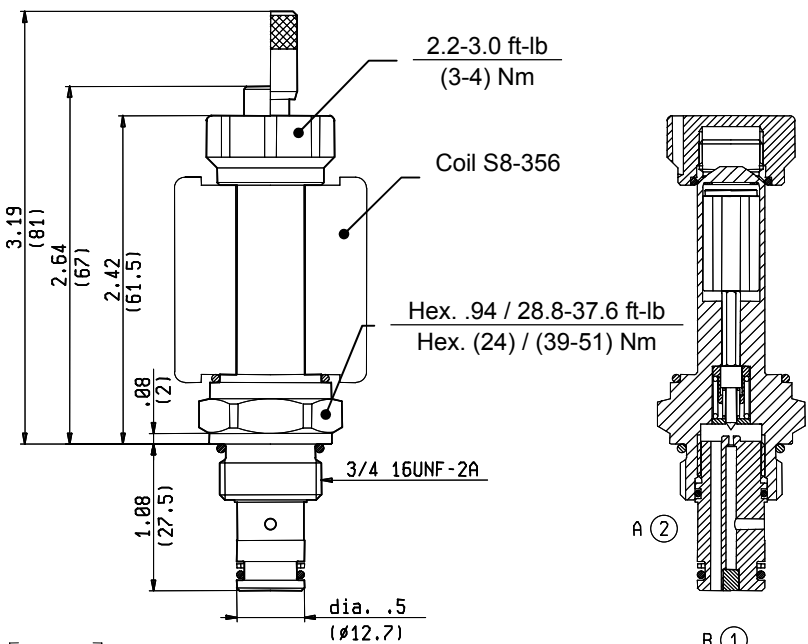
54	Standard	
55	Push Style Manual Override	
56	Push and Twist Style Manual Override	

SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

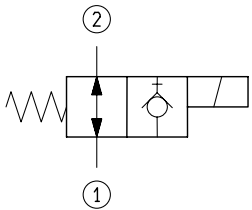
VED-8I-2B-01-NA

SIZE 08

OD.11.04.18 - Y - 00

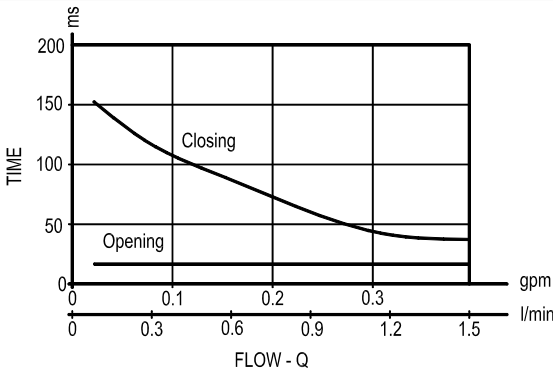
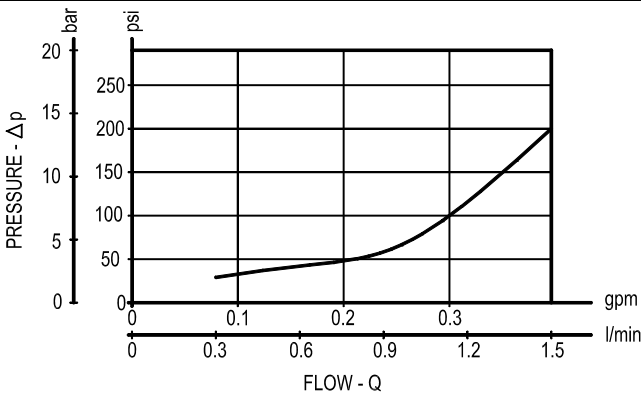


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	0.4 gpm (1.5 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y

ORDERING OPTIONS

20

Standard



21

Push Style Manual Override



22

Push and Twist Style Manual Override

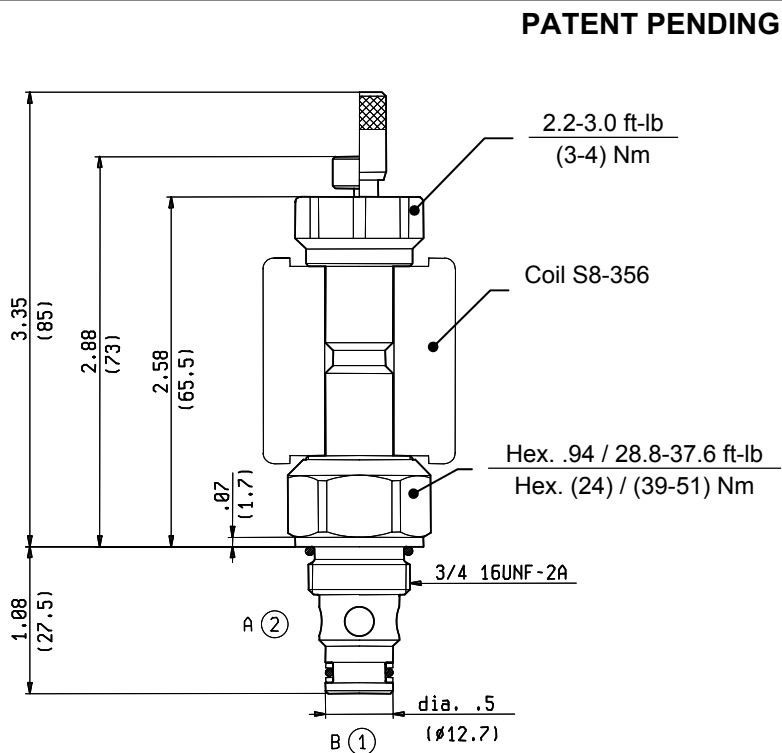
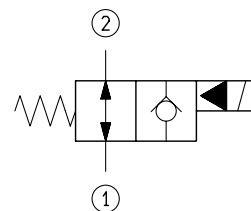


SOLENOID OPERATED VALVES POPPET 2-WAY NORMALLY OPEN COMMON CAVITY

VEI-8A-2B-06-NA-S-NSS

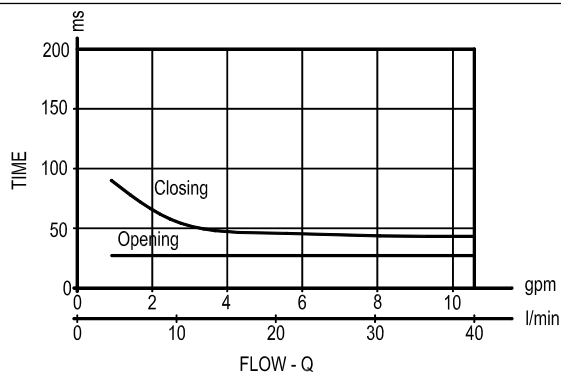
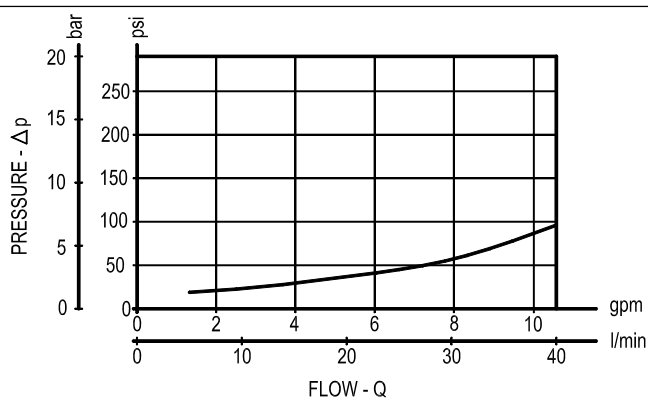
SIZE 08

OD.15.04.18 - Y - S0




Inches
(mm)

TECHNICAL DATA

Maximum Operating Pressure	5000 psi	(350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million	cycles
Rated Flow	11 gpm	(40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U	
Weight	0.286 lbs	(0.130 kg)
Fluids - Temperatures	page 7.01.040	
Testing Conditions - Seals	page 7.01.040	
Internal Leakage	page 7.01.040	
Filtration : 25 µm nominal or better	page 7.01.050	
Minimum Voltage Required	90% of nominal	
Coils must be ordered separately	page 1.71.042	
Mounting Position	unrestricted	



Y ORDERING OPTIONS

1A	Standard	
1B	Push Style Manual Override	
1C	Push and Twist Style Manual Override	

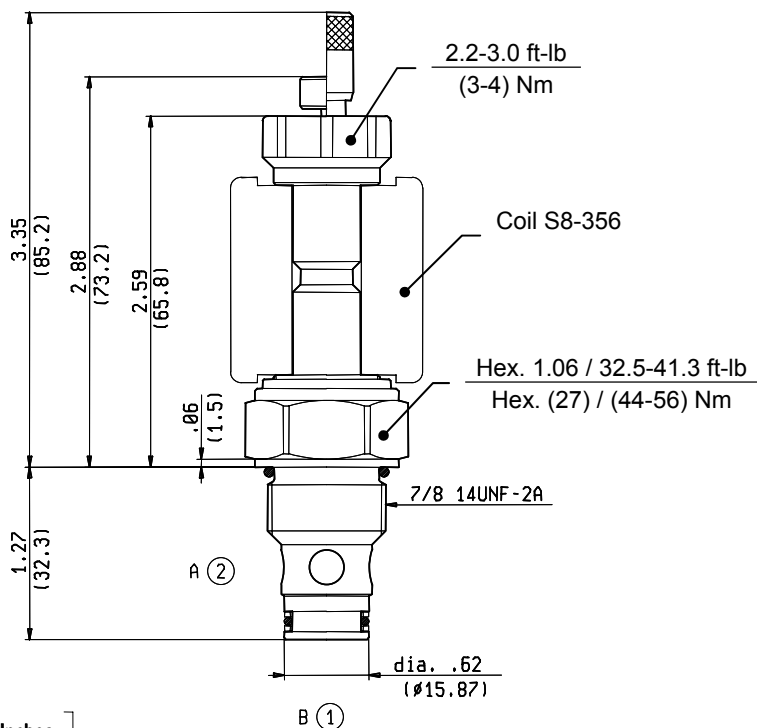
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

VEI-8A-2B-10A-NA-S-NSS

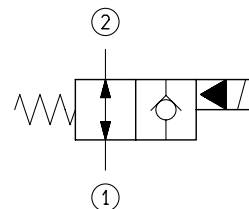
SIZE 10

OD.15.04.36 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

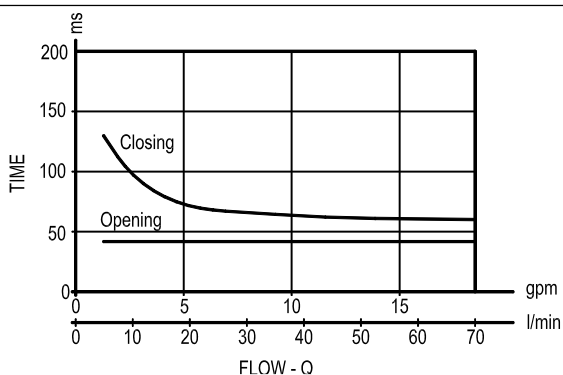
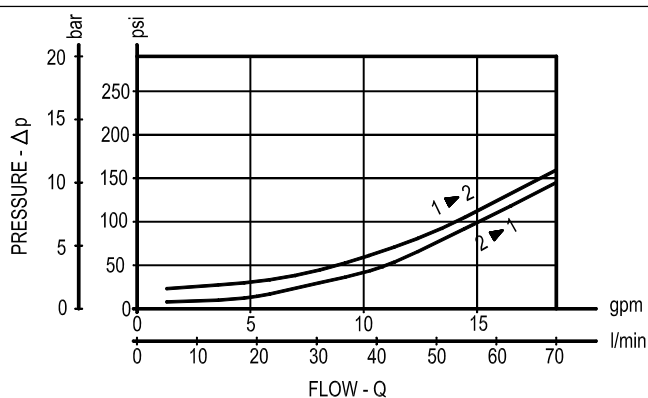
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



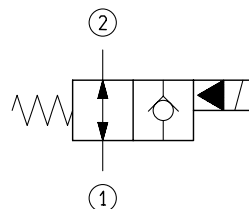
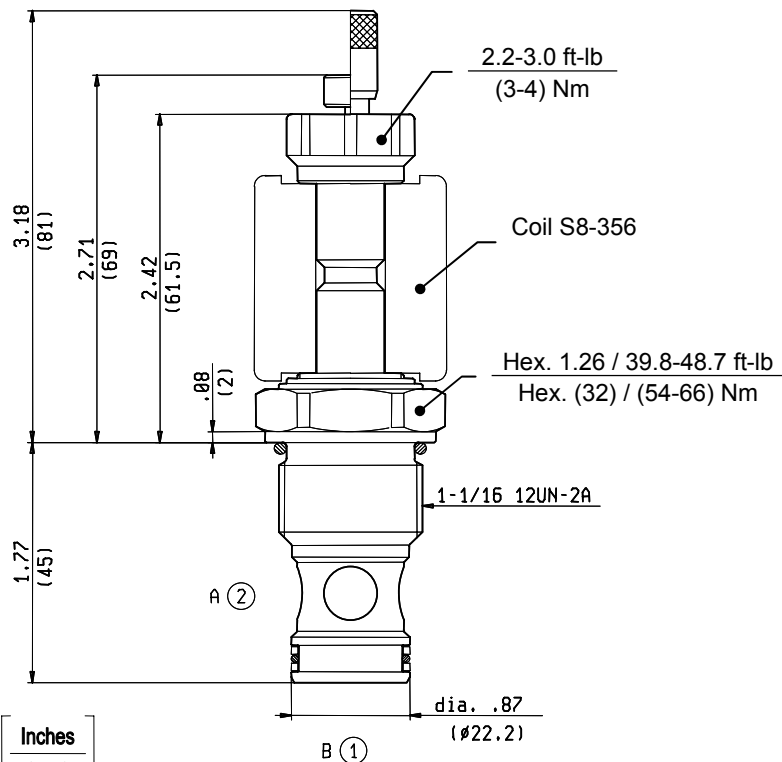
**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY**

VEI-8A-2B-12A-NA-S-NSS

SIZE 12

OD.15.04.89 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-12A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

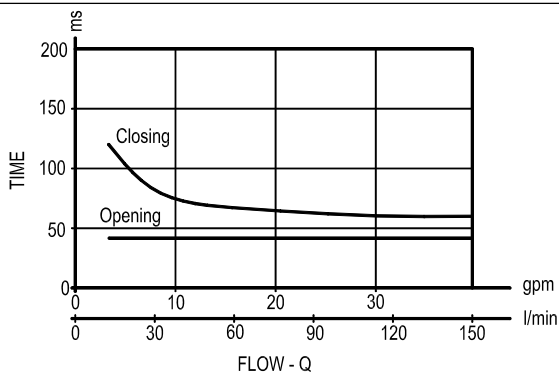
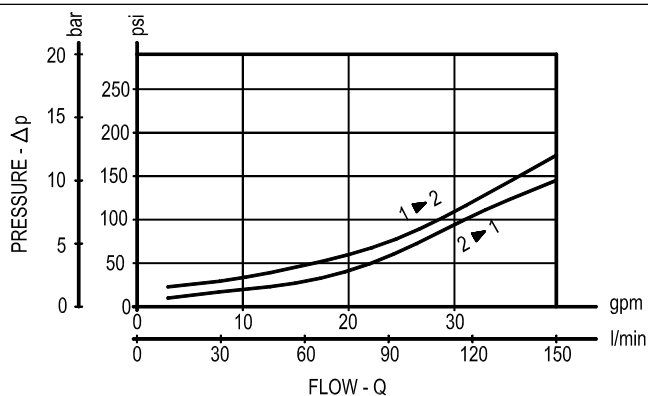
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override



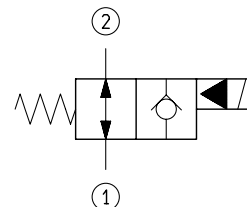
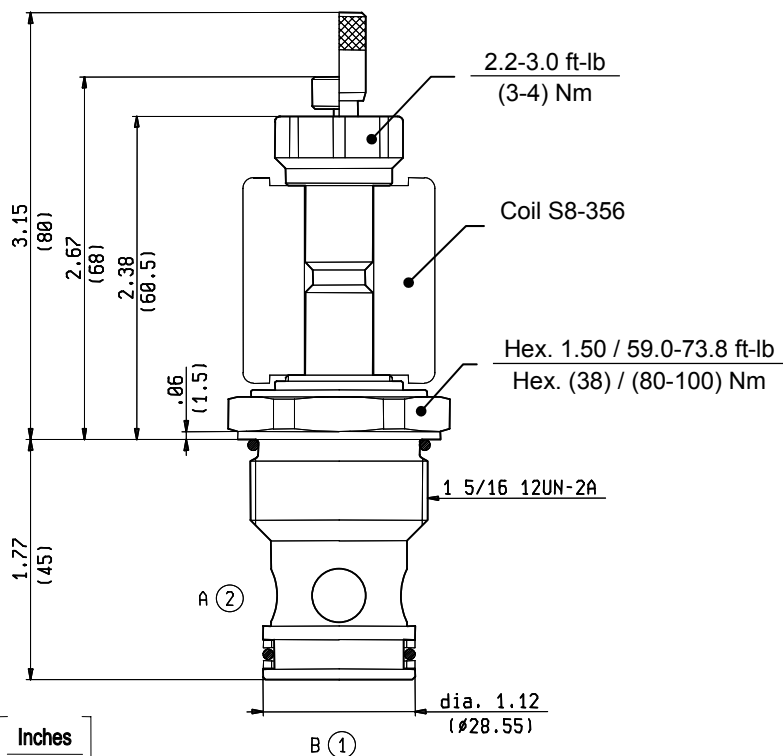
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY

VEI-8A-2B-16A-NA-S-NSS

SIZE 16

OD.15.04.75 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-16A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

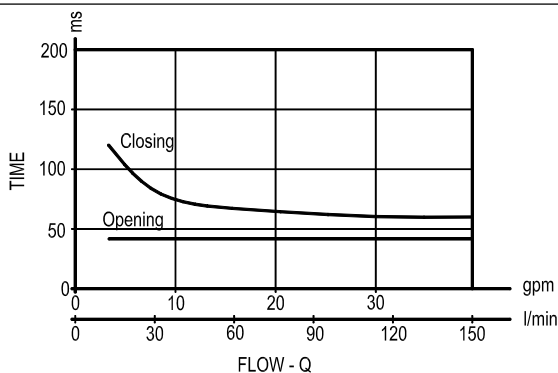
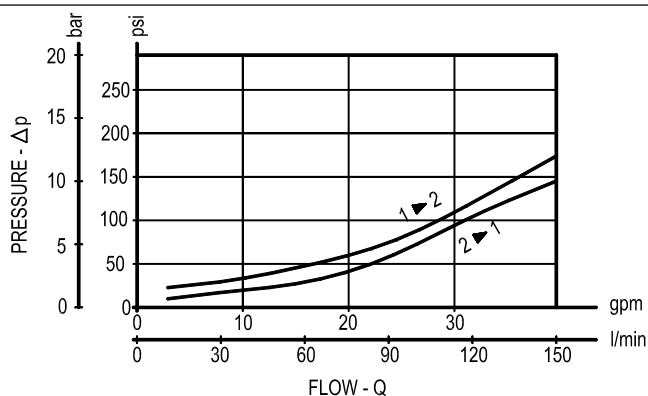
Internal Leakage page 7.01.040

Filtration : 25 μ m nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override

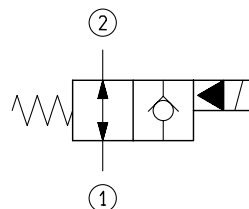
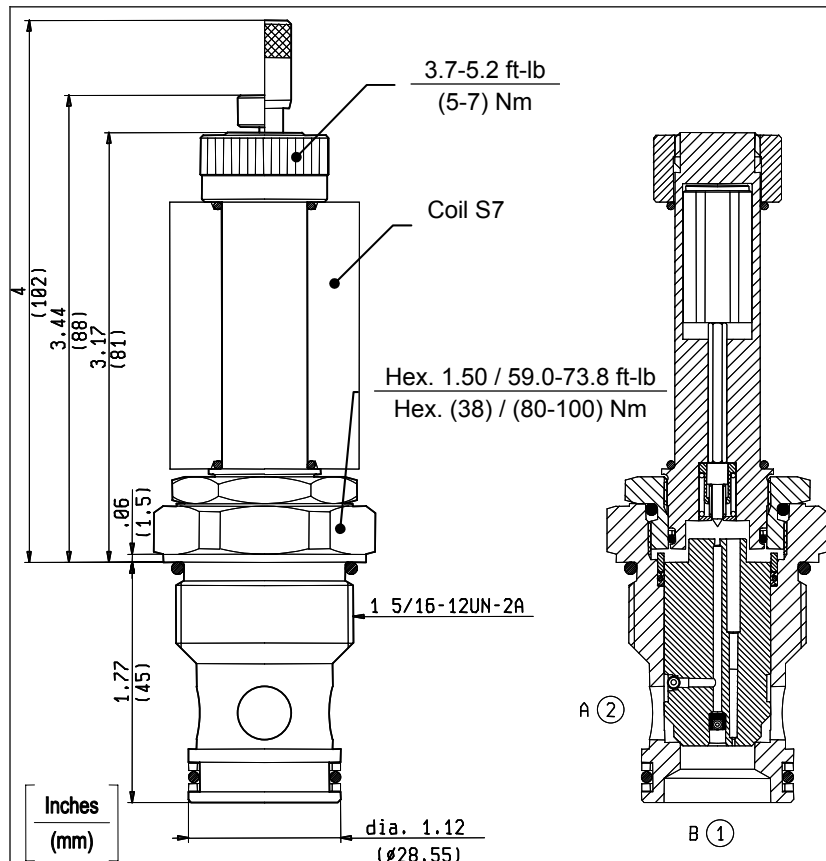


**SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
COMMON CAVITY**

VEI-7A-2B-16A-NA-S

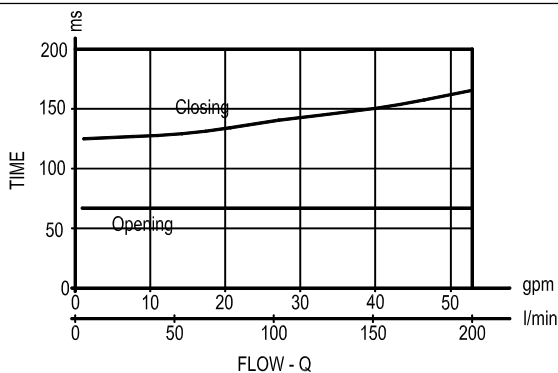
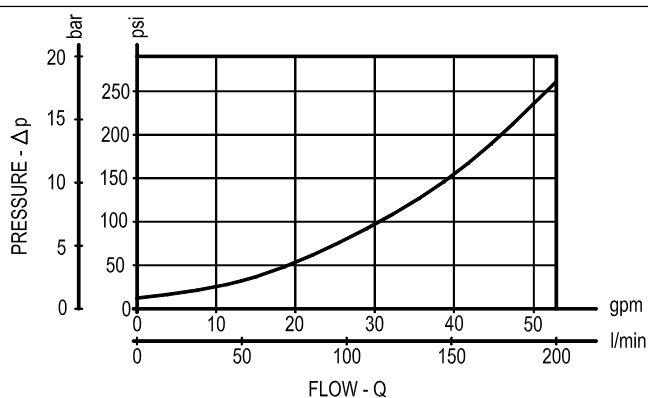
SIZE 16

OD.15.04.75 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



Y

ORDERING OPTIONS

54

Standard



55

Push Style Manual Override



56

Push and Twist Style Manual Override



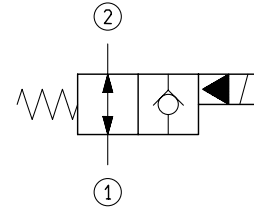
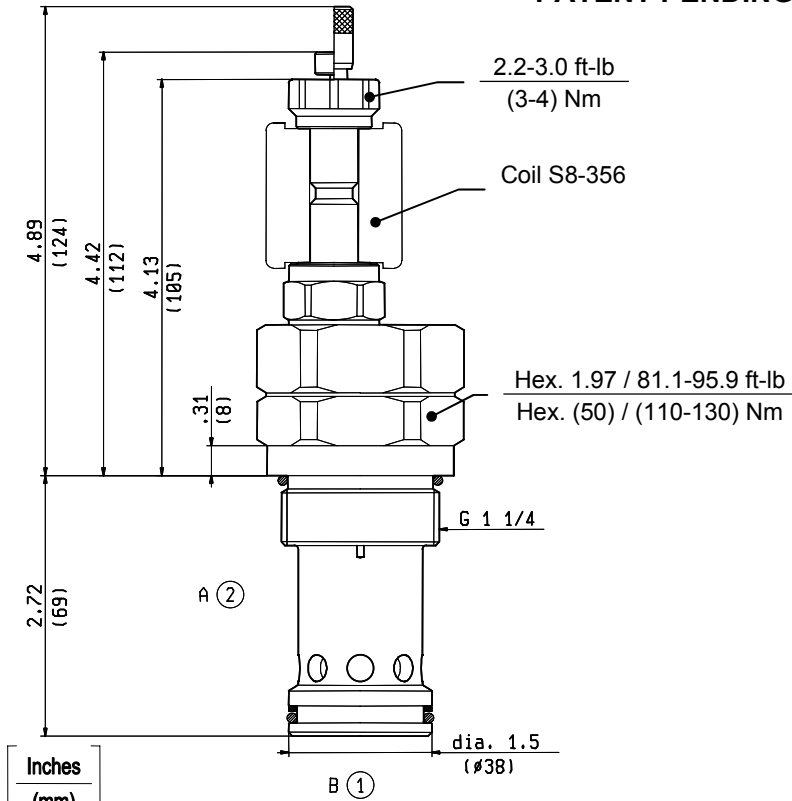
SOLENOID OPERATED VALVES
POPPET 2-WAY NORMALLY OPEN
SPECIAL CAVITY

VEI-8A-2B-16-NA-NSS

004

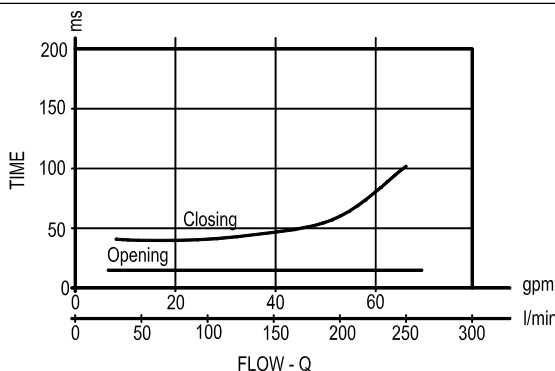
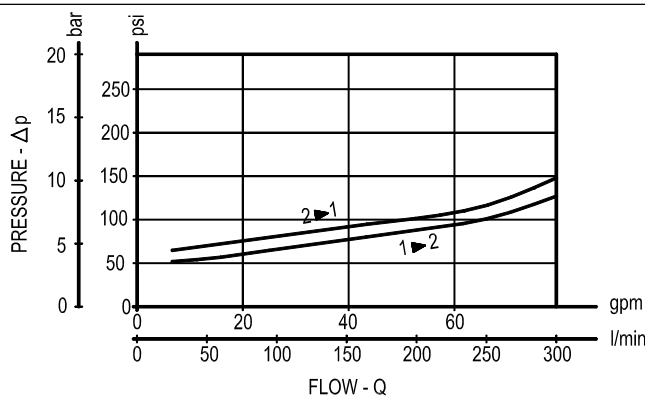
OD.15.04.04 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	69 gpm (260 l/min)
Cavity - Tooling (004)	page CT.S.001.U
Weight	2.491 lbs (1.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

1A	Standard	
1B	Push Style Manual Override	
1C	Push and Twist Style Manual Override	

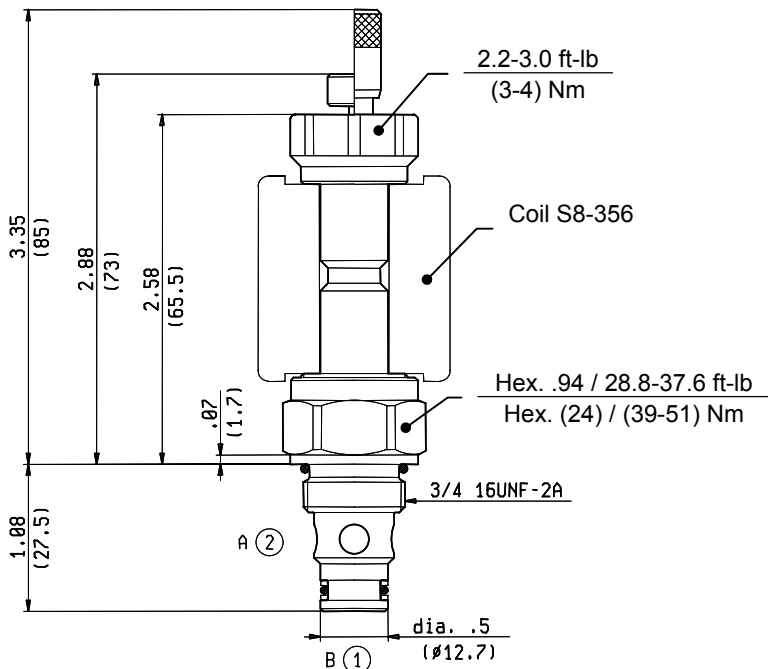
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY OPEN
COMMON CAVITY

VEI-8A-2T-06-NA-S-NSS

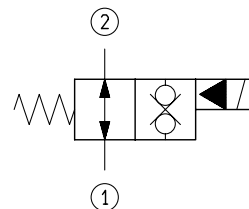
SIZE 08

OD.15.32.18 - Y - S0

PATENT PENDING

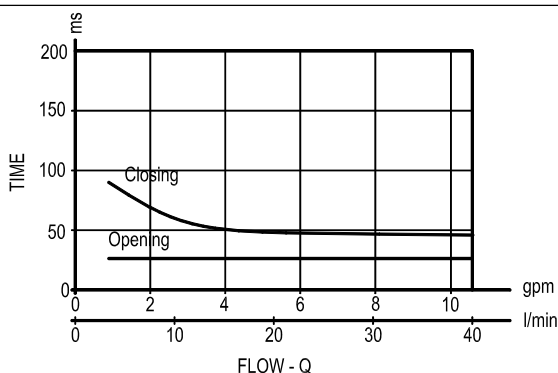
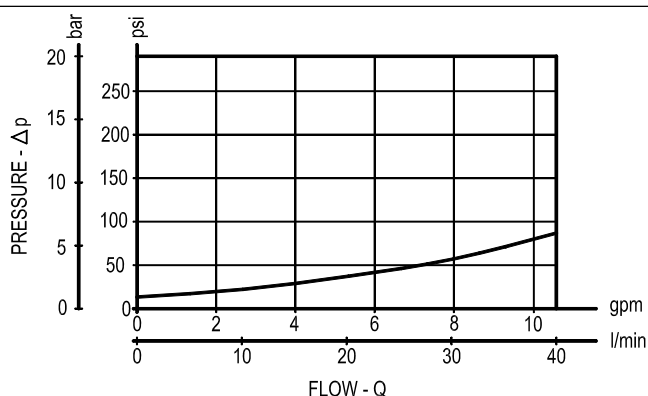


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	11 gpm (40 l/min)
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Line bodies	page MN2.A...
Weight	0.286 lbs (0.130 kg)
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

1A	Standard	
1B	Push Style Manual Override	
1C	Push and Twist Style Manual Override	

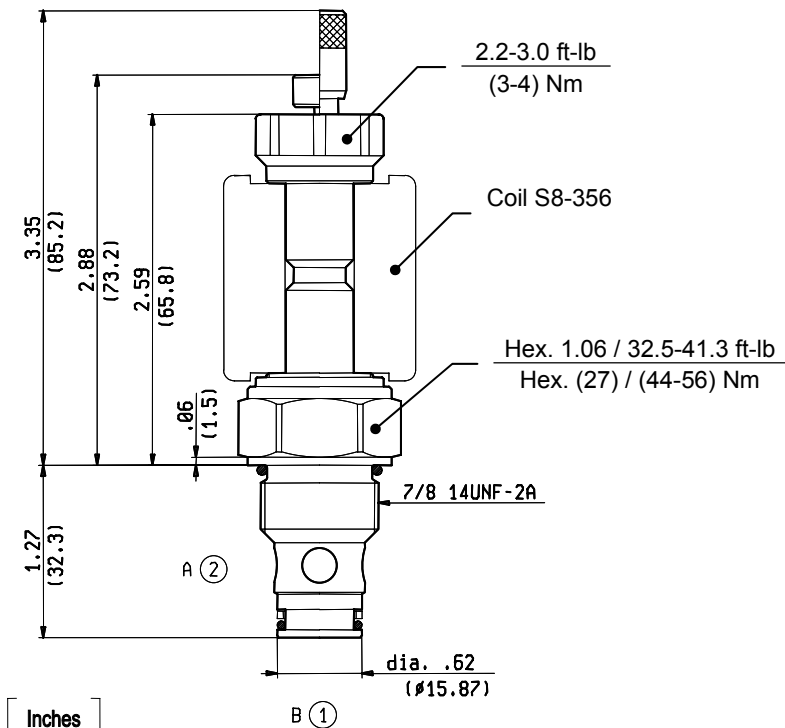
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY OPEN
COMMON CAVITY

VEI-8A-2T-10A-NA-S-NSS

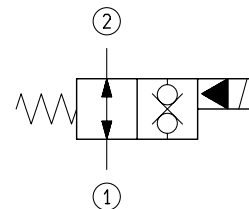
SIZE 10

OD.15.32.36 - Y - S0

PATENT PENDING



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 19 gpm (70 l/min)

Cavity - Tooling (CA-10A-2N) page CT.A.001.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

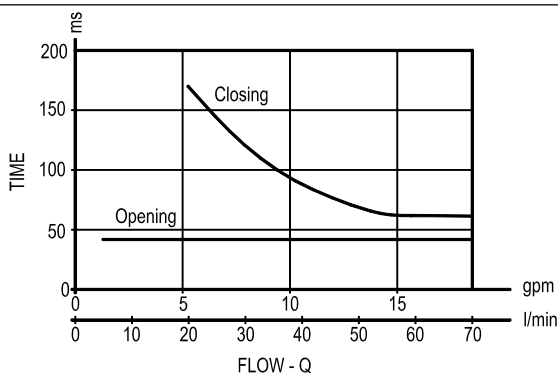
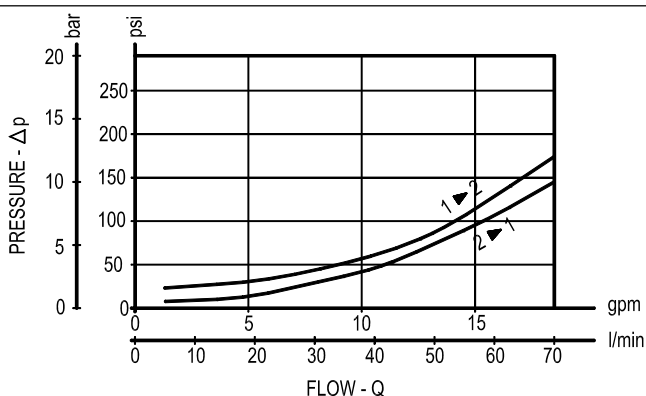
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override

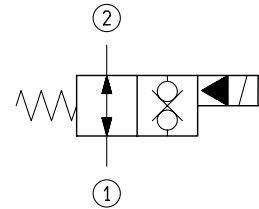
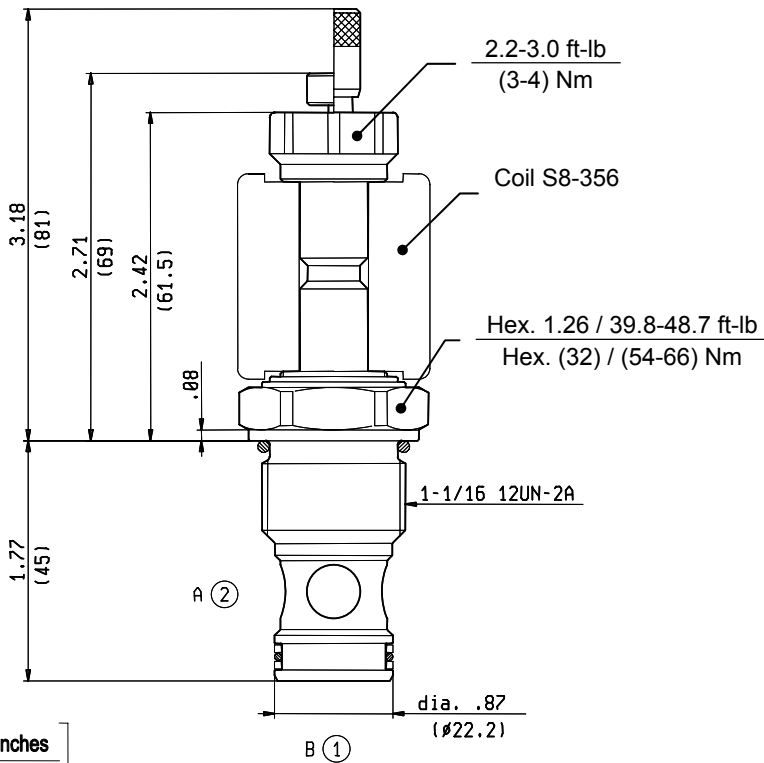


SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY OPEN
COMMON CAVITY

VEI-8A-2T-12A-NA-S-NSS

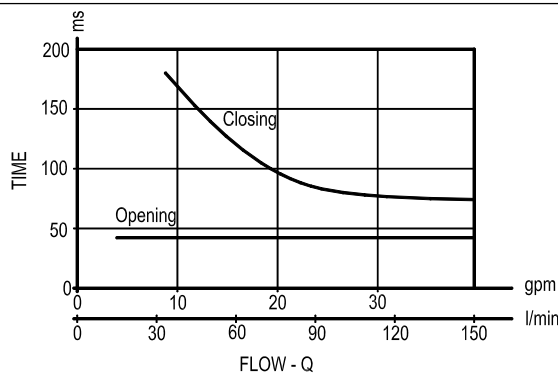
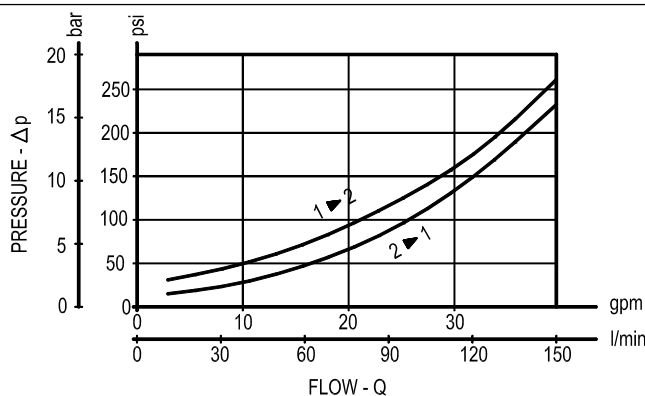
SIZE 12

OD.15.32.89 - Y - S0



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz (1 s ON - 1 s OFF)	10 million cycles
Rated Flow	39 gpm (150 l/min)
Cavity - Tooling (CA-12A-2N)	page CT.A.001.U
Weight	0.772 lbs (0.350 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted



Y ORDERING OPTIONS

1A	Standard	
1B	Push Style Manual Override	
1C	Push and Twist Style Manual Override	

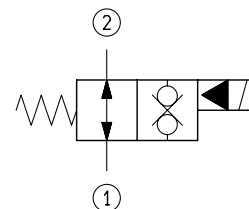
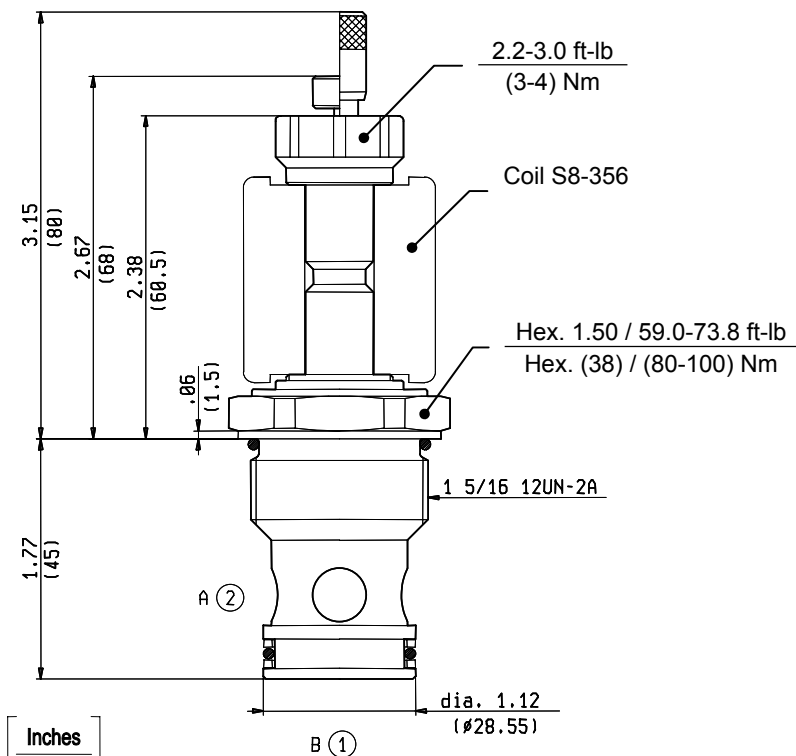
SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY OPEN
COMMON CAVITY

VEI-8A-2T-16A-NA-S-NSS

SIZE 16

OD.15.32.75 - Y - S0

PATENT PENDING



TECHNICAL DATA

Maximum Operating Pressure 5000 psi (350 bar)

Fatigue Cycle Life at 5000 psi (350 bar) and 0.5 Hz 10 million cycles (1 s ON - 1 s OFF)

Rated Flow 39 gpm (150 l/min)

Cavity - Tooling (CA-16A-2N) page CT.A.001.U

Weight 0.772 lbs (0.350 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

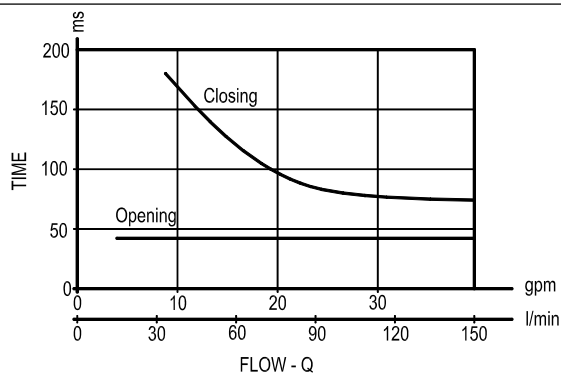
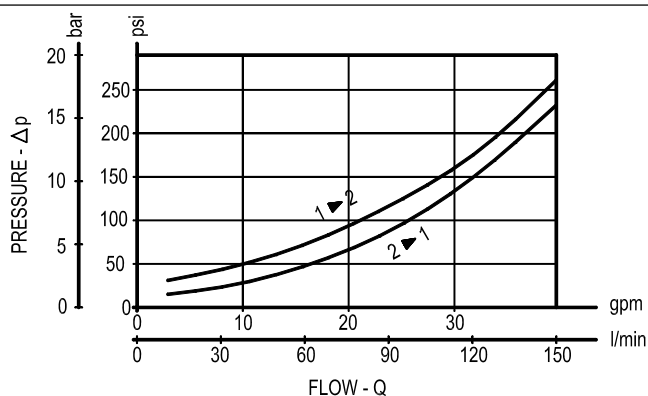
Internal Leakage page 7.01.040

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted



Y ORDERING OPTIONS

1A Standard



1B Push Style Manual Override



1C Push and Twist Style Manual Override

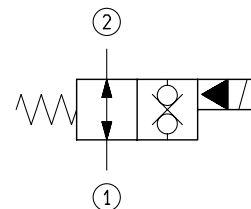
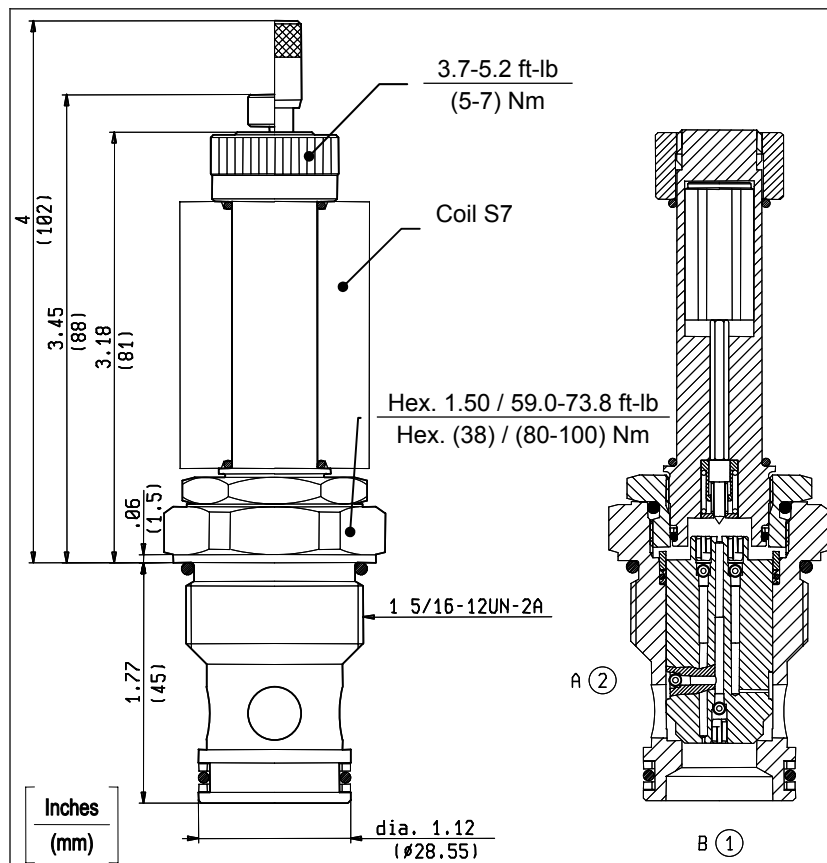


SOLENOID OPERATED VALVES
POPPET 2-WAY DOUBLE LOCK NORMALLY OPEN
COMMON CAVITY

VEI-7A-2T-16A-NA-S

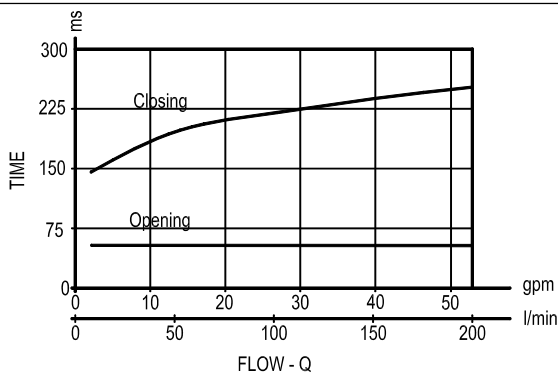
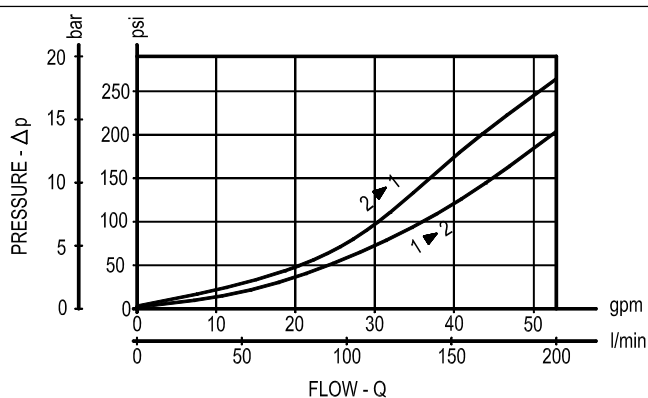
SIZE 16

OD.15.32.75 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	52 gpm (200 l/min)
Cavity - Tooling (CA-16A-2N)	page CT.A.001.U
Weight	0.882 lbs (0.400 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted



Y ORDERING OPTIONS

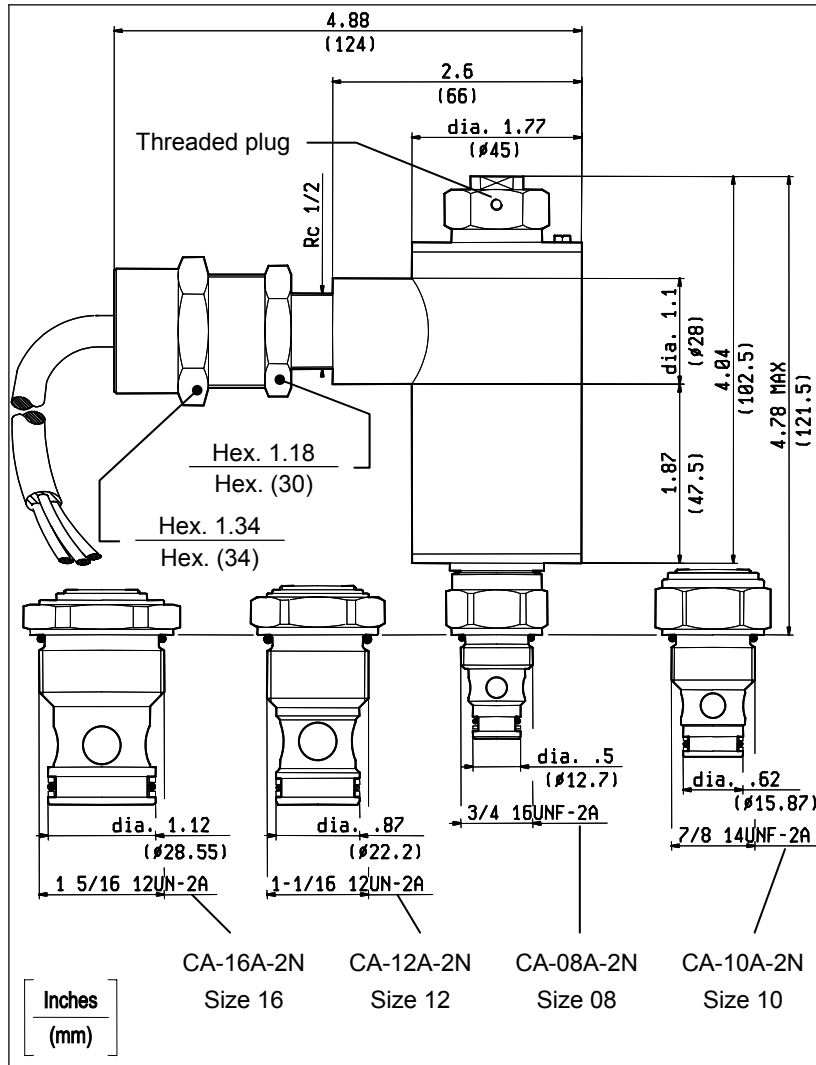
54	Standard	
55	Push Style Manual Override	
56	Push and Twist Style Manual Override	

SOLENOID OPERATED VALVES
POPPET 2-WAY WITH EXPLOSION-PROOF SOLENOID
COMMON CAVITY

VEI-EX SERIES



OD.15 - K - X - Y - Z



DESCRIPTION - FEATURES

Explosion-proof solenoids can be fitted onto all 2-way pilot operated cartridges (size 08 - 10 - 12 - 16). Pressure and flow performance of the valves remain unchanged from SERIES 8A cartridges.

TECHNICAL DATA

EXPLOSION-PROOF PROTECTION :

- **EEx d IIC T6** according to CENELEC EN 50014 and EN 50018.

- **II 2 G** according to ATEX 94/9/CE.

Electrical construction approved and certified by CESI with conformity certificate CESI 03 ATEX 212.

Protection **IP 67**

DIN 40050 Part 9

Working Duty **ED 100%**

DIN VDE 0580

Weight of the complete solenoid : 2.2 lbs (1 kg)

Solenoids are supplied with 3-wire cable with silicon-rubber protective covering and threaded connector. Cable length 59.6 inches (1.5 m) - Wire section area 0.06 inches² (1.5 mm²). Electrical connection to the coil has to be made according to relevant CENELEC and ATEX ex-proof specifications.

Earth Connection : it has to be made through an internal or external earth-connection screw using a cable with minimum section area of 0.06 inches² (1.5 mm²).

Coil retaining nut is an essential part of the explosion-proof construction and has to be tightened and locked through the threaded plug.

Label on coils indicates nominal voltage, explosion-proof protection class, certification number by CESI and maximum power consumption.

Ambient temperature range **-68 +104 °F** **(-20 +40 °C)**

Different voltages are available on request.

Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life of coils.

Coils cannot be ordered separately from the valves.

IMPORTANT : All products shown in this page are not available from stock and not included in our standard price list. Please contact our Sales Department for any information.

K	Y = 96 Normally Open	Y = 98 Normally Closed
05	/	
06		/
31	/	
32		/

Z	Voltage V	Resistance Ω (±7%)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized Ta = 68-77 °F (20-25 °C) Nominal V
OB	12 DC	17.4	7	0.67	0.53	170.6 (77)
OC	24 DC	72	7	0.33	0.23	140 (60)

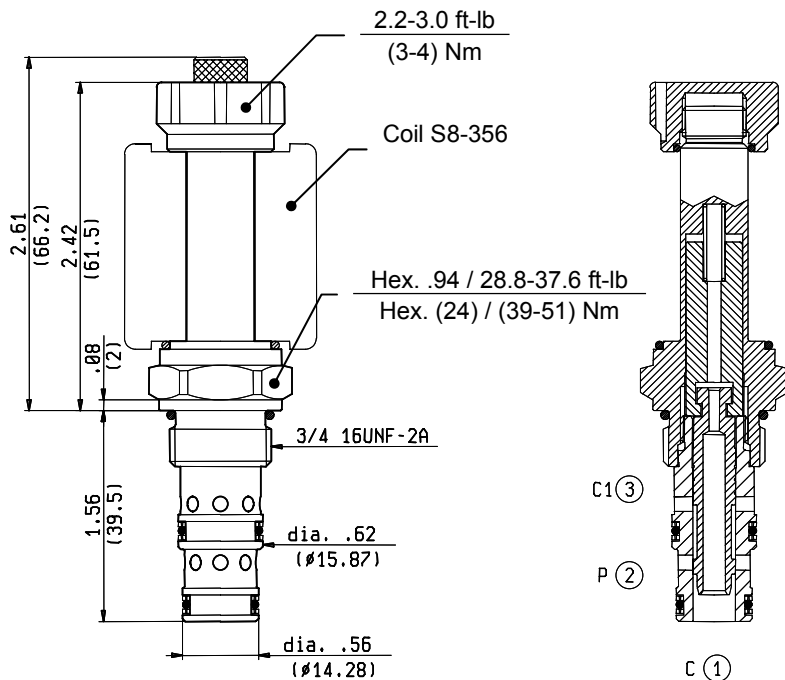
X	OPTIONS		
	cavity		
18	CA-08A-2N		
36	CA-10A-2N		
89	CA-12A-2N		
75	CA-16A-2N		

SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

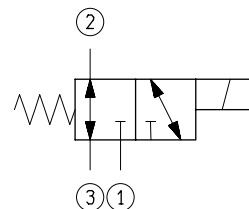
VED-8I-32-06-SE

SIZE 08

OD.13.10.51 - Y - 00



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-3N) page CT.A.003.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

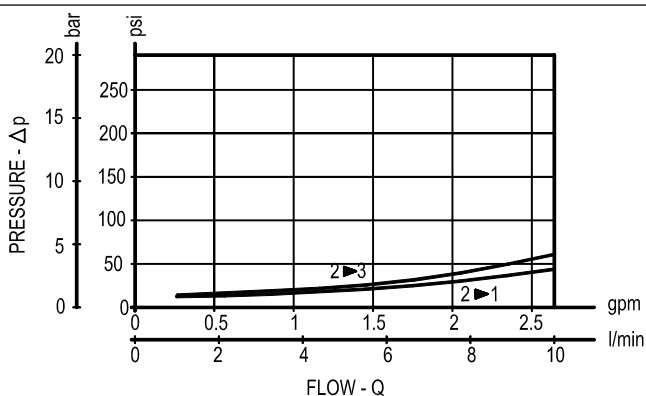
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max. 2.5 in³/min (Max. 40 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

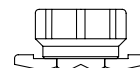


Y

ORDERING OPTIONS

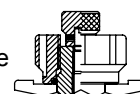
30

Standard



40

Knob Style Manual Override

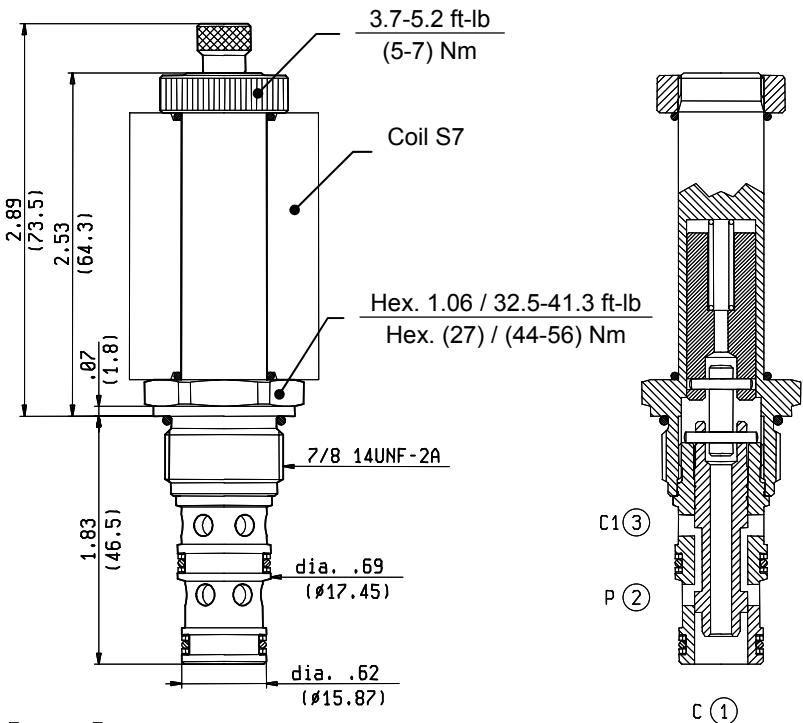


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

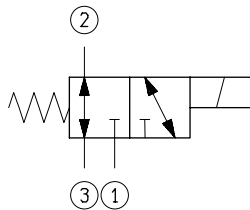
VED-71-32-09-SE

SIZE 10

OD.13.10.77 - Y - 00

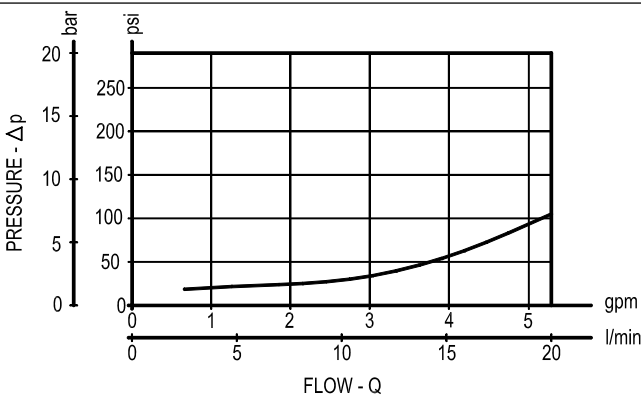


Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	6 gpm (20 l/min)
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.485 lbs (0.220 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max. 4.9 in ³ /min (Max. 80 cm ³ /min)
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted

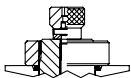


Y ORDERING OPTIONS

70 Standard



71 Knob Style Manual Override

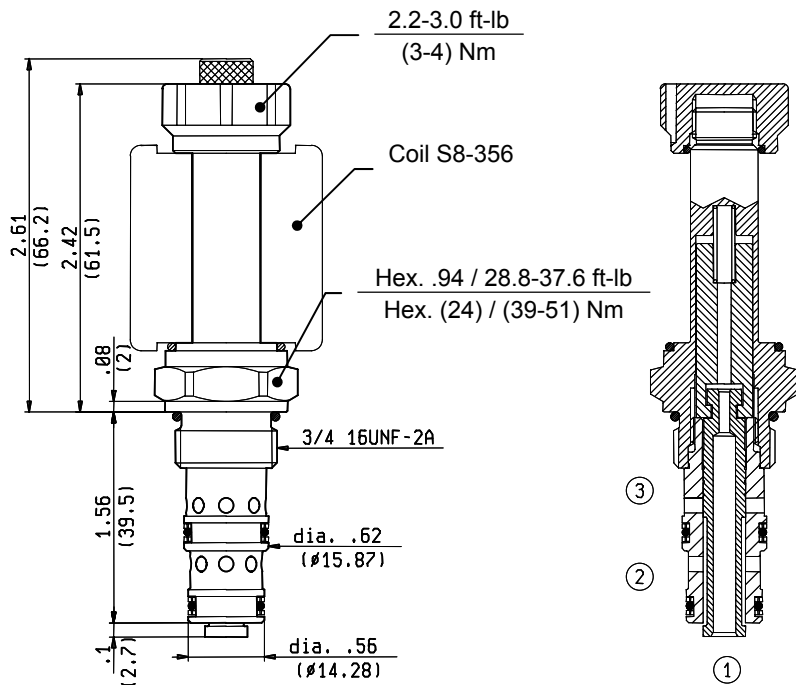


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

VED-8I-32-06-SI

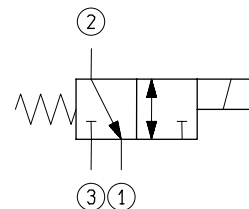
SIZE 08

OD.13.11.51 - Y - 00



Inches
(mm)

Port 1 can be pressurized but is not intended to be used as inlet port.



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-3N) page CT.A.003.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage(2 ► 3) Max.2.5 (Max.40)
at 210 bar with 46 cSt oil in³/min cm³/min

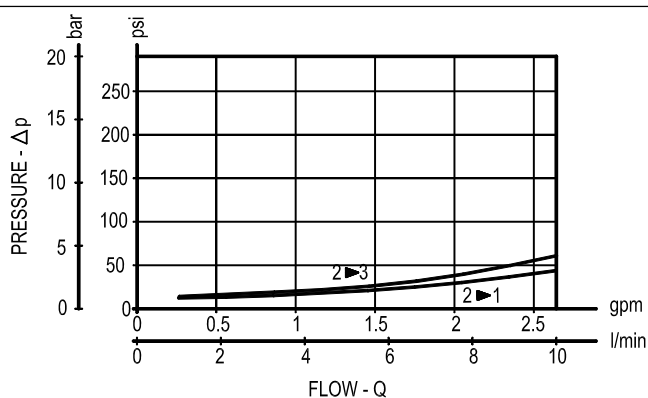
Internal Leakage(2 ► 1) Max.9.8 (Max.160)
at 210 bar with 46 cSt oil in³/min cm³/min

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

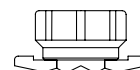
Mounting Position unrestricted



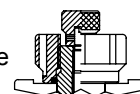
Y

ORDERING OPTIONS

30 Standard



40 Knob Style Manual Override

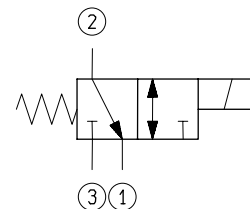
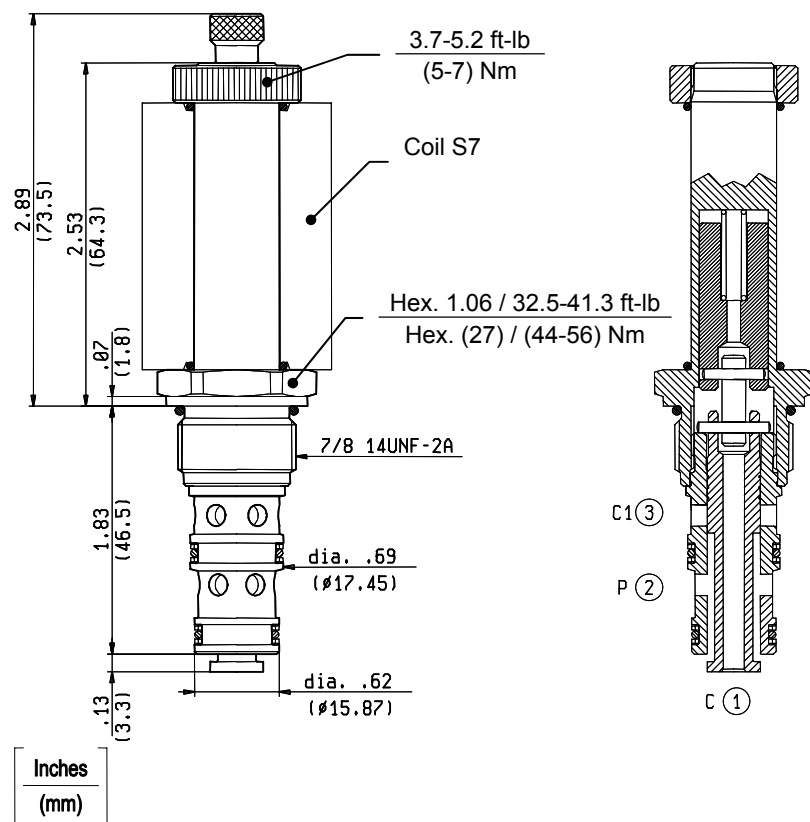


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

VED-71-32-09-SI

SIZE 10

OD.13.11.77 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 6 gpm (20 l/min)

Cavity - Tooling (CA-10A-3N) page CT.A.003.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

Internal Leakage(2 ► 3) Max.4.9 (Max.80
at 210 bar with 46 cSt oil in³/min cm³/min)

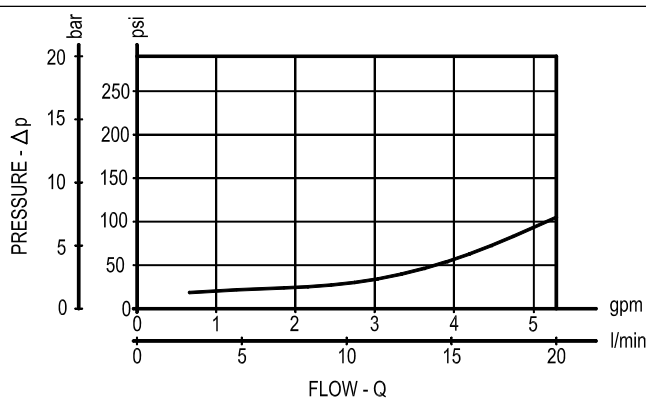
Internal Leakage(2 ► 1) Max.12.2 (Max.200
at 210 bar with 46 cSt oil in³/min cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

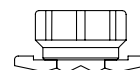
Coils must be ordered separately page 1.71.070

Mounting Position unrestricted

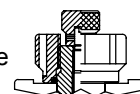


Y ORDERING OPTIONS

70 Standard



71 Knob Style Manual Override

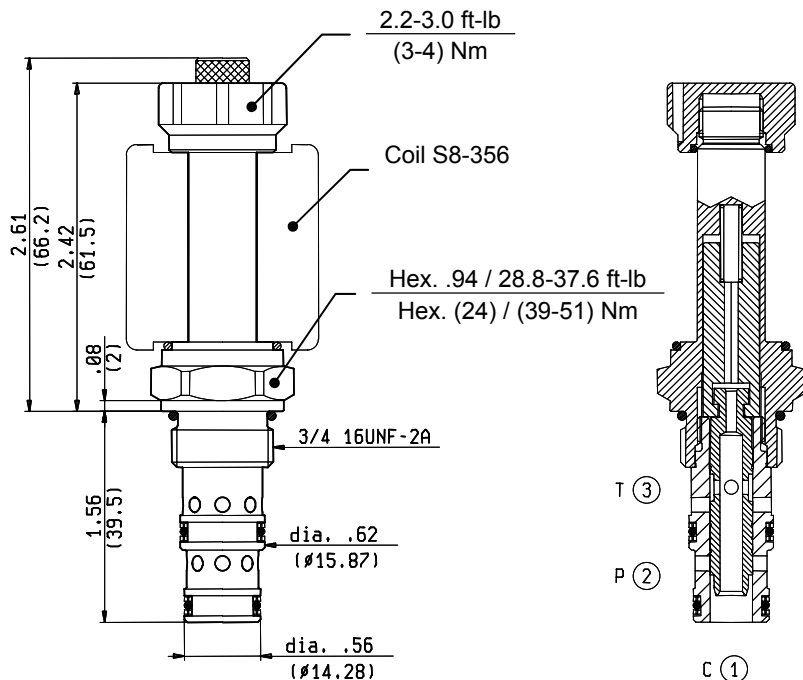


**SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY**

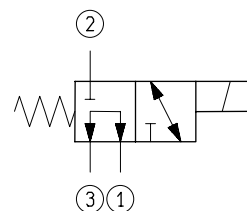
VED-8I-32-06-NC

SIZE 08

OD.13.20.51 - Y - 00



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-3N) page CT.A.003.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

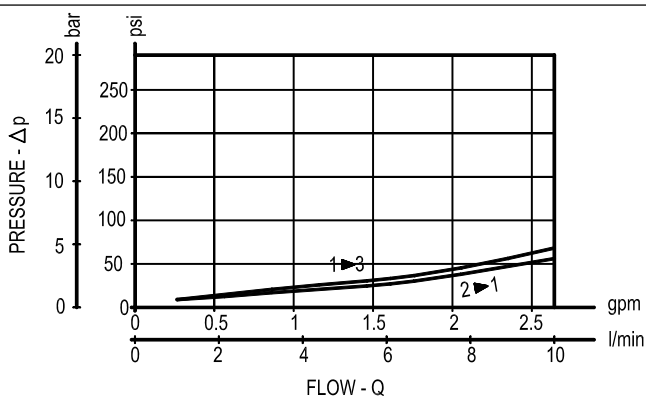
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.2.5 in³/min (Max.40 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

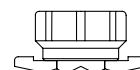
Mounting Position unrestricted



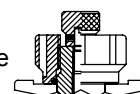
Y

ORDERING OPTIONS

30 Standard



40 Knob Style Manual Override

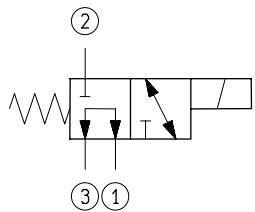
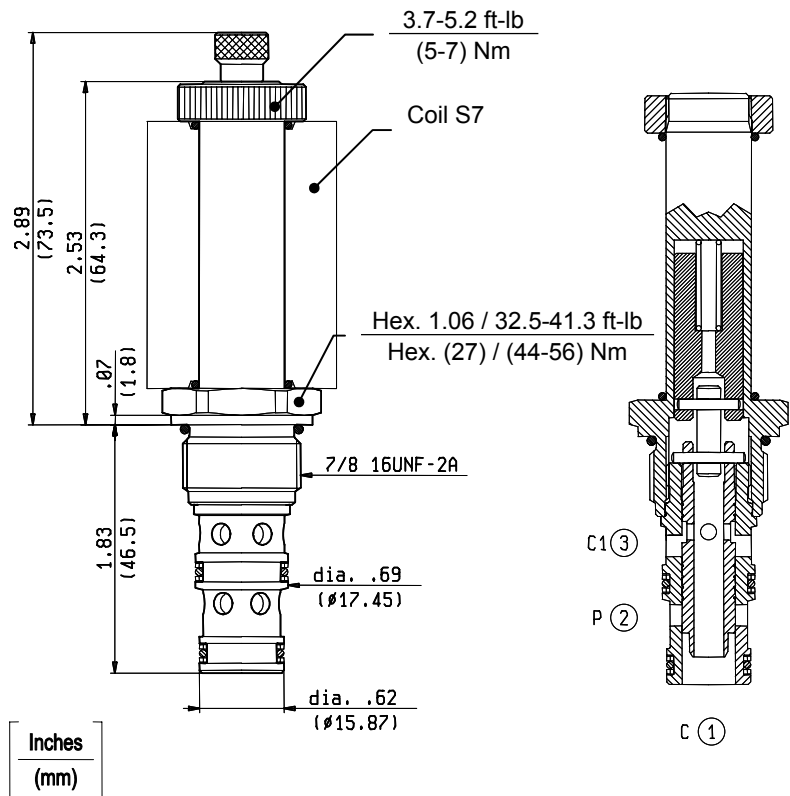


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

VED-71-32-09-NC

SIZE 10

OD.13.20.77 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 6 gpm (20 l/min)

Cavity - Tooling (CA-10A-3N) page CT.A.003.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

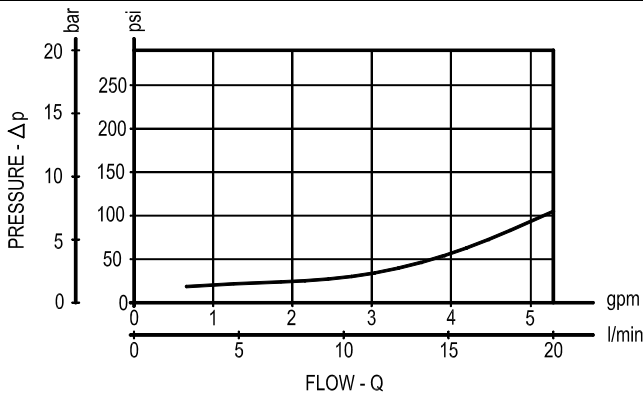
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.4.8 in³/min (Max.80 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.070

Mounting Position unrestricted



Y

ORDERING OPTIONS

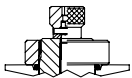
70

Standard



71

Knob Style Manual Override

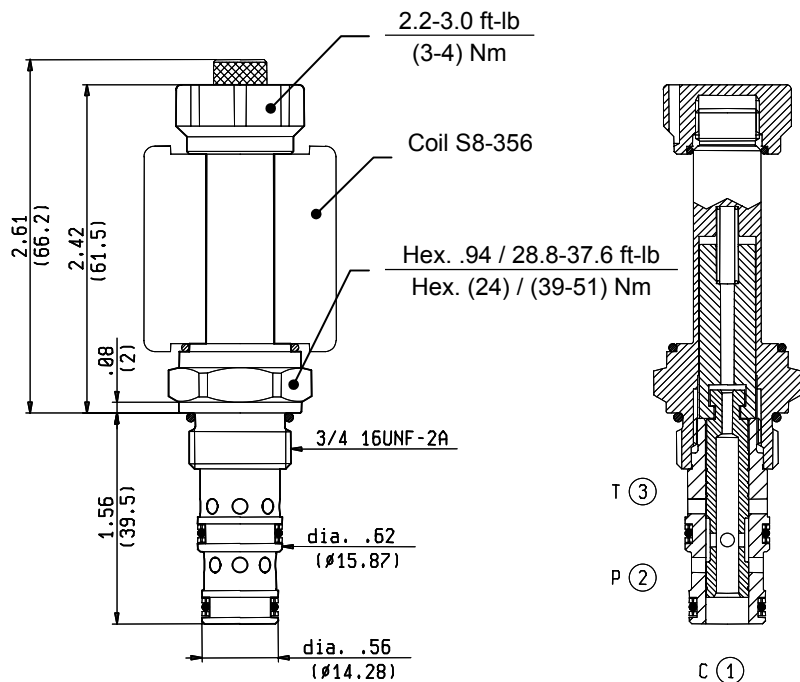


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

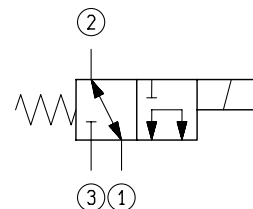
VED-8I-32-06-NA

SIZE 08

OD.13.30.51 - Y - 00



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-3N) page CT.A.003.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

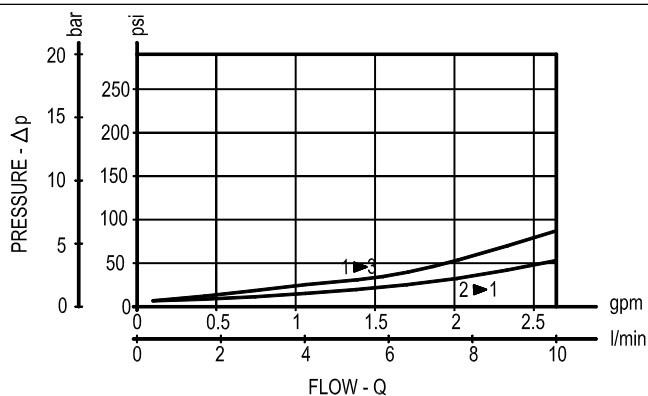
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.2.5 in³/min (Max.40 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

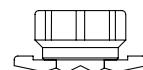


Y

ORDERING OPTIONS

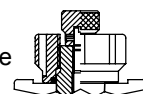
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Standard



40

Knob Style Manual Override

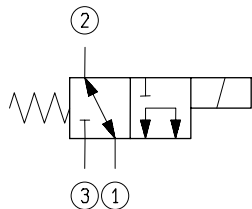
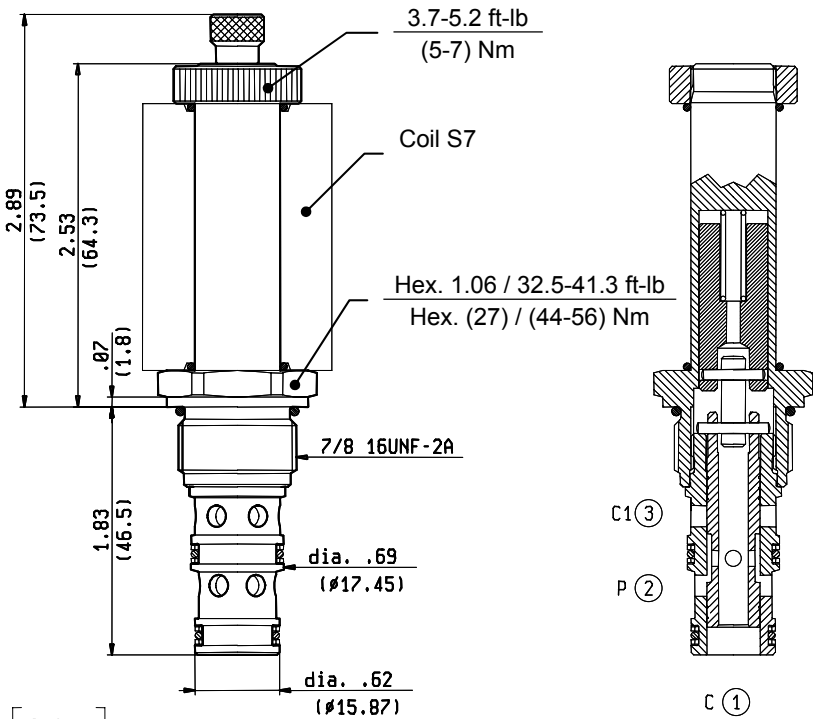


SOLENOID OPERATED VALVES
SPOOL 3-WAY 2-POSITION
COMMON CAVITY

VED-71-32-09-NA

SIZE 10

OD.13.30.77 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 6 gpm (20 l/min)

Cavity - Tooling (CA-10A-3N) page CT.A.003.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

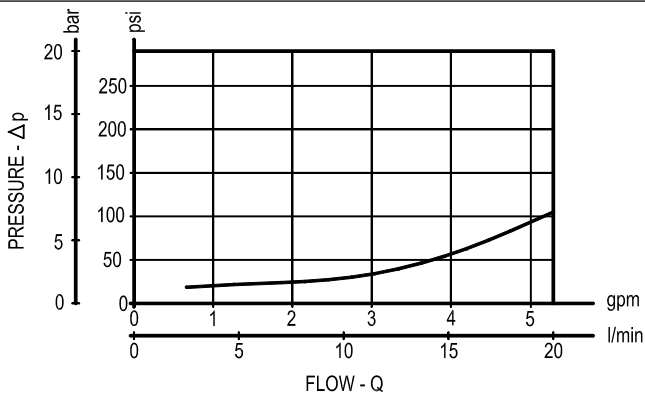
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.4.9 in³/min (Max.80 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.070

Mounting Position unrestricted



Y

ORDERING OPTIONS

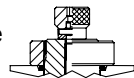
70

Standard



71

Knob Style Manual Override

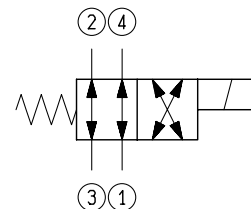
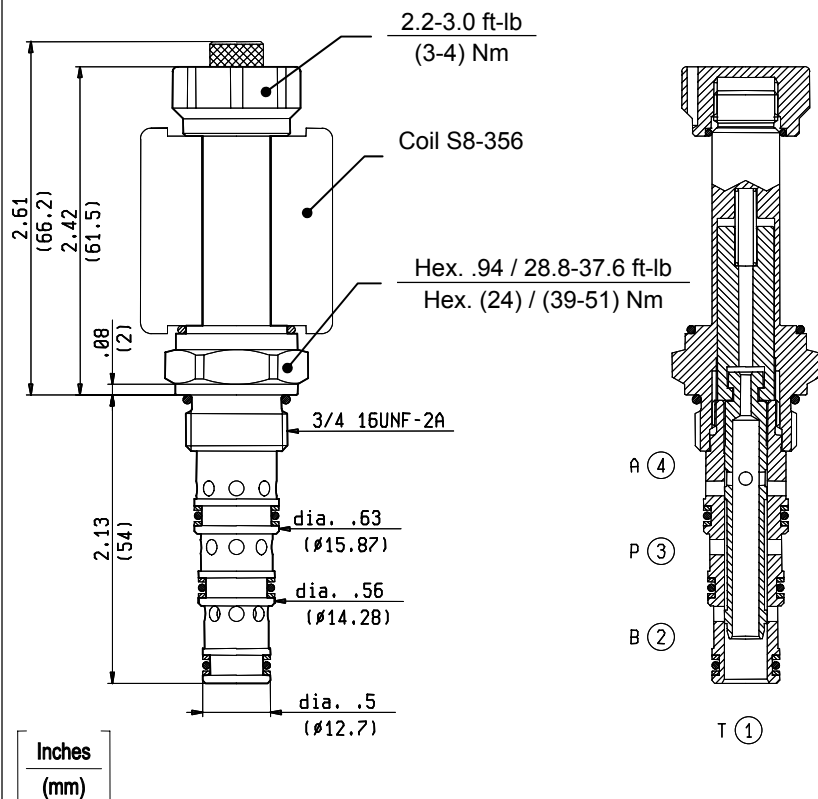


SOLENOID OPERATED VALVES
SPOOL 4-WAY 2-POSITION
COMMON CAVITY

VED-8I-42-06-CA

SIZE 08

OD.14.40.58 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-4N) page CT.A.004.U

Weight 0.286 lbs (0.130 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

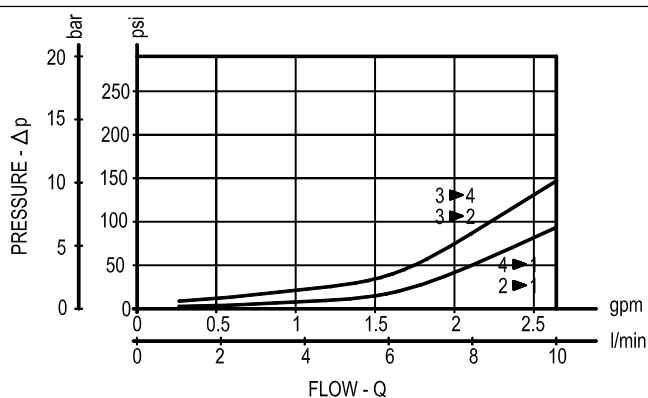
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.2.5 in³/min (Max.40 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

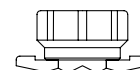
Mounting Position unrestricted



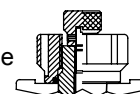
Y

ORDERING OPTIONS

30 Standard



40 Knob Style Manual Override

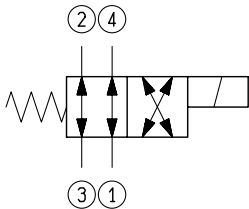
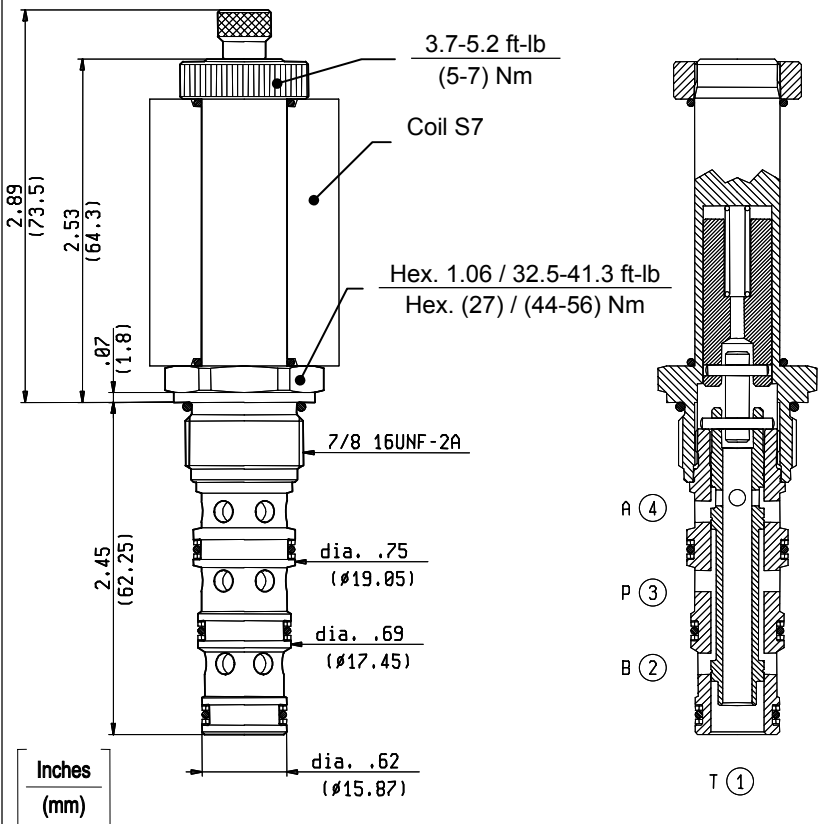


SOLENOID OPERATED VALVES
SPOOL 4-WAY 2-POSITION
COMMON CAVITY

VED-71-42-09-CA

SIZE 10

OD.14.40.78 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 6 gpm (20 l/min)

Cavity - Tooling (CA-10A-4N) page CT.A.004.U

Weight 0.485 lbs (0.220 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

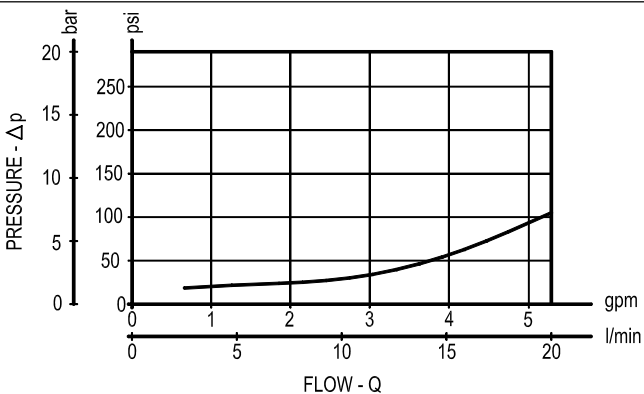
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.4.9 in³/min (Max.80 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.070

Mounting Position unrestricted



Y

ORDERING OPTIONS

70 Standard



71 Knob Style Manual Override

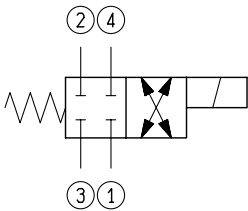
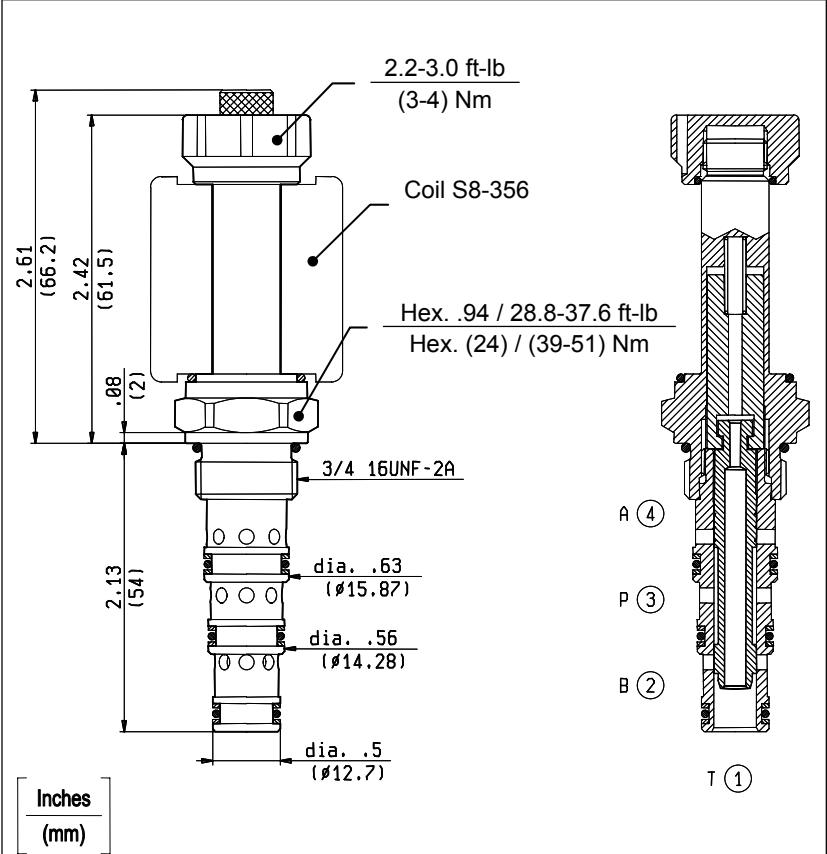


SOLENOID OPERATED VALVES
SPOOL 4-WAY 2-POSITION
COMMON CAVITY

VED-8I-42-06-CC

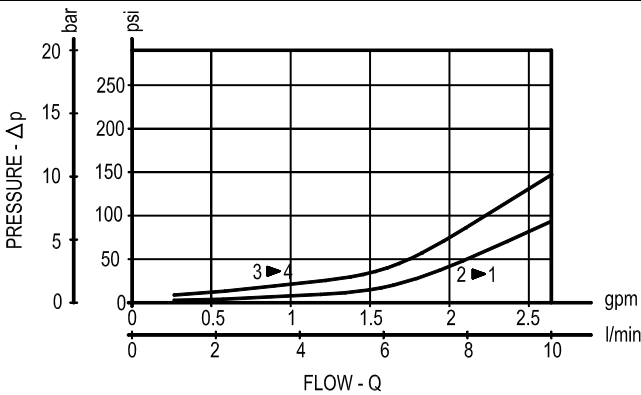
SIZE 08

OD.14.41.58 - Y - 00



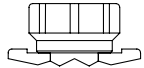
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	3 gpm (10 l/min)
Cavity - Tooling (CA-08A-4N)	page CT.A.004.U
Weight	0.286 lbs (0.130 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.2.5 in ³ /min (Max.40 cm ³ /min)
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.042
Mounting Position	unrestricted

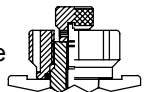


Y ORDERING OPTIONS

30 Standard



40 Knob Style Manual Override

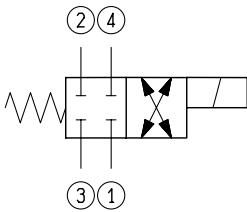
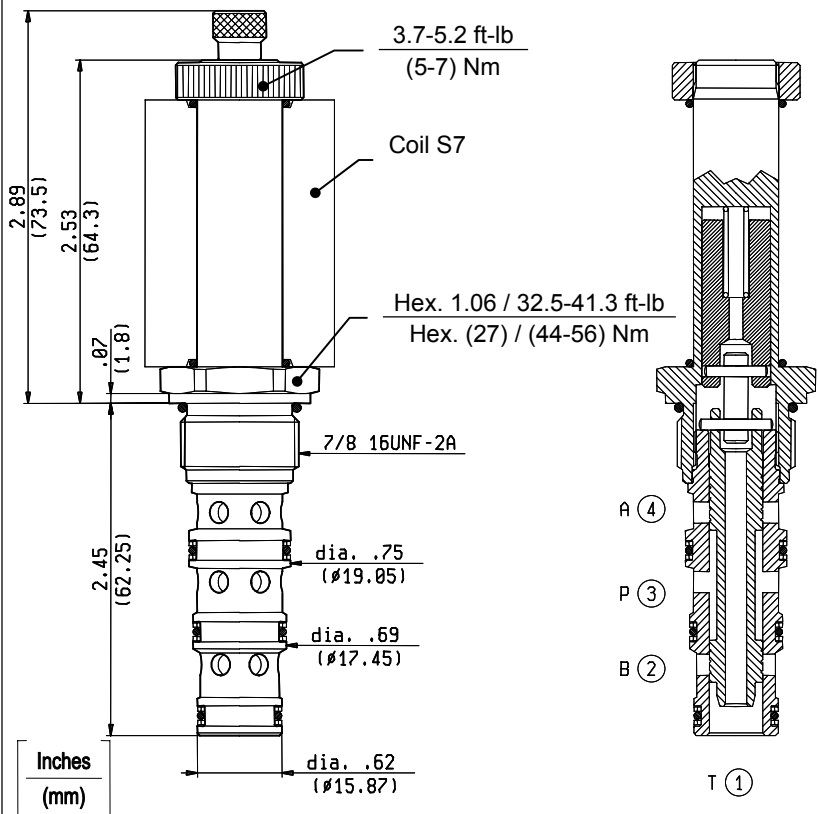


SOLENOID OPERATED VALVES
SPOOL 4-WAY 2-POSITION
COMMON CAVITY

VED-7I-42-09-CC

SIZE 10

OD.14.41.78 - Y - 00



TECHNICAL DATA

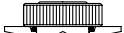
Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	6 gpm (20 l/min)
Cavity - Tooling (CA-10A-4N)	page CT.A.004.U
Weight	0.485 lbs (0.220 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max. 4.9 in ³ /min (Max. 80 cm ³ /min)
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted

Y

ORDERING OPTIONS

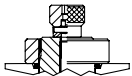
70

Standard



71

Knob Style Manual Override

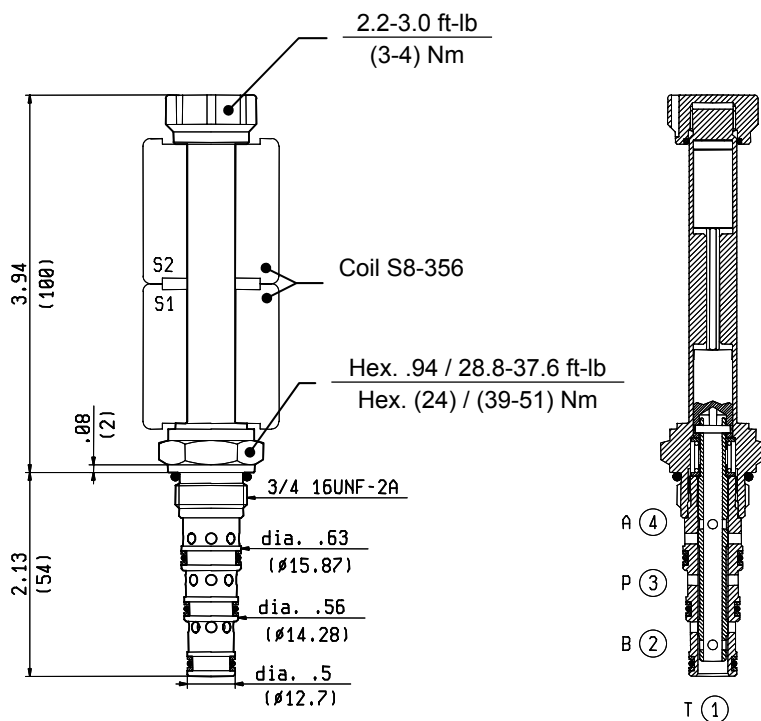


SOLENOID OPERATED VALVES
SPOOL 4-WAY 3-POSITION
COMMON CAVITY

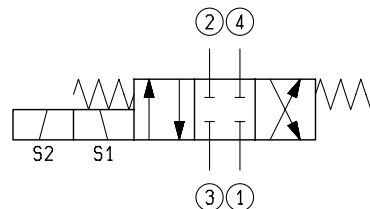
VED-8I-43-06-CC

SIZE 08

OD.14.31.58 - Y - 00



Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-4N) page CT.A.004.U

Weight 0.397 lbs (0.180 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

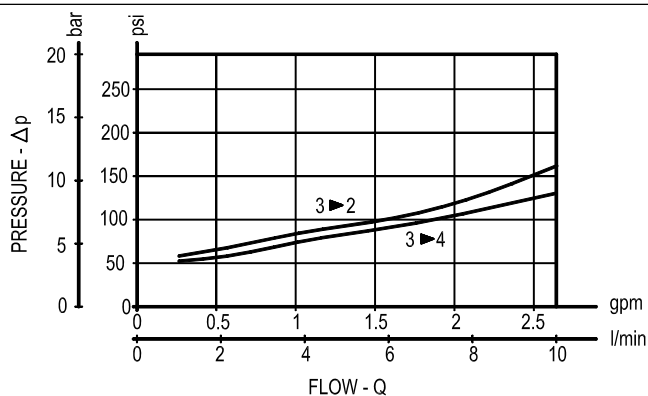
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.7.3 in³/min (Max.120 cm³/min)

Filtration : 25 μ m nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

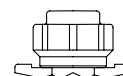
Mounting Position unrestricted



Y

ORDERING OPTIONS

44 Standard

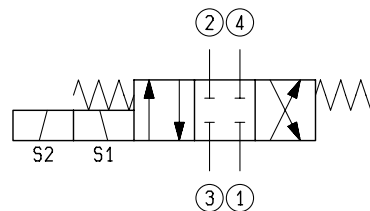
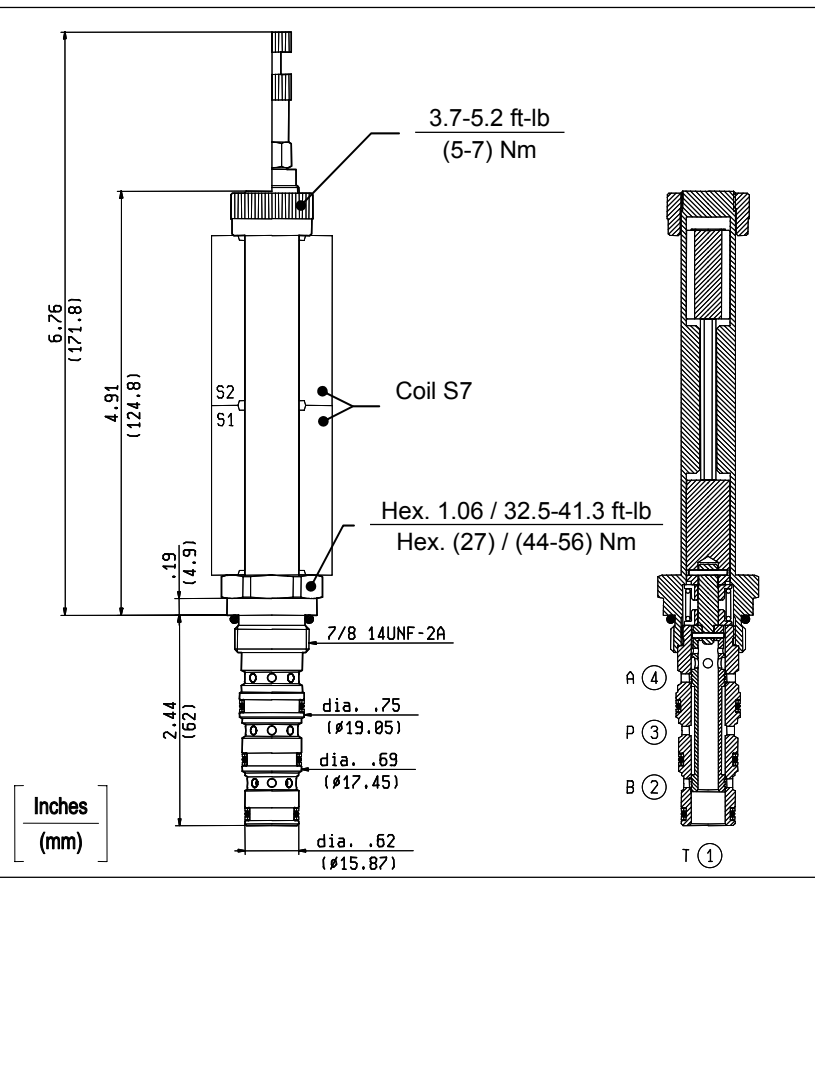


SOLENOID OPERATED VALVES
SPOOL 4-WAY 3-POSITION
COMMON CAVITY

VED-71-43-09-CC

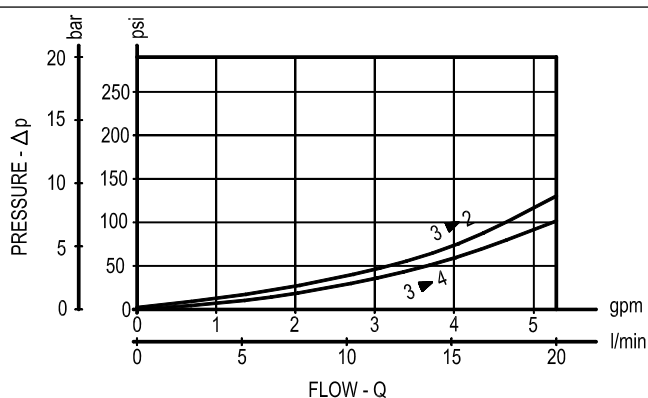
SIZE 10

OD.14.31.78 - Y - 00



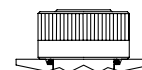
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	6 gpm (20 l/min)
Cavity - Tooling (CA-10A-4N)	page CT.A.004.U
Weight	0.595 lbs (0.270 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max. 7.3 in ³ /min (Max. 120 cm ³ /min)
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted

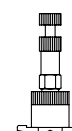


Y ORDERING OPTIONS

80 Standard



81 Push and Pull Manual Override

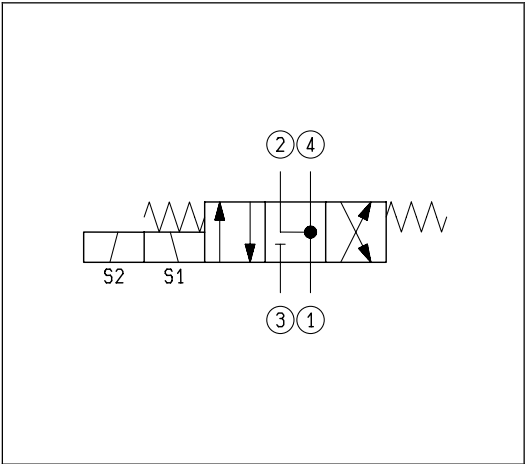
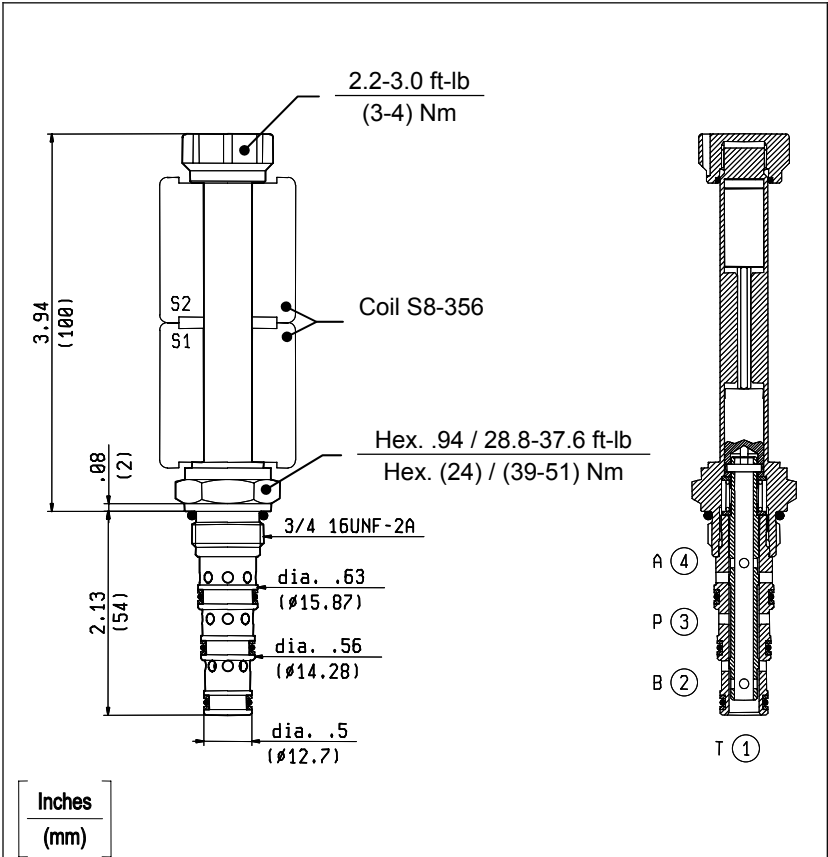


SOLENOID OPERATED VALVES
SPOOL 4-WAY 3-POSITION
COMMON CAVITY

VED-8I-43-06-ABT

SIZE 08

OD.14.32.58 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure 3000 psi (210 bar)

Rated Flow 3 gpm (10 l/min)

Cavity - Tooling (CA-08A-4N) page CT.A.004.U

Weight 0.397 lbs (0.180 kg)

Fluids - Temperatures page 7.01.040

Testing Conditions - Seals page 7.01.040

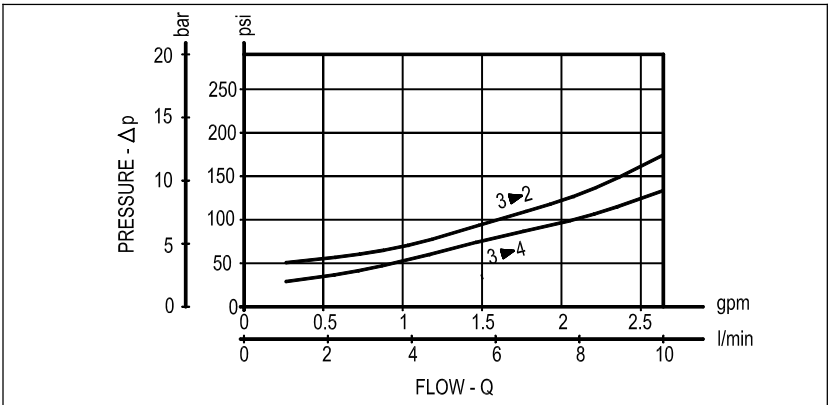
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil Max.7.3 in³/min (Max.120 cm³/min)

Filtration : 25 µm nominal or better page 7.01.050

Minimum Voltage Required 90% of nominal

Coils must be ordered separately page 1.71.042

Mounting Position unrestricted

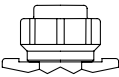


Y

ORDERING OPTIONS

44

Standard

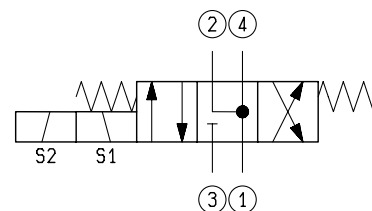
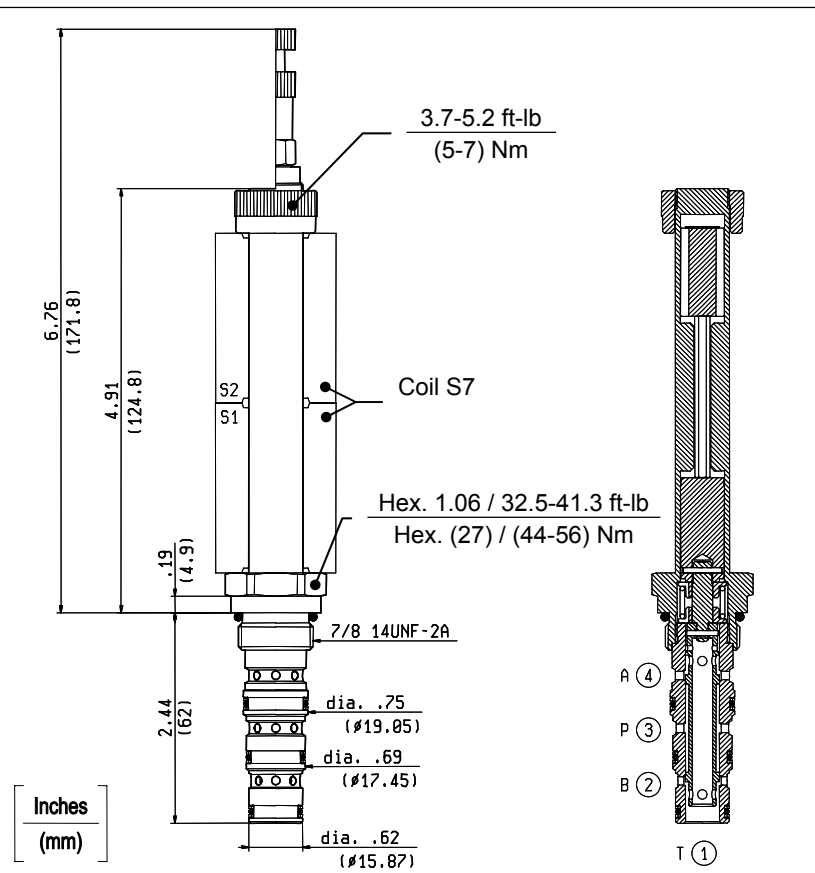


SOLENOID OPERATED VALVES
SPOOL 4-WAY 3-POSITION
COMMON CAVITY

VED-7I-43-09-ABT

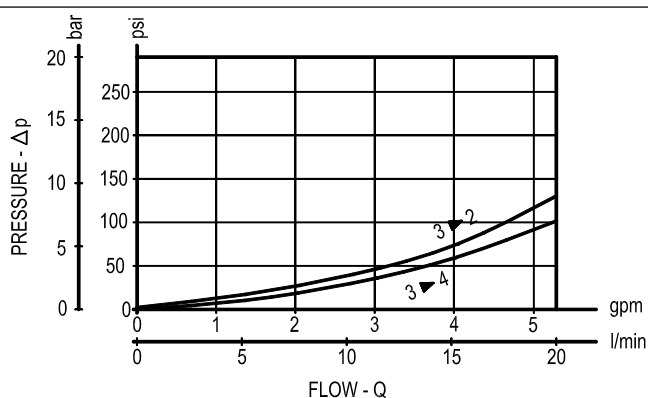
SIZE 10

OD.14.32.78 - Y - 00



TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	6 gpm (20 l/min)
Cavity - Tooling (CA-10A-4N)	page CT.A.004.U
Weight	0.595 lbs (0.270 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max. 7.3 in ³ /min (Max. 120 cm ³ /min)
Filtration : 25 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.070
Mounting Position	unrestricted

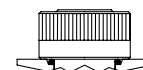


Y

ORDERING OPTIONS

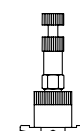
80

Standard



81

Push and Pull Manual Override



GENERAL INFORMATION**GLOSSARY OF TERMS AND DEFINITIONS**

Current is the flow of electrons in a conductor, measured in Amperes (A) or milli-amperes (mA) and abbreviated "I".

Voltage is the potential for current flow in an electrical circuit. It is measured in Volts (V) and abbreviated "V."

Resistance is a material's opposition to the flow of electrical current. It depends on physical properties as well as temperature, size and shape of the material. It is measured in Ohms (Ω) and abbreviated "R". The tolerance allowed on resistance at ambient temperature 68 - 77°F (20 - 25°C) is $\pm 7\%$.

Hysteresis is the difference in regulated hydraulic parameter (flow / pressure) at a fixed current level when current is increasing vs. when current is decreasing. It is normally expressed as a percentage of the total change in regulated hydraulic parameter (flow / pressure).

Example: With 900 mA input current and increasing current, 290 psi (20 bar) regulated pressure is achieved.

With 900 mA input current and decreasing current, 302 psi (20.8) bar regulated pressure is achieved.

There is a 12 psi (0.8 bar) difference in regulated pressure achieved with the same current depending on whether current is increasing or decreasing.

If Maximum Regulated Pressure = 363 psi (25 bar) and Minimum Regulated Pressure = 58 psi (4 bar), the total regulated parameter change is $363 (25) - 58 (4) = 305$ psi (21 bar).

Hysteresis = $(0.8 / 21) \times 100 = 3.8\%$

Proportional Controller is a device that converts a low-power input signal into an output signal that is capable of operating the valve. This output signal can be modified to include PWM, ramping, etc.

Pulse Width Modulation (PWM) is a method used to vary the average current induced in a coil using a square wave of fixed frequency, and variable ratios of on/off times.

Dither is a method used to reduce hysteresis by applying a square or triangle wave to the coil voltage. It can be applied to straight DC or PWM.

Maximum Control Current is the point where increasing current input no longer results in an increase in regulated hydraulic parameter (flow / pressure).

I-Min and I-Max represent the minimum and maximum control current induced into a proportional valve coil. The tolerance allowed is $\pm 10\%$ and depends largely from coil's resistance tolerance.

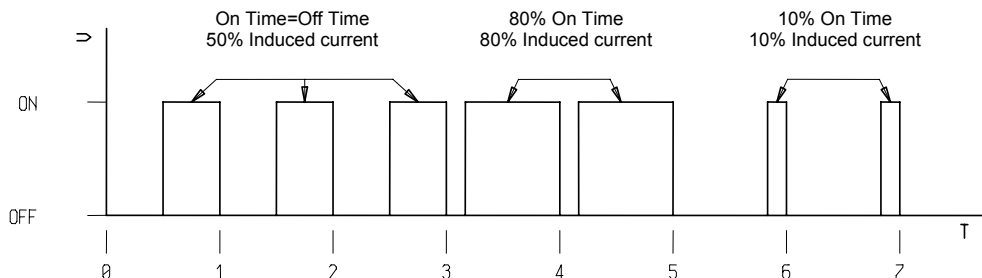
Ramping is the ability to control the rate of change of the output of an electronic controller.

VERY IMPORTANT:

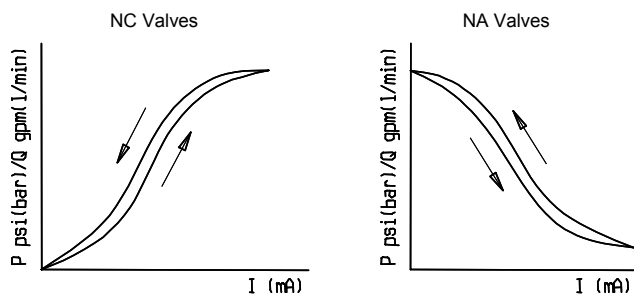
- 1) It is strongly recommended to use pulse-width-modulation (PWM) as input signal to coils rather than straight DC. Our tests indicate that PWM input signal allows best valve performance, significantly reducing hysteresis and response times of all our proportional valves. All features shown and explained in next pages are available from many industry-common electronic controllers, including Proportional Controllers described in this catalogue.
- 2) BROCO recommends to use always 12 V DC coils in combination with 24 V DC supply voltage to the electronic controller. This allows to use a much wider control current range independently from coil temperature, since any current is regulated by the electronic controller and there is no coil overheating risk.

GENERAL INFORMATION

PULSE WIDTH MODULATION

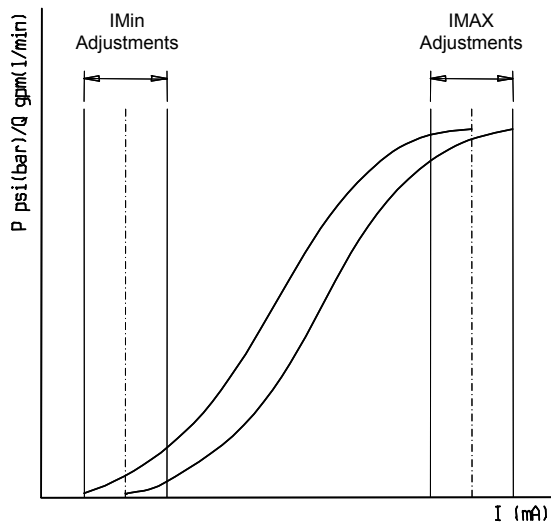


HYSTERESIS CHARACTERISTIC WITH 120 Hz PWM



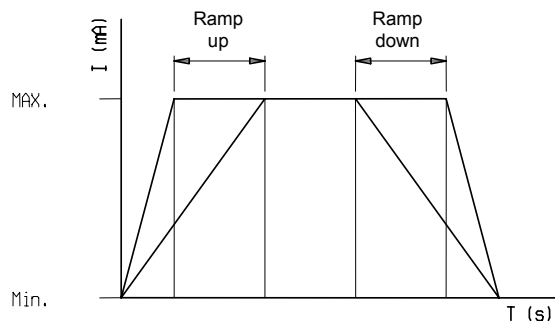
For normally closed proportional valves, the hysteresis curve with increasing current is always lower than the curve with decreasing current. The opposite is true for normally open proportional valves as shown.

REPEATABILITY RANGE



An important control feature of electronic controllers is I-Min / I-Max adjustment. This feature allows control of the regulated hydraulic parameter across the full range of the electronic controller by eliminating deadband.

RAMP SLOPE CONTROL



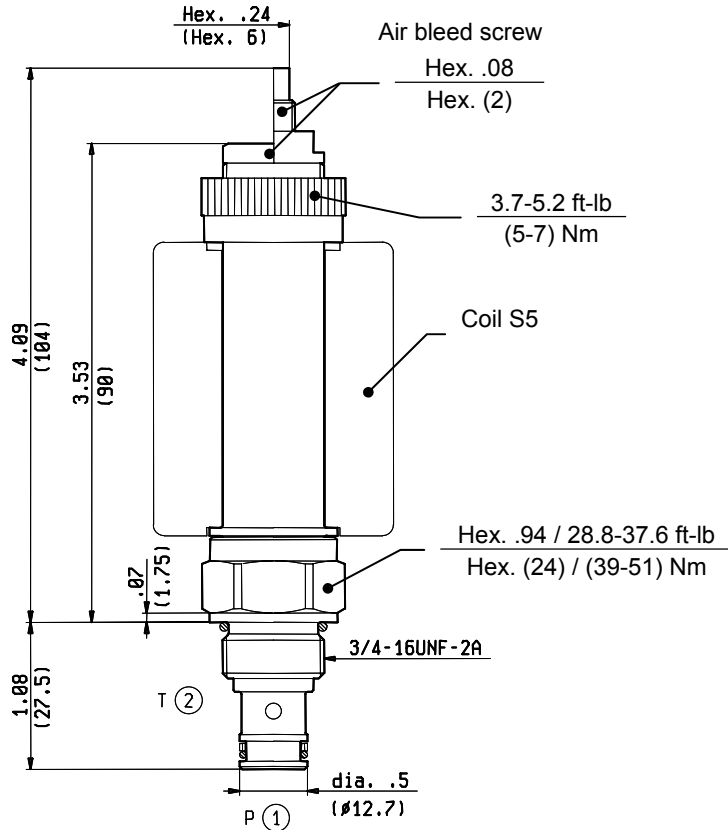
Many commercially available controllers also offer a ramping control feature. This feature allows to adjust the current rate of change between the I-Min and I-Max setpoints.

**PROPORTIONAL VALVES
DIRECT ACTING RELIEF
COMMON CAVITY**

VEP-5B-2S-D

SIZE 08

OD.94.01.18 - Y - Z

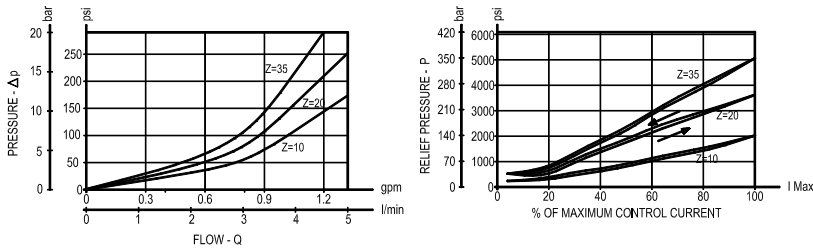


Inches
(mm)

TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	See diagram
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-08A-2N)	page CT.A.001.U
Weight	0.518 lbs (0.235 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage	page 7.01.040
Filtration : 10 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.090
Mounting Position	unrestricted

N.B. It is recommended to bleed air carefully before operation.



Z	OPERATING RANGE				
	Pressure Range psi (bar)	Voltage V	I Min. A (± 10%)	I Max. A (± 10%)	Internal Orifice Inch (bar)
10	220-2000 (15-140)	12	0.25	1.8	0.9 (2.5)
20	440-3600 (30-250)	12	0.25	1.8	0.7 (1.8)
35	440-5000 (30-350)	12	0.25	1.8	0.6 (1.5)

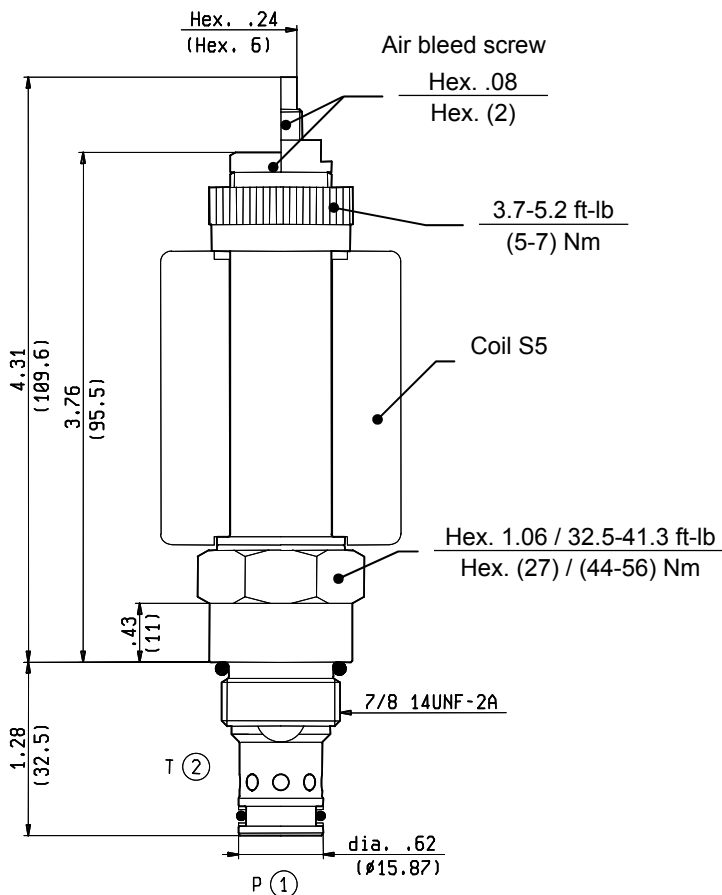
Y	ORDERING OPTIONS	
03	Standard	
04	Knob Style Manual Override	

**PROPORTIONAL VALVES
PILOT OPERATED RELIEF
COMMON CAVITY**

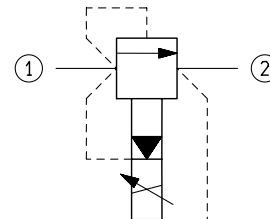
VEP-5B-2S-10A-P

SIZE 10

OD.94.05.36 - Y - Z



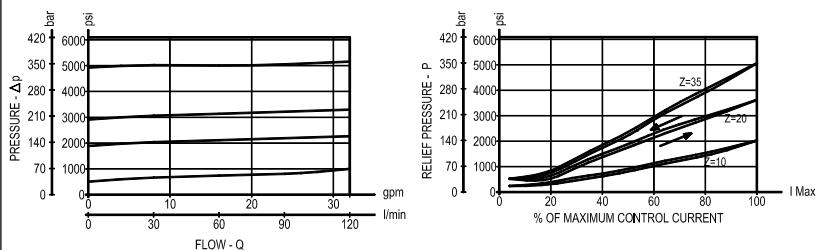
Inches
(mm)



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	32 gpm (120 l/min)
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-2N)	page CT.A.001.U
Weight	0.661 lbs (0.300 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 5000 psi (350 bar) whit 46 cSt oil	Max.12.2 in³/min (Max.200 cm³/min)
Filtration : 10 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.090
Mounting Position	unrestricted

N.B. It is recommended to bleed air carefully before operation.



Z	OPERATING RANGE				
	Pressure Range psi (bar)	Voltage V	I Min. A (± 10%)	I Max. A (± 10%)	
10	220-2000 (15-140)	12	0.18	1.6	
20	440-3600 (30-250)	12	0.13	1.5	
35	440-5000 (30-350)	12	0.28	1.4	

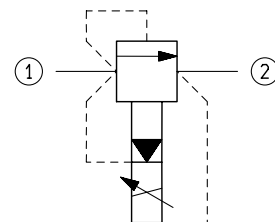
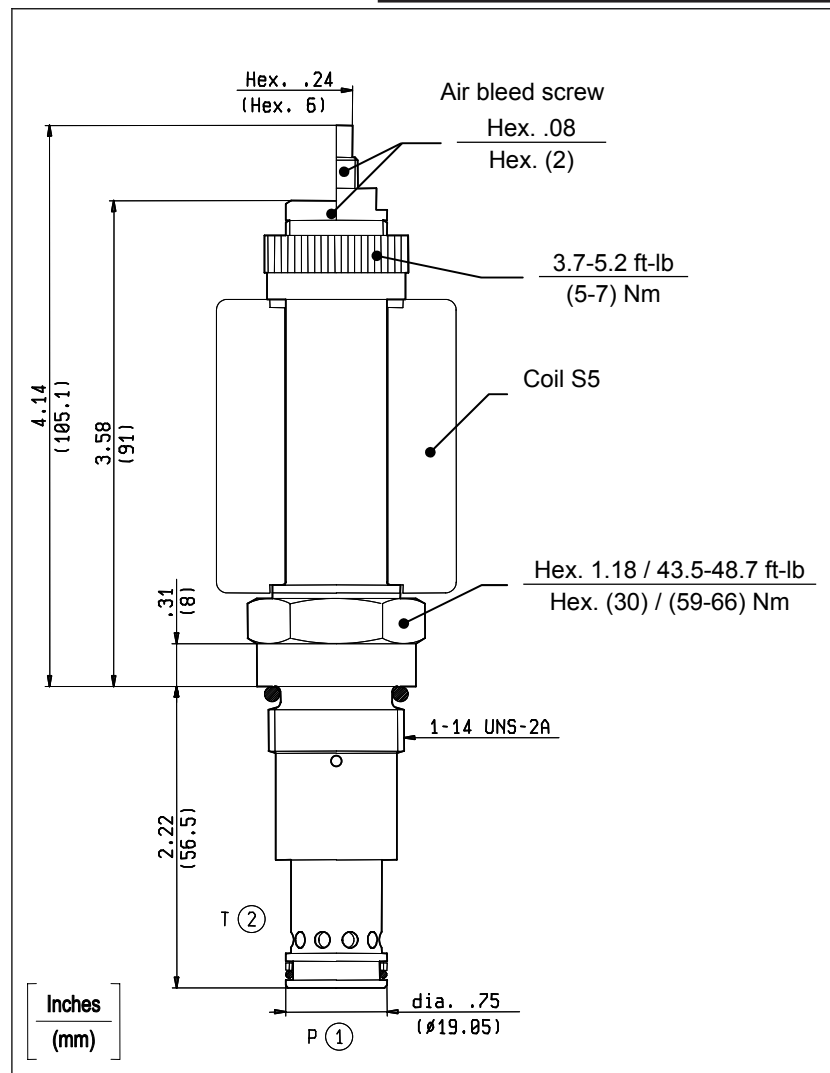
Y	ORDERING OPTIONS	
03	Standard	
04	Knob Style Manual Override	

**PROPORTIONAL VALVES
PILOT OPERATED RELIEF
SPECIAL CAVITY**

VEP-5B-2S-P

065

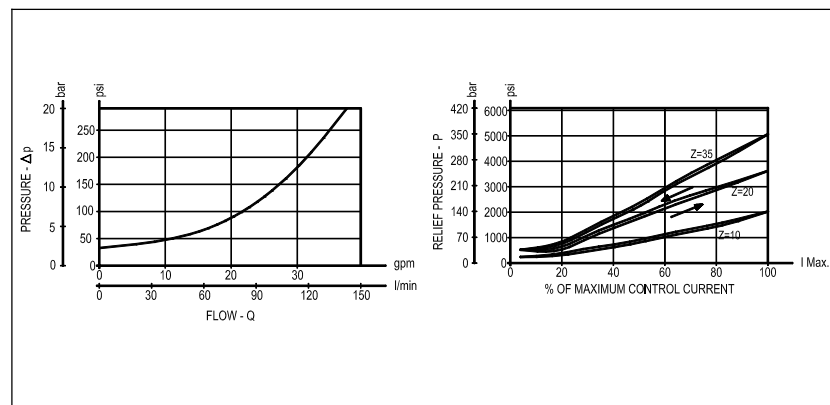
OD.94.05.61 - Y - Z



TECHNICAL DATA

Maximum Operating Pressure	5000 psi (350 bar)
Rated Flow	39 gpm (150 l/min)
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (065)	page CT.S.001.U
Weight	0.739 lbs (0.335 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 5000 psi (350 bar) with 46 cSt oil	Max. 12.2 in ³ /min (Max. 200 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050
Minimum Voltage Required	90% of nominal
Coils must be ordered separately	page 1.71.090
Mounting Position	unrestricted

N.B. It is recommended to bleed air carefully before operation.



Z	OPERATING RANGE				
	Pressure Range psi (bar)	Voltage V	I Min. A (± 10%)	I Max. A (± 10%)	
10	220-2000 (15-140)	12	0.2	1.5	
20	440-3600 (30-250)	12	0.1	1.7	
35	440-5000 (30-350)	12	0.2	1.7	

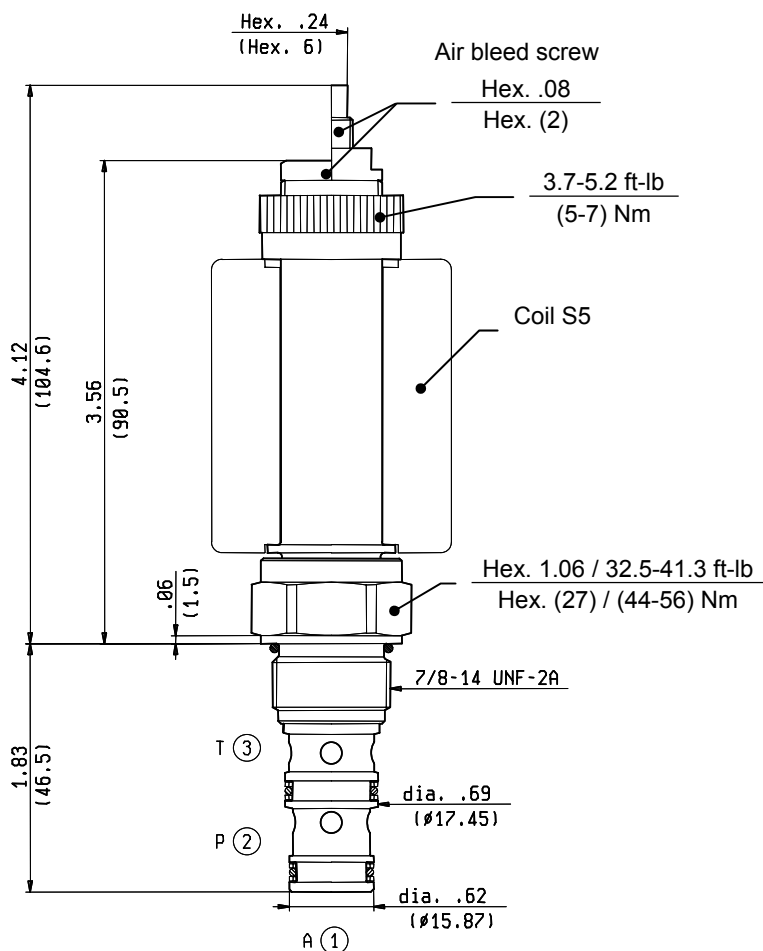
Y	ORDERING OPTIONS	
03	Standard	
04	Knob Style Manual Override	

**PROPORTIONAL VALVES
DIRECT ACTING PRESSURE REDUCING
COMMON CAVITY**

VEP-5A-3R-06

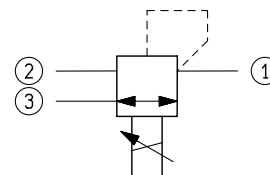
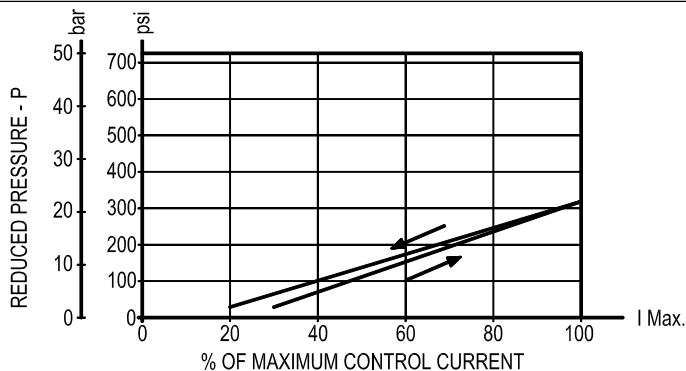
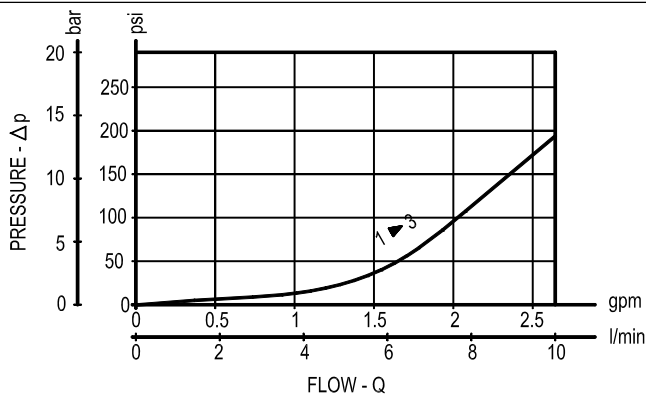
SIZE 10

OD.91.01.77 - Y - 00



Inches
(mm)

Allowed Back Pressure at port 3(T): 73 psi (5bar) max.



TECHNICAL DATA

Maximum Inlet Pressure in 2	3000 psi	(210 bar)
Reduced Pressure in 1	29-319 psi	(2-22 bar)
Rated Flow	3 gpm	(10 l/min)
I Max(±10%) for 12 V DC coil	2	A
I Min(±10%) for 12 V DC coil	0.45	A
Recommended PWM frequency	120-150	Hz
Cavity - Tooling (CA-10A-3N)	page A10.012	
Weight	0.650 lbs	(0.295 kg)
Fluids - Temperatures	page 7.01.040	
Testing Conditions - Seals	page 7.01.040	
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.0.6 in ³ /min	(Max.10 cm ³ /min)

Filtration : 10 μm nominal or better page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

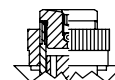
N.B. It is recommended to bleed air carefully before operation.

Y

ORDERING OPTIONS

03

Standard

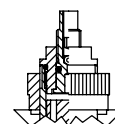


04

Knob
Override

Style

Manual

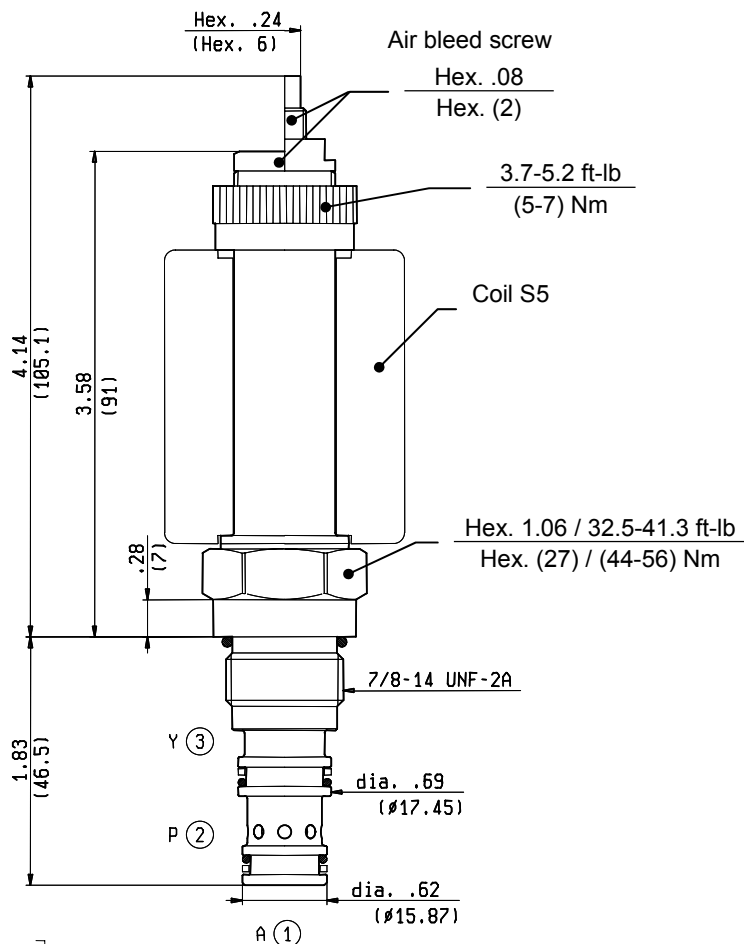


**PROPORTIONAL VALVES
PILOT OPERATED PRESSURE REDUCING
COMMON CAVITY**

VEP-5A-2R-06-P

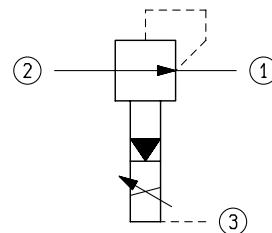
SIZE 10

OD.91.06.77 - Y - 00



Inches
(mm)

Allowed Back Pressure at port 3(Y): 73 psi (5 bar) max.



TECHNICAL DATA

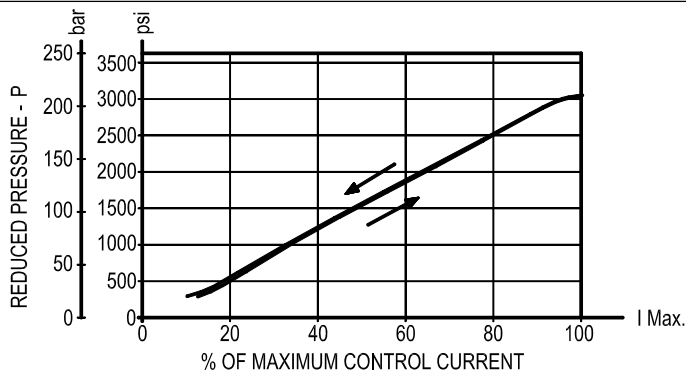
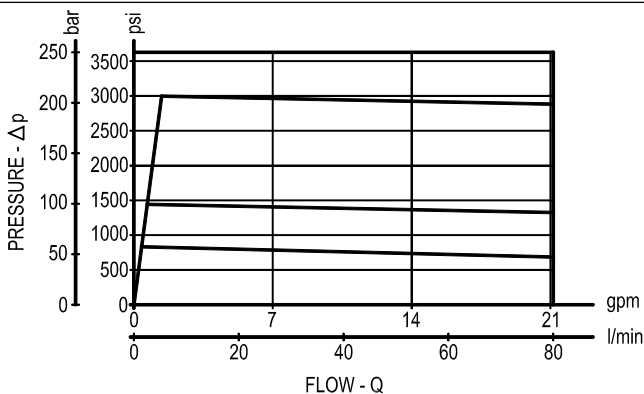
Maximum Inlet Pressure in 2	3600 psi	(250 bar)
Reduced Pressure in 1	290-3000 psi	(20-210 bar)
Rated Flow	21 gpm	(80 l/min)
I Max(±10%) for 12 V DC coil	1.3	A
I Min(±10%) for 12 V DC coil	0.1	A
Recommended PWM frequency	120-150	Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U	
Weight	0.628 lbs	(0.285 kg)
Fluids - Temperatures	page 7.01.040	
Testing Conditions - Seals	page 7.01.040	
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.2.4 in ³ /min	(Max.40 cm ³ /min)

Filtration : 10 µm nominal or better page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

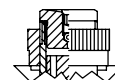


Y

ORDERING OPTIONS

03

Standard

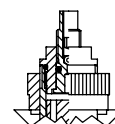


04

Knob
Override

Style

Manual

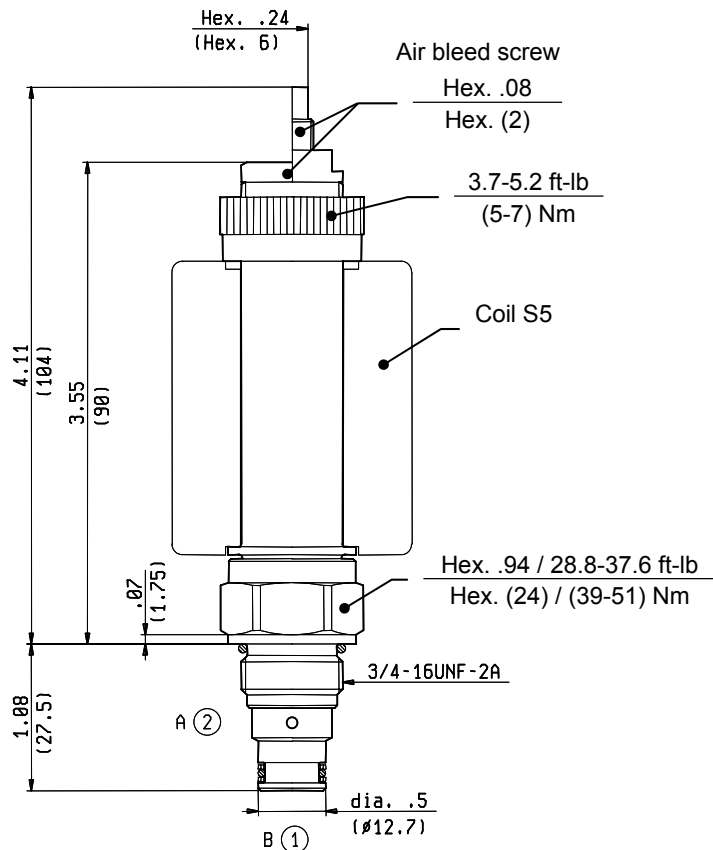


PROPORTIONAL VALVES
2-WAY DOUBLE LOCK NORMALLY CLOSED
COMMON CAVITY

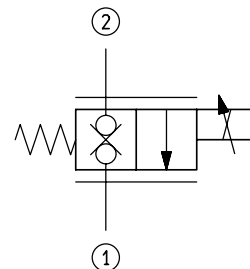
VEP-5A-2T-06-NC

SIZE 08

OD.95.31.18 - Y - 00



Inches
(mm)



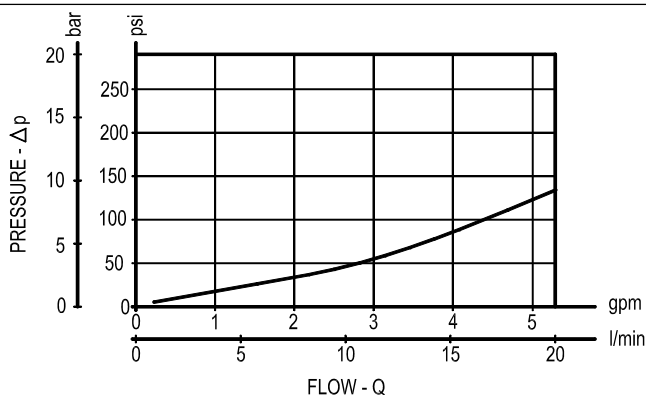
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	6 gpm (20 l/min)
I Max(±10%) for 12 V DC coil	2 A
I Min(±10%) for 12 V DC coil	0.9 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-8A-2N)	page CT.A.001.U
Weight	0.551 lbs (0.250 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.



FLOW REGULATION

Pressure psi (bar)	Current I		Flow Q gpm (l/min)
	minimum (A)	maximum (A)	
218 (15)	0.8	1.4	5 (19)
1450 (100)	0.9	1.6	5.3 (20)
2900 (200)	0.95	2.1	5.3 (20)

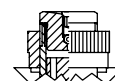
Current valve: ± 10%

Y

ORDERING OPTIONS

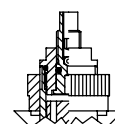
03

Standard



04

Knob Style Manual Override

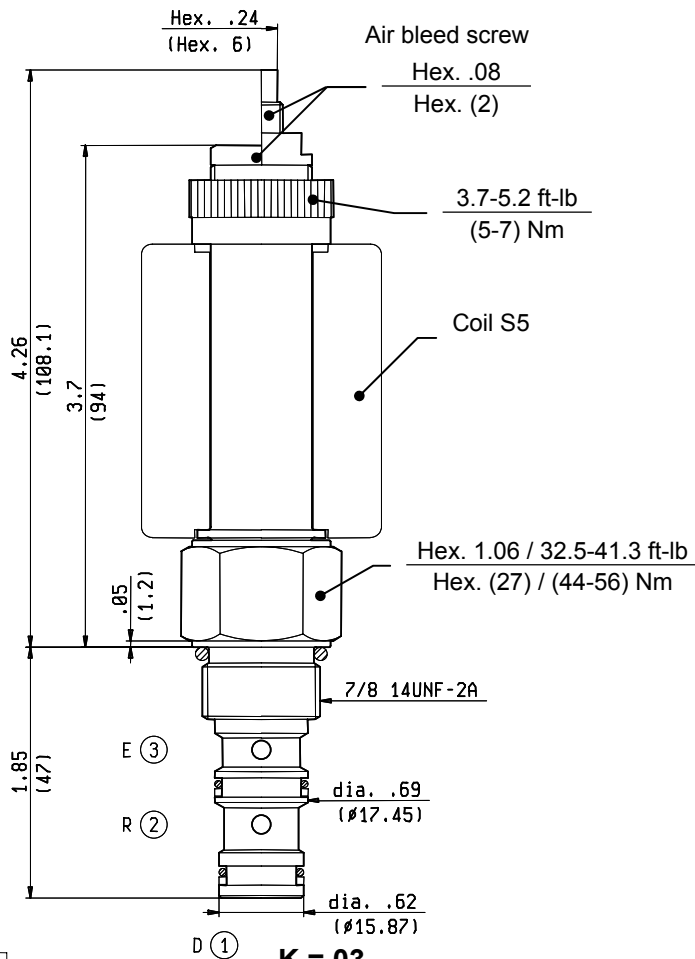


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

VEP-5A-2Q-09-NC-2F

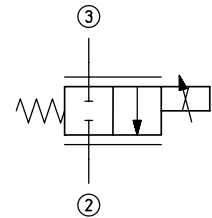
SIZE 10

OD.92 - K - 77 - Y - 01

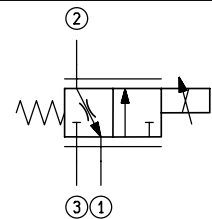


**K = 03
PORT NOT USED**

K = 03



K = 05



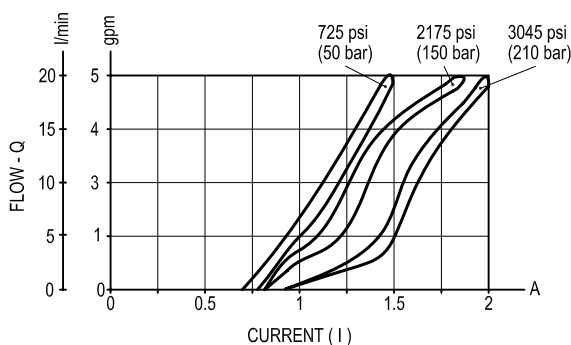
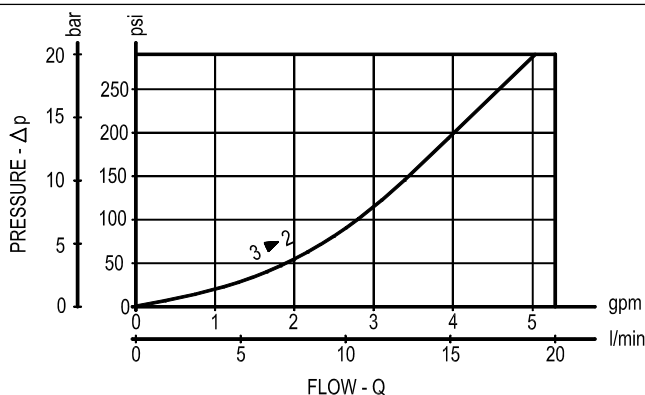
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	6 gpm (20 l/min)
I Max(±15%) for 12 V DC coil	2 A
I Min(±15%) for 12 V DC coil	0.9 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

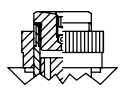


Y

ORDERING OPTIONS

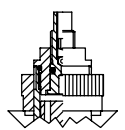
03

Standard



04

Knob Style Manual Override

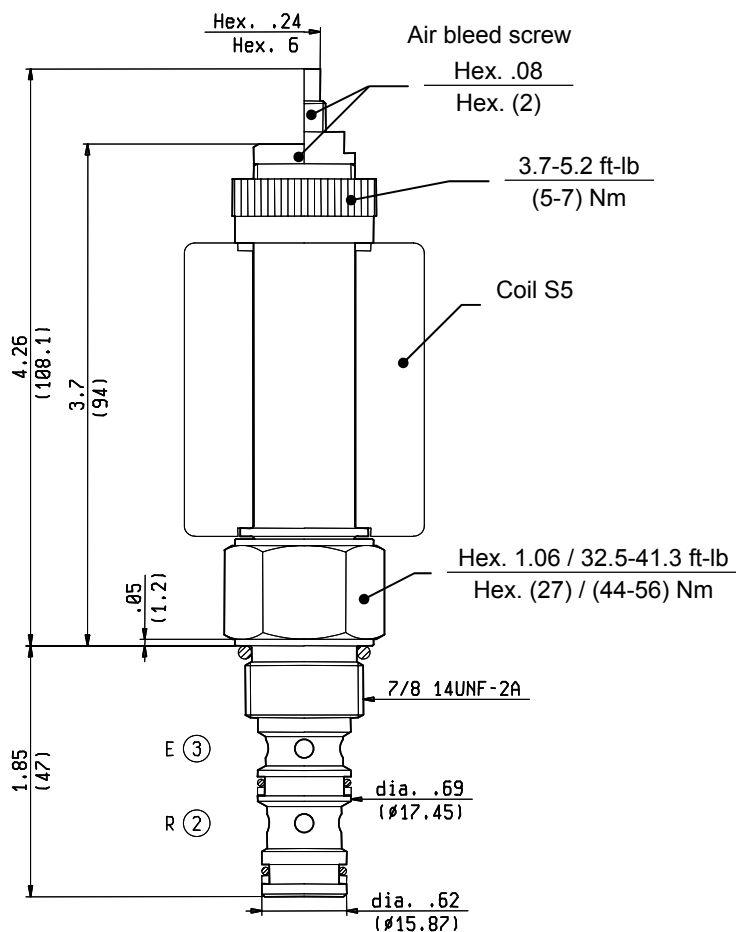


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

VEP-5A-2Q-09-NC-4F

SIZE 10

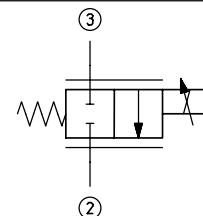
OD.92 - K - 77 - Y - 02



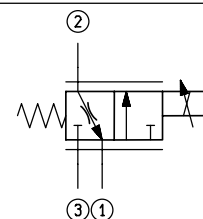
Inches
(mm)

**D (1) K = 03
PORT NOT USED**

K = 03



K = 05



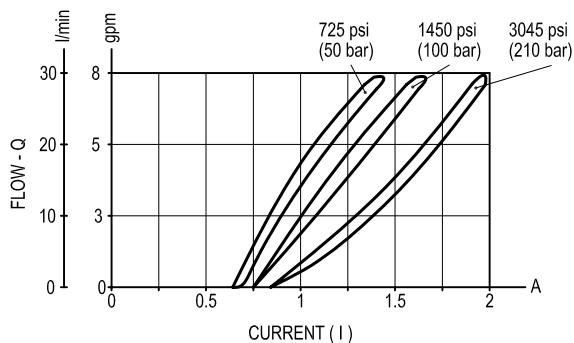
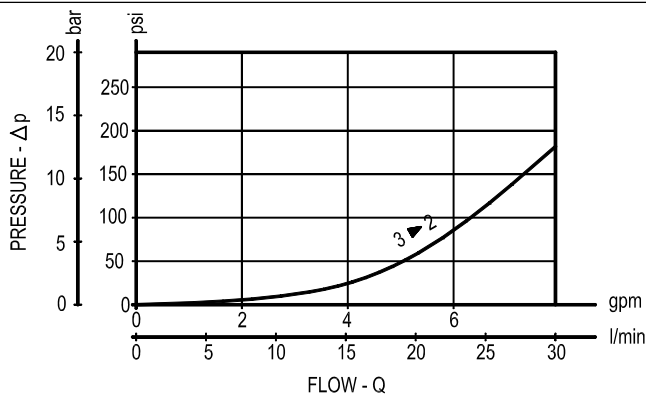
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	8 gpm (30 l/min)
I Max(±15%) for 12 V DC coil	2 A
I Min(±15%) for 12 V DC coil	0.8 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

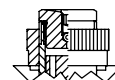


Y

ORDERING OPTIONS

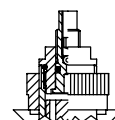
03

Standard



04

Knob Style Manual Override

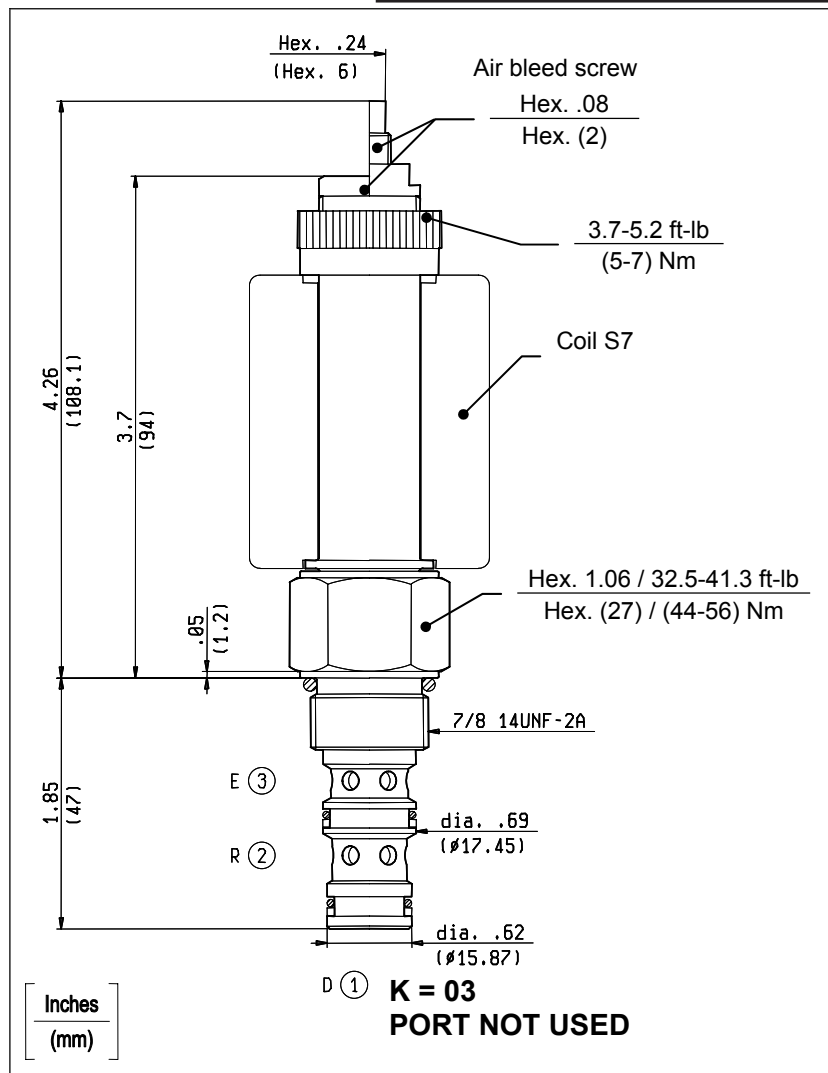


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

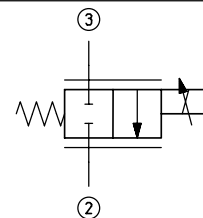
VEP-5A-2Q-09-NC-6F

SIZE 10

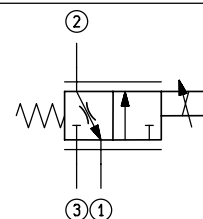
OD.92 - K - 77 - Y - 03



K = 03



K = 05



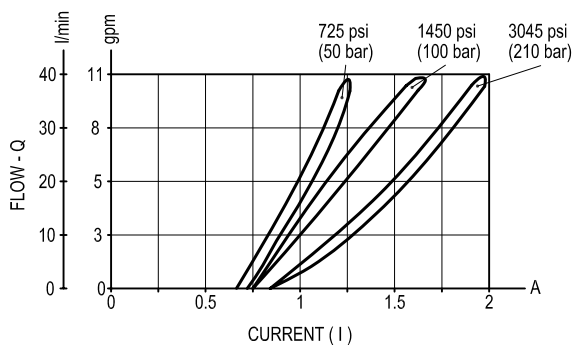
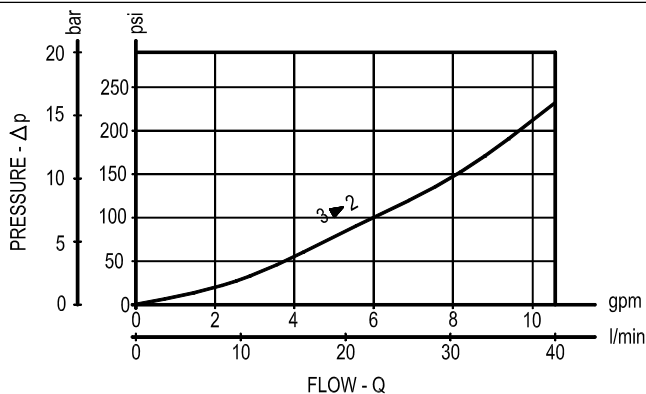
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	11 gpm (40 l/min)
I Max(±15%) for 12 V DC coil	2 A
I Min(±15%) for 12 V DC coil	0.8 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

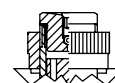


Y

ORDERING OPTIONS

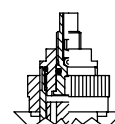
03

Standard



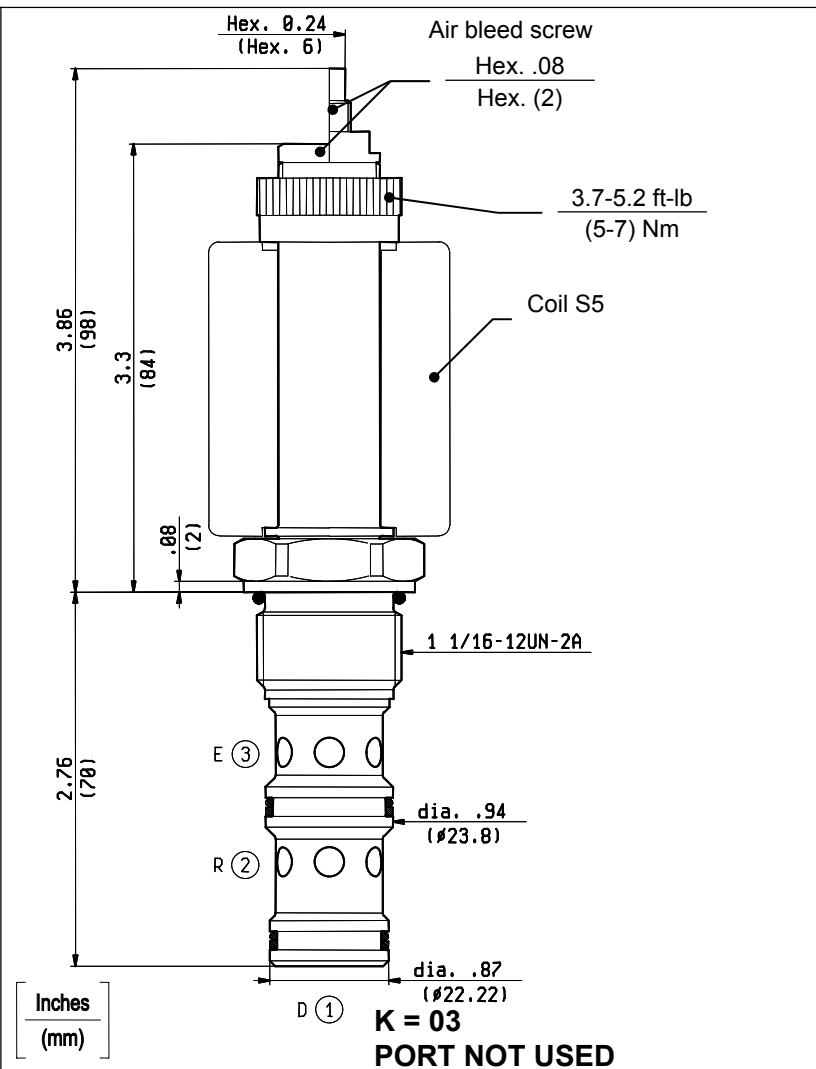
04

Knob Style Manual Override

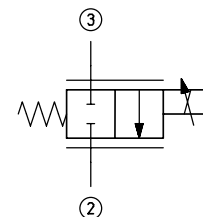


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

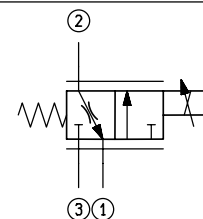
VEP-5A-2Q-12A-NC-6F SIZE 12 OD.92 - K - 12 - Y - 00



K = 03



K = 05



TECHNICAL DATA

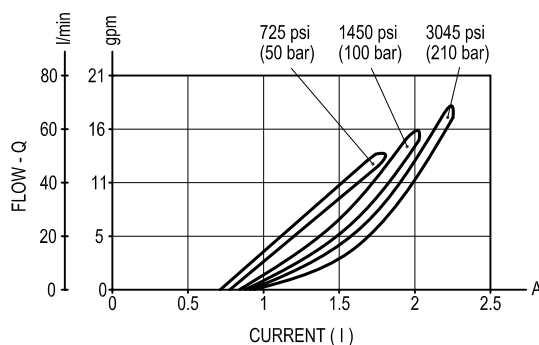
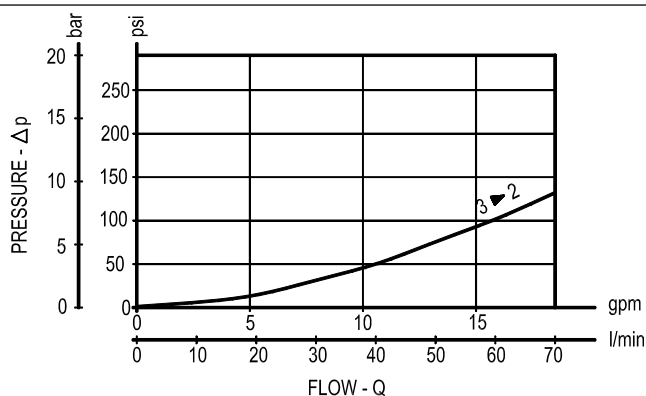
Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow	19 gpm (70 l/min)
I Max(±15%) for 12 V DC coil	2.1 A
I Min(±15%) for 12 V DC coil	0.7 A
Recommended PWM frequency	130-170 Hz
Cavity - Tooling (CA-12A-3N)	page CT.A.003.U
Line bodies	page MN1.A...
Weight	0.904 lbs (0.410 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)

Filtration : 10 µm nominal or better page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

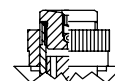
N.B. It is recommended to bleed air carefully before operation.



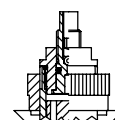
Y

ORDERING OPTIONS

03 Standard



04 Knob Style Manual Override

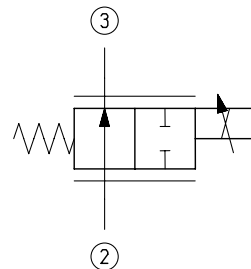
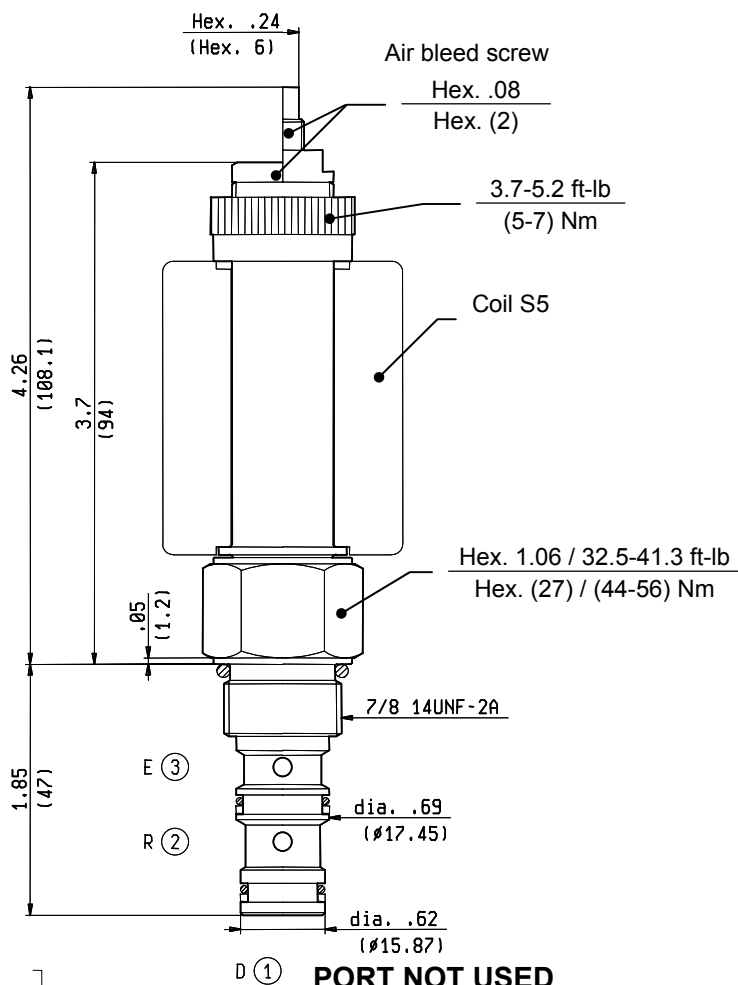


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

VEP-5A-2Q-09-NA-2F

SIZE 10

OD.92.02.77 - Y - 01



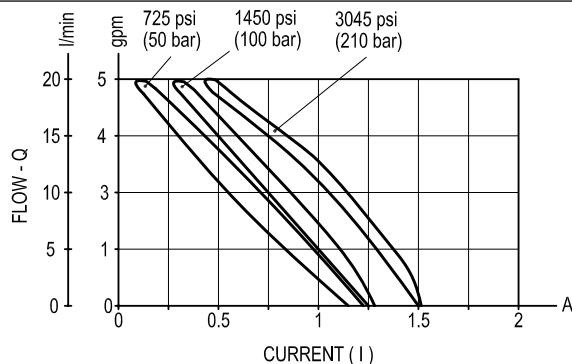
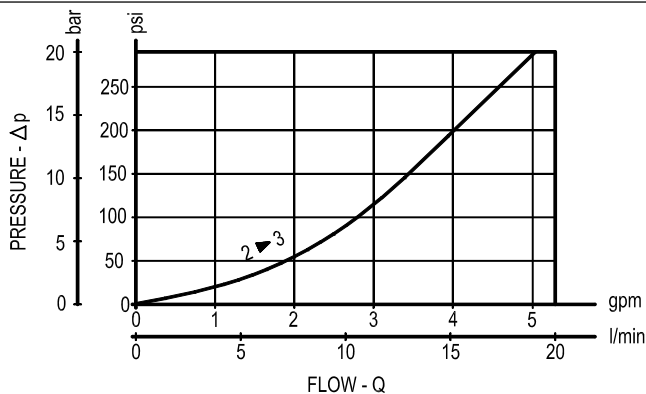
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	6 gpm (20 l/min)
I Max(±15%) for 12 V DC coil	1.4 A
I Min(± 15%) for 12 V DC coil	0.4 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

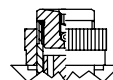


Y

ORDERING OPTIONS

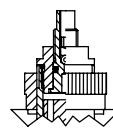
03

Standard



04

Knob Style Manual Override

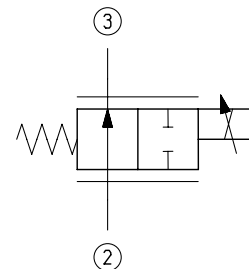
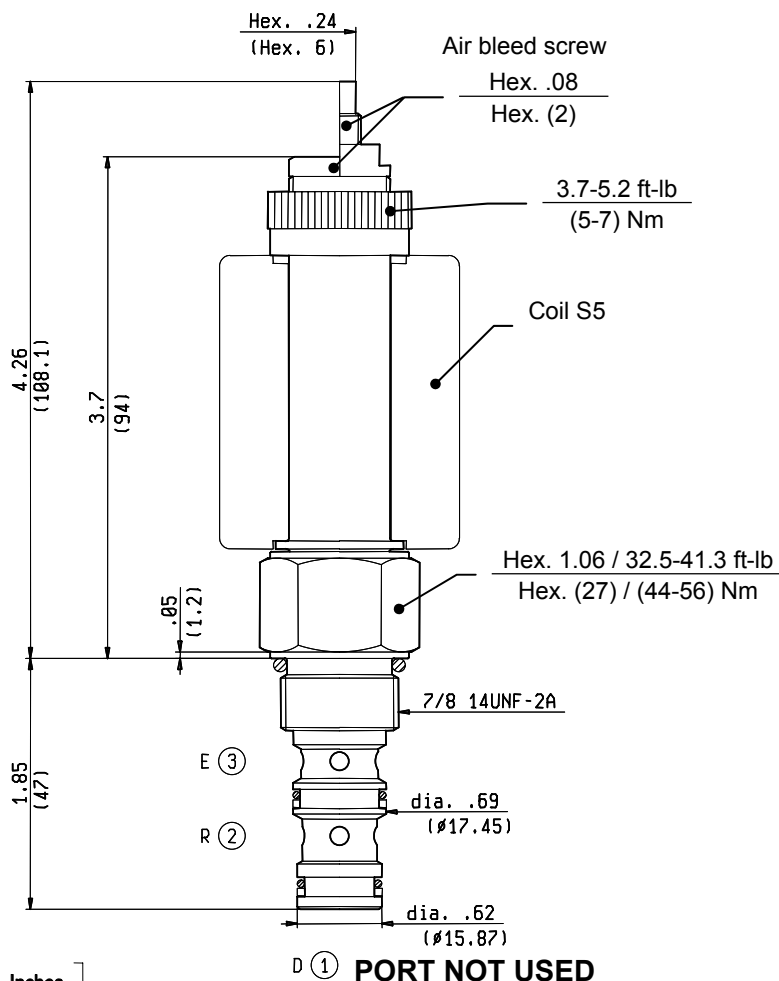


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

VEP-5A-2Q-09-NA-4F

SIZE 10

OD.92.02.77 - Y - 02



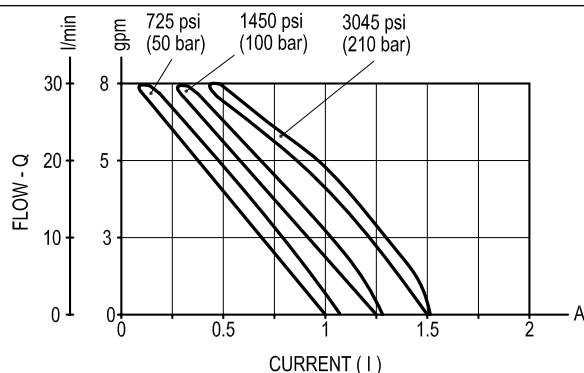
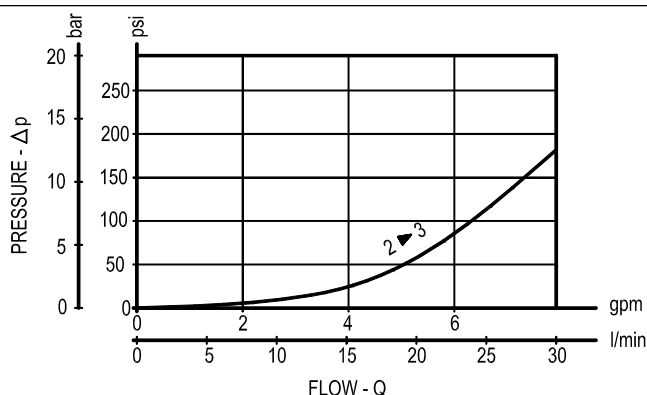
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	8 gpm (30 l/min)
I Max(±15%) for 12 V DC coil	1.4 A
I Min(±15%) for 12 V DC coil	0.4 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page CT.A.003.U
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

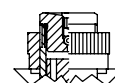
Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

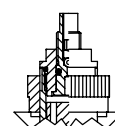


Y ORDERING OPTIONS

03 Standard



04 Knob Style Manual Override

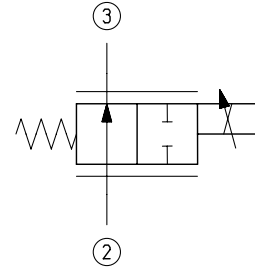
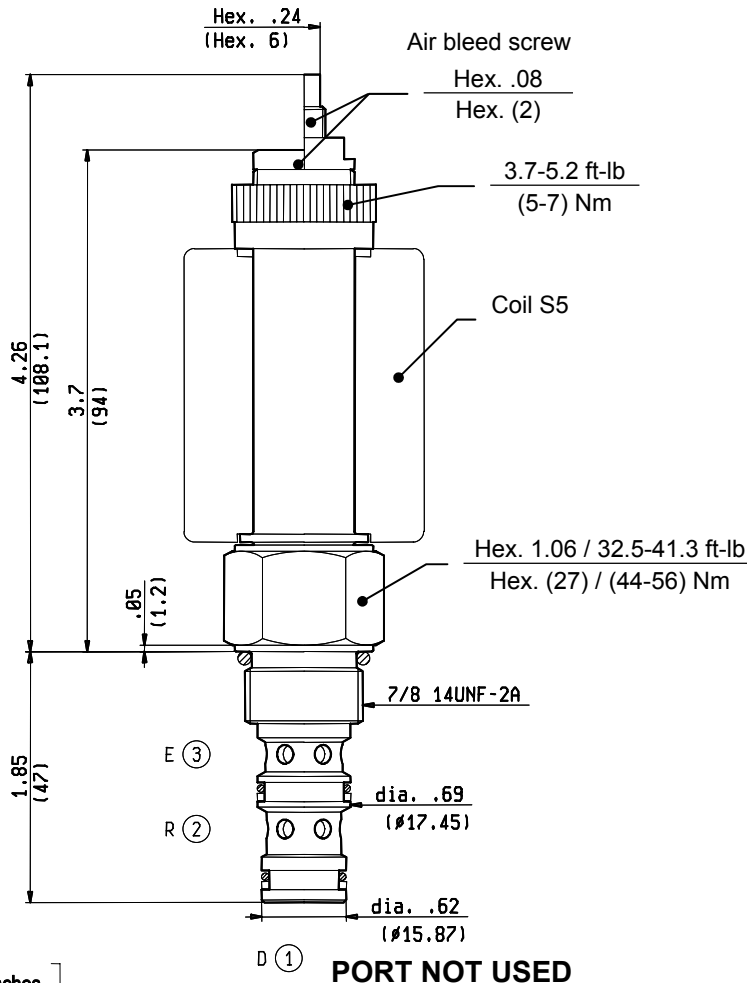


**PROPORTIONAL VALVES
NON COMPENSATED FLOW REGULATORS
COMMON CAVITY**

VEP-5A-2Q-09-NA-6F

SIZE 10

OD.92.02.77 - Y - 03



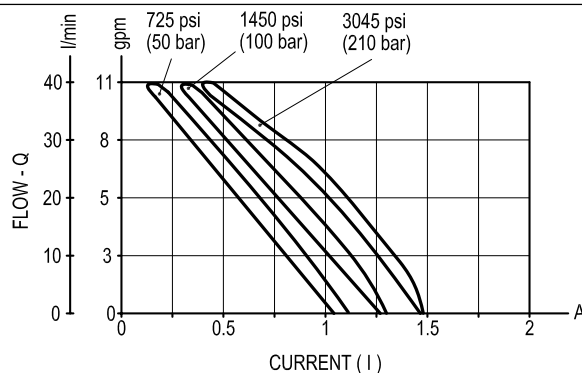
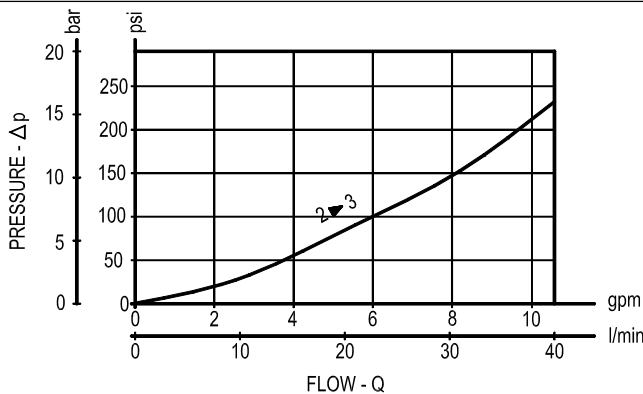
TECHNICAL DATA

Maximum Operating Pressure	3000 psi (210 bar)
Rated Flow (max)	11 gpm (40 l/min)
I Max(±15%) for 12 V DC coil	1.4 A
I Min(±15%) for 12 V DC coil	0.3 A
Recommended PWM frequency	150-180 Hz
Cavity - Tooling (CA-10A-3N)	page A10.012
Weight	0.672 lbs (0.305 kg)
Fluids - Temperatures	page 7.01.040
Testing Conditions - Seals	page 7.01.040
Internal Leakage at 3000 psi (210 bar) with 46 cSt oil	Max.11 in ³ /min (Max.180 cm ³ /min)
Filtration : 10 µm nominal or better	page 7.01.050

Coils must be ordered separately page 1.71.090

Mounting Position unrestricted

N.B. It is recommended to bleed air carefully before operation.

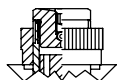


Y

ORDERING OPTIONS

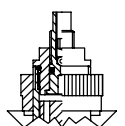
03

Standard



04

Knob Style Manual Override

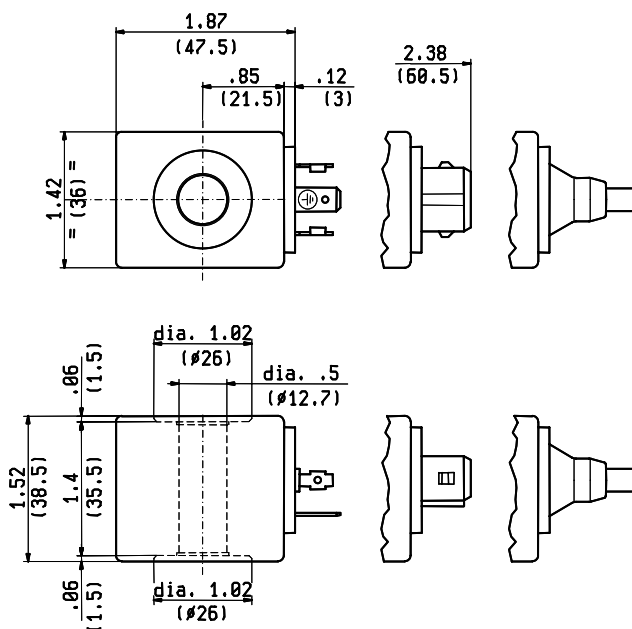


SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%

S8-356 SERIES - CLASS H

OD.02.17 - X - Y - Z

S8-H DIN 43650 - ISO 4400 S8-A AMP JUNIOR S8-G SINGLE LEAD



Inches
(mm)

TECHNICAL DATA

General coil information page 7.01.010

Weight 0.397 lbs (0.180 kg)

Encapsulating material IXEF

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages - Different connectors mounted on single lead.

Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life of coils.

X	Y	Connections	Circuit	Voltage
01	30	DIN 43650 - ISO 4400	Standard	DC-RAC
07	30	AMP JUNIOR	Standard	DC only
0G	03	SINGLE LEAD	Standard	DC only
14	30	DIN 43650 - ISO 4400	Bidirectional Diode	DC only
15	30	AMP JUNIOR	Bidirectional Diode	DC only
0H	03	SINGLE LEAD	Bidirectional Diode	DC only

Length
11.8 inches (300 mm)
Ext. diameter
0.25 inches (6.3 mm)
External and Internal Sheath
Silicone rubber

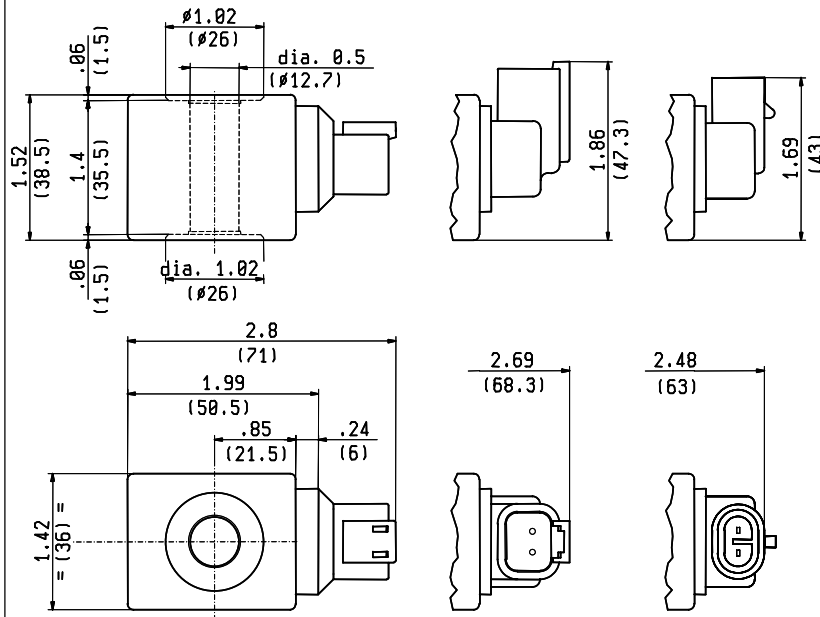
Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	7.4	20	1.62	1.19	221-230 (105-110)
OC	24 DC	28.5	20	0.85	0.61	
OV	24 RAC		20			
OW	110 RAC		20			
OZ	220 RAC		20			
OG	14 DC		20			
AC	26 DC	34.3	20	0.76	0.54	

SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%

S8-356 SERIES - CLASS H

OD.02.17 - X - Y - Z

S8-DTL DEUTSCH DT04-2P-L S8-DTV DEUTSCH DT04-2P-V S8-ASV AMP SUPERSEAL-V



Inches
(mm)

TECHNICAL DATA

General coil information page 7.01.010

Weight 0.397 lbs (0.180 kg)

Encapsulating material IXEF

Protection **IP 69K** DIN 40050 part 9
These coils have passed the
THERMAL SHOCK DUNK
TEST, see page 7.01.010

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages - Different connectors mounted on single lead.

Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life of coils.

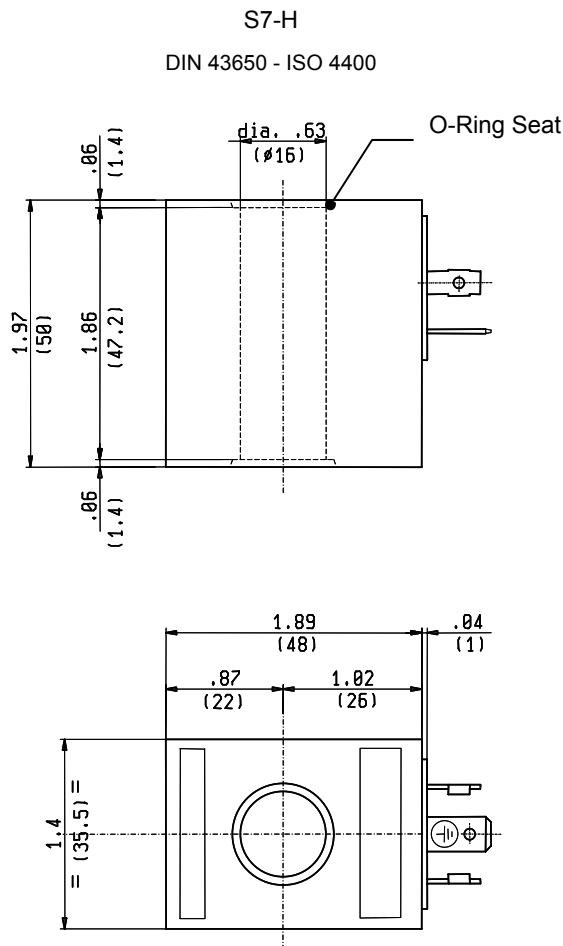
X	Y	Connections	Circuit	Voltage
20	30	DEUTSCH DT04-2P-L	Standard	DC only
20	3P	DEUTSCH DT04-2P-V	Standard	DC only
30	3P	AMP SUPERSEAL-V	Standard	DC only
22	30	DEUTSCH DT04-2P-L	Bidirectional Diode	DC only
22	3P	DEUTSCH DT04-2P-V	Bidirectional Diode	DC only
32	3P	AMP SUPERSEAL-V	Bidirectional Diode	DC only

Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	7.4	20	1.62	1.19	221-230 (105-110)
OC	24 DC	28.5	20	0.85	0.61	
AC	26 DC	34.3	20	0.76	0.54	

SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%

S7 SERIES

OD.02.07.01.30 - Z - 02



TECHNICAL DATA

General coil information page 7.01.010

Weight 0.728 lbs (0.330 kg)

Encapsulating material IXEF

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages - Working Duty ED 50%

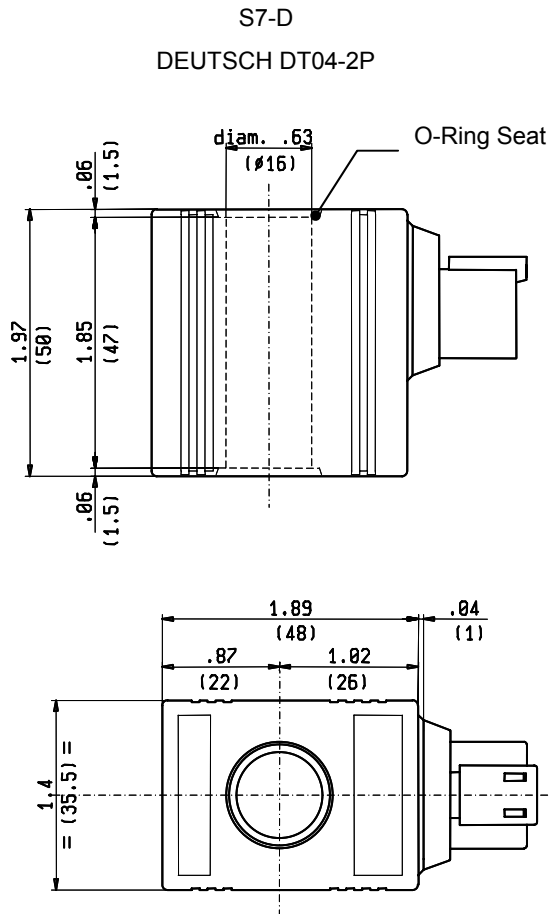
Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life of coils.

Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	5.1	30	2.23	1.55	266-275 (130-135)
OC	24 DC	19.3	30	1.22	0.79	

**SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%**

S7 SERIES

OD.02.07 - X - Y - Z - 02



Inches
(mm)

TECHNICAL DATA

General coil information page 7.01.010

Weight 0.728 lbs (0.330 kg)

Encapsulating material see table

Protection **IP 69K** DIN 40050 part 9
These coils have passed the
THERMAL SHOCK DUNK
TEST, see page 7.01.010

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages -
Working Duty ED 50%

Inlet voltage fluctuations must not exceed $\pm 10\%$ of
nominal voltage to obtain correct operation and long
life of coils.

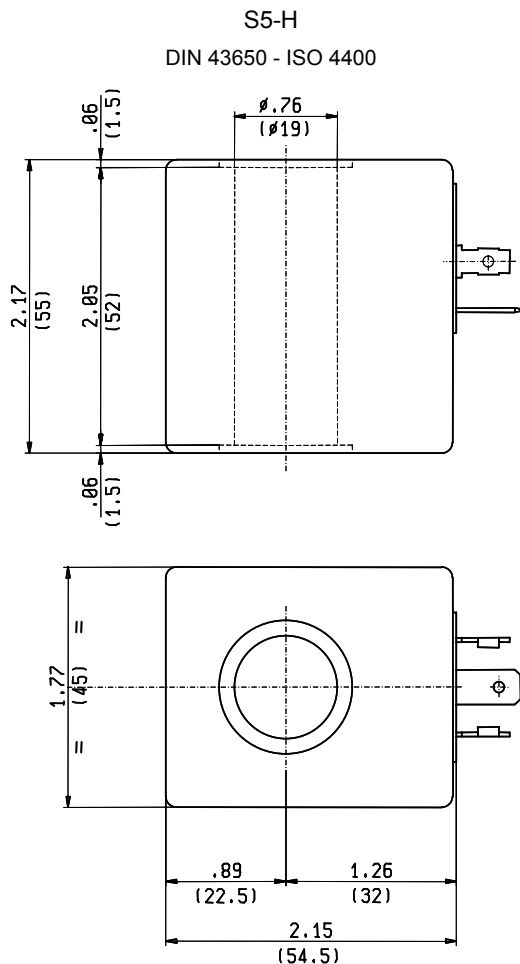
X	Y	Connections	Circuit	Voltage	Material
20	30	DEUTSCH DT04-2P	Standard	DC only	IXEF
22	30	DEUTSCH DT04-2P	Bidirectional Diode	DC only	IXEF

Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	5.1	30	2.23	1.55	266-275 (130-135)
OC	24 DC	19.3	30	1.22	0.79	

SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%

S5 SERIES

OD.02.09.01.30 - Z - 01



TECHNICAL DATA

General coil information page 7.01.010

Weight 0.728 lbs (0.330 kg)

Encapsulating material IXEF

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages - Working Duty ED 50%

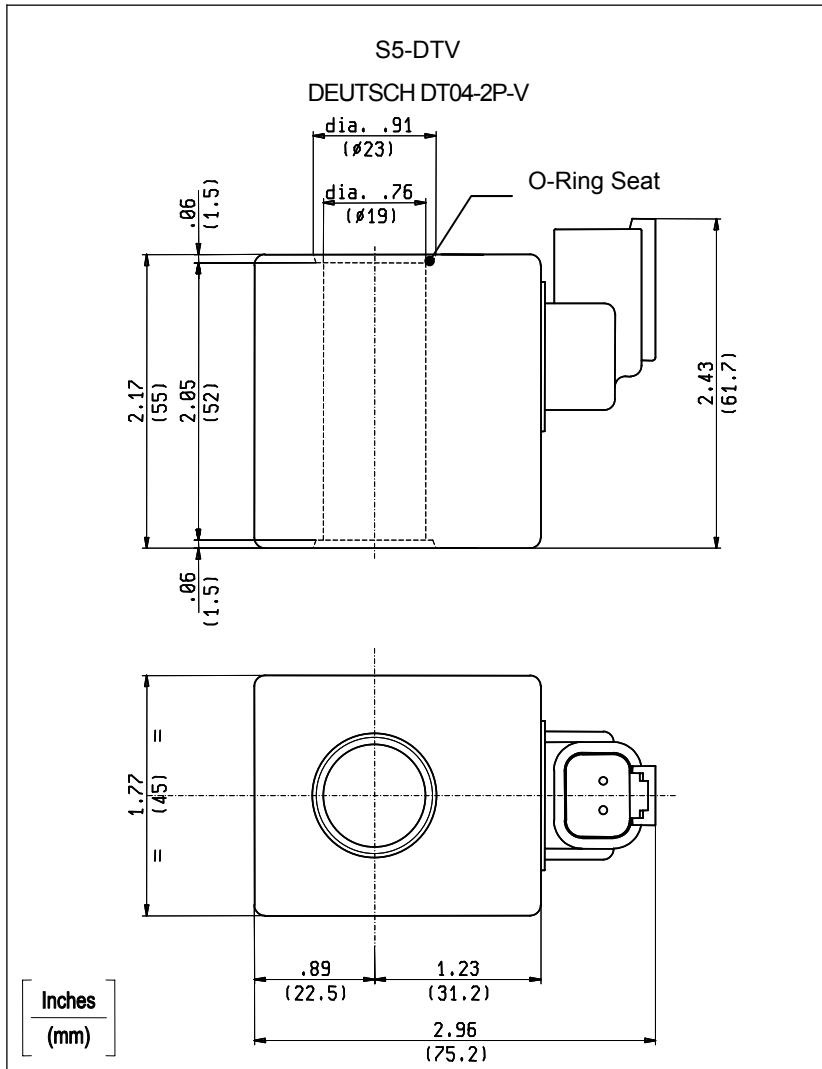
Inlet voltage fluctuations must not exceed $\pm 10\%$ of nominal voltage to obtain correct operation and long life of coils.

Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	6.2	23	1.92	1.41	198-205 (92-96)
OC	24 DC	24.9	23	0.96	0.71	

SOLENOID OPERATED VALVES
CONTINUOUS DUTY COILS - ED 100%

S5 SERIES

OD.02.09 - X - Y - Z - 01



TECHNICAL DATA

General coil information page 7.01.010

Weight 1.036 lbs (0.470 kg)

Encapsulating material see table

Protection **IP 69K** DIN 40050 part 9
These coils have passed the
THERMAL SHOCK DUNK
TEST, see page 7.01.010

HEAT INSULATION CLASS H 356 °F (180 °C)

Ambient temperature range -86 +140 °F (-30 +60 °C)

Available on request : Different Voltages -
Working Duty ED 50%

Inlet voltage fluctuations must not exceed $\pm 10\%$ of
nominal voltage to obtain correct operation and long
life of coils.

X	Y	Connections	Circuit	Voltage	Material
20	3P	DEUTSCH DT04-2P-V	Standard	DC only	IXEF
22	3P	DEUTSCH DT04-2P-V	Bidirectional Diode	DC only	IXEF

Z	Voltage V	Resistance Ω ($\pm 7\%$)	Power W	Current A		ΔT °F (°C)
	Nominal	Ta = 68-77 °F (20-25 °C)	Cold Coil	Cold Coil	Hot Coil	1 hour energized at Ta = 68-77 °F (20-25 °C) Nominal Voltage
OB	12 DC	6.2	23	1.92	1.41	198-205 (92-96)
OC	24 DC	24.9	23	0.96	0.71	

TECHNICAL DATA

WORKING DUTY

DIN VDE 0580

The working duty ED of a coil is the ratio between energized time t_i and full cycle time t_c where $t_c = t_i + t_r$ and t_r = de-energized time.

$$ED = (t_i / t_c) * 100 \%$$

ALL COILS ARE RATED FOR ED = 100 % PROVIDED THAT TEMPERATURE LIMIT OF THEIR INSULATION CLASS IS NOT EXCEEDED.

PROTECTION

DIN 40050 Part 9 - EN 60529

Protection class is designated by the letter IP followed by two digits: the first indicates protection against penetration of foreign solid bodies, the second against penetration of water. Protection class doesn't apply to explosion risks or to conditions such as moisture, corrosive agents, mildew etc.

IP65 MEANS WATER PROTECTION AGAINST:

- LOW PRESSURE JETS

Water at 43.5 psi (0.3 bar) pressure sprayed from a distance of 8.2 - 9.8 ft (2.5 - 3 m) from every direction. Coils CANNOT BE PLUNGED INTO WATER OR REMAIN UNDER WATER.

IP67 MEANS WATER PROTECTION AGAINST:

- 30 MINUTES IMMERSION AT 3.3 ft (1 m) DEPTH

IP69K MEANS WATER PROTECTION AGAINST:

- HIGH PRESSURE AND TEMPERATURE JETS

Water at 1160 - 1450 psi (80-100 bar) pressure and 167 - 185°F (75-85°C) temperature sprayed from a distance of 3.9 - 5.9 in (100 - 150 mm) from every direction.

PROTECTION

THERMAL SHOCK DUNK TEST

This test, well known and commonly applied in the construction, agricultural and mobile equipment markets, includes several steps:

- 1) Coil is continuously energized for 1 hour at nominal voltage (ambient temperature 77°F (25°C)) or heated for 2 hours in oven at 221°F (105°C) (coil not energized)
- 2) Coil is immediately immersed in water at 68 - 77°F (20 - 25°C) for 30 minutes (minimum depth 11.8 in (300 mm))
- 3) Coil, when still wet, is tested for moisture ingress and dielectric breakdown with the "Hypot test". Using an instrument for testing dielectric strength, 500 VDC is supplied between winding and external surface of the coil and current leakage is measured. Current leakage must not exceed 100 micro-amps
- 4) Complete cycle is repeated for 5 times minimum on a sample of 10 coils minimum

All coils with DIN 43650 connector correctly mounted have IP65 protection.

S8-356, S7 and S5 coils with integrated Deutsch DT04-2P connector have IP69K protection and have passed the thermal shock dunk test.

INLET VOLTAGE

To obtain correct operation and long life of coils it is necessary that operating voltage fluctuations do not exceed $\pm 10 \%$ of nominal voltage.

HEAT INSULATION

DIN VDE 0580

All COILS

COMPLETE COIL	CLASS	H	365°F (180°C)
Copper wire			392°F (200°C)

These are the maximum allowable absolute temperatures $T = T_A + \Delta T$ where T_A = ambient temperature and ΔT = temperature rise due to operation.

For example, if $T_A = 104^\circ\text{F}$ (40°C) we obtain $\Delta T_{\text{max}} = 239^\circ\text{F}$ (115°C) if we have to comply with the limit of 311°F (155°C) and $\Delta T_{\text{max}} = 284^\circ\text{F}$ (140°C) if we have to comply with the limit of 365°F (180°C).

The temperature rise ΔT is calculated from resistance at ambient temperature and resistance at stabilized temperature, measured according to DIN VDE 0580:

- coil is mounted on a standard cartridge valve size 06 inserted in a standard steel manifold on a wooden surface.
- coil is kept energized for 1 hour at nominal voltage, with ambient temperature $T_A = 68 - 77^\circ\text{F}$ ($20-25^\circ\text{C}$) and natural ventilation.

CLASS H COILS ARE NOT RATED FOR CONTINUOUS DUTY ED = 100 % IF AMBIENT TEMPERATURE EXCEEDS THE VALUE $T_x = 365 (180) - \Delta T \text{ } ^\circ\text{F} (^\circ\text{C})$

IN ANY CASE FREE HEAT EXCHANGE AND NATURAL VENTILATION ARE NECESSARY FOR THE CORRECT OPERATION OF COILS.

EXTERNAL TEMPERATURE of coils is not directly related with ΔT . After few minutes of continuous energization temperatures up to $176-212^\circ\text{F}$ ($80-100^\circ\text{C}$) can be reached, so care should be taken to avoid accidental contact of people with hot surfaces.

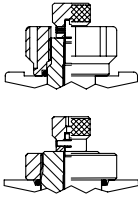
AC SERVICE

All OIL CONTROL's solenoid valves are designed to operate only with DC power supply. All windings are DC.

AC service is possible using DIN 43650 connectors with rectifier (see page 1.71.010).

TECHNICAL DATA

SCREW-OUT KNOB STYLE



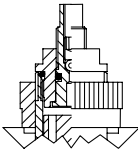
AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally closed series 8A / 8I
- 2 way 2 position direct acting poppet style normally closed series 8I
- 2 way 2 position direct acting double lock normally open series 8I
- 3 way 2 position spool style series 8I / 7I
- 4 way 2 position spool style series 8I / 7I

OPERATION

To operate manual override, screw out the knob turning it counterclockwise.
To return to normal valve operation, turn the knob clockwise.

SCREW-IN STYLE



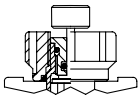
AVAILABLE ON FOLLOWING MODELS:

- Proportional valves series 5A

OPERATION

To operate manual override, screw in the pin turning it clockwise with wrench.
To return to normal valve operation, turn the bolt counterclockwise.

PUSH STYLE

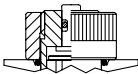


AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, push and hold override button.
To return to normal valve operation, simply release the button.



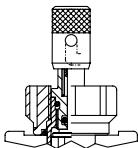
AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position direct acting double lock normally closed series 7A
- 3 way 2 position direct acting poppet style series 7A

OPERATION

To operate manual override, push and hold override button with tool.
To return to normal valve operation, simply release the button.

PUSH AND TWIST STYLE



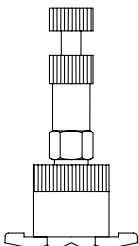
AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override button, turn clockwise and release.
To return to normal valve operation, push override button, turn counterclockwise and release.

PUSH AND PULL STYLE



AVAILABLE ON FOLLOWING MODELS:

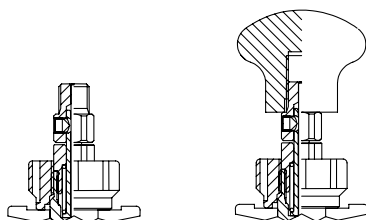
- 4 way 3 position spool style series 8A / 7I

OPERATION

To operate manual override, push to override S2 coil or pull to override S1 coil and hold override button.
To return to normal valve operation, simply release the button.

TECHNICAL DATA

PULL STYLE CABLE OPERATED HAND OPERATED



AVAILABLE ON FOLLOWING MODELS:

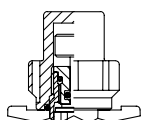
- 2 way 2 position pilot operated normally closed series 8A size 06

OPERATION

To operate manual override, pull and hold the knob. This override is not detented. Force required to operate is approximately 11.2 lbs (50 N).

This override can also be remote operated by a cable fixed to the M8 thread. In this case the spring may not provide enough force to overcome internal cable friction and the user must provide an external means of returning the cable.

SAFETY PUSH STYLE



AVAILABLE ON FOLLOWING MODELS:

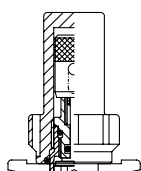
- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, screw out the knob protection after removing wire-locking and push and hold override button.

To return to normal valve operation, simply release the button.

SAFETY PUSH AND TWIST STYLE



AVAILABLE ON FOLLOWING MODELS:

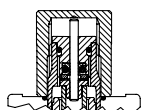
- 2 way 2 position pilot operated normally open series 8A / 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

To operate manual override, screw out the knob protection after removing wire-locking and turn clockwise and release override button.

To return to normal valve operation, push override button, turn counterclockwise and release.

SAFETY SCREW-IN STYLE



AVAILABLE ON FOLLOWING MODELS:

- 2 way 2 position pilot operated normally open series 8I
- 2 way 2 position direct acting poppet style normally open series 8I
- 2 way 2 position direct acting double lock normally closed series 8I

OPERATION

Safety manual override has been designed to avoid accidental operation of the emergency device.

Manual override can be operated only screwing out the knob, removing the coil and screwing the knob completely in again.

To return to normal valve operation it is necessary to turn out the knob and mount the coil again.

TECHNICAL DATA

HYDRAULIC FLUID

GENERAL PROPERTIES

Hydraulic fluid must have physical, lubricating and chemical properties suitable for use in hydraulic systems such as, for example

MINERAL BASED HYDRAULIC OILS HL DIN 51524 Part 1

MINERAL BASED HYDRAULIC OILS HLP DIN 51524 Part 2

VISCOSITY CLASS ISO 3448 - DIN 51519

ISO viscosity class is expressed by ISO VG followed by one number representing the medium kinematic viscosity at 104°F 40°C in mm²/s or centiStokes cSt

VISCOSITY CLASS	KINEMATIC VISCOSITY		
	Maximum at 32°F (0°C)	Medium at 104°F (40°C)	Minimum at 212°F (100°C)
ISO VG 10	90	10	2.4
ISO VG 22	300	22	4.1
ISO VG 32	420	32	5.0
ISO VG 46	780	46	6.1
ISO VG 68	1400	68	7.8
ISO VG 100	2560	100	9.9

FUNCTIONAL TESTING - TEMPERATURES - INTERNAL LEAKAGE

FUNCTIONAL TESTING

All performance curves in this catalogue are obtained using mineral based hydraulic oil with 46 cSt viscosity at 104°F (40°C) (ISO VG 46 viscosity class).

All valves go through functional testing at these conditions before shipment. Our test stands ensure 10 micron ABSOLUTE FILTRATION.

All performance curves represent the average of real values measured on tested valves. For this reason a tolerance of ± 15-29 psi (1-2 bar) for pressure drop and ± 20-30 ms for response time has to be considered normal and acceptable.

The electrical parameters and the response times of the ON-OFF solenoid valves are measured using 24 V DC coils at stabilized temperature and nominal voltage. Tests on proportional valves are performed using 12 V DC coils.

FLUID TEMPERATURE RANGE

-22°F (-30°C) to +212°F (+100°C)

AMBIENT TEMPERATURE RANGE

NON SOLENOID VALVES -22°F (-30°C) to +212°F (+100°C)

SOLENOID VALVES SEE COIL PAGES

Please consult us for different temperature ranges.

INTERNAL LEAKAGE - POPPET VALVES

MAXIMUM ALLOWABLE INTERNAL LEAKAGE of all poppet valves cannot exceed 0.06 in³/min (1 cm³/min) (15-20 drops/min) at the maximum working pressure with 46 cSt oil viscosity. Actual leakage is expected, on average, to be less than 10 drops/min and anyway tends to decrease after few seconds.

SEALS

O - RINGS

Acryl - Nitrile Butadiene Rubber NBR (BUNA-N) standard for temperatures between -22°F (-30°C) and +212°F (+100°C).

FLUOROCARBON FPM (Viton) and other compounds are available on request.

BACKUP RINGS

LUBRIFLON - PTFE

TECHNICAL DATA

CARTRIDGE INSTALLATION

It is recommended to follow these steps:

- Inspect the cartridge to ensure that no external contaminant is present.
- Check that O-ring and back-up rings are intact and correctly positioned. The O-ring should be towards the higher pressure port if only one back-up ring is present or between double back-up rings if both ports receive high pressure.

- Inspect cavity for burrs or other machining irregularities which could damage seals during installation.
- Dip the cartridge in clean oil.
- Screw the cartridge in BY HAND until the O-ring is met, then tighten to the torque specified in the cartridge catalogue page. Do not exceed maximum torque: overtightening may cause valve failure.

IMPORTANT: Continuous high frequency vibrations especially if combined with pulsating pressure, may cause cartridge unscrewing and consequent O-ring extrusion. Please consult our Technical Department.

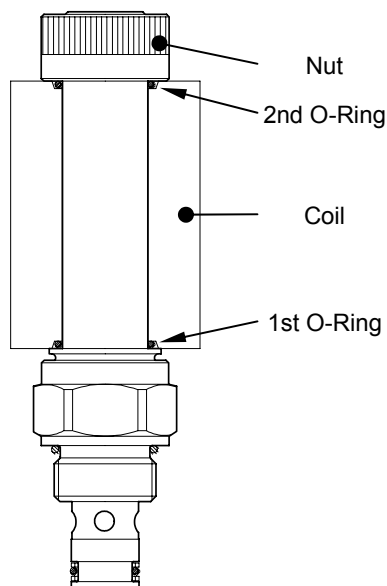
COIL INSTALLATION

COIL WITH O-RING SEATS (S7 - S5)

It is recommended to follow these steps:

- Insert 1st O-Ring (see drawing)
- Insert coil
- Insert 2nd O-Ring (see drawing)
- Tighten BY HAND coil retaining nut to the torque specified in the cartridge catalogue page.

Example:

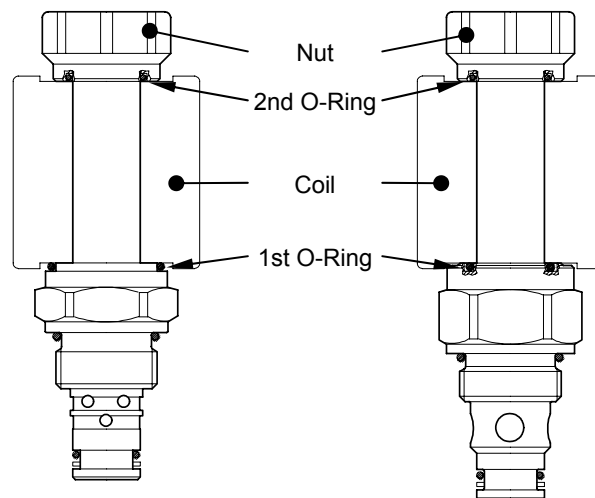


COIL WITHOUT O-RING SEATS (S8-356)

It is recommended to follow these steps:

- Insert 1st O-Ring (see drawing)
- Insert coil
- Tighten BY HAND coil retaining nut to the torque specified in the cartridge catalogue page. The 2nd O-Ring is fixed inside the nut.

Example:



IMPORTANT: O-rings are the only protection against water infiltration between tube and coil, which may lead in short time to coil failure. The proper mounting of both O-rings is therefore necessary to ensure normal life of coils when operating in presence of water, ice, moisture etc. Oil Control cannot guarantee any IP protection degree if both O-rings are not properly mounted on coils.

TECHNICAL DATA

GENERAL INFORMATION

Manufactures and users of hydraulic equipment admit that contamination is the most likely cause of malfunction or failure in hydraulic systems and reduces security and reliability of components and systems. Metal particles flowing throughout the circuit scratch moving surfaces so that contaminaton level, if not controlled, increases very rapidly.

It is strongly recommended to maintain contamination level at least at nominal values shown below, choosing adequate filtration products.

FILTRATION RATIO BETAx

It's the ratio between the number of particles before and after the filter with diameter larger than X micron.

ABSOLUTE FILTRATION RATING ISO 4572

It's the diameter X of the largest particle with BETAx \geq 75.

CONTAMINATION CLASS ISO 4406:1999

It's expressed by 3 scale numbers representing respectively: the number of particles equal to or larger than 4 μm (c); the number of particles equal to or larger than 6 μm (c); the number of particles equal to or larger than 14 μm (c), contained in 0.034 oz (1 ml) of fluid.

CONTAMINATION CLASS NAS 1638

It's expressed by one scale numbers representing the number of particles of different size ranges contained in 3.4 oz (100 ml) of fluid.

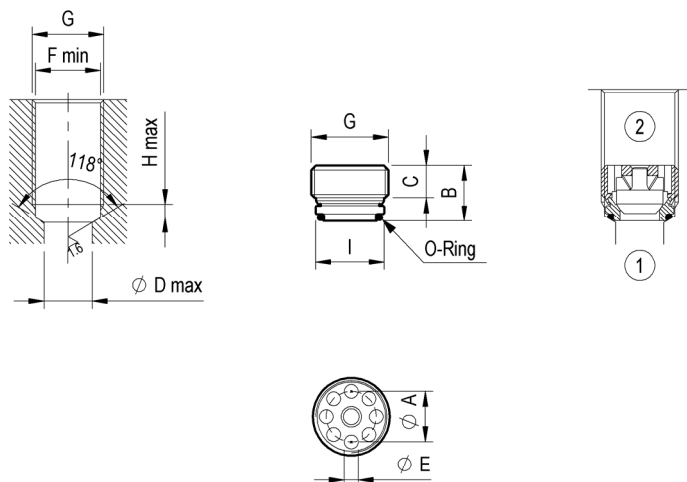
TYPE OF SYSTEM	MINIMUM REQUIRED	FILTRATION RECOMMENDATIONS FOR EXTENDED PRODUCT LIFE		
	NOMINAL FILTRATION (μm)	ABSOLUTE FILTRATION RATING ISO 4572 BETAx \geq 75	CONTAMINATION ACCORDING TO	
			ISO 4406:1999	NAS 1638
PROPORTIONAL VALVES	6	X = 6...10	18 / 16 / 13	7
Systems/components operating at HIGH PRESSURE > 3600 psi (250 bar)	10	X = 10...12	19 / 17 / 14	8
HIGH CYCLE APPLICATIONS				
Sistems/components with LOW dirt tolerance	15	X = 12...15	20 / 18 / 15	9
Systems/components operating at MEDIUM PRESSURE up to 3600 psi (250 bar)				
Systems/components operating at LOW PRESSURE < 1450 psi (100 bar)	25	X = 15...25	21 / 19 / 16	10
LOW CYCLE APPLICATIONS				
Systems/components with GOOD dirt tolerance.				

Insert Type valves

CHECK, POPPET TYPE

VUH1

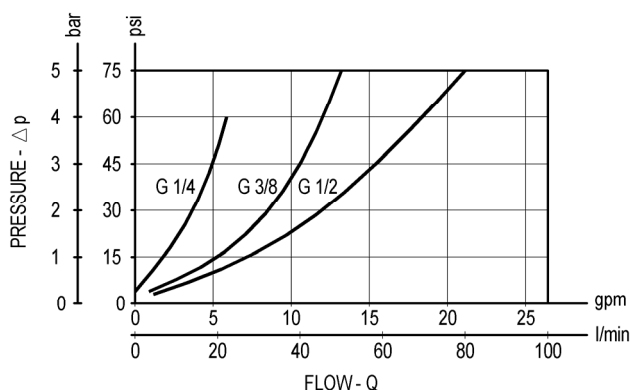
0T.U5.01.00 - Y - Z



Inches
(mm)

G	A	B	C	D	E	F	O-Ring	H	I	Weight	Inst. torque	Flow max.
G 1/4	.34 (8.5)	.35 (8.8)	.17 (4.2)	.28 (7)	.09 (2.2)	.46 (11.6)	dia .32x.06 Ø 8.1x1.6	.12 (3)	.45 (11.3)	0.011 lbs 0.005 Kg	4 ft-lb 6 Nm	5 gpm 20 l/min
G 3/8	.43 (10.8)	.47 (12)	.28 (7)	.35 (9)	.12 (3)	.6 (15.1)	dia .43x.06 Ø 11x1.5	.12 (3)	.58 (14.8)	0.033 lbs 0.015 Kg	4 ft-lb 6 Nm	13 gpm 50 l/min
G 1/2	.56 (14.2)	.58 (14.7)	.32 (8)	.47 (12)	.15 (3.8)	.74 (18.8)	dia .55x.06 Ø 14x1.5	.18 (4.5)	.73 (18.6)	0.033 lbs 0.015 Kg	7 ft-lb 10 Nm	21 gpm 80 l/min

When pressure at 1 rises above the spring bias pressure, the poppet is lifted and flow allowed from 1 to 2. The valve is closed (checked) from 2 to 1. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.



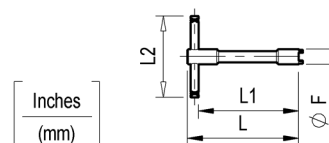
TECHNICAL DATA

Max. pressure: 5000 psi (350 bar)

Max. flow : see diagram

Note : valves are burnished.

FITTING TOOL DIMENSION



Type	F	L	L1	L2	Tool code
VUH1.G14	.45 (11.3)	4.72 (120)	4.33 (110)	2.36 (60)	AVA17
VUH1.G38	.59 (14.9)	4.72 (120)	4.25 (108)	3.15 (80)	AVA17-01
VUH1.G12	.73 (18.6)	4.72 (120)	4.25 (108)	3.15 (80)	AVA17-02

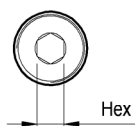
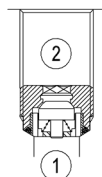
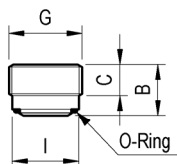
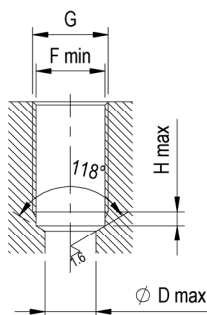
Z	Cracking pressure psi (bar)				
00	< 7 (< 0.5)				

Y	PORTS
09	G 1/4
02	G 3/8
03	G 1/2

CHECK, POPPET TYPE

VUB1

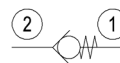
0T.U3.01.00 - Y - Z



Inches
(mm)

G	B	C	Hex	D	I	F	O-Ring	H	Weight	Inst. torque	Flow max.
G 1/4	.39 (10)	.24 (6)	.24 (6)	.28 (7)	.45 (11.5)	.46 (11.6)	dia .35x.04 Ø 9x1	.12 (3)	0.011 lbs 0.005 Kg	11 ft-lb 15 Nm	5 gpm 20 l/min
G 3/8	.45 (11.5)	.28 (7)	.24 (6)	.35 (9)	.59 (14.95)	.6 (15.1)	dia .43x.06 Ø 11x1.5	.12 (3)	0.033 lbs 0.015 Kg	15 ft-lb 20 Nm	13 gpm 50 l/min
G 1/2	.53 (13.5)	.32 (8)	.32 (8)	.47 (12)	.74 (18.7)	.74 (18.8)	dia .55x.06 Ø 14x1.5	.12 (3)	0.044 lbs 0.020 Kg	15 ft-lb 20 Nm	21 gpm 80 l/min

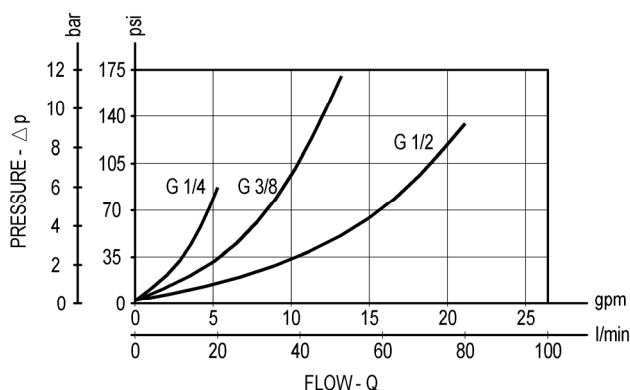
When pressure at 2 rises above the spring bias pressure, the poppet is lifted and flow allowed from 2 to 1. The valve is closed (checked) from 1 to 2. Precision machining and hardening processes allow virtually leak-free performance in the checked condition.



TECHNICAL DATA

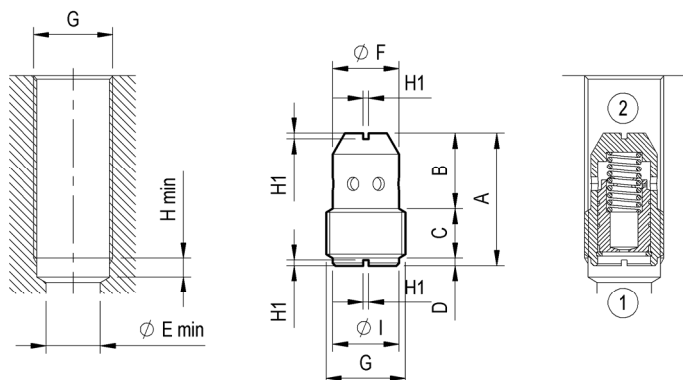
Max. pressure: 5000 psi (350 bar)

Max. flow : see diagram



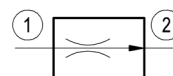
Z	Cracking pressure psi (bar)				
00	< 7 (< 0.5)				

Y	PORTS
09	G 1/4
02	G 3/8
03	G 1/2

**FLOW CONTROL, 2-WAY PRESSURE COMPENSATED
 FIXED SETTING**
SFC1
0T.F1.01.00 - Y - Z

 [Inches
 (mm)]

G	A	B	C	D	E	F	I	H	H1	Weight	Flow max.
G 1/4	1 (25.5)	.53 (13.5)	.34 (8.5)	.12 (3)	.32 (8)	.39 (10)	.43 (11)	.2 (5)	.06 (1.5)	0.024 lbs 0.011 Kg	3 gpm 10 l/min
G 3/8	1.1 (28)	.59 (15)	.41 (10.5)	.08 (2)	.43 (11)	.55 (14)	.57 (14.5)	.2 (5)	.06 (1.5)	0.053 lbs 0.024 Kg	4 gpm 16 l/min
G 1/2	1.38 (35)	.77 (19.5)	.52 (13)	.08 (2)	.55 (14)	.69 (17.5)	.69 (17.5)	.2 (5)	.06 (1.5)	0.106 lbs 0.048 Kg	12 gpm 45 l/min

A constant flow rate, regardless of system pressures, is established from 1 to 2 while a minimum pressure differential of 145 psi exists between the two ports. The valve cannot be adjusted for variable flow output. Flow from 2 to 1 is limited by the diameter of the selected control orifice and is not pressure compensated.


TECHNICAL DATA

Max. pressure: 3000 psi (210 bar)

Flow: not adjustable (see below)

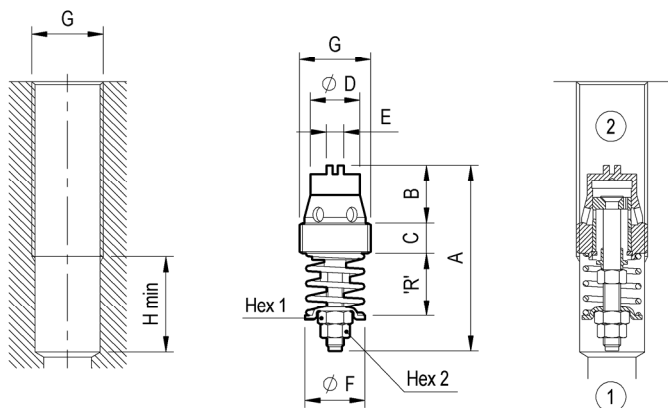
Z	REGULATED FLOW RANGE (± 10%) at 1450 psi (100 bar)									
	01	02	03	04	05	06	07	08	09	10
Y=09	.3 gpm	.5 gpm	.8 gpm	1.1 gpm	1.3 gpm	1.6 gpm	1.9 gpm	2.1 gpm	2.4 gpm	2.6 gpm
	1 l/min	2 l/min	3 l/min	4 l/min	5 l/min	6 l/min	7 l/min	8 l/min	9 l/min	10 l/min
Y=02	1.1 gpm	1.3 gpm	1.6 gpm	2.1 gpm	2.6 gpm	3.2 gpm	3.7 gpm	4.2 gpm		
	4 l/min	5 l/min	6 l/min	8 l/min	10 l/min	12 l/min	14 l/min	16 l/min		
Y=03	3.2 gpm	4.2 gpm	5.3 gpm	6.6 gpm	7.9 gpm	9.3 gpm	10.6 gpm	11.9 gpm		
	12 l/min	16 l/min	20 l/min	25 l/min	30 l/min	35 l/min	40 l/min	45 l/min		

Y	PORTS
09	G 1/4
02	G 3/8
03	G 1/2

FLOW CONTROL

VCD1

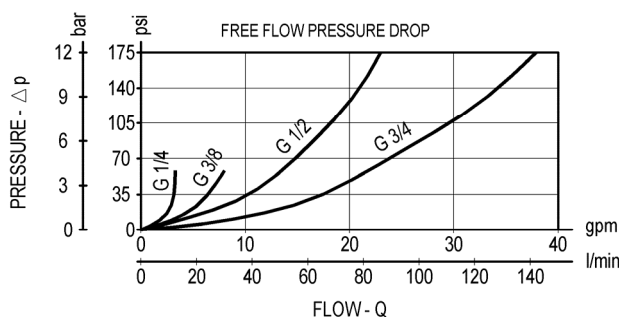
0T.F3.01 - X - Y - Z



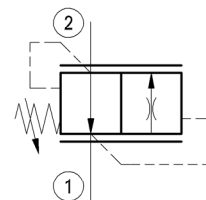
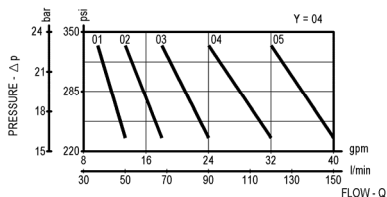
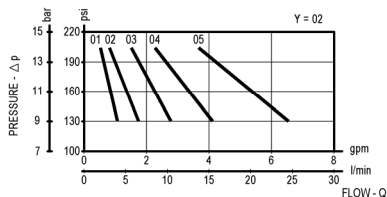
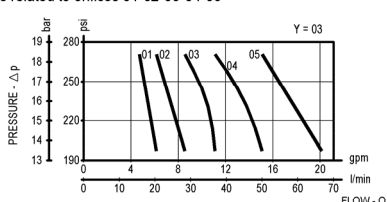
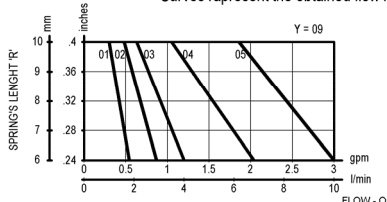
Inches
(mm)

G	A	B	C	D	E	F	Hex 1	Hex 2	H	Weight	Inst. torque	Flow max
G 1/4	1.51 (38.3)	.49 (12.5)	.28 (7)	.39 (10)	.16 (4)	.41 (10.3)	.22 (5.5)	.18 (4.5)	.87 (22)	0.027 lbs 0.012 Kg	4 ft-lb 6 Nm	3 gpm 10 l/min
G 3/8	1.69 (43)	.53 (13.5)	.28 (7)	.45 (11.5)	.16 (4)	.55 (14)	.28 (7)	.24 (6)	.91 (23)	0.055 lbs 0.025 Kg	6 ft-lb 8 Nm	7 gpm 25 l/min
G 1/2	1.93 (49)	.63 (16)	.32 (8)	.59 (15)	.24 (6)	.72 (18.2)	.28 (7)	.24 (6)	1.06 (27)	0.084 lbs 0.038 Kg	9 ft-lb 12 Nm	18 gpm 67 l/min
G 3/4	2.36 (60)	.83 (21)	.39 (10)	.79 (20)	.24 (6)	.91 (23)	.28 (7)	.24 (6)	1.22 (31)	0.154 lbs 0.070 Kg	11 ft-lb 15 Nm	40 gpm 150 l/min

These valves can be used either as lowering control devices or as two ways flow regulators. In the first option, they keep the lowering speed largely independent from the load, while, in the second option, they limit flow to the preset value which can be adjusted within the regulate flow path. On the opposite flow direction, from 2 to 1, the valve is acting as a free flow check reducing the pressure drop to low values (see diagram "ΔP - Q").



Performance curves: spring's length - flow (regulated flow) with nominal pressure of 50 bar.
Curves represent the obtained flow range related to orifices 01-02-03-04-05



TECHNICAL DATA

Max. pressure: 4500 psi (315 bar)

Flow: see below table "Z" and performance graph.

Special flow settings available. Please contact factory authorized representative for ordering code.

Note: on request are available as "in line mounted sleeves type configuration". Please contact factory for any information.

X ADJUSTMENTS

02 Locking nut + counter nut
see graphs ('R' - Q)

Y PORTS

09 G 1/4

02 G 3/8

03 G 1/2

04 G 3/4

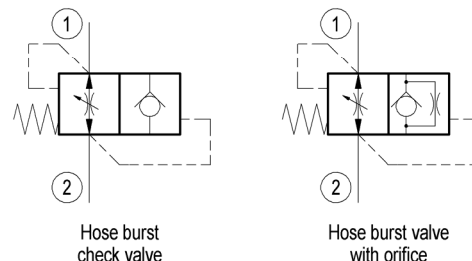
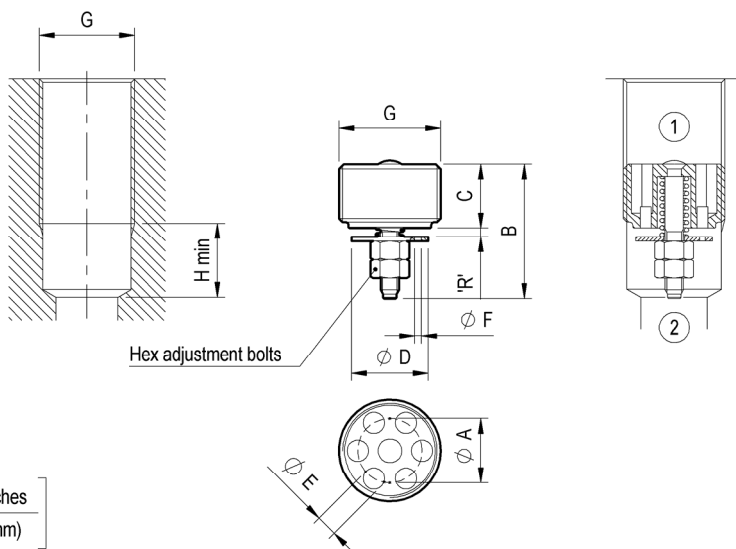
Z FLOW RANGE ADJUSTMENT gpm (l/min)

	Y=09	Y=02	Y=03	Y=04
01	.26-.42 (1-1.6)	.66-1.06 (2.5-4)	4.23-5.55 (16-21)	9.78-13.2 (37-50)
02	.42-.66 (1.6-2.5)	1.06-1.67 (4-6.3)	5.55-7.4 (21-28)	13.2-17.7 (50-67)
03	.66-1.06 (2.5-4)	1.67-2.64 (6.3-10)	7.4-9.78 (28-37)	17.7-23.8 (67-90)
04	1.06-1.67 (4-6.3)	2.64-4.23 (10-16)	9.78-13.2 (37-50)	23.8-31.7 (90-120)
05	1.67-2.64 (6.3-10)	4.23-6.61 (16-25)	13.2-17.7 (50-67)	31.7-39.6 (120-150)

CHECK, HOSE BURST

VPN1

OT.F4.01 - X - Y - Z



TECHNICAL DATA

Max. pressure: 4500 psi (315 bar)

Flow: see below graphs ('R'-Q)

Special flow settings available. Please contact factory authorized representative for ordering code.

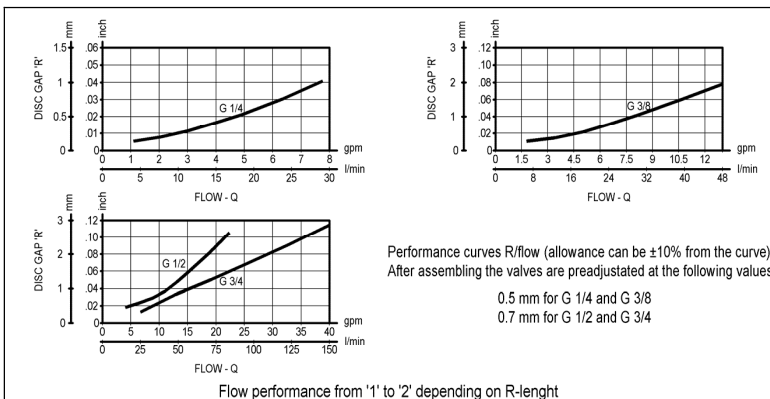
Note: on request are available as "in line mounted sleeves type configuration". Please contact factory for any information.

The valve is only supposed to be operated in case of hose failure. Should this circumstance occur, we strongly recommend to verify the integrity of the valve and eventually to replace it in the event that the pressure spike generated by the hose failure was such to damage permanently some valve components.

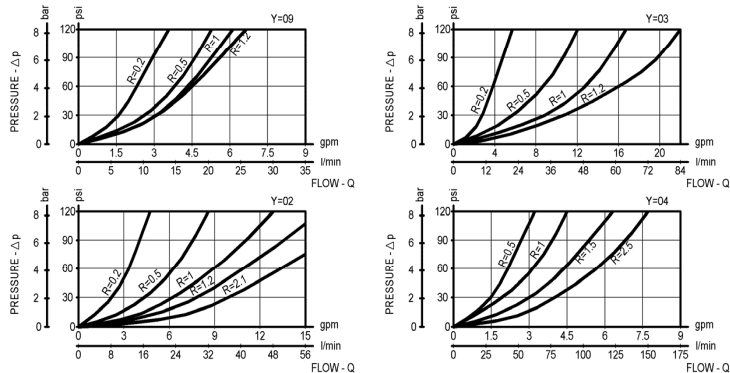
When the lowering speed exceeds preset value, as it might happen in case of hose failure, the flow is blocked. These valves should ideally be screwed directly into the actuator outlet port. Sealing parts are superfinished and enable to lock the load in the position where the actuator is in the moment of hose failure. These valves can be supplied, on request, with an orifice on the disc, allowing an emergency lowering of the load. It is recommended to fit a flow regulator valve downstream the hose burst valve, at the end of the flexible hose, to control the lowering speed at the nominal value. The "R" gap must be adjusted to allow a flow at least 50% over the nominal regulated flow from the actuator.

ADJUSTMENTS

03 Locking nut + counter nut
see graphs ('R' - Q)



Flow performance from '1' to '2' depending on R-length



PORTS

09	G 1/4
02	G 3/8
03	G 1/2
04	G 3/4

ORIFICE DIAMETER (mm)

00	no orifice	06	1
01	0.5	07	1.2
02	0.6	08	1.3
03	0.7	09	1.5
04	0.8	10	1.9
05	0.9	11	2

FITTING TOOL DIMENSION

Type	F	L	L1	L2	Tool's ordering code
VPN1.G14	.45 (11.3)	4.72 (120)	4.33 (110)	2.36 (60)	AVA18
VPN1.G38	.59 (15)	4.72 (120)	4.25 (108)	3.15 (80)	AVA18-01
VPN1.G12	.74 (18.8)	4.72 (120)	4.25 (108)	3.15 (80)	AVA18-02
VPN1.G34	.95 (24)	4.72 (120)	4.25 (108)	3.15 (80)	AVA18-03

Cavities & Tooling

STANDARD CAVITIES - TOOLS

TWO WAY		CA-08A-2N	CA-10A-2N	CA-12A-2N	CA-16A-2N	CA-20A-2N
<p>General tolerance : ± 0.012 (0.3 mm)</p> <p> $\text{H} \begin{matrix} \text{0.002} & (0.03) \end{matrix}$ $\text{L} \begin{matrix} \text{0.008} & (0.02) \end{matrix}$ </p>	A	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
	B	1.024 (26)	1.181 (30)	1.378 (35)	1.654 (42)	1.890 (48)
	C	$0.811^{+0.004}_{-0} (20.6^{+0.1}_{-0})$	$0.941^{+0.004}_{-0} (23.9^{+0.1}_{-0})$	$1.150^{+0.004}_{-0} (29.2^{+0.1}_{-0})$	$1.398^{+0.004}_{-0} (35.5^{+0.1}_{-0})$	$1.713^{+0.004}_{-0} (43.5^{+0.1}_{-0})$
	D1	$0.500^{+0.002}_{-0} (12.7^{+0.05}_{-0})$	$0.625^{+0.002}_{-0} (15.87^{+0.05}_{-0})$	$0.875^{+0.002}_{-0} (22.22^{+0.05}_{-0})$	$1.126^{+0.002}_{-0} (28.60^{+0.05}_{-0})$	$1.438^{+0.002}_{-0} (36.52^{+0.05}_{-0})$
	E	$0.102^{+0.012}_{-0} (2.6^{+0.3}_{-0})$	$0.102^{+0.012}_{-0} (2.6^{+0.3}_{-0})$	$0.130^{+0.012}_{-0} (3.3^{+0.3}_{-0})$	$0.130^{+0.012}_{-0} (3.3^{+0.3}_{-0})$	$0.134^{+0.012}_{-0} (3.4^{+0.3}_{-0})$
	F	0.512 (13)	0.591 (15)	0.787 (20)	0.787 (20)	0.866 (22)
	G	0.354 (9)	0.472 (12)	0.709 (18)	0.748 (19)	0.984 (25)
	G1	0.472 (12)	0.591 (15)	0.748 (19)	0.945 (24)	1.378 (35)
	H1	0.551 (14)	0.709 (18)	1.024 (26)	0.984 (25)	1.221 (31)
	L1	0.807 (20.5)	1.004 (25.5)	1.437 (36.5)	1.417 (36)	1.811 (46)
	L2	1.142 (29)	1.358 (34.5)	1.890 (48)	1.929 (49)	2.323 (59)
	M	0.059 (1.5)	0.059 (1.5)	-	-	-

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE				
DRILL 	Ø G1	Ø G1	Ø G1	Ø G1	Ø G1
FORM DRILL 	P-CA-08A-2N	P-CA-10A-2N	P-CA-12A-2N	P-CA-16A-2N	P-CA-20A-2N
FORM REAMER 	A-CA-08A-2N	A-CA-10A-2N	A-CA-12A-2N	A-CA-16A-2N	A-CA-20A-2N
PLUG TAP 	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A

* NOTE: Special heavy duty tools are available upon request, for steel drilling.

inches (mm)

STANDARD CAVITIES - TOOLS

THREE WAY SHORT		CA-08A-3C	CA-10A-3C	CA-12A-3C	CA-16A-3C	CA-20A-3C
<p>General tolerance : ± 0.012 (0.3 mm)</p> <p>$\varnothing 0.002$ (0.03) $\perp 0.008$ (0.02)</p>	A	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
	B	1.024 (26)	1.181 (30)	1.378 (35)	1.654 (42)	1.118 (48)
	C	0.811 ^{+0.004} ₋₀ (20.6 ^{+0.1} ₋₀)	0.941 ^{+0.004} ₋₀ (23.9 ^{+0.1} ₋₀)	1.150 ^{+0.004} ₋₀ (29.2 ^{+0.1} ₋₀)	1.398 ^{+0.004} ₋₀ (35.5 ^{+0.1} ₋₀)	1.713 ^{+0.004} ₋₀ (43.5 ^{+0.1} ₋₀)
	D1	0.625 ^{+0.002} ₋₀ (15.87 ^{+0.05} ₋₀)	0.750 ^{+0.002} ₋₀ (19.05 ^{+0.05} ₋₀)	0.937 ^{+0.002} ₋₀ (23.80 ^{+0.05} ₋₀)	1.126 ^{+0.002} ₋₀ (28.60 ^{+0.05} ₋₀)	1.438 ^{+0.002} ₋₀ (36.52 ^{+0.05} ₋₀)
	D2	0.562 ^{+0.002} ₋₀ (14.27 ^{+0.05} ₋₀)	0.688 ^{+0.002} ₋₀ (17.47 ^{+0.05} ₋₀)	0.875 ^{+0.002} ₋₀ (22.22 ^{+0.05} ₋₀)	1 ^{+0.002} ₋₀ (25.42 ^{+0.05} ₋₀)	1.313 ^{+0.002} ₋₀ (33.35 ^{+0.05} ₋₀)
	E	0.102 ^{+0.012} ₋₀ (2.6 ^{+0.3} ₋₀)	0.102 ^{+0.012} ₋₀ (2.6 ^{+0.3} ₋₀)	0.130 ^{+0.012} ₋₀ (3.3 ^{+0.3} ₋₀)	0.130 ^{+0.012} ₋₀ (3.3 ^{+0.3} ₋₀)	0.134 ^{+0.012} ₋₀ (3.4 ^{+0.3} ₋₀)
	F	0.472 (12)	0.512 (13)	0.827 (21)	0.650 (16.5)	0.787 (20)
	G	0.315 (8)	0.551 (14)	0.551 (14)	0.591 (15)	1.102 (28)
	G1	0.118 (3)	0.158 (4)	0.197 (5)	0.197 (5)	0.276 (7)
	G2	0.472 (12)	0.591 (15)	0.748 (19)	0.945 (24)	1.181 (30)
	H1	0.492 (12.5)	0.551 (14)	0.889 (22.5)	0.689 (17.5)	0.787 (20)
	H2	0.807 (26.5)	1.240 (31.5)	1.595 (40.5)	1.496 (38)	1.969 (50)
	L1	0.630 (16)	0.709 (18)	1.043 (26.5)	0.866 (22)	1.004 (25.5)
	L2	1.260 (32)	1.575 (40)	1.949 (49.5)	1.870 (47.5)	2.579 (65.5)
	L3	1.575 (40)	1.929 (49)	2.362 (60)	2.284 (58)	3.071 (78)
	M	-	-	-	0.079 (2)	-
	M1	-	-	-	0.079 (2)	-

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE				
DRILL 	\varnothing G2	\varnothing G2	\varnothing G2	\varnothing G2	\varnothing G2
FORM DRILL 	P-CA-08A-3C	P-CA-10A-3C	P-CA-12A-3C	P-CA-16A-3C	P-CA-20A-3C
FORM REAMER 	A-CA-08A-3C	A-CA-10A-3C	A-CA-12A-3C	A-CA-16A-3C	A-CA-20A-3C
PLUG TAP 	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A
* NOTE: Special heavy duty tools are available upon request, for steel drilling.					

inches (mm)

STANDARD CAVITIES - TOOLS

THREE WAY		CA-08A-3N	CA-10A-3N	CA-12A-3N	CA-16A-3N	CA-20A-3N
<p>General tolerance : ± 0.012 (0.3 mm)</p>	A	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	1-5/8 12 UN-2B
	B	1.024 (26)	1.181 (30)	1.378 (35)	1.654 (42)	2.126 (54)
	C	0.811 $^{+0.004}_{-0}$ (20.6 $^{+0.1}_{-0}$)	0.941 $^{+0.004}_{-0}$ (23.9 $^{+0.1}_{-0}$)	1.150 $^{+0.004}_{-0}$ (29.2 $^{+0.1}_{-0}$)	1.398 $^{+0.004}_{-0}$ (35.5 $^{+0.1}_{-0}$)	1.713 $^{+0.004}_{-0}$ (43.5 $^{+0.1}_{-0}$)
	D1	0.625 $^{+0.002}_{-0}$ (15.87 $^{+0.05}_{-0}$)	0.688 $^{+0.002}_{-0}$ (17.47 $^{+0.05}_{-0}$)	0.937 $^{+0.002}_{-0}$ (23.80 $^{+0.05}_{-0}$)	1.126 $^{+0.002}_{-0}$ (28.60 $^{+0.05}_{-0}$)	1.438 $^{+0.002}_{-0}$ (36.52 $^{+0.05}_{-0}$)
	D2	0.562 $^{+0.002}_{-0}$ (14.27 $^{+0.05}_{-0}$)	0.625 $^{+0.002}_{-0}$ (15.87 $^{+0.05}_{-0}$)	0.875 $^{+0.002}_{-0}$ (22.22 $^{+0.05}_{-0}$)	1.063 $^{+0.002}_{-0}$ (27.00 $^{+0.05}_{-0}$)	1.313 $^{+0.002}_{-0}$ (33.35 $^{+0.05}_{-0}$)
	E	0.102 $^{+0.012}_{-0}$ (2.6 $^{+0.3}_{-0}$)	0.102 $^{+0.012}_{-0}$ (2.6 $^{+0.3}_{-0}$)	0.130 $^{+0.012}_{-0}$ (3.3 $^{+0.3}_{-0}$)	0.130 $^{+0.012}_{-0}$ (3.3 $^{+0.3}_{-0}$)	0.134 $^{+0.012}_{-0}$ (3.4 $^{+0.3}_{-0}$)
	F	0.512 (13)	0.551 (14)	0.787 (20)	0.787 (20)	0.866 (22)
	G	0.236 (6)	0.315 (8)	0.551 (14)	0.669 (17)	0.984 (25)
	G1	0.472 (12)	0.591 (15)	0.748 (19)	0.945 (24)	1.181 (30)
	H1	0.591 (15)	0.709 (18)	1.102 (28)	1.004 (25.5)	1.220 (31)
	H2	1.142 (29)	1.339 (34)	2.087 (53)	2.126 (54)	2.835 (72)
	L1	0.768 (19.5)	0.925 (23.5)	1.437 (36.5)	1.398 (35.5)	1.811 (46)
	L2	1.319 (33.5)	1.555 (39.5)	2.421 (61.5)	2.520 (64)	3.445 (87.5)
	L3	1.693 (43)	1.910 (48.5)	2.874 (73)	2.953 (75)	3.937 (100)
	M	-	0.059 (1.5)	-	-	-
	M1	-	-	-	-	-
	*	-	-	-	-	1 (25.5)

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE				
DRILL 	Ø G1	Ø G1	Ø G1	Ø G1	Ø G1
FORM DRILL 	P-CA-08A-3N	P-CA-10A-3N	P-CA-12A-3N	P-CA-16A-3N	P-CA-20A-3N
FORM REAMER 	A-CA-08A-3N	A-CA-10A-3N	A-CA-12A-3N	A-CA-16A-3N	A-CA-20A-3N
PLUG TAP 	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A

* NOTE: Special heavy duty tools are available upon request, for steel drilling.

inches (mm)

STANDARD CAVITIES - TOOLS

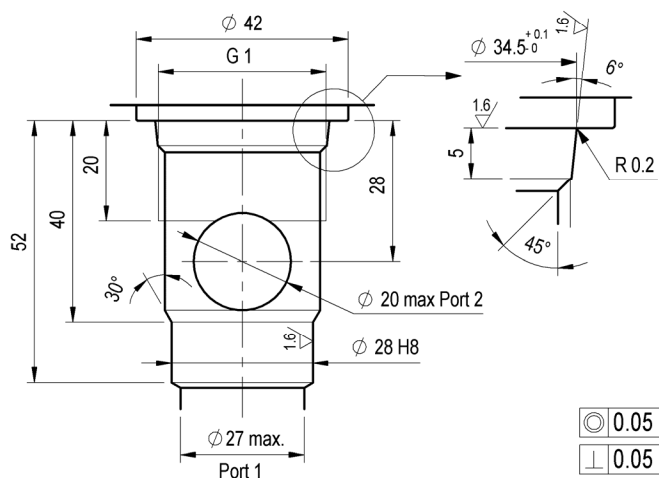
FOUR WAY		CA-08A-4N	CA-10A-4N	CA-12A-4N	CA-16A-4N	CA-20A-4N	
<p>General tolerance : ± 0.012 (0.3 mm)</p> <p>$\text{○} 0.002$ (0.03) $\text{⊥} 0.008$ (0.02)</p>		A	3/4-16 UNF-2B	7/8-14 UNF-2B	1-1/16 12 UN-2B	1-5/16 12 UN-2B	
		B	1.024 (26)	1.181 (30)	1.378 (35)	1.654 (42)	1.890 (48)
		C	$0.811^{+0.004}_{-0}$ (20.6 $^{+0.1}_{-0}$)	$0.941^{+0.004}_{-0}$ (23.9 $^{+0.1}_{-0}$)	$1.150^{+0.004}_{-0}$ (29.2 $^{+0.1}_{-0}$)	$1.398^{+0.004}_{-0}$ (35.5 $^{+0.1}_{-0}$)	$1.713^{+0.004}_{-0}$ (43.5 $^{+0.1}_{-0}$)
		D1	$0.625^{+0.002}_{-0}$ (15.87 $^{+0.05}_{-0}$)	$0.750^{+0.002}_{-0}$ (19.05 $^{+0.05}_{-0}$)	$0.937^{+0.002}_{-0}$ (23.80 $^{+0.05}_{-0}$)	$1.126^{+0.002}_{-0}$ (28.60 $^{+0.05}_{-0}$)	$1.438^{+0.002}_{-0}$ (36.52 $^{+0.05}_{-0}$)
		D2	$0.562^{+0.002}_{-0}$ (14.27 $^{+0.05}_{-0}$)	$0.688^{+0.002}_{-0}$ (17.47 $^{+0.05}_{-0}$)	$0.875^{+0.002}_{-0}$ (22.22 $^{+0.05}_{-0}$)	$1.063^{+0.002}_{-0}$ (27.00 $^{+0.05}_{-0}$)	$1.313^{+0.002}_{-0}$ (33.35 $^{+0.05}_{-0}$)
		D3	$0.500^{+0.002}_{-0}$ (12.70 $^{+0.05}_{-0}$)	$0.625^{+0.002}_{-0}$ (15.87 $^{+0.05}_{-0}$)	$0.812^{+0.002}_{-0}$ (20.62 $^{+0.05}_{-0}$)	$1.0^{+0.002}_{-0}$ (25.42 $^{+0.05}_{-0}$)	$1.250^{+0.002}_{-0}$ (31.75 $^{+0.05}_{-0}$)
		E	$0.102^{+0.012}_{-0}$ (2.6 $^{+0.3}_{-0}$)	$0.102^{+0.012}_{-0}$ (2.6 $^{+0.3}_{-0}$)	$0.130^{+0.012}_{-0}$ (3.3 $^{+0.3}_{-0}$)	$0.130^{+0.012}_{-0}$ (3.3 $^{+0.3}_{-0}$)	$0.134^{+0.012}_{-0}$ (3.4 $^{+0.3}_{-0}$)
		F	0.512 (13)	0.591 (15)	0.748 (19)	0.787 (20)	0.866 (22)
		G	0.236 (6)	0.315 (8)	0.551 (14)	0.630 (16)	0.984 (25)
		G1	0.472 (12)	0.591 (15)	0.748 (19)	0.945 (24)	1.181 (30)
		H1	0.591 (15)	0.709 (18)	1.102 (28)	0.984 (25)	1.260 (32)
		H2	1.142 (29)	1.339 (34)	2.087 (53)	2.106 (53.5)	2.835 (72)
		H3	1.693 (43)	1.969 (50)	3.071 (78)	3.228 (82)	4.488 (114)
		L1	0.768 (19.5)	0.925 (23.5)	1.437 (36.5)	1.398 (35.5)	1.811 (46)
		L2	1.319 (33.5)	1.555 (39.5)	2.421 (61.5)	2.520 (64)	3.425 (87)
		L3	1.870 (47.5)	2.185 (55.5)	3.445 (87.5)	3.642 (92.5)	5.059 (128.5)
		L4	2.205 (56)	2.539 (64.5)	3.898 (99)	4.095 (104)	5.591 (142)
		M	-	-	-	-	-
		M1	-	-	-	-	-
		M2	-	-	-	-	-

TOOLS (ALUMINIUM/STEEL *)	ORDERING CODE				
DRILL 	Ø G1	Ø G1	Ø G1	Ø G1	Ø G1
FORM DRILL 	P-CA-08A-4N	P-CA-10A-4N	P-CA-12A-4N	P-CA-16A-4N	P-CA-20A-4N
FORM REAMER 	A-CA-08A-4N	A-CA-10A-4N	A-CA-12A-4N	A-CA-16A-4N	A-CA-20A-4N
PLUG TAP 	M-CA-08A	M-CA-10A	M-CA-12A	M-CA-16A	M-CA-20A
* NOTE: Special heavy duty tools are available upon request, for steel drilling.					

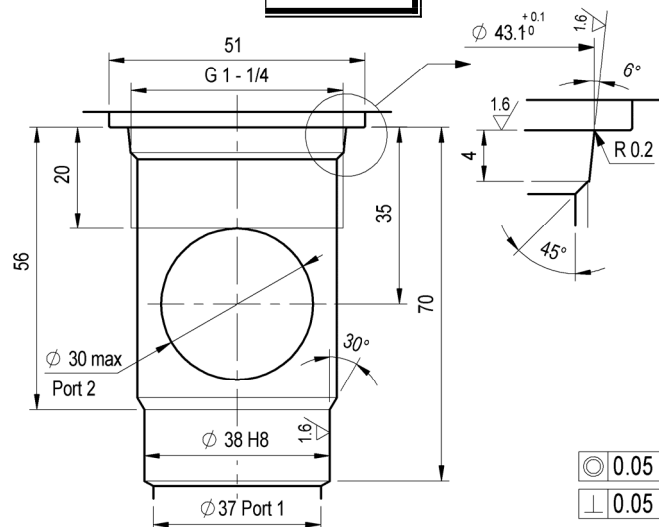
inches (mm)

SPECIAL CAVITIES

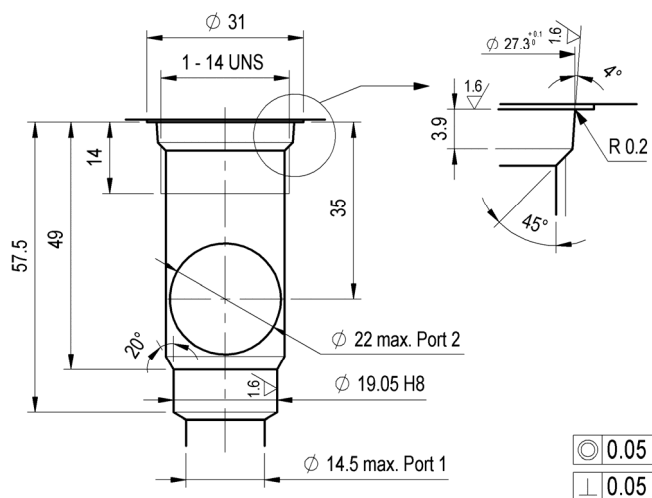
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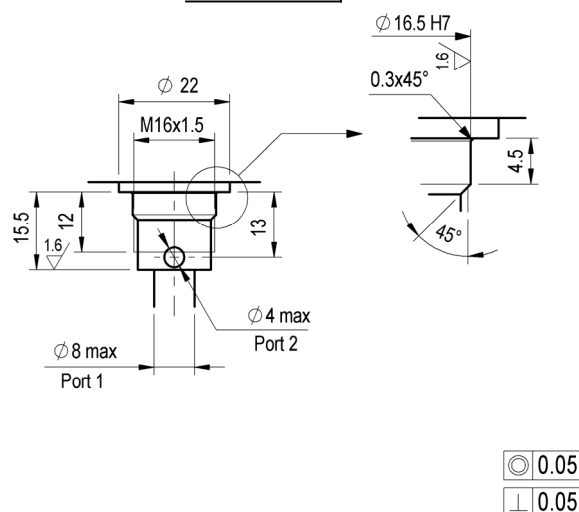
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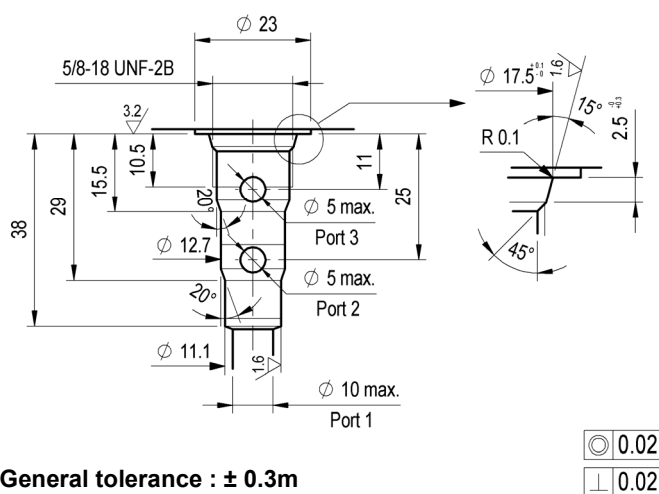
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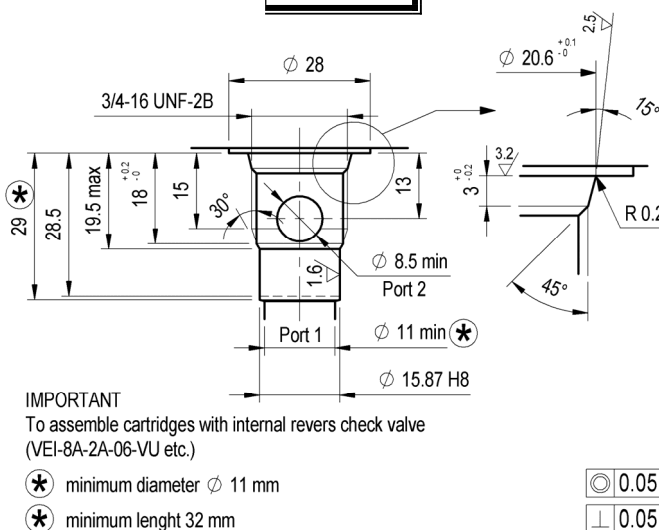
348



CA-07A-3N



019-E

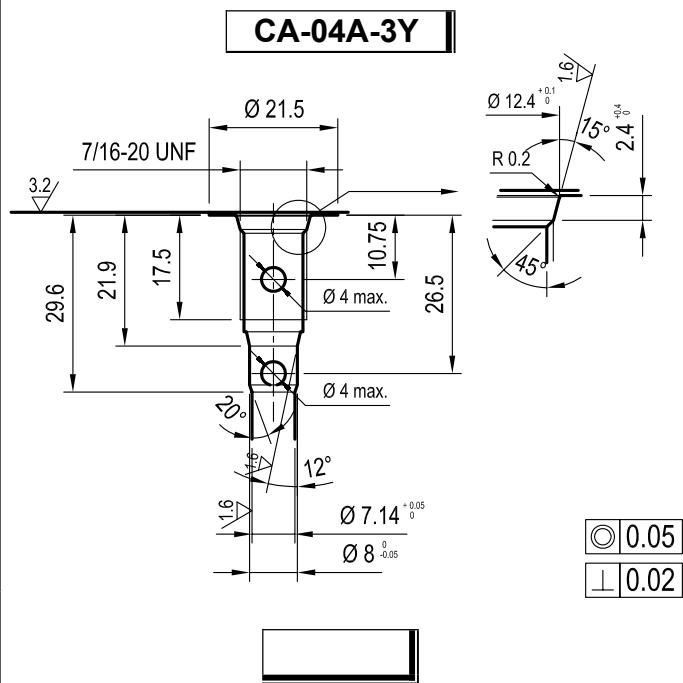


IMPORTANT
To assemble cartridges with internal revers check valve
(VEI-8A-2A-06-VU etc.)

- * minimum diameter \varnothing 11 mm
- * minimum lenght 32 mm

General tolerance : ± 0.3 mm

SPECIAL CAVITIES



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