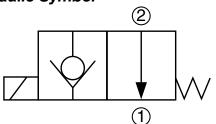
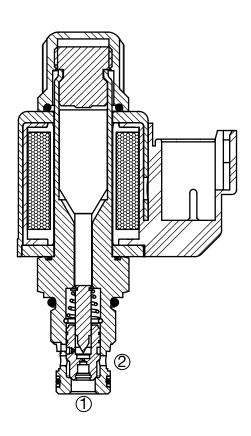
WS06Y-01

Poppet Type, Normally Open, Pilot Operated Up to 5 gpm (19 l/min) • 5000 psi (350 bar)







Description

A screw-in cartridge, solenoid operated, 2 way 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

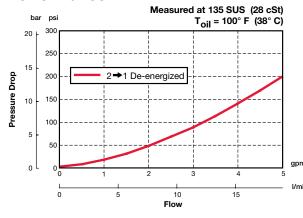
Operation

When de-energized the WS06Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated overcomes solenoid force.

Specifications

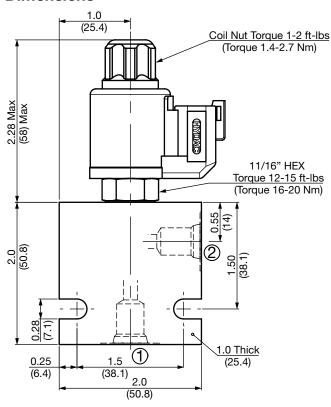
Opedineations			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	3.5 gpm (13.3 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (350 bar)		
Fluid Operating Temp. Range	-20° to 248°F (-29° to 120°C)		
Ambient Temperature Range	-20° to 140°F (-29° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw at 68°F (20°C)	984 mA at 12VDC; 492 mA at 24VDC		
Minimum Pull-in Current to Operate Valve	70% of nominal amperage		
Typical Response Time (Varies with Pressure and Flow)	Energized: 50ms De-Energized: 35ms		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406)		
Installation	No orientation restrictions		
Cavity	FC06-2 (see Line Bodies and Cavities section)		
Cavity Tools	Rougher: 02582046 Finisher: 02582047		
Cartridge Weight	2.7 oz (75 grams)		
Coil Weight	3.1 oz (88 grams)		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. Solid thermoplastic polyester back-up rings.		
Coil Material	Class N, 200°C high temperature magnet wire, steel shell, polyester encapsulation.		
Seal Kits Buna-N Viton®	FS062-N P/N: 02610184 FS062-V P/N: 02610185		

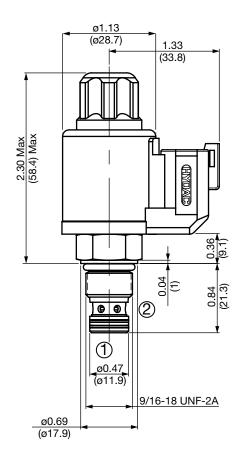
Performance



Solenoid Valves HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS06Y-01 M-C-N-24 DN</u>
Valve Model	
Override Opt	ion —
blank =	No manual override
M =	Manual override, push type
	(for availability consult factory)
Body & Ports	<u>; </u>
	Cartridge only
	SAE-4 Ports, aluminum body
SS4 =	SAE-4 Ports, steel body
Seals ———	
	Buna-N
V =	Viton®
Coil Voltage	
	No coil, cartridge only
DC 12 =	-
_24 =	
	105 VDC (only available with connector DG)
	205 VDC (only available with connector DG)
•	329 coils are DC. AC models require an external diode bridge
mounted outsid	e the coil)""

Coil Connector

DG = EN 175301-803-B (IP65 Rated)**

Leadwires (2) - 18" long (46 cm) AWG18, TYPE UL 1815 DC DL

(IP69K Rated)*

DN = Deutsch DT04-2P integral molded (IP69K Rated)*

Use mating plug EN 175301-803-B without diode bridge for

DC voltages P/N 02600570

Use mating plug EN 175301-803-B w/diode bridge for

AC voltages P/N 02600582

Coil Model 32-1329

For other coil connector types consult factory

** Mating Plugs sold separately

*Coils with internal transient suppression diode are available, consult factory.

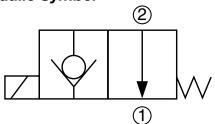
Standard Line Bodies*

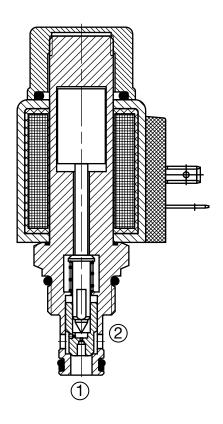
Code	Part No	Material	Pressure Rating	Weight
FH062-AS4	02600491	Aluminum, anodized	3500 psi (245 bar)	0.33 lbs (0.15 kg)
FH062-SS4	02600490	Steel, Zinc plated	6000 psi (420 bar)	0.97 lbs (0.45 kg)

WS08Y-01

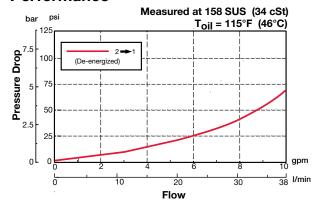
Poppet Type, Normally Open, Pilot Operated Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS08YR. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (130 to 290 psi (9 to 20 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

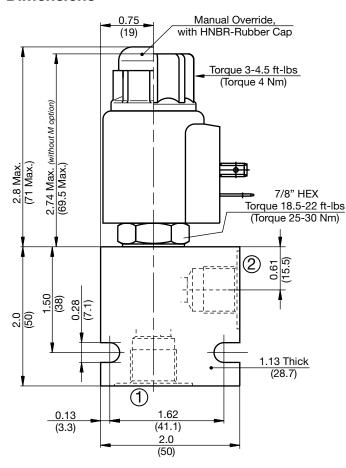
Features

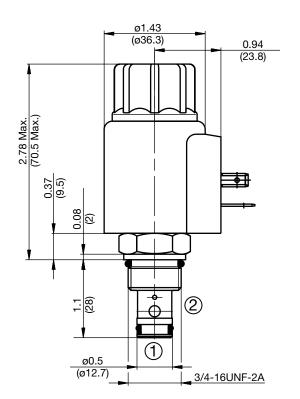
Push type manual override button, protected by rubber cap

<u>opoomoationo</u>			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	10 gpm (38 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized: 50ms De- 35ms Energized:		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406). Use with filter rated β 10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies and Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Solenoid Valves HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS08Y-01 M-C-N</u>	- <u>2</u>	<u>4 [</u>	<u>)</u> :
Valv	e Mo	del				
Ove	erride (blank M	=	tion ————————————————————————————————————			
Вос	AS6	= =	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body			
Sea	N V	=	Buna-N Viton®			
	12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)			
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC			
	DG DS	=	tor EN 175301-803-A Dual spade (SAEJ858a)*			J

DL DW

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DN = Amp Junior Timer™, molded, radial mount* DT

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

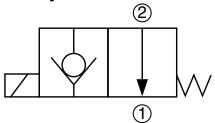
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

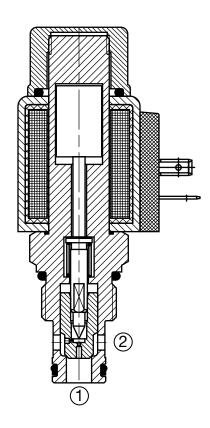
^{*}Please refer to Line Bodies & Cavities section for details

WS10Y-01

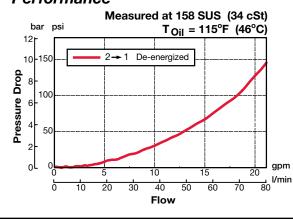
Poppet Type, Normally Open, Pilot Operated Up to 20 gpm (75 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS10Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS10YR. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (36 to 145 psi (2.5 to 10 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

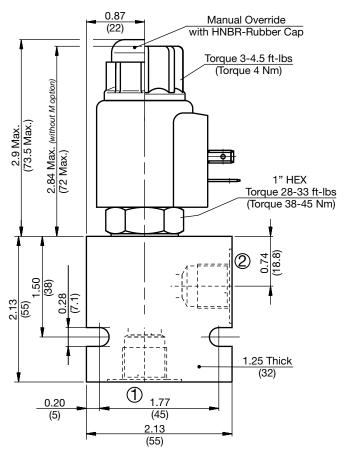
Features

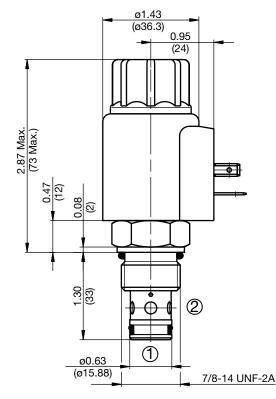
Push type manual override button, protected by rubber cap

opcomoations		
Operating Pressure	5000 psi (350 bar)	
Nominal Flow	20 gpm (75 l/min)	
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 55 ms De-energized 35 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC10-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580274 Finisher: 02580247	
Cartridge Weight	0.40 Lbs. (0.182 kg)	
Coil Weight	0.42 Lbs. (0.190 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS102-N P/N: 03033872 FS102-V P/N: 03051757	

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS10Y-01</u> <u>M</u> -C- <u>N</u> -	24 DS
Valv	e Mod	del		
Ove		=	tion ————————————————————————————————————	
	C AS8 SS8	= =	Cartridge only SAE-8 Ports, aluminum body SAE-8 Ports, steel body	
Sea			Buna-N Viton®	
	0 12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)	
	115 _230	= =	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC	
	Conn DG		tor ————————————————————————————————————	

= Dual spade (SAEJ858a)* DS DL DW

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DN DT Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

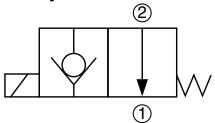
Standard Line Bodies*

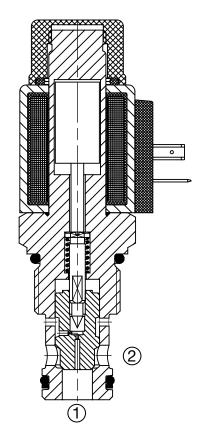
Code	Part No	Material	Pressure Rating	Weight
FH102-AS8	03037778	Aluminum, anodized	3500 psi (245 bar)	0.40 lbs (0.18 kg)
FH102-SS8	03037612	Steel, Zinc plated	6000 psi (420 bar)	1.16 lbs (0.53 kg)

WS12Y-01

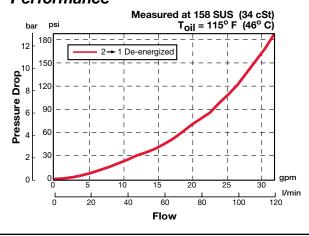
Poppet Type, Normally Open, Pilot Operated Up to 29 gpm (110 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS12Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS12YR. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (22 to 94 psi (1.5 to 6.5 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

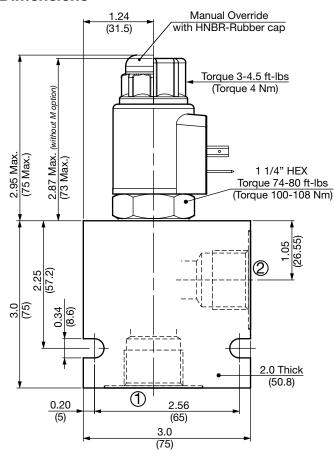
Features

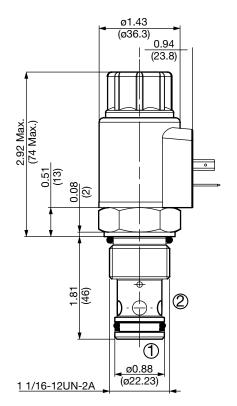
Push type manual override button, protected by rubber cap

opecifications	
Operating Pressure	5000 psi (350 bar)
Nominal Flow	29 gpm (110 l/min)
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)
Response Time (typical)	Energized 90 ms De-energized 25 ms
Fluid Compatibility	Mineral-based or synthetics with lubricating properties
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.
Installation	No orientation restrictions
Cavity	FC12-2 (see Line Bodies & Cavities section)
Cavity Tools	Rougher: 02580667 Finisher: 02580668
Cartridge Weight	0.60 Lbs. (0.27 kg)
Coil Weight	0.42 Lbs. (0.19 kg)
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.
Seal Kits Buna-N Viton®	FS122-N P/N: 03071298 FS122-V P/N: 03071299

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS12Y-01 M-C-N-24 DS</u>
Valve Mod	lel ———————————————————————————————————
	Dption = No manual override = Manual override, push type
AS12 SS12	orts = Cartridge only = SAE-12 Ports, aluminum body = SAE-12 Ports, steel body
	= Buna-N = Viton®
24 36	ge = No coil, cartridge only = 12 VDC = 24 VDC = 36 VDC = 110 VDC (only available with connector DG)
115	= 24 VAC = 115 VAC (AC coils internally full wave rectified) = 230 VAC
Coil conne	ector — = EN 175301-803-A = Dual spade (SAF.I858a)*

Dual spade (SAEJ858a) DL

DW

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DT = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

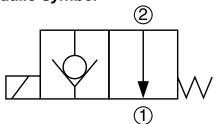
Standard Line Bodies*

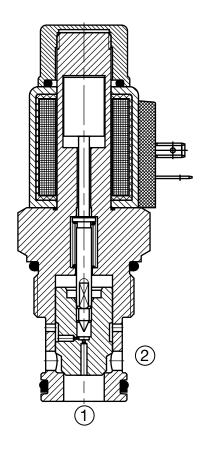
Code	Part No	Material	Pressure Rating	Weight
FH122-AS12	03053845	Aluminum, anodized	3500 psi (245 bar)	1.39 lbs (0.63 kg)
FH122-SS12	03053772	Steel, Zinc plated	6000 psi (420 bar)	4.16 lbs (1.89 kg)

WS16Y-01

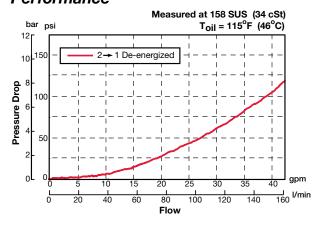
Poppet Type, Normally Open, Pilot Operated Up to 40 gpm (150 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS16Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS16YR. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (15 to 45 psi (1 to 3 bar)) overcomes solenoid force.

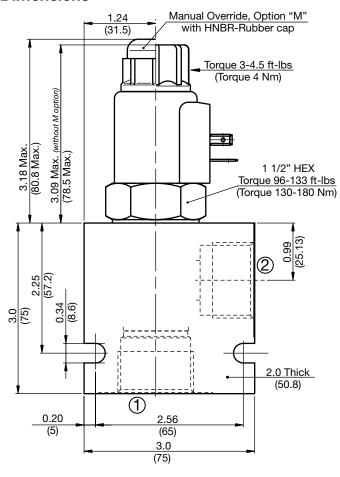
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

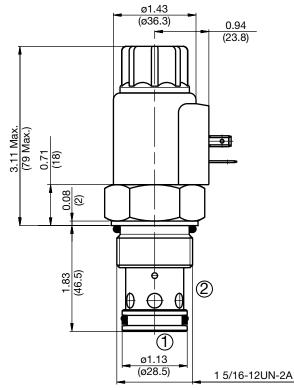
Features

Push type manual override button, protected by rubber cap

Specifications			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	40 gpm at 4060 psi (150 l/min at 280 bar) 26 gpm at 5000 psi (100 l/min at 350 bar)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 150 ms De-energized 35 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC16-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580250 Finisher: 02580251		
Cartridge Weight	1.37 Lbs. (0.62 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS162-N P/N: 03052427 FS162-V P/N: 03051758		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	WS16Y-01 M-C-N-24 D
Valve Model —	
blank = N	on — o manual override lanual override, push type
AS16 = SA	artridge only AE-16 Ports, aluminum body AE-16 Ports, steel body
N = Bi V = Vi	una-N
Coil Voltage — 0 = N	o coil, cartridge only
DC 12 = 12 24 = 24 36 = 36	2 VDC 4 VDC
$ \begin{array}{rcl} AC & 24 & = & 24 \\ 115 & = & 11 \\ 230 & = & 23 \end{array} $	15 VAC (AC coils internally full wave rectified)
Coil Connector	r
	N 175301-803-A

= Dual spade (SAEJ858a)*

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN = Amp Junior Timer™, molded, radial mount* DT

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

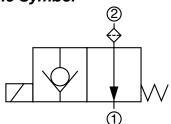
Standard Line Bodies*

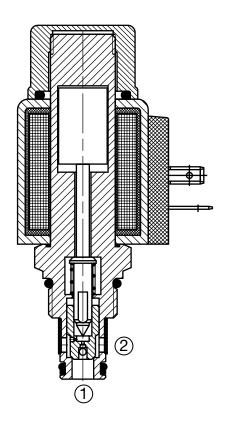
Code	Part No	Material	Pressure Rating	Weight
FH162-AS16	03037195	Aluminum, anodized	3500 psi (245 bar)	1.2 lbs (0.55 kg)
FH162-SS16	03032655	Steel, Zinc plated	6000 psi (420 bar)	3.56 lbs (1.62 kg)

WS08Y-30

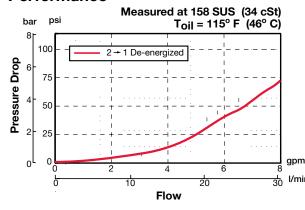
Poppet Type, Normally Open, Pilot Operated Up to 8 gpm (30 l/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type, with filter screen on inlet port, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08Y allows flow from port 2 to port 1, while flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS08YR. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (130 to 290 psi (9 to 20 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

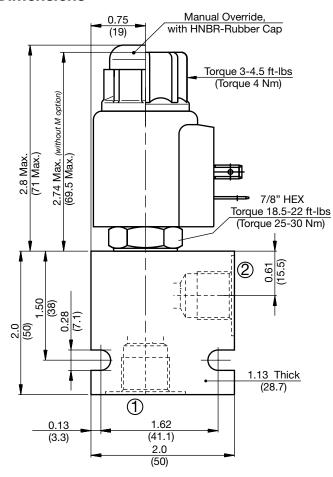
Features

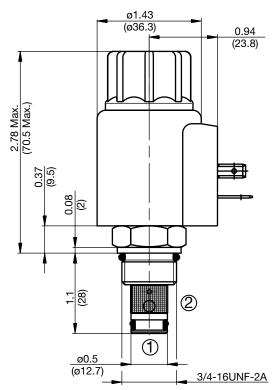
- Filter screen on the inlet port for protection from contamination getting inside the cartridge
- Push type manual override button, protected by rubber cap

<u> </u>	y		
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	8 gpm (30 I/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized: 50ms De- 35ms Energized:		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406). Use with filter rated β10 ≥ 200.		
Filter screen	300 μm mesh		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies and Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

Model	WS08Y-30 M-C-N-24
Valve Mod	el — T T T
Override (Option ————————————————————————————————————
	= No manual override
M	Manual override, push type
Body & Po	rts
	= Cartridge only
	= SAE-6 Ports, aluminum body
	= SAE-6 Ports, steel body
Seals —	·
	= Buna-N
V	= Viton®
Coil Volta	ge —
	= No coil, cartridge only
	= 12 VDC
I	= 24 VDC
36	= 36 VDC
_110	= 110 VDC (only available with connector DG)
AC 	= 24 VAC
	= 115 VAC (AC coils internally full wave rectified)
	= 230 VAC
Coil Conn	ector — = FN 175301-803-A

EN 175301-803-A

DS = Dual spade (SAEJ858a)*

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW = Amp Junior Timer™, molded, radial mount* DT

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

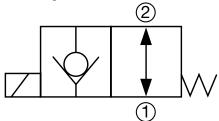
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

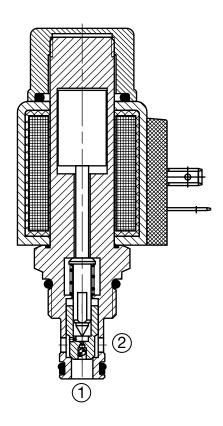
^{*}Please refer to Line Bodies & Cavities section for details

WS08YR-01

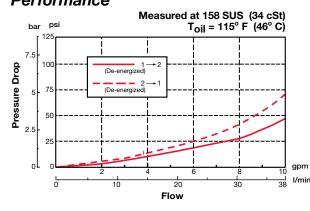
Poppet Type, Normally Open, Pilot Operated, Free Reverse Flow Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08YR allows flow from port 2 to port 1 and from port 1 to port 2. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (130 to 290 psi (9 to 20 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

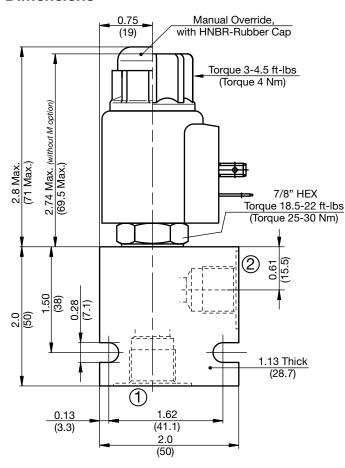
Features

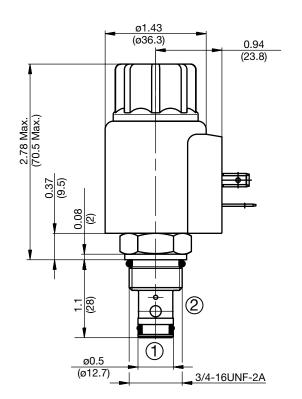
- Push type manual override button, protected by rubber cap
- Free reverse flow

opecifications			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	10 gpm (38 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized: 50ms De- 35ms Energized:		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406). Use with filter rated β 10 \geq 200.		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies and Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS08YR-01</u> <u>M</u> -C-N-24 DS
Valve Model	
Override Op	tion
	No manual override Manual override, push type
Body & Port	
AS6 =	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body
Seals ——	
N = V =	Buna-N Viton®
Coil Voltage	
DC 12 = 24 = 36 =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
DS = DL = DW =	tor EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)* Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

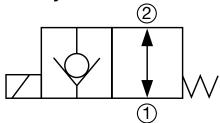
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

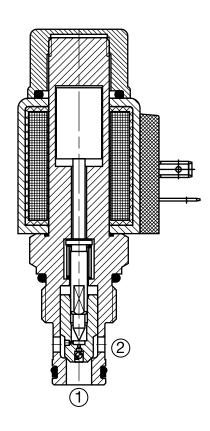
^{*}Please refer to Line Bodies & Cavities section for details

WS10YR-01

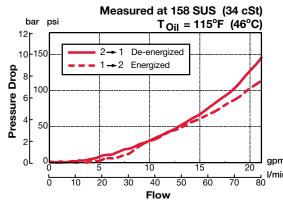
Poppet Type, Normally Open, Pilot Operated, Free Reverse Flow Up to 20 gpm (75 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS10YR allows flow from port 2 to port 1 and from port 1 to port 2. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (130 to 290 psi (9 to 20 bar)) overcomes solenoid force.

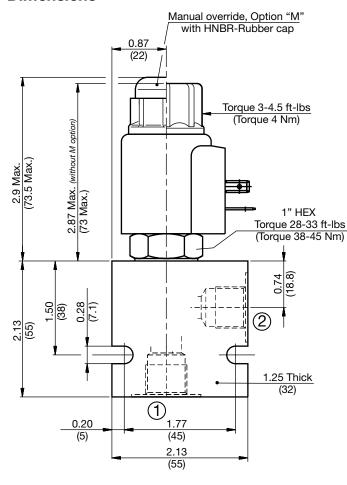
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

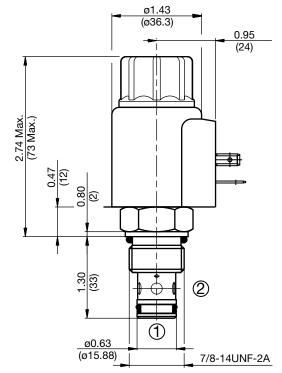
Features

- Push type manual override button, protected by rubber cap
- Free reverse flow

	5000: (050 b)			
Operating Pressure	5000 psi (350 bar)			
Nominal Flow	20 gpm (75 l/min)			
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)			
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C)			
	(Consult factory for usage at temp. outside range.)			
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)			
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage			
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC			
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)			
Response Time (typical)	Energized 55 ms De-energized 35 ms			
Fluid Compatibility	Mineral-based or synthetics with lubricating properties			
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)			
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.			
Installation	No orientation restrictions			
Cavity	FC10-2 (see Line Bodies & Cavities section)			
Cavity Tools	Rougher: 02580274 Finisher: 02580247			
Cartridge Weight	0.40 Lbs. (0.182 kg)			
Coil Weight	0.42 Lbs. (0.190 kg)			
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.			
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.			
Seal Kits Buna-N Viton®	FS102-N P/N: 03033872 FS102-V P/N: 03051757			

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS10YR-01 M-C-N-24 D</u>
Valv	e Mo	del	
Ove	rride	Op	tion ————————————————————————————————————
	blank M		No manual override Manual override, push type
Boo	ly & Po	ort	s
	AS8	=	Cartridge only SAE-8 Ports, aluminum body SAE-8 Ports, steel body
Sea	ls —		
			Buna-N Viton®
Coi	l Volta	ge	
	0 12 24 36	= = = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
Coi	Conn	ec	tor —
DC	DS DL	= =	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)*

= Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A **Coil Model** 40-1836

DT

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

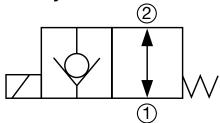
Standard Line Bodies*

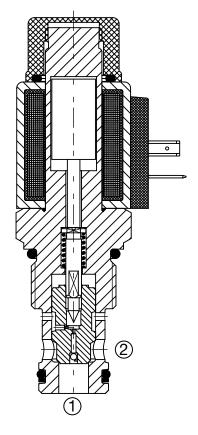
Code	Part No	Material	Pressure Rating	Weight
FH102-AS8	03037778	Aluminum, anodized	3500 psi (245 bar)	0.40 lbs (0.18 kg)
FH102-SS8	03037612	Steel, Zinc plated	6000 psi (420 bar)	1.16 lbs (0.53 kg)

WS12YR-01

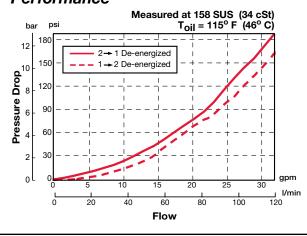
Poppet Type, Normally Open, Pilot Operated, Free Reverse Flow Up to 29 gpm (110 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS12YR allows flow from port 2 to port 1 and from port 1 to port 2. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (22 to 94 psi (1.5 to 6.5 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

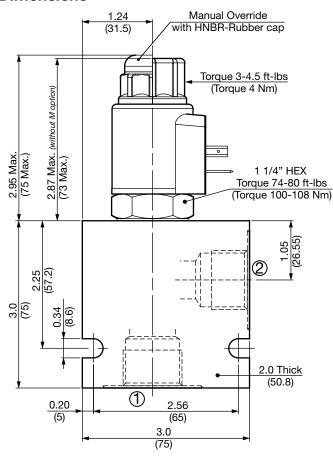
Features

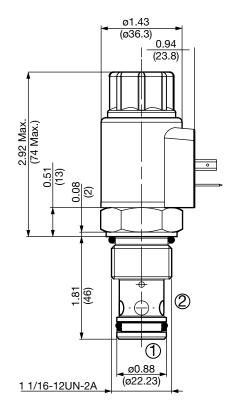
- Push type manual override button, protected by rubber cap
- Free reverse flow

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	29 gpm (110 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 90 ms De-energized 25 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC12-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580667 Finisher: 02580668		
Cartridge Weight	0.60 Lbs. (0.27 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS122-N P/N: 03071298 FS122-V P/N: 03071299		

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS12YR-01 M</u> -C-N-24	DS
Valve Model		
blank =	tion ————————————————————————————————————	
AS12 =	S ————————————————————————————————————	
	Buna-N Viton®	
Coil Voltage		
DC 12 = 24 = 36 =		
	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC	
DC DG = DS =	tor ————————————————————————————————————	

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW = Amp Junior Timer™, molded, radial mount* DT

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

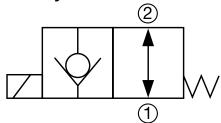
Standard Line Bodies*

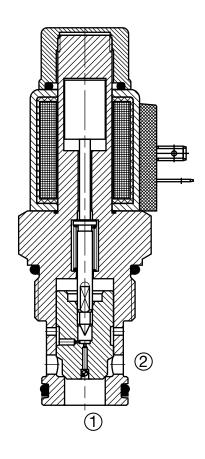
Code	Part No	Material	Pressure Rating	Weight
FH122-AS12	03053845	Aluminum, anodized	3500 psi (245 bar)	1.39 lbs (0.63 kg)
FH122-SS12	03053772	Steel, Zinc plated	6000 psi (420 bar)	4.16 lbs (1.89 kg)

WS16YR-01

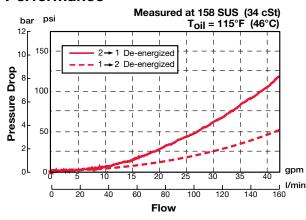
Poppet Type, Normally Open, Pilot Operated, Free Reverse Flow Up to 40 gpm (150 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS16YR allows flow from port 2 to port 1 and from port 1 to port 2. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (15 to 45 psi (1to 3 bar)) overcomes solenoid force.

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

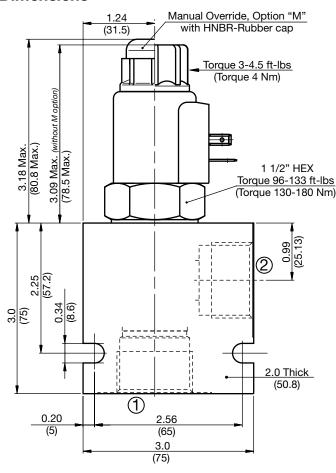
Features

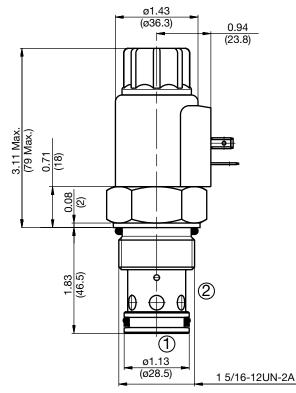
- Push type manual override button, protected by rubber cap
- Free reverse flow

Operating Pressure	5000 psi (350 bar)	
Nominal Flow	40 gpm at 4060 psi (150 l/min at 280 bar) 26 gpm at 5000 psi (100 l/min at 350 bar)	
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 150 ms De-energized 35 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC16-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580250 Finisher: 02580251	
Cartridge Weight	1.37 Lbs. (0.62 kg)	
Coil Weight	0.42 Lbs. (0.19 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS162-N P/N: 03052427 FS162-V P/N: 03051758	

Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS16YR-01</u> M-C-N-	<u>24 D</u>
Valve Model		
blank =	tion ————————————————————————————————————	
AS16 =	Cartridge only SAE-16 Ports, aluminum body SAE-16 Ports, steel body	
Seals N = V =		
0 = DC 12 = 24 = 36 =	24 VDC	
_230 =	115 VAC (AC coils internally full wave rectified) 230 VAC	
	tor ————————————————————————————————————	

Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DL DW

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

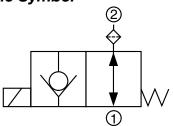
Standard Line Bodies*

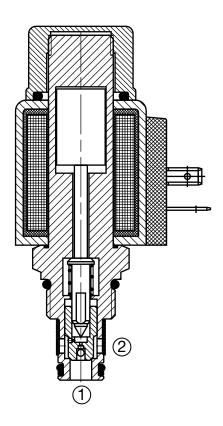
Code	Part No	Material	Pressure Rating	Weight
FH162-AS16	03037195	Aluminum, anodized	3500 psi (245 bar)	1.2 lbs (0.55 kg)
FH162-SS16	03032655	Steel, Zinc plated	6000 psi (420 bar)	3.56 lbs (1.62 kg)

WS08YR-30

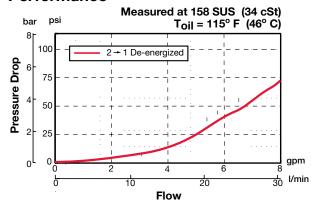
Poppet Type, Normally Open, Pilot Operated, Free Reverse Flow Up to 8 gpm (30 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally open, pilot operated, poppet type, with filter screen on inlet port, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08YR allows flow from port 2 to port 1 and from port 1 to port 2. When energized the valve's poppet closes on its seat, blocking flow from port 2 to port 1. Flow from port 1 to port 2 is allowed when hydraulic pressure generated force (130 to 290 psi (9 to 20 bar)) overcomes solenoid force.

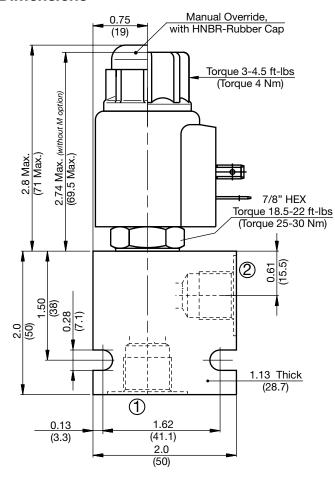
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

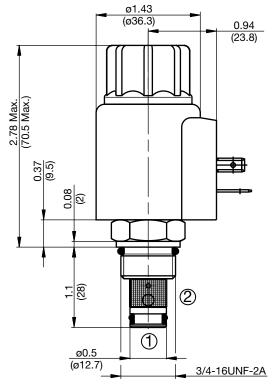
Features

- Filter screen on the inlet port for protection from contamination
- Push type manual override button, protected by rubber cap

<u> </u>			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	8 gpm (30 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized: 50ms De- 35ms Energized:		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406). Use with filter rated β10 ≥ 200.		
Filter screen	300 μm mesh		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies and Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS08YR-30 M-C-N-24 D</u>
Valve Mode	4
Override O	ation ————————————————————————————————————
	No manual override
	Manual override, push type
Body & Por	
	Cartridge only
	SAE-6 Ports, aluminum body
SS6 =	SAE-6 Ports, steel body
Seals ——	
	Buna-N
	Viton®
•	
Coil Voltage	
	No coil, cartridge only
DC 12 =	
	24 VDC
36 =	36 VDC
_110 =	110 VDC (only available with connector DG)
AC	24 VAC
115 =	115 VAC (AC coils internally full wave rectified)
	230 VAC
Coil Conne	
DC DG =	EN 175301-803-A

= Dual spade (SAEJ858a)* DS

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DT = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

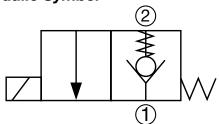
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

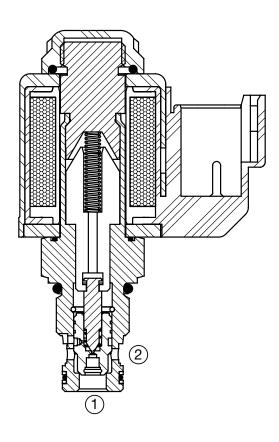
^{*}Please refer to Line Bodies & Cavities section for details

WS06Z-01

Poppet Type, Normally Closed, Pilot Operated Up to 5 gpm (19 I/min) • 5000 psi (350 bar)







Description

A screw-in cartridge, solenoid operated, 2 way 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

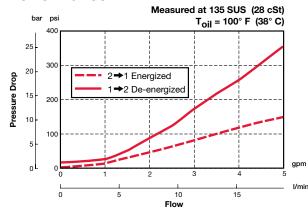
Operation

When de-energized the WS06Z blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted.

Specifications

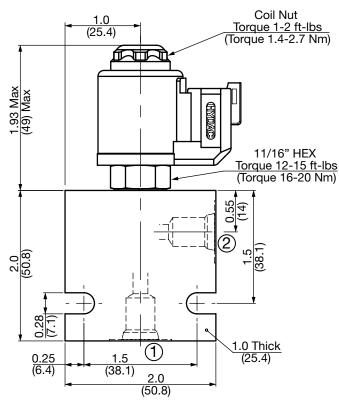
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	3.5 gpm (13.3 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (350 bar)		
Fluid Operating Temp Range	-20° to 248°F (-29° to 120°C)		
Ambient Temperature Range	-20° to 140°F (-29° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw at 68°F (20°C)	984 mA at 12VDC; 492 mA at 24VDC		
Minimum Pull-in Current to Operate Valve	70% of nominal amperage		
Typical Response Time (Varies with Pressure and Flow)	Energized: 35ms De-Energized: 50ms		
Fluid Compatibility	Mineral-Based or Synthetics with lubricating properties.		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner per (ISO 4406)		
Installation	No orientation restrictions		
Cavity	FC06-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02582046 Finisher: 02582047		
Cartridge Weight	2.7 oz (75 grams)		
Coil Weight	3.1 oz (88 grams)		
Cartridge Material	Steel with hardened work surfaces. Zinc plated exposed surfaces. Buna N or Viton® o-rings. Solid thermoplastic polyester back-up rings.		
Coil Material	Class N, 200°C high temperature magnet wire. steel shell, polyester encapsulation.		
Seal Kits Buna-N Viton®	FS062-N P/N: 02610184 FS062-V P/N: 02610185		

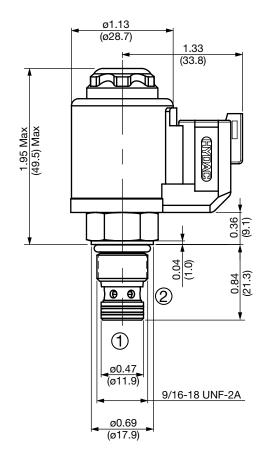
Performance



Solenoid Valves (HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS06Z-01 M-C-N-24 DN</u>
Valve Mode	ı
Override Op	otion —
blank =	No manual override
M =	Manual override, screw type
Body & Port	ts — I I
C =	Cartridge only
AS4 =	SAE-4 Ports, aluminum body
SS4 =	SAE-4 Ports, steel body
Seals ——	
N =	Buna-N
V =	Viton®
Coil Voltage	,
0 =	No coil, cartridge only
DC 12 =	12 VDC
	24 VDC
	105 VDC (only available with connector DG)
	205 VDC (only available with connector DG)
,	1329 coils are DC. AC models require an external diode bridge
mounted outs	de the coil)**
	_

Coil Connector

DG = EN 175301-803-B (IP65 Rated)**

DL = Leadwires (2) - 18" long (46 cm) AWG18, TYPE UL 1815 (IP69K Rated)*

= Deutsch DT04-2P intergral molded (IP69K Rated)*

Use mating plug EN 175301-803-B without diode bridge for

DC voltages P/N 02600570

Use mating plug EN 175301-803-B w/diode bridge for AC voltages P/N 02600582

Coil Model 32-1329

For other coil connector types consult factory

** Mating Plugs sold separately

*Coils with internal transient suppression diode are available, consult factory.

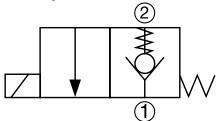
Standard Line Bodies*

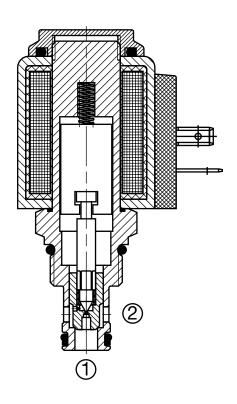
Code	Part No	Material	Pressure Rating	Weight
FH062-AS4	02600491	Aluminum, anodized	3500 psi (245 bar)	0.33 lbs (0.15 kg)
FH062-SS4	02600490	Steel, Zinc plated	6000 psi (420 bar)	0.97 lbs (0.44 kg)

WS08Z-01

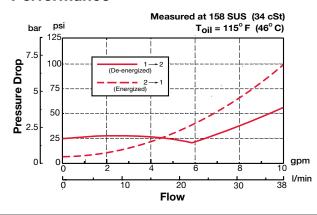
Poppet Type, Normally Closed, Pilot Operated Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08Z blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS08ZR.

Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

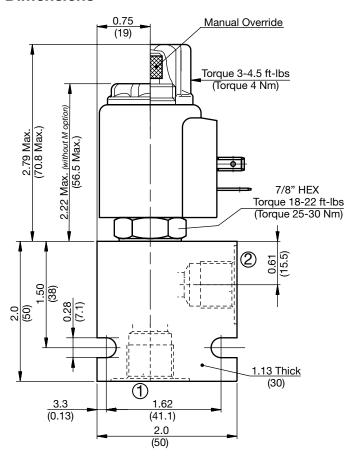
Features

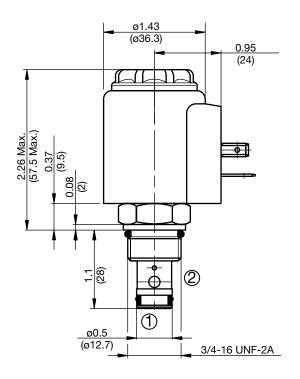
Screw type manual override option

opecifications			
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	10 gpm (38 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 50 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Solenoid Valves HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			WS08Z-01 M-C-N-24 DS
Valv	e Mo	del	
Ove	erride (blank M	=	tion No manual override Manual override, screw type
Boo	ly & Po	orts	s
		=	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body
Sea	ls —		
	N V		Buna-N Viton®
Coi	l Volta	ge	
	0 12 24 36	= = = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
AC	24 115 230	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
Coi	Conn	ec	tor —
DC	DS DL	= = =	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)* Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

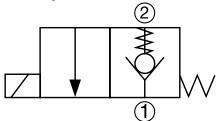
Standard Line Bodies*

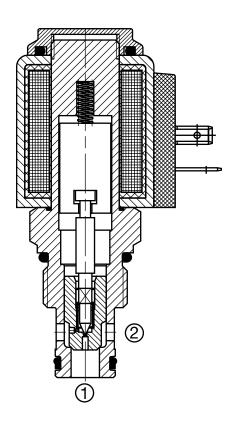
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS10Z-01

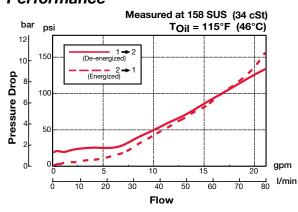
Poppet Type, Normally Closed, Pilot Operated 20 gpm (75 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS10Z blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS10ZR.

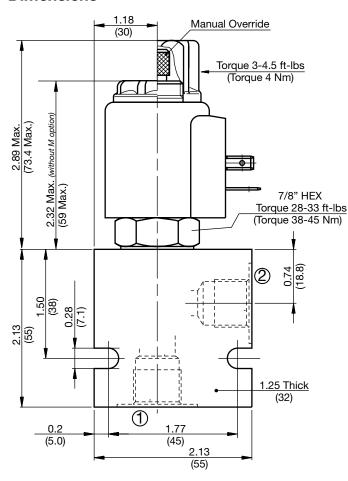
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

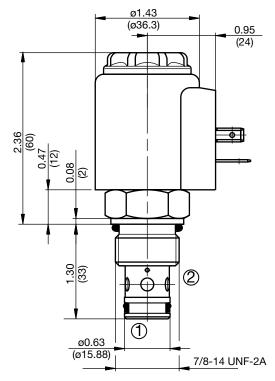
Features

Screw type manual override option

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	20 gpm (75 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 30 ms De-energized 60 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β 10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC10-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580274 Finisher: 02580247		
Cartridge Weight	0.40 Lbs. (0.182 kg)		
Coil Weight	0.42 Lbs. (0.190 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS102-N P/N: 03033872 FS102-V P/N: 03051757		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS10Z-01</u> M-C-N-24 DS
Valve Model —	
blank = No	no manual override anual override, screw type
C = C6 AS8 = S6 SS8 = S6	artridge only AE-8 Ports, aluminum body AE-8 Ports, steel body
Seals N = Bi V = Vi	
DC 12 = 12 24 = 24 36 = 36	1 VDC
$ \begin{array}{rcl} AC & 24 & = & 24 \\ 115 & = & 11 \\ 230 & = & 23 \end{array} $	5 VAC (AC coils internally full wave rectified)
Coil Connector	r

DS = Dual spade (SAEJ858a)* DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN DT Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

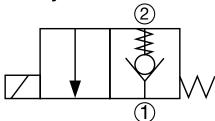
Standard Line Bodies*

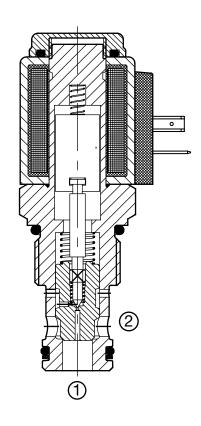
Code	Part No	Material	Pressure Rating	Weight
FH102-AS8	03037778	Aluminum, anodized	3500 psi (245 bar)	0.40 lbs (0.18 kg)
FH102-SS8	03037612	Steel, Zinc plated	6000 psi (420 bar)	1.16 lbs (0.53 kg)

WS12Z-01

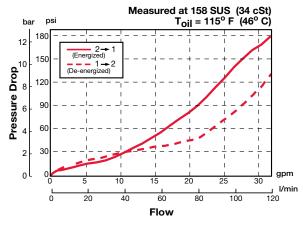
Poppet Type, Normally Closed, Pilot Operated Up to 29 gpm (110 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS12Z blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS12ZR.

Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

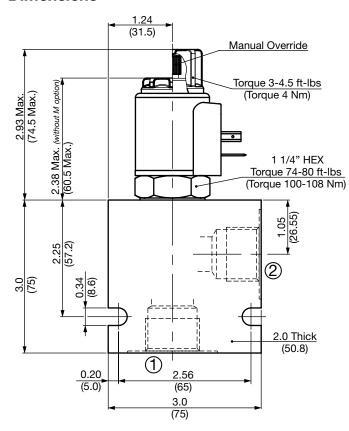
Features

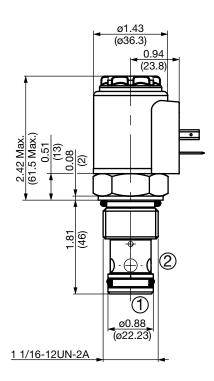
Screw type manual override option

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	29 gpm (110 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 30 ms De-energized 70 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC12-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580667 Finisher: 02580668		
Cartridge Weight	0.60 Lbs. (0.27 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS122-N P/N: 03071298 FS122-V P/N: 03071299		

Solenoid Valves HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS12Z-01 M-C-N-24 DN</u>			
Valv	e Mo	del				
Ove	Override Option —					
	blank = No manual override M = Manual override, screw type					
Boo	ly & P					
		=	Cartridge only SAE-12 Ports, aluminum body SAE-12 Ports, steel body			
Sea						
	• •		Buna-N Viton®			
Coi	l Volta	ge				
DC	24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)			
AC		=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC			
Coil connector —						
DC	DS DL DW	= = = =	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)* Deutsch™ DT04-2P, molded, axial (IP69K Rated)* Amp Junior Timer™, molded, radial mount*			

Coil Model 40-1836

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

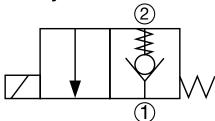
Standard Line Bodies*

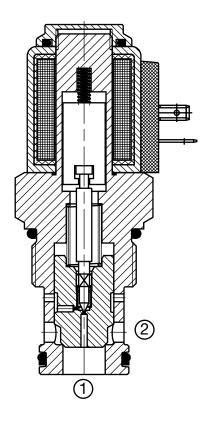
Code	Part No	Material	Pressure Rating	Weight
FH122-AS12	03053845	Aluminum, anodized	3500 psi (245 bar)	1.39 lbs (0.63 kg)
FH122-SS12	03053772	Steel, Zinc plated	6000 psi (420 bar)	4.16 lbs (1.89 kg)

WS16Z-01

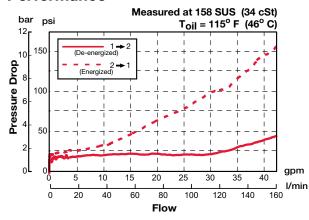
Poppet Type, Normally Closed, Pilot Operated Up to 40 gpm (150 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS16Z blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS16ZR.

Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

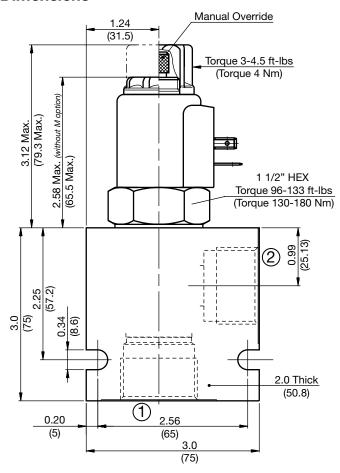
Features

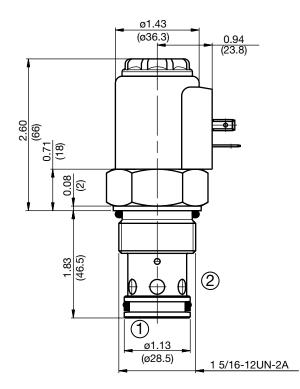
Screw type manual override option

Opecineations	-		
Operating Pressure	5000 psi (350 bar)		
Nominal Flow	40 gpm at 4060 psi (150 l/min at 280 bar) 26 gpm at 5000 psi (100 l/min at 350 bar)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 30 ms De-energized 70 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC16-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580250 Finisher: 02580251		
Cartridge Weight	1.37 Lbs. (0.62 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS162-N P/N: 03052427 FS162-V P/N: 03051758		

Solenoid Valves (HYDA)

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	<u>WS16Z-01 M-C-N-24 DN</u>
Valve Model	
Override Op	tion ————————————————————————————————————
2.4	No manual override
M =	Manual override, screw type
Body & Ports	
	Cartridge only
AS16 =	SAE-16 Ports, aluminum body
SS16 =	SAE-16 Ports, steel body
Seals ———	
N =	Buna-N
V =	Viton®
Coil Voltage	
0 =	No coil, cartridge only
DC [12 =	12 VDC
24 =	24 VDC
36 =	36 VDC
_110 =	110 VDC (only available with connector DG)
AC [24 =	24 VAC
115 =	115 VAC (AC coils internally full wave rectified)
	230 VAC
Coil Connec	tor —
DC DG =	EN 175301-803-A

= Dual spade (SAEJ858a)*

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN DT Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

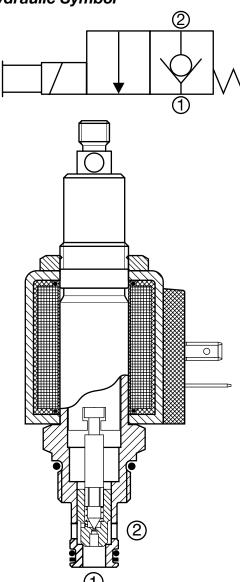
Standard Line Bodies*

Code	Part No	Material	Pressure Rating	Weight
FH162-AS16	03037195	Aluminum, anodized	3500 psi (245 bar)	1.2 lbs (0.55 kg)
FH162-SS16	03032655	Steel, Zinc plated	6000 psi (420 bar)	3.56 lbs (1.62 kg)

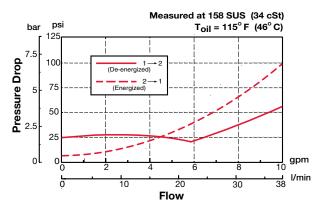
WS08Z-01J

Poppet Type, Normally Closed, Pilot Operated Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol



Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type with pull type, spring return manual override, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08Z-01J blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS08ZR-01J.

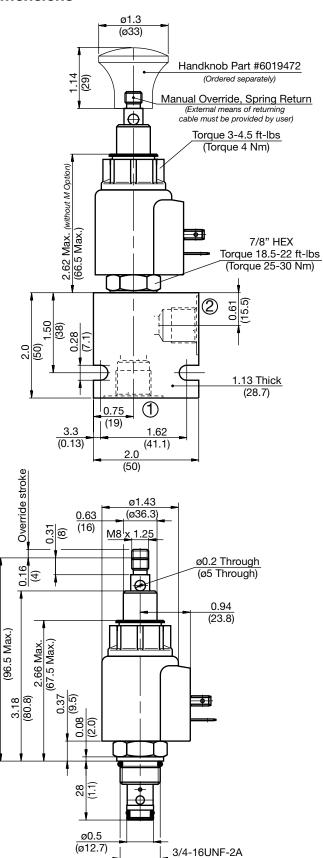
Operation of Manual Override Option: To manually override pull and hold the override stem. This override is not detented. The override stem has a male thread M8X1.25 and hole for a cable attachment. If a cable is used, the internal spring may not provide enough force to overcome internal cable friction. An external means of returning the cable must be provided by the user. The manual override option is intended for emergency use, not for continuous duty operation.

Features

Rugged manual override design with thread and hole for a handle or cable attachment

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	10 gpm (38 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Manual Override Pull Force	38 - 40.5 bs (150 - 180 N) Max. permissible pull force		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 50 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Dimensions



All measurements in inches (mm). Subject to technical modifications

Model Code

			WS08Z-01 J-C-N-24 DS
Valv	e Mo	del	
Ove	rride	Ωn	tion
010	J		Manual override, pull type, spring return
Boo	ly & Po	orts	s
	AS6	=	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body
Sea	ls —		
			Buna-N Viton®
Coi	l Volta	ge	
DC	12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
Coi	Conn	ec	tor —
DC	DS DL	=	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)*

= Deutsch™ DT04-2P, molded, axial (IP69K Rated)* = Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

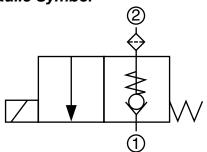
Standard Line Bodies*

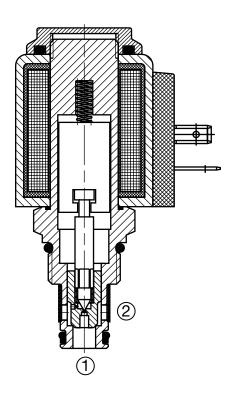
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS08Z-30

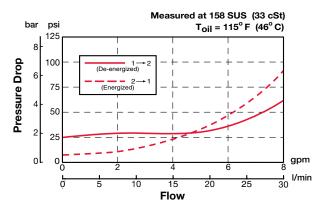
Poppet Type, Normally Closed, Pilot Operated Up to 8 gpm (30 I/min) • 5000 psi (350 bar)







Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type, with a filter screen on the inlet port, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08Z-30 blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts and opens the flow from port 2 to port 1, while the flow from port 1 to port 2 is severely restricted. If this flow path is required see model WS08ZR.

Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

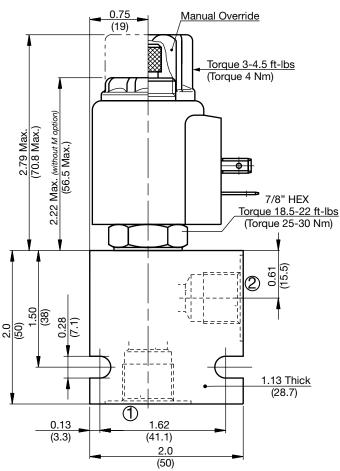
Features

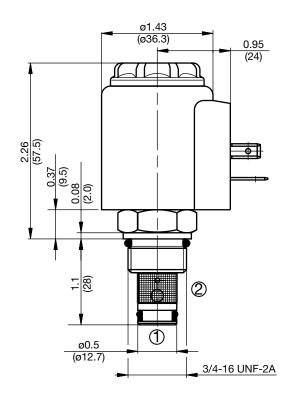
- Filter screen on the inlet port for protection from contamination
- Screw type manual override option

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	8 gpm (30 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to +60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 50 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Filter screen	300 μm mesh		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Solenoid Valves HYDA

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS08Z-30 M-C-N</u>	<u>-2</u>	<u> 4 C</u>	<u>)</u> ;
Valv	e Mo	del				
Ove	rride	Op	tion ————————			
	blank	(=	No manual override Manual override, screw type			
Boo	ly & P	ort	s			
	AS6	=	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body			
Sea	ls —					
			Buna-N Viton®			
Coi	l Volta	ge		\Box		
	12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)			
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC			
Coi	Conr	nec	tor ————			
DC	DG DS		EN 175301-803-A Dual spade (SAF-I858a)*			

Dual spade (SAEJ858a) DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN DT = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

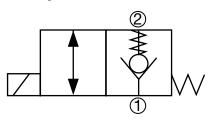
Standard Line Bodies*

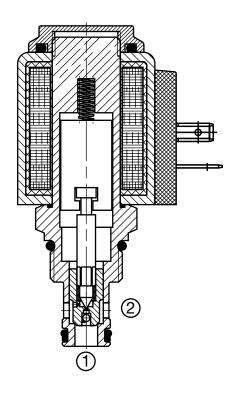
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS08ZR-01

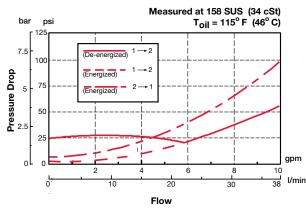
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type with filter screen on inlet port, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08ZR blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts allowing bi-directional flow between port 1 and port 2.

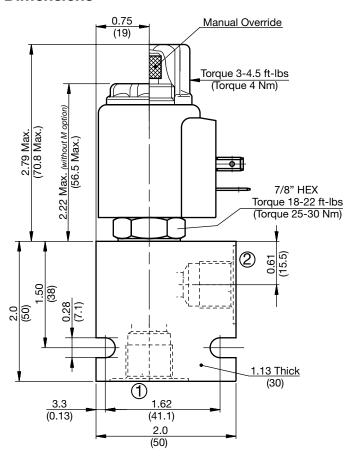
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

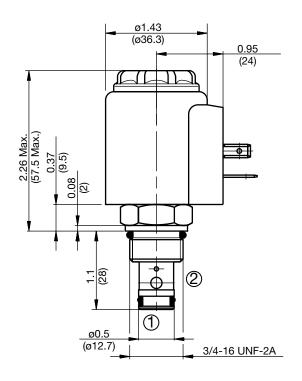
Features

- Screw type manual override option
- Free reverse flow

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	10 gpm (38 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 50 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS08ZR-01 M-C-N-24 DN</u>
Valv	ve Mod	del	
Ove	erride		
			No manual override
_	М		Manual override, screw type
Boo	ly & Po		
			Cartridge only
	AS6	=	SAE-6 Ports, aluminum body
	SS6	=	SAE-6 Ports, steel body
Sea	ıls —		
		=	Buna-N
			Viton®
Coi	l Volta	ae	
	0		No coil, cartridge only
DC			12 VDC
	24	_	24 VDC
	36	_	36 VDC
			110 VDC (only available with connector DG)
	_		
AC			24 VAC
			115 VAC (AC coils internally full wave rectified)
	_230	=	230 VAC
Coi	l Conn	ec	tor —
DC	DG	=	EN 175301-803-A
	DS	=	Dual spade (SAEJ858a)*
			Leadwires (2) - 18" long (46 cm)*
			WeatherPak [™] on leadwires - 9.5" long (24 cm)*

= Deutsch[™] DT04-2P, molded, axial (IP69K Rated)* = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

DT

Coil Model 40-1836 For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

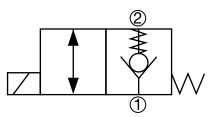
Standard Line Bodies*

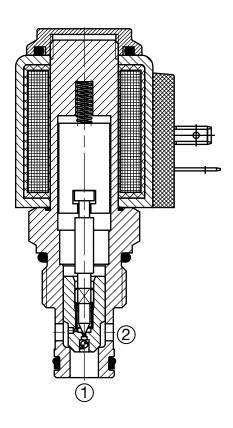
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS10ZR-01

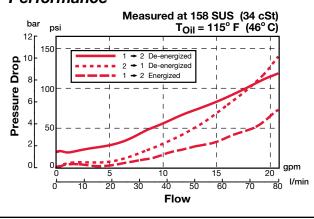
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 20 gpm (75 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS10ZR blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts allowing bi-directional flow between port 1 and port 2.

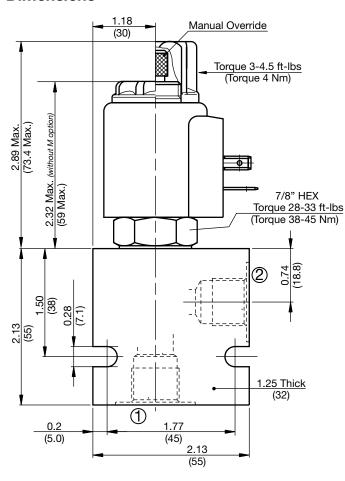
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

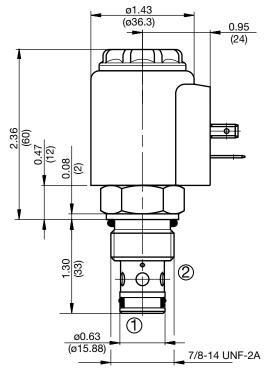
Features

- Screw type manual override option
- Free reverse flow

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	20 gpm (75 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 60 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β 10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC10-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580274 Finisher: 02580247		
Cartridge Weight	0.40 Lbs. (0.18 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS102-N P/N: 03033872 FS102-V P/N: 03051757		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

WS10ZR-01 M-C-N-24 DS
Valve Model Valve Model
Override Option blank = No manual override Manual override accept type
M = Manual override, screw type Body & Ports
C = Cartridge only AS8 = SAE-8 Ports, aluminum body SS8 = SAE-8 Ports, steel body
Seals N = Buna-N V = Viton®
Coil Voltage 0 = No coil, cartridge only DC 12 = 12 VDC 24 = 24 VDC 36 = 36 VDC 110 = 110 VDC (only available with connector DG)
AC 24 = 24 VAC 115 = 115 VAC (AC coils internally full wave rectified) 230 = 230 VAC
Coil Connector DC DG = EN 175301-803-A DC DG = EN 175301-803-A

= Dual spade (SAEJ858a)*

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN DT Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

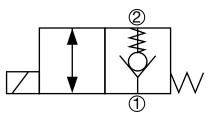
Standard Line Bodies*

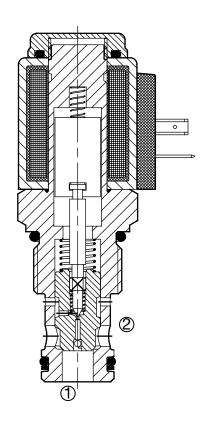
Code	Part No	Material	Pressure Rating	Weight
FH102-AS8	03037778	Aluminum, anodized	3500 psi (245 bar)	0.40 lbs (0.18 kg)
FH102-SS6	03037612	Steel, Zinc plated	6000 psi (420 bar)	1.16 lbs (0.53 kg)

WS12ZR-01

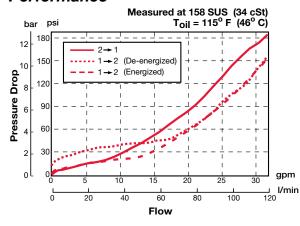
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 29 gpm (110 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS12ZR blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts, allowing bi-directional flow between port 1 and port 2.

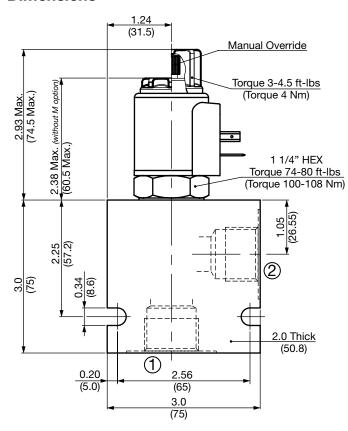
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

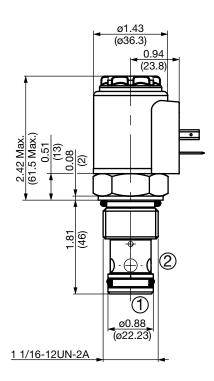
Features

- Screw type manual override option
- Free reverse flow

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	29 gpm (110 l/min)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C)		
	(Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 70 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC12-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580667 Finisher: 02580668		
Cartridge Weight	0.60 Lbs. (0.27 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS122-N P/N: 03071298 FS122-V P/N: 03071299		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS12ZR-01</u> M-C-N-24 DS
Valv	e Mo	del	
Ove		ς =	tion No manual override Manual override, screw type
Boo	ly & P	orts	s
	AS12	! =	Cartridge only SAE-12 Ports, aluminum body SAE-12 Ports, steel body
Sea	N		Buna-N Viton®
Coi	l Volta	ıge	
DC	12 24	=	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
	l conn		
DC	DS	=	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)*

= Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

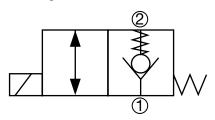
Standard Line Bodies*

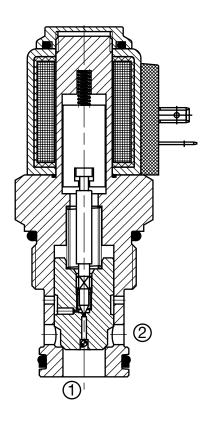
Code	Part No	Material	Pressure Rating	Weight
FH122-AS12	03053845	Aluminum, anodized	3500 psi (245 bar)	1.39 lbs (0.63 kg)
FH122-SS12	03053772	Steel, Zinc plated	6000 psi (420 bar)	4.16 lbs (1.89 kg)

WS16ZR-01

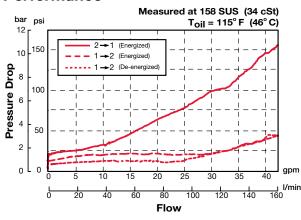
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 40 gpm (150 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS16ZR blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts, allowing bi-directional flow between port 1 and port 2.

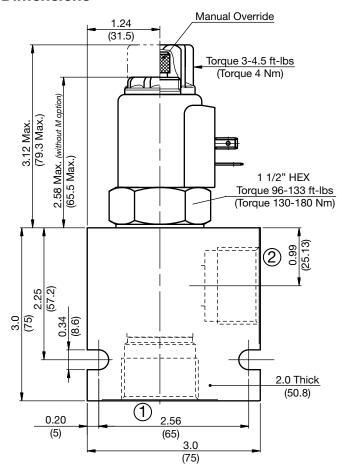
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

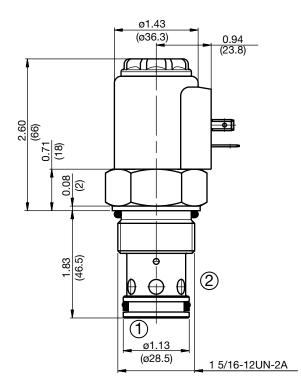
Features

- Screw type manual override option
- Free reverse flow

Operating Pressure	5000 psi (350 bar)		
Nominal Flow	40 gpm at 4060 psi (150 l/min at 280 bar) 26 gpm at 5000 psi (100 l/min at 350 bar)		
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 70 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β 10 ≥ 200.		
Installation	No orientation restrictions		
Cavity	FC16-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580250 Finisher: 02580251		
Cartridge Weight	1.37 Lbs. (0.62 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS162-N P/N: 03052427 FS162-V P/N: 03051758		

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	WS16ZR-01 M-C-N-24-D
Valve Model ———	
Override Option — blank = No ma M = Manua	
Seals N = Buna-î V = Viton®	
DC 12 = 12 VDC 24 = 24 VDC 36 = 36 VDC	l, cartridge only C
AC 24 = 24 VAC 115 = 115 VA 230 = 230 VA Coil Connector	C (AC coils internally full wave rectified)

= Dual spade (SAEJ858a)* DS

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DT = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

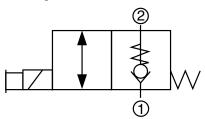
Standard Line Bodies*

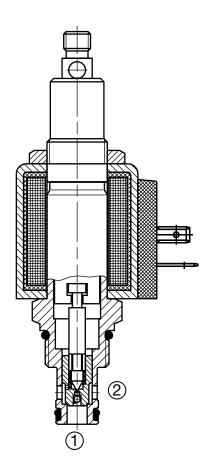
Code	Part No	Material	Pressure Rating	Weight
FH162-AS16	03037195	Aluminum, anodized	3500 psi (245 bar)	1.2 lbs (0.55 kg)
FH162-SS16	03032655	Steel, Zinc plated	6000 psi (420 bar)	3.56 lbs (1.62 kg)

WS08ZR-01J

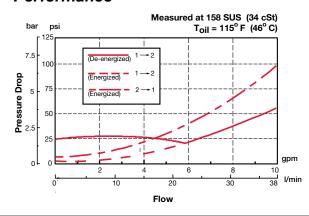
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 10 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type with pull type, spring return manual override, intended for use as a uni-directional blocking or load holding device in

Operation

When de-energized the WS08ZR-01J blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts, allowing bi-directional flow between port 1 and port 2.

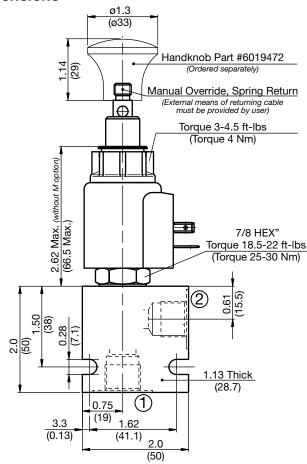
Operation of Manual Override Option: To manually override pull and hold the override stem. This override is not detented. The override stem has a male thread M8X1.25 and hole for a cable attachment. If a cable is used, the internal spring may not provide enough force to overcome internal cable friction. An external means of returning the cable must be provided by the user. The manual override option is intended for emergency use, not for continuous duty operation.

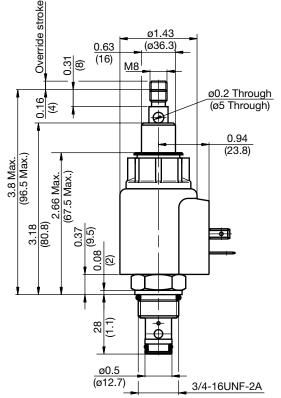
Features

 Rugged manual override design with thread and hole for a handle or cable attachment.

Operating Pressure	5000 psi (350 bar)	
Nominal Flow	10 gpm (38 l/min)	
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)	
Manual Override Pull Force	38 - 40.5 bs (150 - 180 N) Max. permissible pull force	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 35 ms De-energized 50 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC08-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580090 Finisher: 02580091	
Cartridge Weight	0.31 Lbs. (0.14 kg)	
Coil Weight	0.42 Lbs. (0.19 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756	

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS08ZR-01</u> J-C-N-24 DI
Valv	ve Mo	del	
Ove	rride	Op	tion —
	J	=	Manual override, pull type, spring return
Boo	ly & P	ort	s
	AS6	=	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body
Sea	ıls —		
			Buna-N Viton®
Coi	l Volta	ige	
	0 12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
AC	115	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
	DG DS DL	= = =	tor EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)* Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

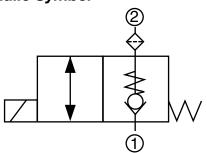
Standard Line Bodies*

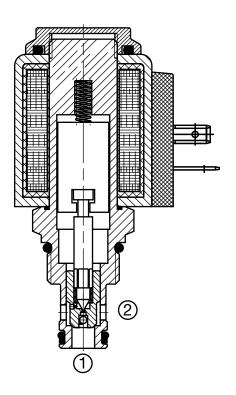
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS08ZR-30

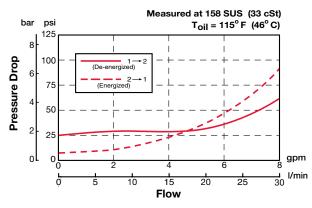
Poppet Type, Normally Closed, Pilot Operated, Free Reverse Flow Up to 8 gpm (38 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, pilot operated, poppet type, with filter screen on inlet port, intended for use as a uni-directional blocking or load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08ZR blocks flow from port 2 to port 1, while allowing flow from port 1 to port 2. When energized the poppet lifts allowing bi-directional flow between port 1 and port 2.

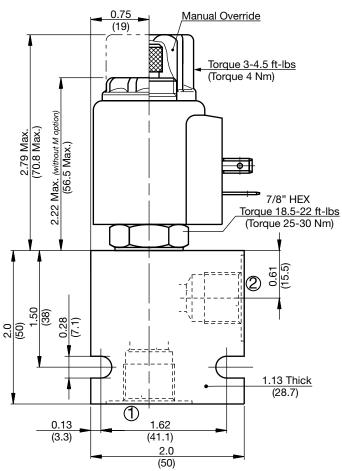
Operation of Manual Override Option: To override, remove the coil nut, turn the override knurled knob counterclockwise until it stops. The override will remain activated until the knob is turned clockwise to original position. The manual override option is intended for emergency use, not for continuous duty operation.

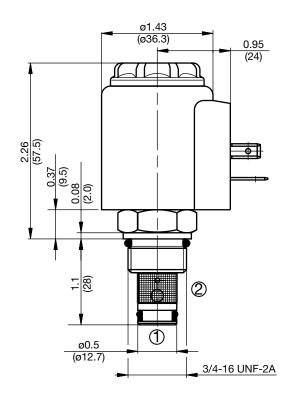
Features

- Filter screen on the inlet port for protection from contamination
- Screw type manual override option
- Free reverse flow

Operating Pressure	5000 psi (350 bar)
Nominal Flow	8 gpm (30 I/min)
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)
Ambient Temperature Range	-4° to 140°F (-20° to +60°C)
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)
Response Time (typical)	Energized 35 ms De-energized 50 ms
Fluid Compatibility	Mineral-based or synthetics with lubricating properties
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.
Filter screen	300 μm mesh
Installation	No orientation restrictions
Cavity	FC08-2 (see Line Bodies & Cavities section)
Cavity Tools	Rougher: 02580090 Finisher: 02580091
Cartridge Weight	0.31 Lbs. (0.14 kg)
Coil Weight	0.42 Lbs. (0.19 kg)
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

			<u>WS08ZR-30 M-C-N-24</u>	ł <u>D</u> :
Valv	e Mo	del		
	М	=	No manual override Manual override, screw type	
вос	C AS6	= =	S — Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body	
Sea			Buna-N Viton®	
DC	24 36 110 24	= = = = = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG) 24 VAC 115 VAC (AC coils internally full wave rectified)	
	230 I Conr DG DS DL DW DN	= nec = = = = =	230 VAC	

= Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A **Coil Model** 40-1836

DT

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

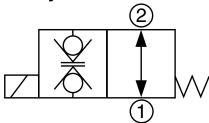
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

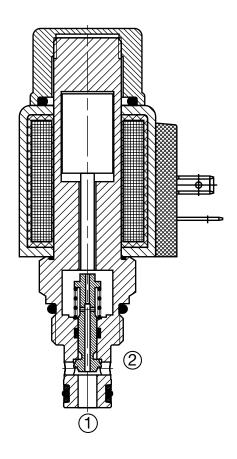
^{*}Please refer to Line Bodies & Cavities section for details

WS08V-01

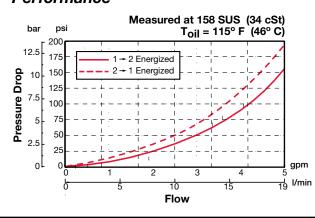
Poppet Type, Bi-directional, Normally Open, Direct Acting Up to 5 gpm (19 I/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2-position, normally open, direct acting, poppet type, intended for use as a bi-directional load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08V allows flow in both directions. When energized the poppet closes and oblocks the flow from port 2 to port 1 and from port 1

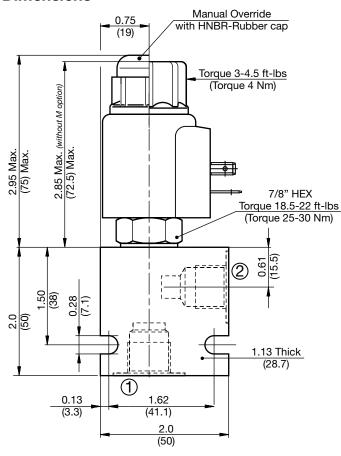
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

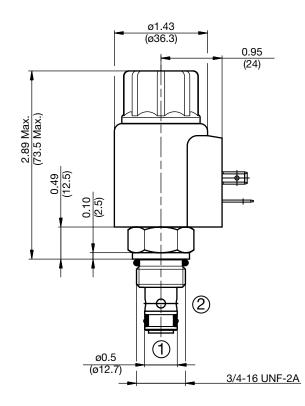
Features

Push type manual override button, protected by rubber cap

opecifications		
Operating Pressure	5000 psi (350 bar)	
Nominal Flow	5 gpm (19 l/min)	
Internal Leakage	Leaktight, less than 2 drops/min. at 3600 psi (0.10 cc/min at 250 bar)	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 35 ms De-energized 50 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC08-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580090 Finisher: 02580091	
Cartridge Weight	0.31 Lbs. (0.14 kg)	
Coil Weight	0.42 Lbs. (0.19 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756	

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

		<u>WS08V-01</u> <u>M</u> -Ç- <u>N</u>	- <u>2</u>	<u> 4 C</u>	<u>)</u> :
Valve Mo	del				
	ς =	tion No manual override Manual override, push type			
AS6	= =	S Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body			
		Buna-N Viton®			
Coil Volta	ge				
DC 12 24 36	= = =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)			
	=	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC			
Coil Conr					⅃
DC DG	=	EN 175301-803-A			

= Dual spade (SAEJ858a)* DS DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DT = Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 40-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

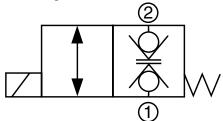
Standard Line Bodies*

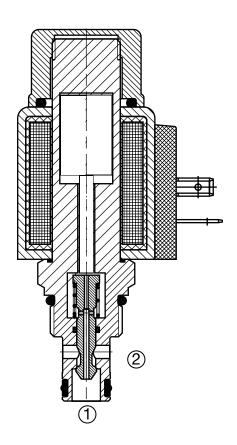
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS08W-01

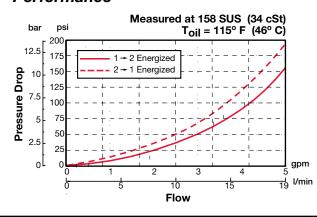
Poppet Type, Bi-directional, Normally Closed, Direct Acting Up to 5 gpm (19 I/min) • 3600 psi (250 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, direct acting, poppet type, intended for use as a bi-directional load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08W blocks flow, leakfree, in both directions. When energized the poppet lifts and opens the flow from port 2 to port 1 and from port

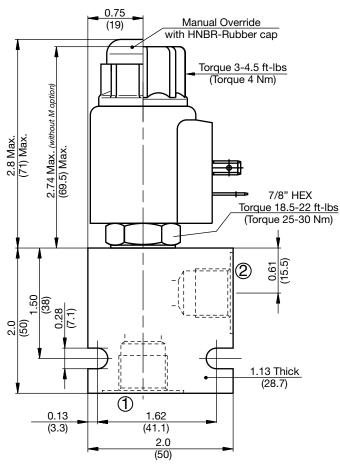
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

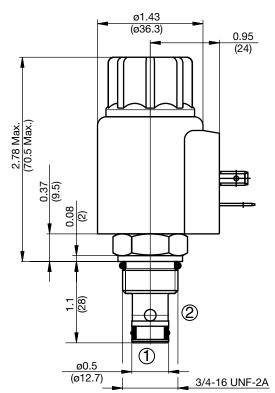
Features

- One piece cartridge body design to maximize reliability
- Push type manual override button, protected by rubber cap

O P	0000: (050)	
Operating Pressure	3600 psi (250 bar)	
Nominal Flow	5 gpm (19 l/min)	
Internal Leakage	Leaktight, less than 2 drops/min. at 3600 psi (0.10 cc/min at 250 bar)	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 35 ms De-energized 50 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC08-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580090 Finisher: 02580091	
Cartridge Weight	0.31 Lbs. (0.14 kg)	
Coil Weight	0.42 Lbs. (0.19 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756	

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	WS08W-01 M-C-N-24 DS
Valve Mode	
Override Op	
	No manual override Manual override, push type
Body & Port	s
AS6 =	Cartridge only SAE-6 Ports, aluminum body SAE-6 Ports, steel body
Seals ——	
N = V =	Buna-N Viton®
Coil Voltage	,
DC 12 = 24 =	No coil, cartridge only 12 VDC 24 VDC 36 VDC 110 VDC (only available with connector DG)
	24 VAC 115 VAC (AC coils internally full wave rectified) 230 VAC
Coil Connec	·
DS = DL = DW =	EN 175301-803-A Dual spade (SAEJ858a)* Leadwires (2) - 18" long (46 cm)* WeatherPak™ on leadwires - 9.5" long (24 cm)* Deutsch™ DT04-2P, molded, axial (IP69K Rated)*

= Amp Junior Timer™, molded, radial mount*

Coil Model 40-1836

DT

AC AG

For other coil connector types consult factory

= EN 175301-803-A

*Coils with internal diode are available, consult factory.

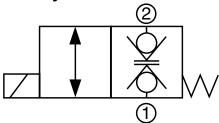
Standard Line Bodies*

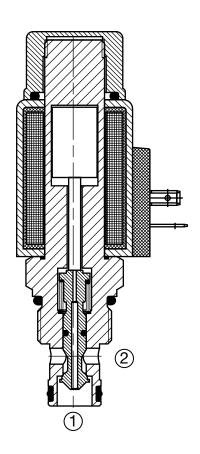
Code	Part No	Material	Pressure Rating	Weight
FH082-AS6	03011409	Aluminum, anodized	3500 psi (245 bar)	0.34 lbs (0.15 kg)
FH082-SS6	00560917	Steel, Zinc plated	6000 psi (420 bar)	1.0 lbs (0.45 kg)

WS10W-01

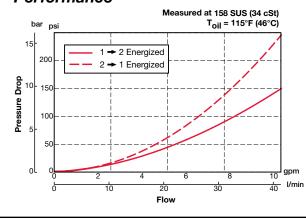
Poppet Type, Bi-directional, Normally Closed, Direct Acting Up to 10.5 gpm (40 l/min) • 5000 psi (350 bar)

Hydraulic Symbol





Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, direct acting, poppet type, intended for use as a bi-directional load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS10W blocks flow, leakfree, in both directions. When energized the poppet lifts and opens the flow from port 2 to port 1 and from port

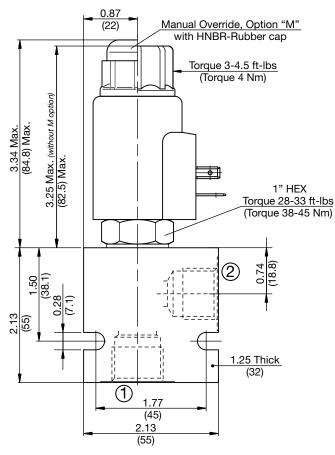
Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

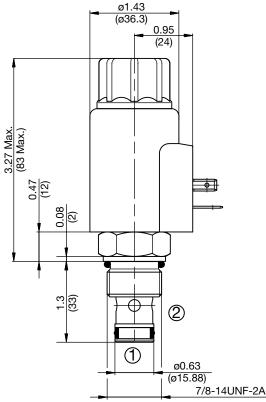
Features

- One piece cartridge body design to maximize reliability
- Push type manual override button, protected by rubber cap

Operating Pressure	5000 psi (350 bar)	
Nominal Flow	10.5 gpm (40 l/min)	
Internal Leakage	Leaktight, less than 5 drops/min. at 5000 psi (0.25 cc/min at 350 bar)	
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C)	
	(Consult factory for usage at temp. outside range.)	
Ambient Temperature Range	-4° to 140°F (-20° to 60°C)	
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage	
Current Draw @ 68°F (20°C)	2.22 A at 12VDC; 1.13 A at 24VDC	
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)	
Response Time (typical)	Energized 35 ms De-energized 50 ms	
Fluid Compatibility	Mineral-based or synthetics with lubricating properties	
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)	
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated β10 ≥ 200.	
Installation	No orientation restrictions	
Cavity	FC10-2 (see Line Bodies & Cavities section)	
Cavity Tools	Rougher: 02580274 Finisher: 02580247	
Cartridge Weight	0.40 Lbs. (0.18 kg)	
Coil Weight	0.51 Lbs. (0.23 kg)	
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.	
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.	
Seal Kits Buna-N Viton®	FS102-N P/N: 03033872 FS102-V P/N: 03051757	

Dimensions





All measurements in inches (mm). Subject to technical modifications

Model Code

	WS10W-01 M-C-N-24 DS
Valve Model -	
blank = 1	No manual override
Body & Ports	Manual override, push type
C = 0 AS8 = 3	Cartridge only SAE-8 Ports, aluminum body SAE-8 Ports, steel body
	Buna-N Viton®
Coil Voltage -	
DC 12 = 2 24 = 2 36 = 3	24 VDC
AC 24 = 2 115 = 2 230 = 2	115 VAC (AC coils internally full wave rectified)
Coil Connect	
DC DG = I	EN 175301-803-A

= Dual spade (SAEJ858a)* DS

DL

 Leadwires (2) - 18" long (46 cm)*
 WeatherPak™ on leadwires - 9.5" long (24 cm)*
 Deutsch™ DT04-2P, molded, axial (IP69K Rated)* DW DN DT Amp Junior Timer™, molded, radial mount*

AC AG = EN 175301-803-A

Coil Model 50-1836

For other coil connector types consult factory

*Coils with internal diode are available, consult factory.

Standard Line Bodies*

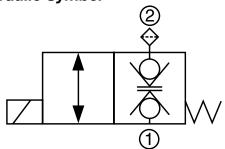
Code	Part No	Material	Pressure Rating	Weight
FH102-AS8	03037778	Aluminum, anodized	3500 psi (245 bar)	0.40 lbs (0.18 kg)
FH102-SS8	03037612	Steel, Zinc plated	6000 psi (420 bar)	1.16 lbs (0.53 kg)

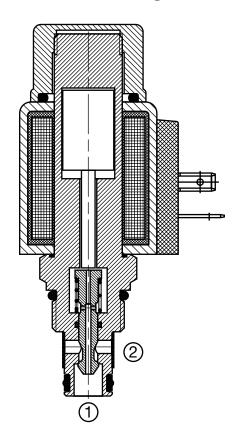
^{*}Please refer to Line Bodies & Cavities section for details

WS08W-30

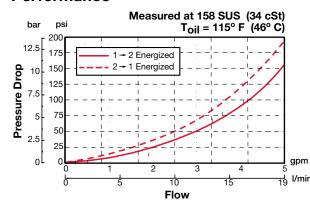
Poppet Type, Bi-directional, Normally Closed, Direct Acting Up to 5 gpm (19 l/min) • 3600 psi (250 bar)







Performance



Description

A screw-in cartridge, solenoid operated, 2-way, 2 position, normally closed, direct acting, poppet type, with filter screen on port 2, intended for use as a bidirectional load holding device in hydraulic circuits requiring low internal leakage.

Operation

When de-energized the WS08W blocks flow, leakfree, in both directions. When energized the poppet lifts and opens the flow from port 2 to port 1 and from port

Operation of Manual Override Option: To override, push and hold the override button. The override is not detented. The manual override option is intended for emergency use, not for continuous duty operation.

Features

- Filter screen on port 2 for protection from contamination getting inside the cartridge
- One piece cartridge body design to maximize reliability
- Push type manual override button, protected by rubber cap

Operating Pressure	3600 psi (250 bar)		
Nominal Flow	5 gpm (19 l/min)		
Internal Leakage	Leaktight, less than 2 drops/min. at 3600 psi (0.10 cc/min at 250 bar)		
Fluid Operating Temp. Range	-4° to 248°F (-20° to 120°C) (Consult factory for usage at temp. outside range.)		
Ambient Temperature Range	-4° to 140°F (-20° to +60°C)		
Coil Duty Rating	Continuous from 85% to 115% of nominal voltage		
Current Draw @ 68°F (20°C)	1.5 A at 12VDC; 0.8 A at 24VDC		
Min. Pull-in Voltage @ 68°F (20°C)	85% of nominal @ 5000 psi (350 bar)		
Response Time (typical)	Energized 35 ms De-energized 50 ms		
Fluid Compatibility	Mineral-based or synthetics with lubricating properties		
Viscosity	50 to 2000 SUS (7.4 to 420 cSt)		
Filtration	21/19/16 or cleaner (per ISO 4406). Use with filter rated ß10 ≥ 200.		
Filter screen	300 µm mesh		
Installation	No orientation restrictions		
Cavity	FC08-2 (see Line Bodies & Cavities section)		
Cavity Tools	Rougher: 02580090 Finisher: 02580091		
Cartridge Weight	0.31 Lbs. (0.14 kg)		
Coil Weight	0.42 Lbs. (0.19 kg)		
Cartridge Material	Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N or Viton® o-rings. PTFE back-up rings.		
Coil Material	Class N high temperature magnet wire, steel shell, polyamid encapsulation.		
Seal Kits Buna-N Viton®	FS082-N P/N: 03033920 FS082-V P/N: 03051756		