

General Description

3-Way Spool Valves.

For additional information see
Technical Tips on pages SV1-SV6.

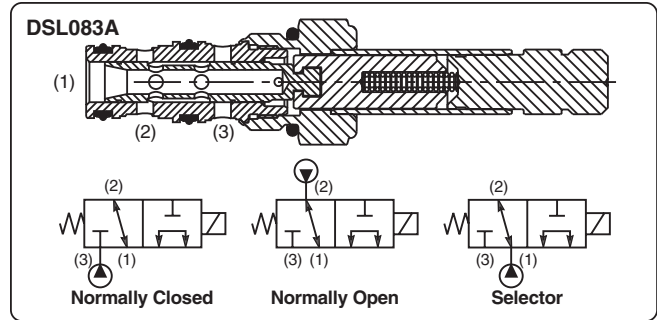
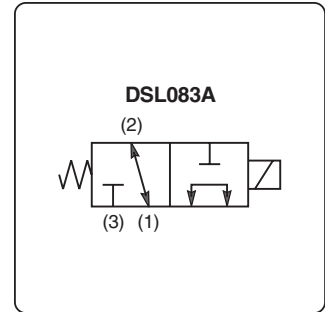
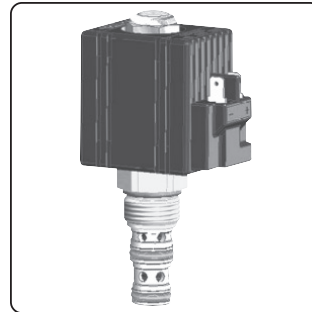


Features

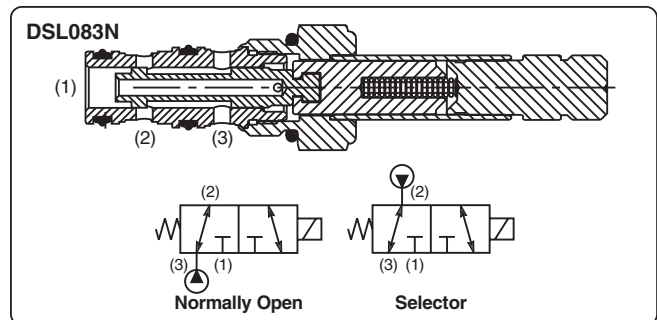
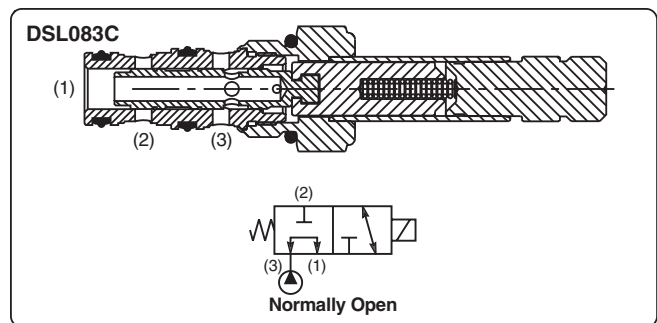
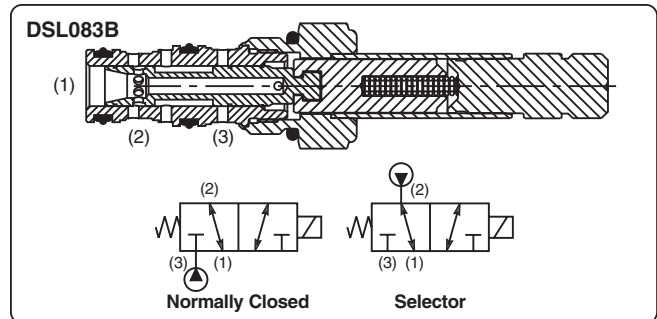
- High flow capacity with reduced space requirements
- Standard valve bodies and common cavities
- One piece encapsulated coils with minimal amperage draw
- Manual overrides, seal variations and other options available
- No dynamic seals
- Variety of coil terminations
- Polyurethane “D”-Ring eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications

Specifications

Rated Flow	DSL083A
	N.O. 13.2 LPM (3.5 GPM)
	N.C. 8.4 LPM (2.25 GPM)
	Selector 8.4 LPM (2.25 GPM)
	DSL083B
	N.C. 15.0 LPM (4.0 GPM)
Selector 15.0 LPM (4.0 GPM)	
DSL083C	N.O. 15.0 LPM (4.0 GPM)
	DSL083N
N.O. 12.3 LPM (3.25 GPM)	
Selector 15.0 LPM (4.0 GPM)	
Maximum Inlet Pressure	250 Bar (3600 PSI)
Leakage at 150 SSU (32 cSt)	120 cc/min. (7.5 in ³ /min.) at 250 Bar (3600 PSI) DSL083B - 180 cc/min. (11 in ³ /min.)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	50 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range (Ambient)	-45°C to +93.3°C (“D”-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Filtration	ISO Code 16/13, SAE Class 4 or better
Fluids	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Approx. Weight	.13 kg (.28 lbs.)
Cavity	C08-3
Form Tool	Rougher NFT08-3R Finisher NFT08-3F

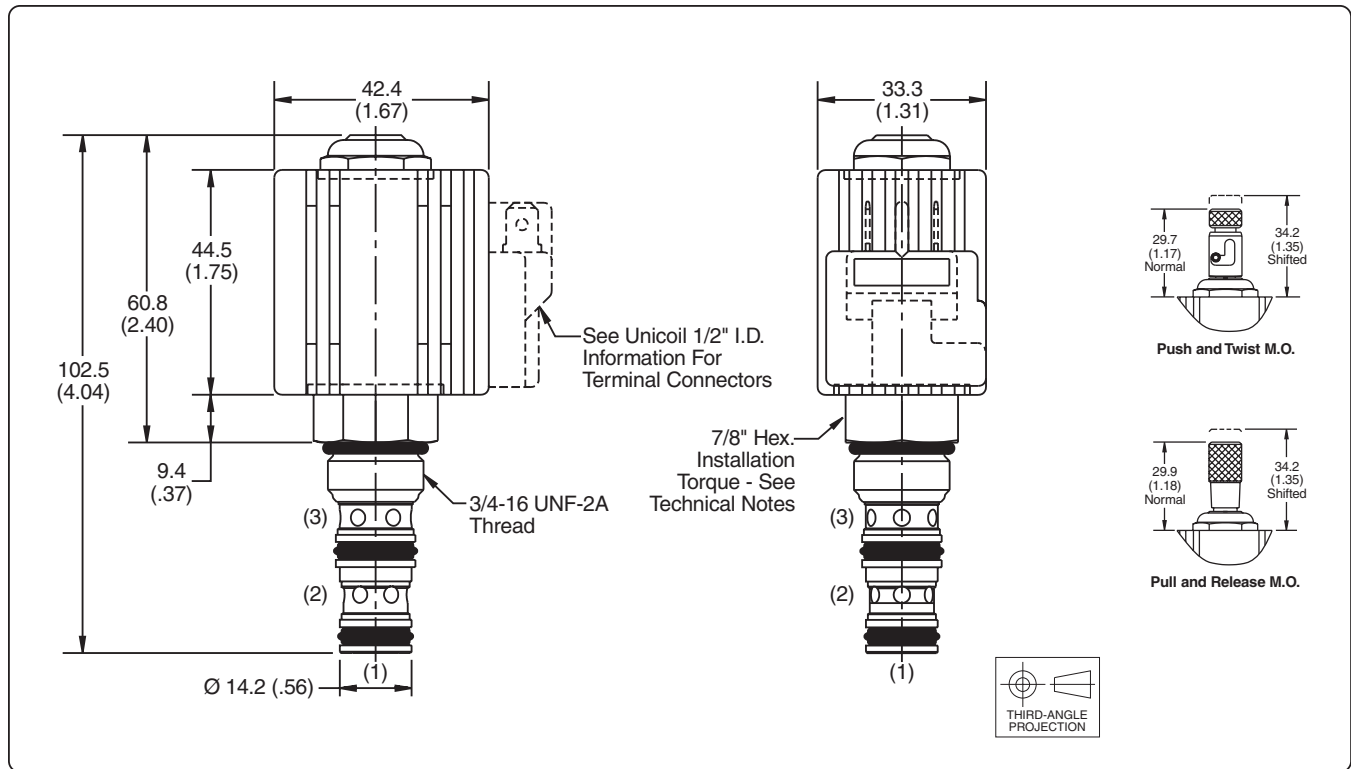


Construction/Symbols



dsl083.pm6.5, bl, 6/04

Dimensions Millimeters (Inches)



Ordering Information

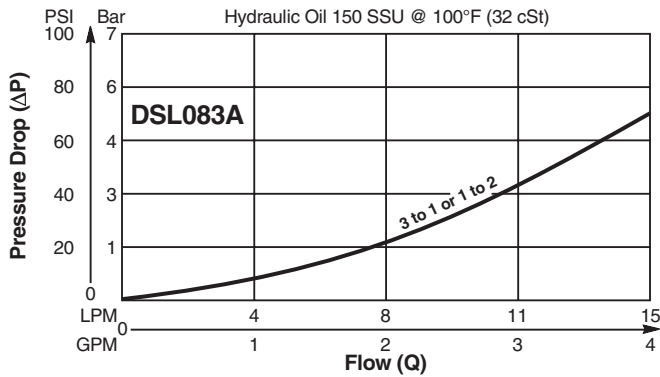
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08 Size Solenoid Valve	Style	Override Option	Seals	Coil Voltage	Coil Wattage	Coil Termination	Diode	Body Material	Port Size

Code Style	Code Override Options	Code Coil Wattage	Code Diode
A	Omit None P Pull & Release T Push & Twist	Omit Without Coil L 14 Watt	Omit None R Diode
B	Code Seals / Kit. No.	Code Coil Termination	Code Body Material
C	Omit "D"-Ring / (SK08-3) N Nitrile / (SK08-3N) V Fluorocarbon / (SK08-3V)	Omit Without Coil C Conduit (AC Only) D DIN Plug Face M Metri-Pak* P Dual Spade* S Dual Screw* W Dual Lead* WS Weather-Pak Shroud*	Omit Steel A Aluminum
N	Code Coil Voltage	Code Port Size Body Part No.	
	Omit Without Coil D012 12 VDC D024 24 VDC A120 120/110 VAC, 60/50 Hz A240 240/220 VAC, 60/50 Hz	Omit Cartridge Only 4P 1/4" NPTF (B08-3-*4P) 6T SAE-6 (B08-3-*6T) 6B 3/8" BSPG (B08-3-*6B)	

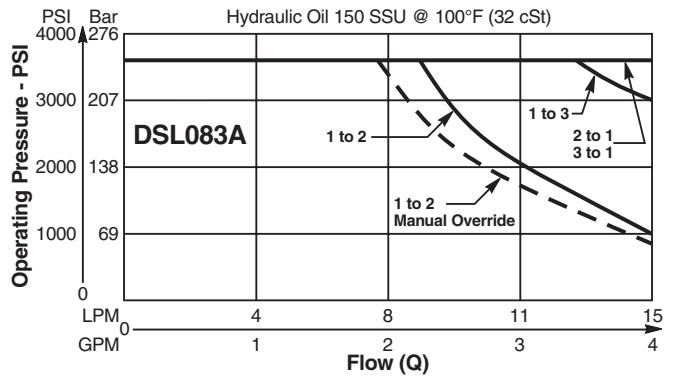
*See Unicoil 1/2" I.D. * DC Only*

** Add "A" for aluminum, omit for steel.*

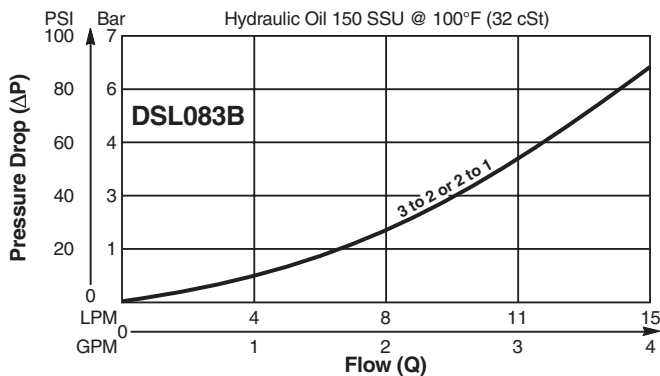
Pressure Drop vs. Flow (Through cartridge only)



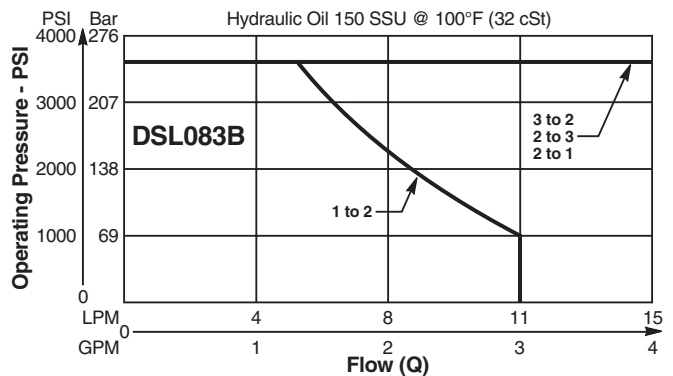
Shift Limit Characteristics (Min. Operating Voltage)



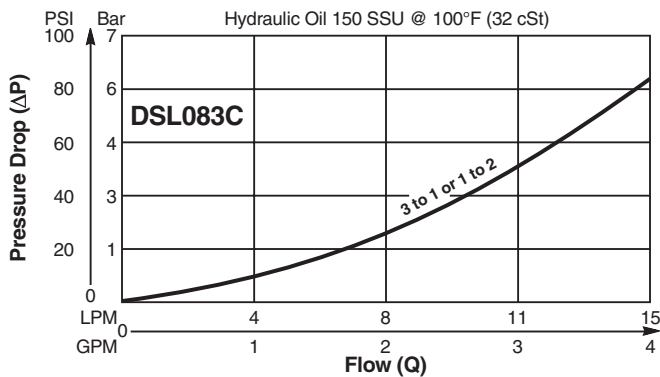
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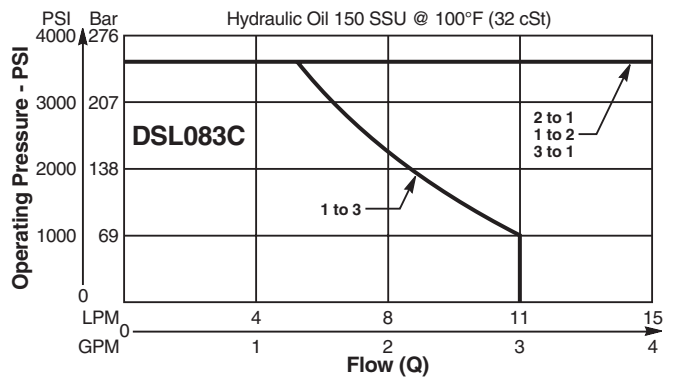
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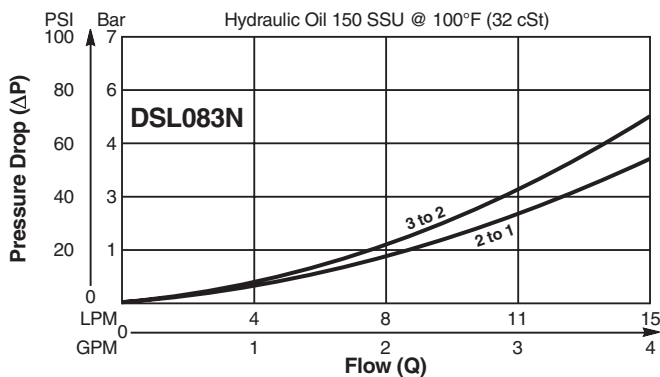
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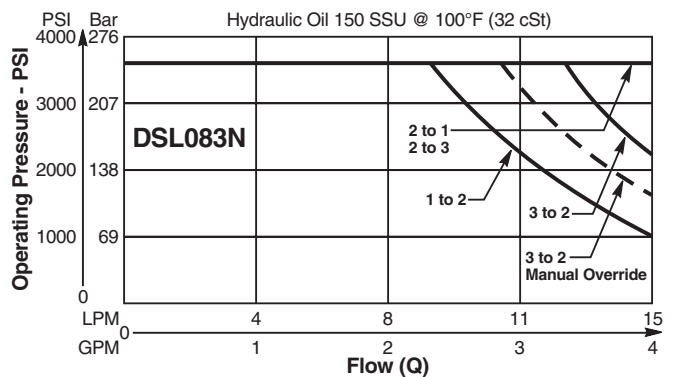
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



Technical Information

General Description

3-Way Spool Valves.

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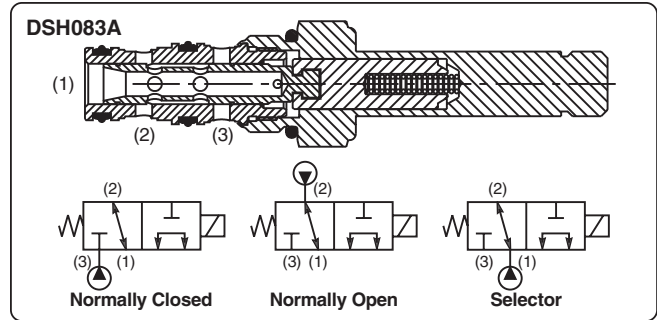
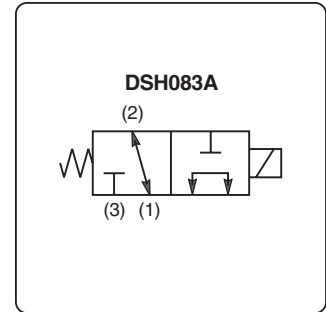
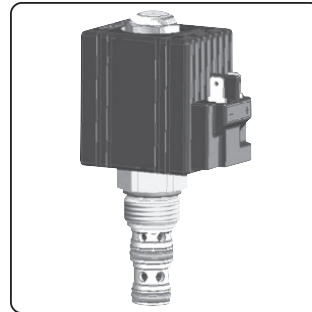


Features

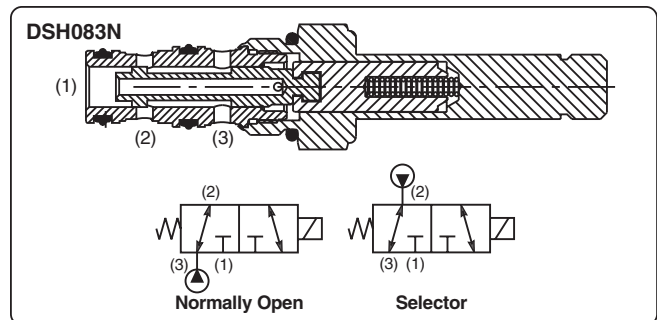
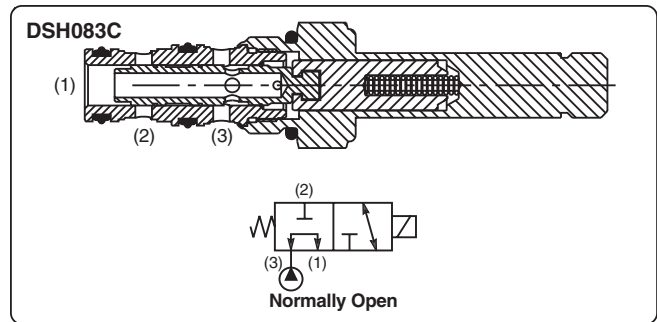
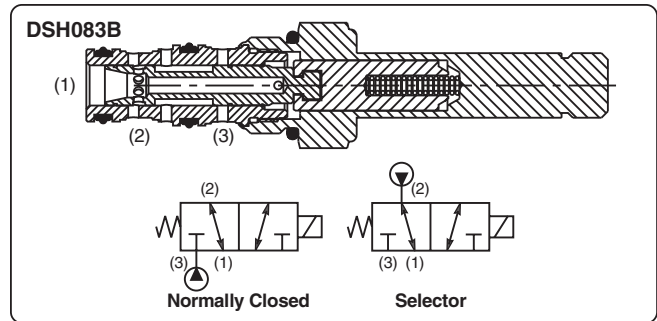
- High flow capacity with reduced space requirements
- Standard valve bodies and common cavities
- One piece encapsulated coils with minimal amperage draw
- Manual overrides, seal variations and other options available
- No dynamic seals
- Variety of coil terminations
- Polyurethane "D"-Ring eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications

Specifications

Rated Flow	DSH083A
	N.O. 11.3 LPM (3.0 GPM)
	N.C. 7.5 LPM (2.0 GPM)
	Selector 7.5 LPM (2.0 GPM)
	DSH083B
	N.C. 15.0 LPM (4.0 GPM)
Selector 15.0 LPM (4.0 GPM)	
DSH083C	N.O. 15.0 LPM (4.0 GPM)
	DSH083N
N.O. 11.3 LPM (3.0 GPM)	
Selector 15.0 LPM (4.0 GPM)	
Maximum Inlet Pressure	350 Bar (5000 PSI)
Leakage at 150 SSU (32 cSt)	160 cc/min. (10 in ³ /min.) at 350 Bar (5000 PSI) DSH083B - 250 cc/min. (15 in ³ /min.)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	50 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range (Ambient)	-45°C to +93.3°C ("D"-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Filtration	ISO Code 16/13, SAE Class 4 or better
Fluids	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Approx. Weight	.13 kg (.28 lbs.)
Cavity	C08-3
Form Tool	Rougher NFT08-3R Finisher NFT08-3F



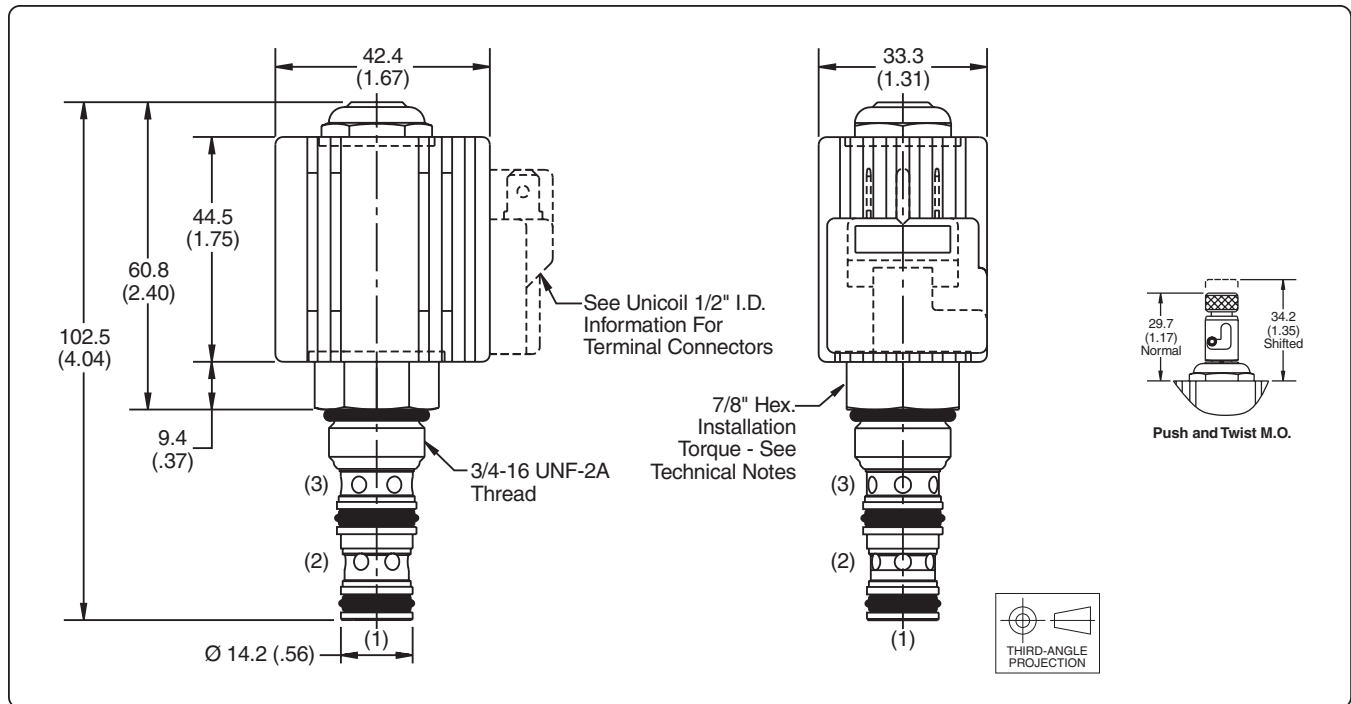
Construction/Symbols



dsh083.pm6.5, bl, 6/04



Dimensions Millimeters (Inches)



Ordering Information

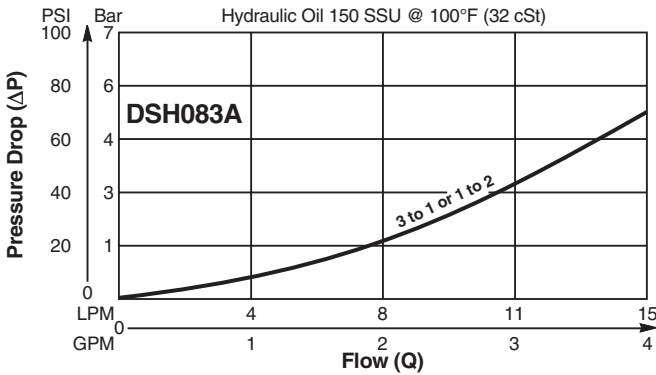
DSH083									
08 Size Solenoid Valve	Style	Override Option	Seals	Coil Voltage	Coil Wattage	Coil Termination	Diode	Body Material	Port Size

Code Style	Code Override Options	Code Coil Wattage	Code Diode
A	Omit None T Push & Twist (N.C. & N.O.)	Omit Without Coil L 14 Watt	Omit None R Diode
B	Code Seals / Kit. No.	Code Coil Termination	Code Body Material
C	Omit "D"-Ring / (SK08-3) N Nitrile / (SK08-3N) V Fluorocarbon / (SK08-3V)	Omit Without Coil C Conduit (AC Only) D DIN Plug Face M Metri-Pak* P Dual Spade* S Dual Screw* W Dual Lead* WS Weather-Pak Shroud*	Omit Steel A Aluminum
N	Code Coil Voltage	Code Port Size Body Part No.	
	Omit Without Coil D012 12 VDC D024 24 VDC A120 120/110 VAC, 60/50 Hz A240 240/220 VAC, 60/50 Hz	Omit Cartridge Only 4P 1/4" NPTF (B08-3-*4P) 4T SAE-4 (B08-3-*4T) 6T SAE-6 (B08-3-*6T) 6B 3/8" BSPG (B08-3-*6B)	

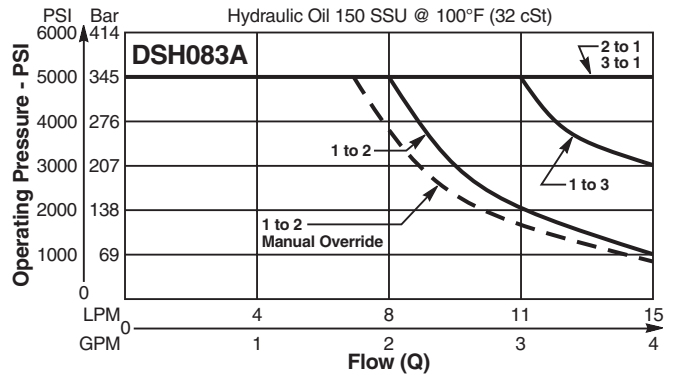
*See Unicoil 1/2" I.D. * DC Only*

** Add "A" for aluminum, omit for steel.*

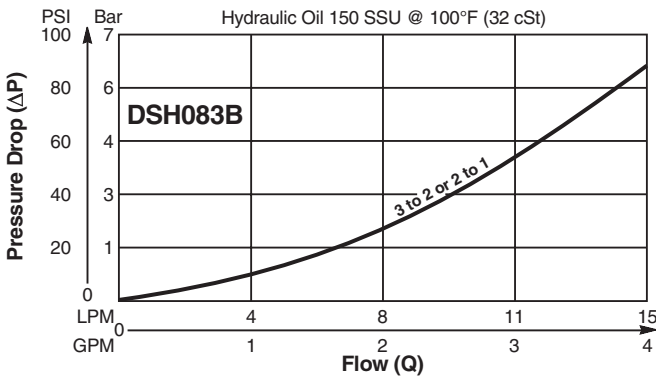
Pressure Drop vs. Flow (Through cartridge only)



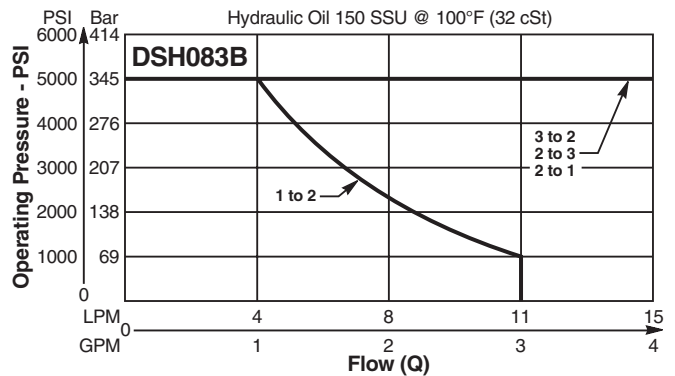
Shift Limit Characteristics (Min. Operating Voltage)



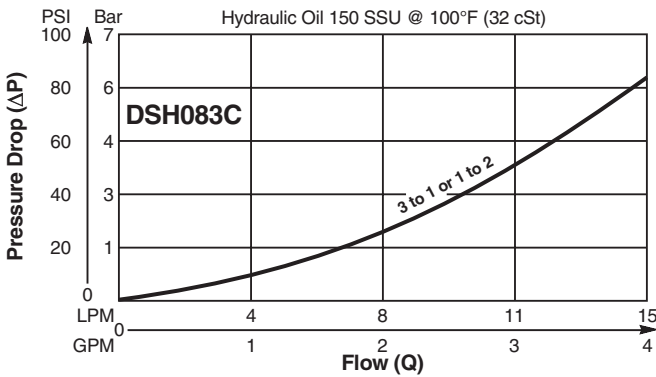
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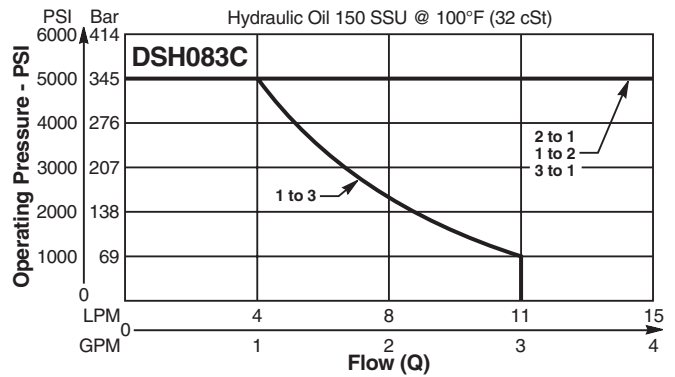
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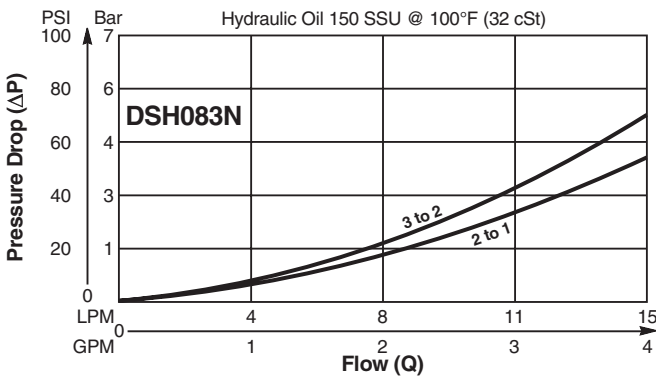
Pressure Drop vs. Flow (Through cartridge only)



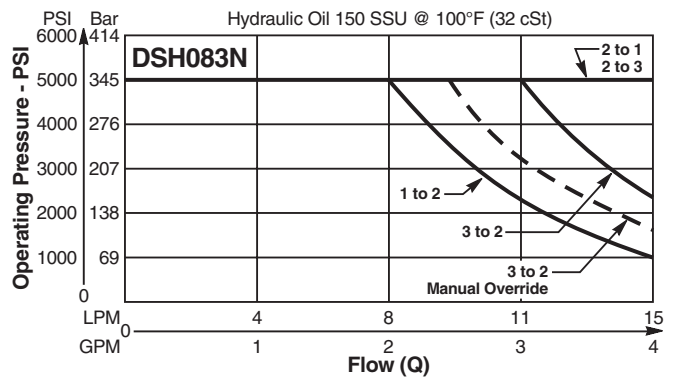
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



General Description

3-Way Spool Valves. [For additional information see Technical Tips on pages SV1-SV6.](#)

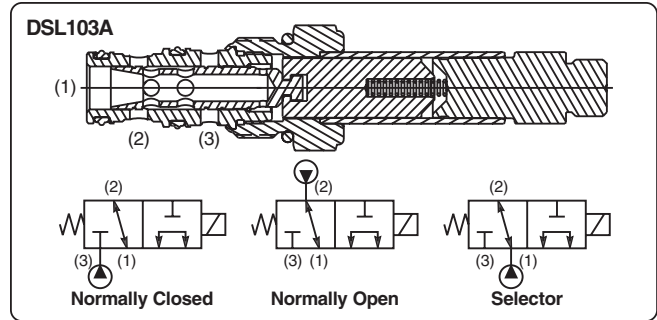
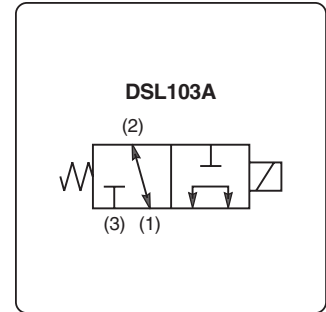
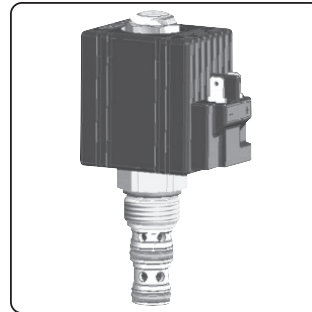


Features

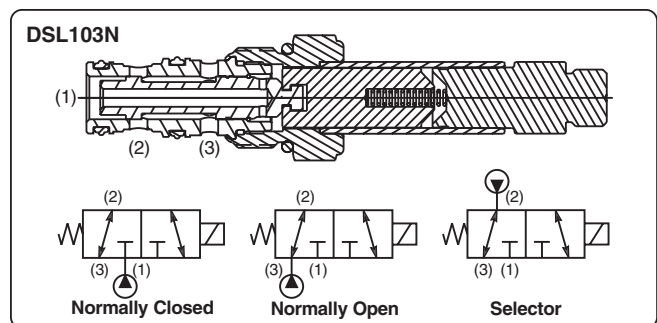
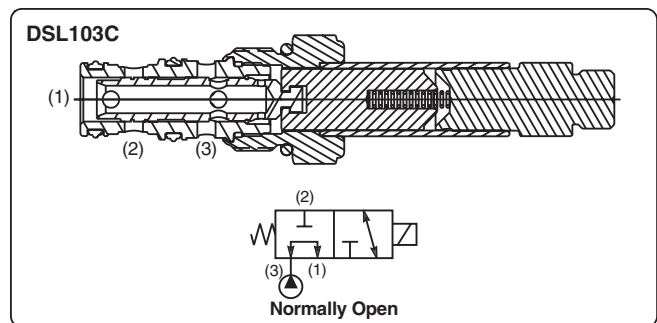
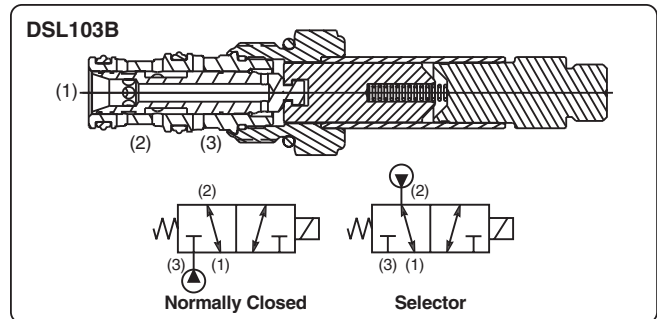
- High flow capacity with reduced space requirements
- Standard valve bodies and common cavities
- One-piece encapsulated coil with minimal amperage draw
- Manual overrides, seal variations and other options available
- No dynamic seals
- Variety of coil terminations
- Polyurethane "D"-Ring

Specifications

Rated Flow	DSL103A	N.O.	22.7 LPM (6.0 GPM)	
		N.C.	17.0 LPM (4.5 GPM)	
		Selector	17.0 LPM (4.5 GPM)	
	DSL103B	N.C.	30.2 LPM (8.0 GPM)	
		Selector	30.2 LPM (8.0 GPM)	
	DSL103C	N.O.	30.2 LPM (8.0 GPM)	
	DSL103N	N.O.	18.8 LPM (5.0 GPM)	
		N.C.	18.8 LPM (5.0 GPM)	
		Selector	30.2 LPM (8.0 GPM)	
	Maximum Inlet Pressure	250 Bar (3600 PSI)		
	Leakage at 150 SSU (32 cSt)	120 cc/min. (7.5 in ³ /min.) DSL103B - 180 cc/min. (11 in ³ /min.)		
	Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time	50 ms to 100 ms			
Cartridge Material	All parts steel. All operating parts hardened steel.			
Operating Temp. Range (Ambient)	-45°C to +93.3°C ("D"-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)			
Filtration	ISO Code 16/13, SAE Class 4 or better			
Fluids	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)			
Approx. Weight	.19 kg (.42 lbs.)			
Cavity	C10-3			
Form Tool	Rougher	NFT10-3R		
	Finisher	NFT10-3F		

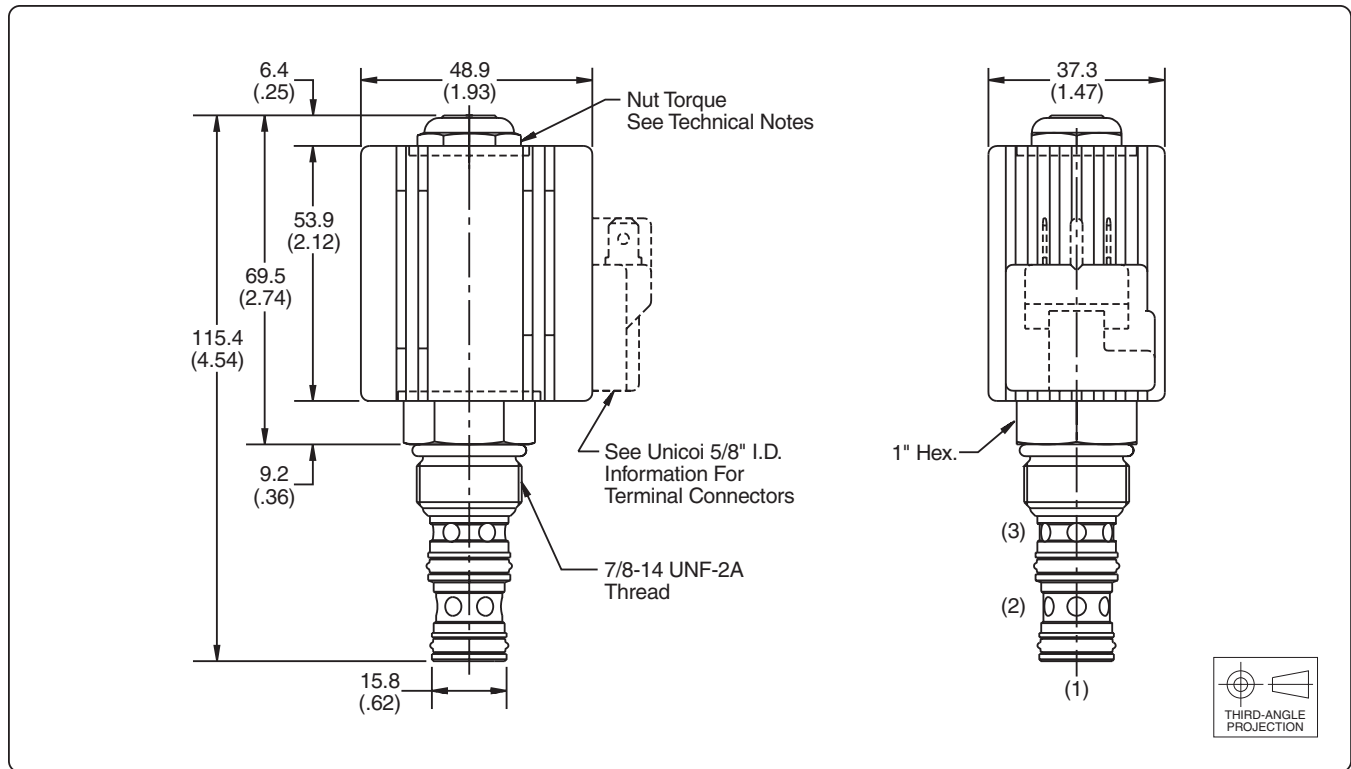


Construction/Symbols



dsl103.pm6.5, bl, 6/04

Dimensions Millimeters (Inches)

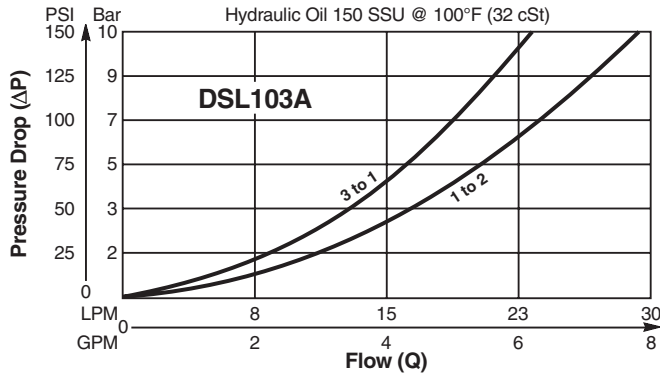


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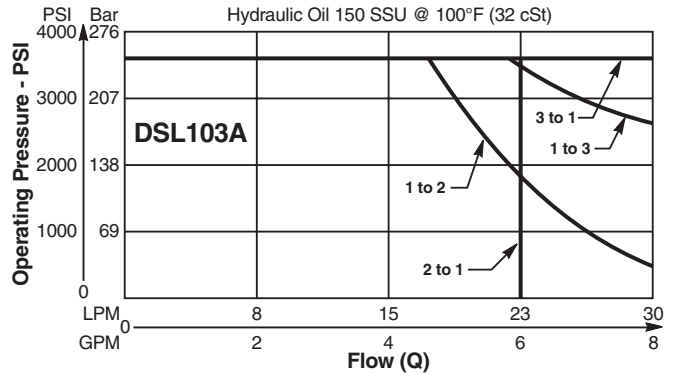
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10 Size Solenoid Valve	Style	Override Option	Seals	Coil Voltage	Coil Wattage	Coil Termination	Diode	Body Material	Port Size

Code Style	Code Override Options	Code Coil Wattage	Code Diode
A	Omit None P Pull & Release T Push & Twist	Omit Without Coil L 20 Watt	Omit None R Diode
B	Code Seals / Kit. No. Omit "D"-Ring / (SK10-3) N Nitrile / (SK10-3N) V Fluorocarbon / (SK10-3V)	Code Coil Termination Omit Without Coil C Conduit (AC Only) D DIN Plug Face J Amp Jr.* M Metri-Pak* P Dual Spade* S Dual Screw* W Dual Lead* WS Weather-Pak Shroud*	Code Body Material Omit Steel A Aluminum
C	Code Coil Voltage Omit Without Coil D012 12 VDC D024 24 VDC A120 120/110 VAC, 60/50 Hz A240 240/220 VAC, 60/50 Hz	Code Port Size Body Part No. Omit Cartridge Only 4P 1/4" NPTF (B10-3-*4P) 6P 3/8" NPTF (B10-3-*6P) 8P 3/8" NPTF (B10-3-*8P) 6T SAE-6 (B10-3-*6T) 8T SAE-8 (B10-3-*8T) 6B 3/8" BSPG (B10-3-6B)† 8B 3/8" BSPG (B10-3-*8B)	
N		<i>See Unicoil 5/8" I.D.</i> <i>* DC Only</i>	<i>* Add "A" for aluminum, omit for steel.</i> <i>† Steel bodies only.</i>

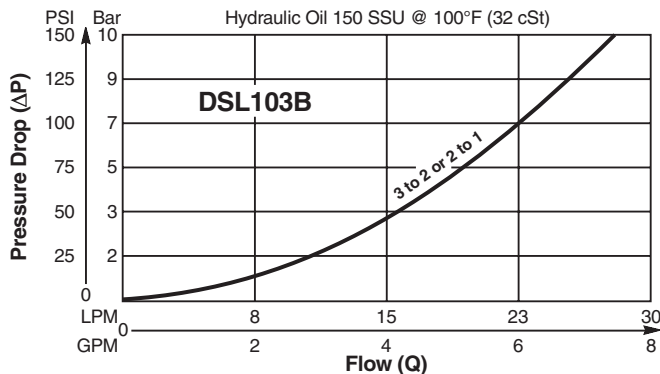
Pressure Drop vs. Flow (Through cartridge only)



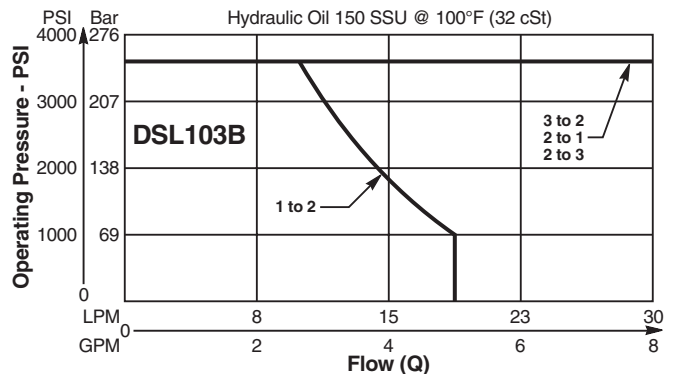
Shift Limit Characteristics (Min. Operating Voltage)



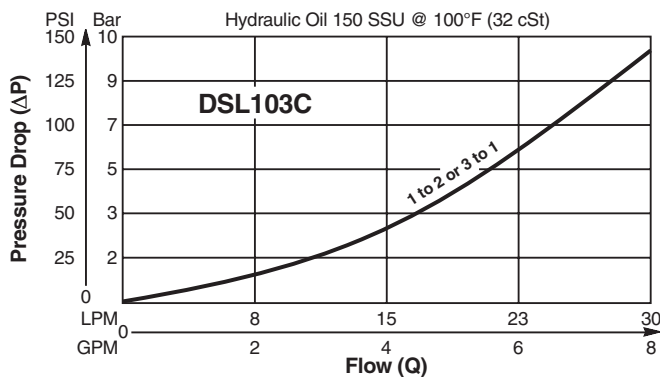
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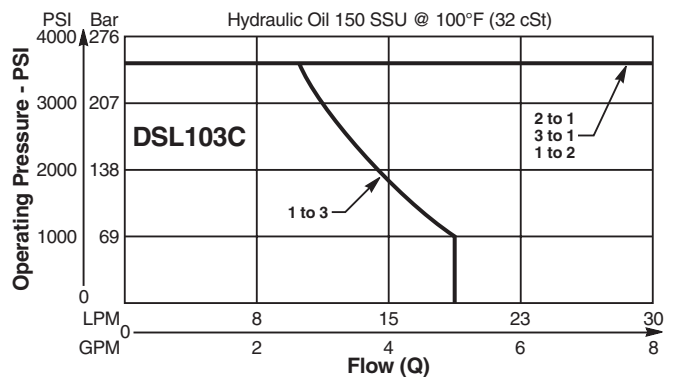
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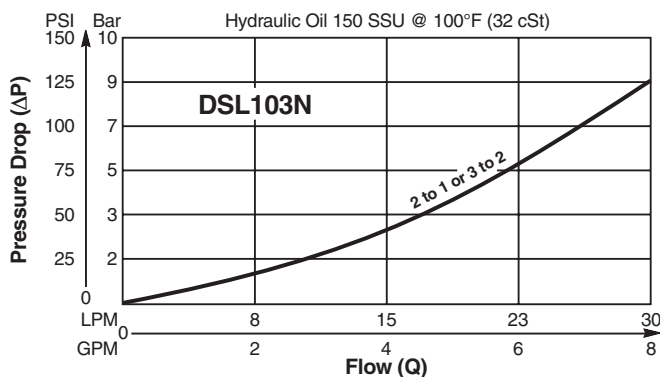
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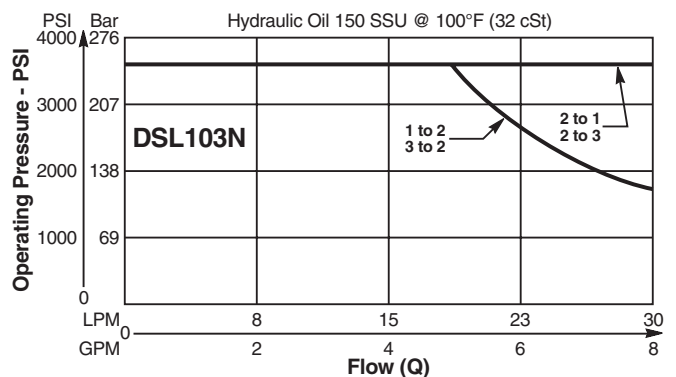
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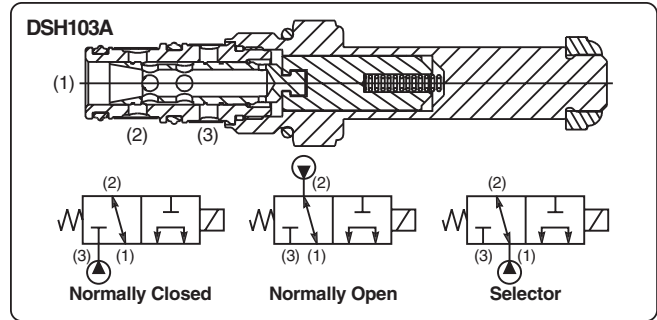
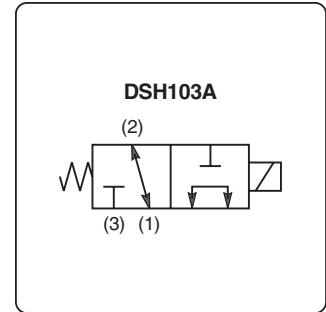
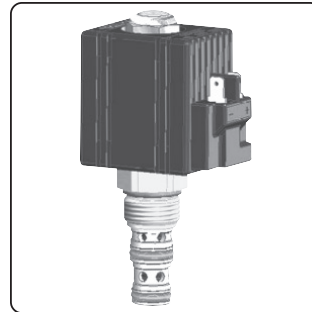


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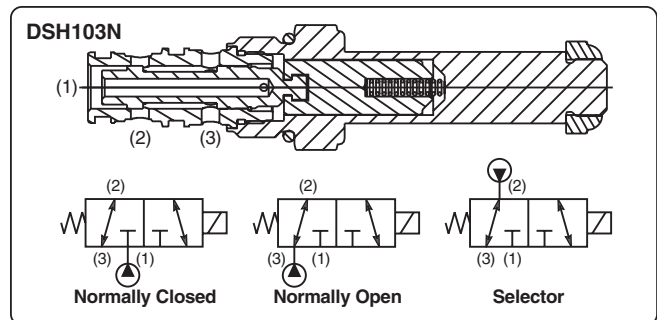
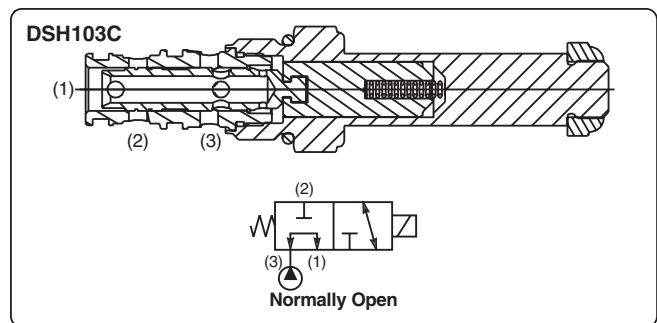
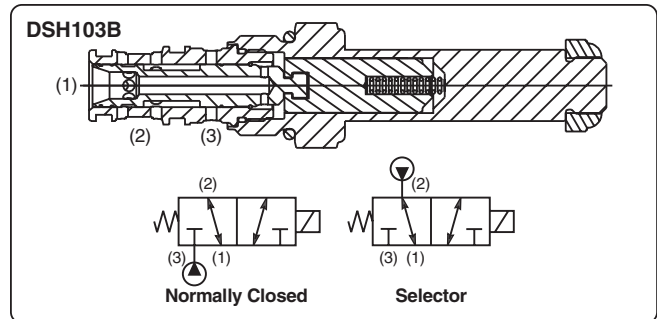
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Specifications

Rated Flow	DSH103A
	N.O. 17.0 LPM (4.5 GPM)
	N.C. 15.0 LPM (4.0 GPM)
	Selector 15.0 LPM (4.0 GPM)
	DSH103B
	N.C. 30.0 LPM (8.0 GPM)
	Selector 30.0 LPM (8.0 GPM)
	DSH103C
	N.O. 30.0 LPM (8.0 GPM)
	DSH103N
	N.O. 15.0 LPM (4.0 GPM)
	N.C. 15.0 LPM (4.0 GPM)
Selector 30.0 LPM (8.0 GPM)	
Maximum Inlet Pressure	350 Bar (5000 PSI)
Leakage at 150 SSU (32 cSt)	160 cc/min. (10 in ³ /min.) DSH103B - 250 cc/min. (15 in ³ /min.)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	50 ms to 100 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range (Ambient)	-45°C to +93.3°C ("D"-Ring) (-50°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Filtration	ISO Code 16/13, SAE Class 4 or better
Fluids	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Approx. Weight	.19 kg (.42 lbs.)
Cavity	C10-3
Form Tool	Rougher NFT10-3R Finisher NFT10-3F



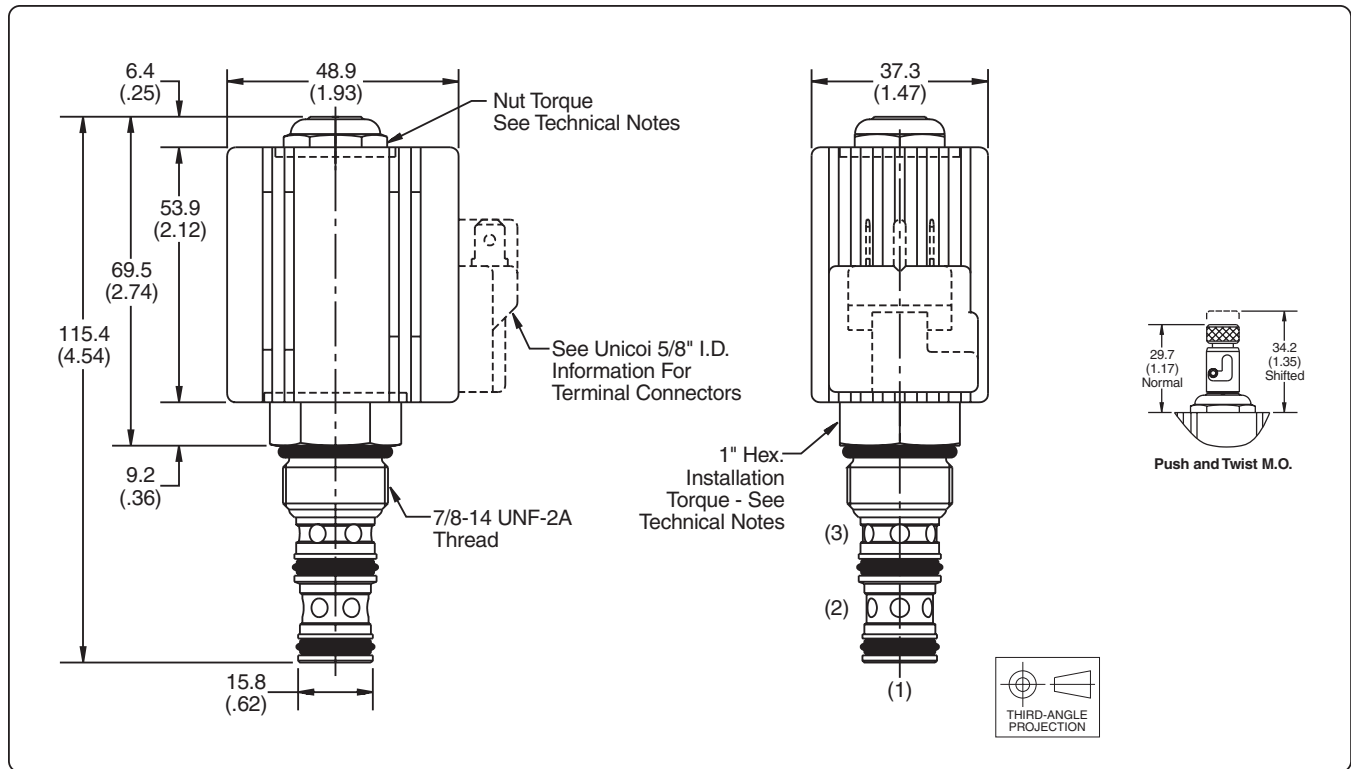
Construction/Symbols



dsh103.pm6.5, bl, 6/04



Dimensions Millimeters (Inches)



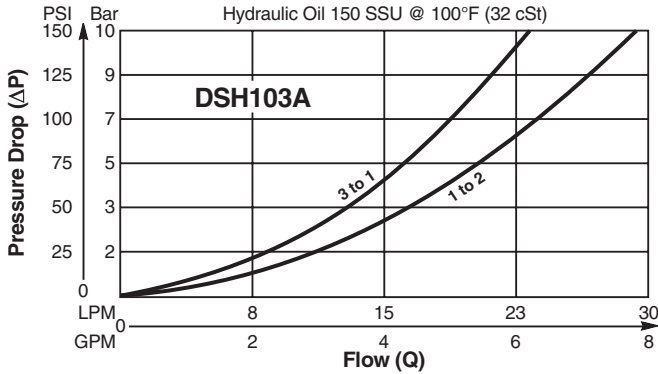
Ordering Information

DSH103									
10 Size Solenoid Valve	Style	Override Option	Seals	Coil Voltage	Coil Wattage	Coil Termination	Diode	Body Material	Port Size

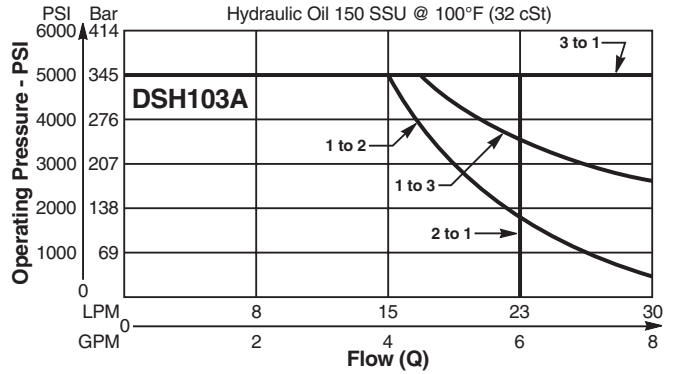
Code Style	Code Override Options	Code Coil Wattage	Code Diode
A	Omit None T Push & Twist (N.C. & N.O.)	Omit Without Coil L 20 Watt	Omit None R Diode
B	Code Seals / Kit. No.	Code Coil Termination	Code Body Material
N	Omit "D"-Ring / (SK10-3) N Nitrile / (SK10-3N) V Fluorocarbon / (SK10-3V)	Omit Without Coil C Conduit (AC Only) D DIN Plug Face M Metri-Pak* P Dual Spade* S Dual Screw* W Dual Lead* WS Weather-Pak Shroud*	Omit Steel A Aluminum
	Code Coil Voltage	Code Port Size Body Part No.	
	Omit Without Coil D012 12 VDC D024 24 VDC A120 120/110 VAC, 60/50 Hz A240 240/220 VAC, 60/50 Hz	Omit Cartridge Only 4P 1/4" NPTF (B10-3-*4P) 6P 3/8" NPTF (B10-3-*6P) 8P 3/8" NPTF (B10-3-*8P) 6T SAE-6 (B10-3-*6T) 8T SAE-8 (B10-3-*8T) 6B 3/8" BSPG (B10-3-6B)† 8B 3/8" BSPG (B10-3-*8B)	

* Add "A" for aluminum, omit for steel.
 † Steel bodies only.

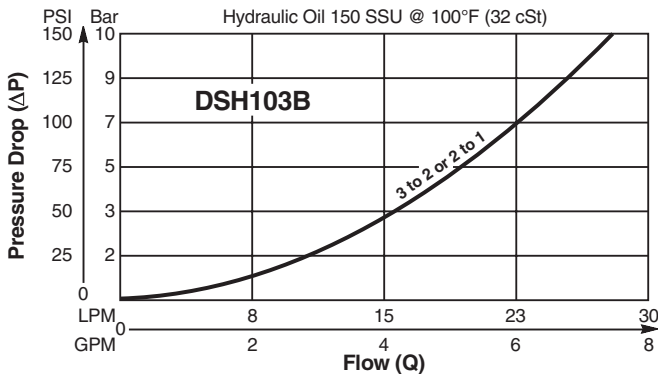
Pressure Drop vs. Flow (Through cartridge only)



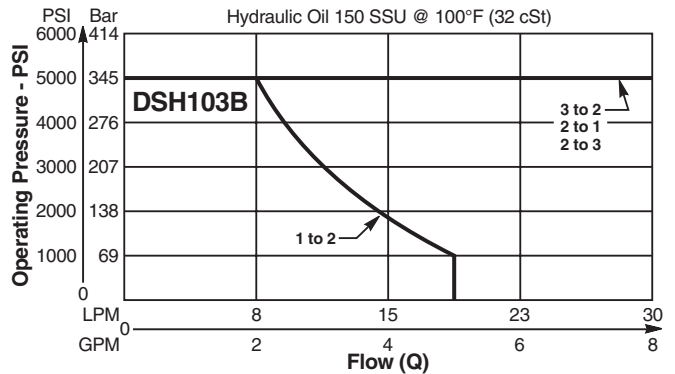
Shift Limit Characteristics (Min. Operating Voltage)



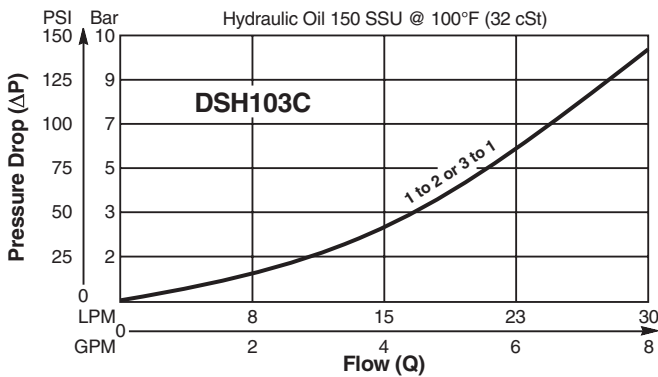
Pressure Drop vs. Flow (Through cartridge only)



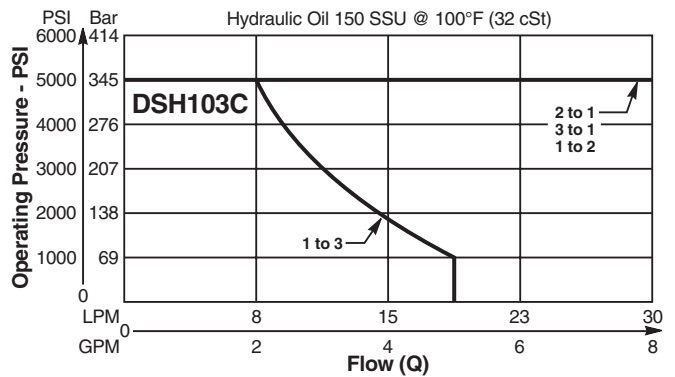
Shift Limit Characteristics (Min. Operating Voltage)



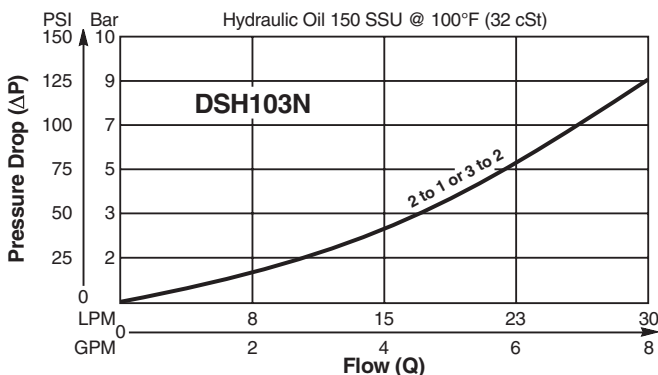
Pressure Drop vs. Flow (Through cartridge only)



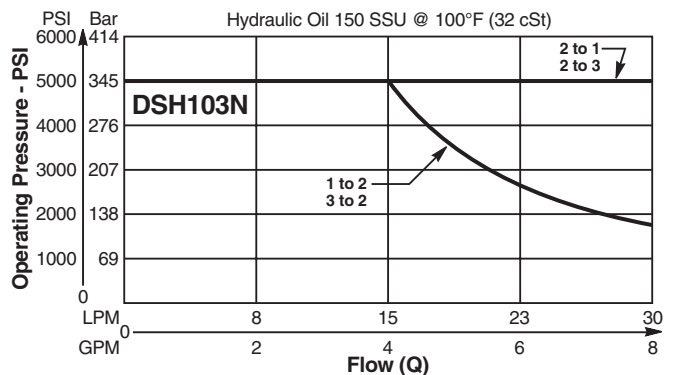
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



General Description

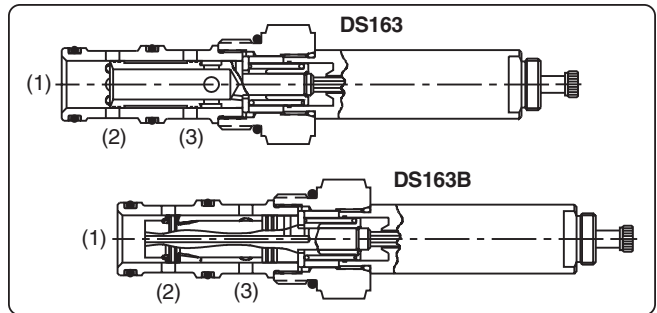
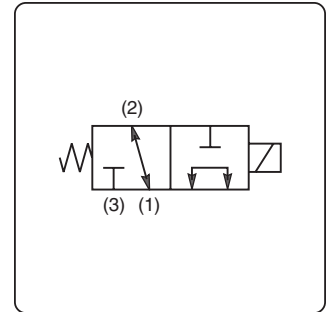
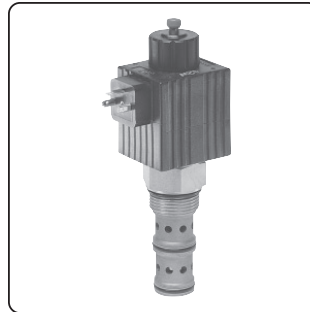
3-Way Spool Valves. [For additional information see Technical Tips on pages SV1-SV6.](#)

Features

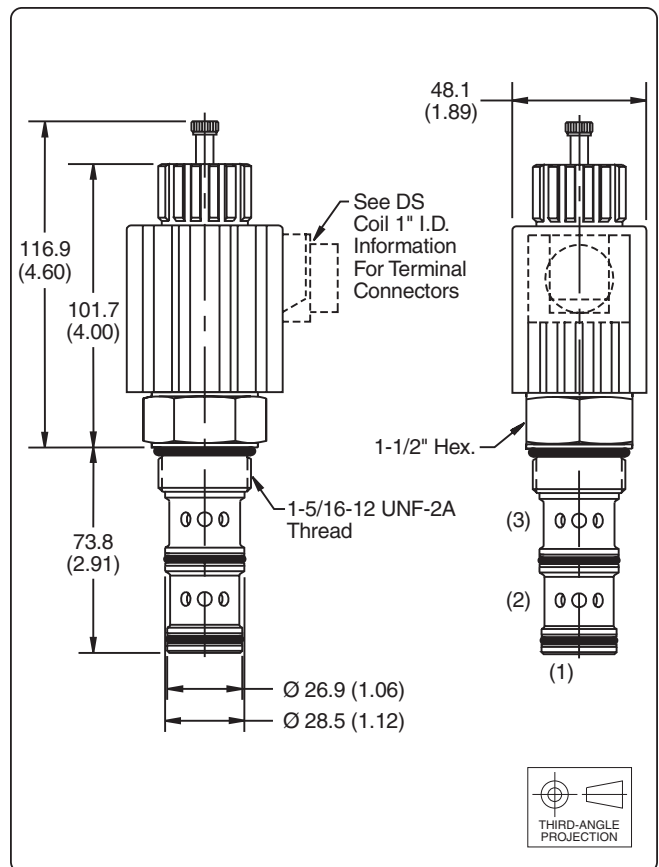
- High flow capacity with reduced space requirements
- Standard valve body and common cavities
- One-piece encapsulated coil with minimal amperage draw
- No dynamic seals
- Variety of coil terminations

Specifications

Rated Flow	DS163
	N.O. 45.4 LPM (12 GPM)
	N.C. 49.2 LPM (13 GPM)
	Selector 41.6 LPM (11 GPM)
	DS163B
	N.O. 26.5 LPM (7 GPM)
N.C. 53.0 LPM (14 GPM)	
Selector 56.8 LPM (15 GPM)	
Maximum Inlet Pressure	210 Bar (3000 PSI)
Leakage at 150 SSU (32 cSt)	82 cc/min. (5 in ³ /min.)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	Normally Closed up to 90 ms Normally Open up to 100 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range (Ambient)	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
Filtration	ISO Code 16/13, SAE Class 4 or better
Fluids	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Approx. Weight	.59 kg (1.3 lbs.)
Cavity	C16-3
Form Tool	Rougher NFT16-3R Finisher NFT16-3F



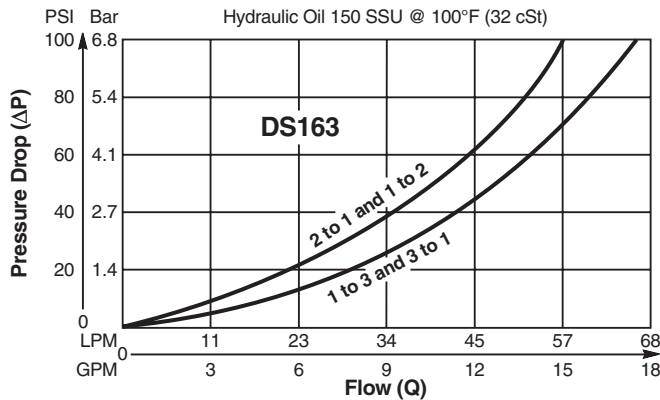
Dimensions Millimeters (Inches)



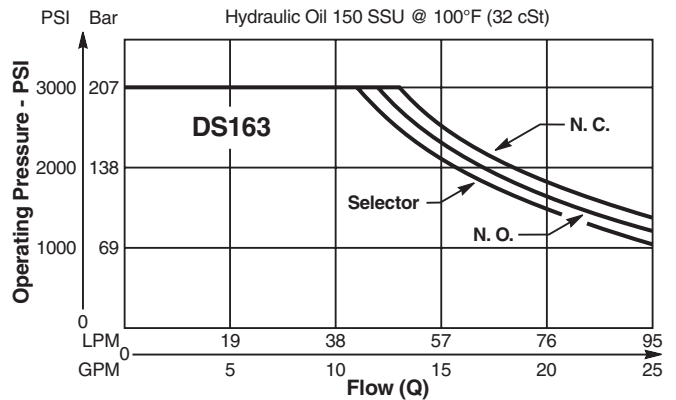
ds163.pm6.5, bl, 6/04

Performance Curves

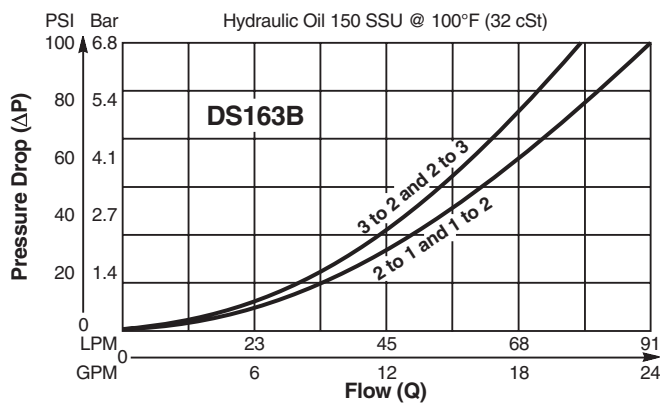
Pressure Drop vs. Flow (Through cartridge only)



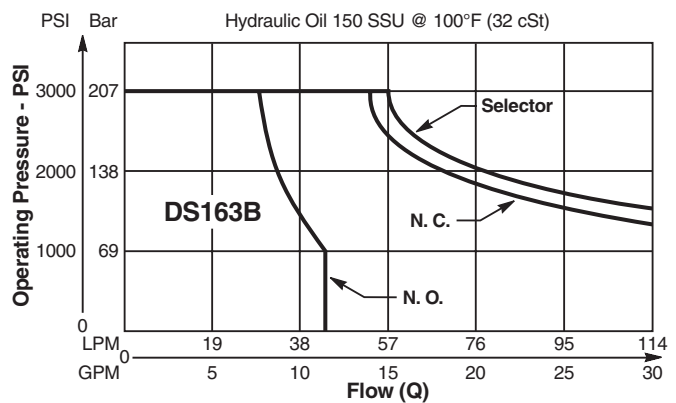
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



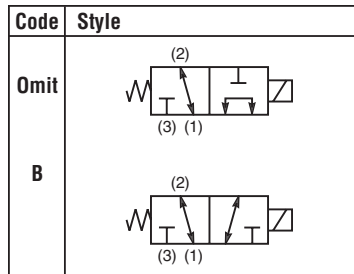
Shift Limit Characteristics (Min. Operating Voltage)



Ordering Information

DS163

16 Size Solenoid Valve **Style** **Seals** **Coil Voltage** **Coil Termination** **Body Material** **Port Size**



Code	Seals / Kit. No.
Omit	Nitrile / (SK16-3)
V	Fluorocarbon / (SK16-3V)

Code	Coil Voltage
Omit	Without Coil
D012	12 VDC
D024	24 VDC
A120	120/110 VAC, 60/50 Hz

Code	Coil Termination
Omit	Without Coil
C	Conduit (AC Only)
D	DIN Plug Face
S	Dual Screw (DC Only)
W	Dual Lead (DC Only)

See DS coil 1" I.D. (42 watt)

Code	Body Material
Omit	Steel
A	Aluminum

Code	Port Size	Body Part No.
Omit	Cartridge Only	
12T	SAE-12	(B16-3-*12T)
16T	SAE-16	(B16-3-*16T)

** Add "A" for aluminum, omit for steel.*