

General Description

2-Way Poppet Valves. For additional information see Technical Tips on pages SV1-SV5.

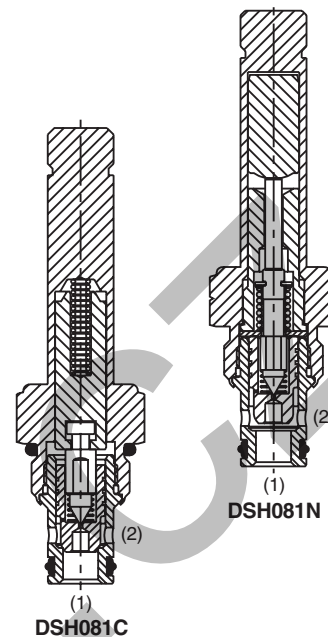
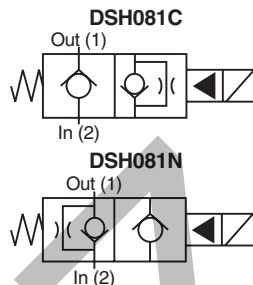


Features

- Replaceable, one piece encapsulated, coils with minimal amperage draw
- Variety of coil terminations and voltages
- Variety of manual override options available
- Fast response available, (CH and CHR) rated at 15 LPM (4.0 GPM)
- Polyurethane "D"-Ring eliminates need for backup rings
- Spherical poppet for low leakage
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

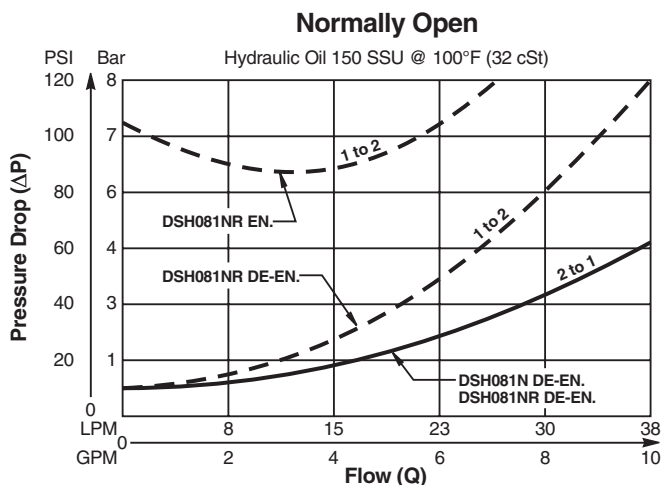
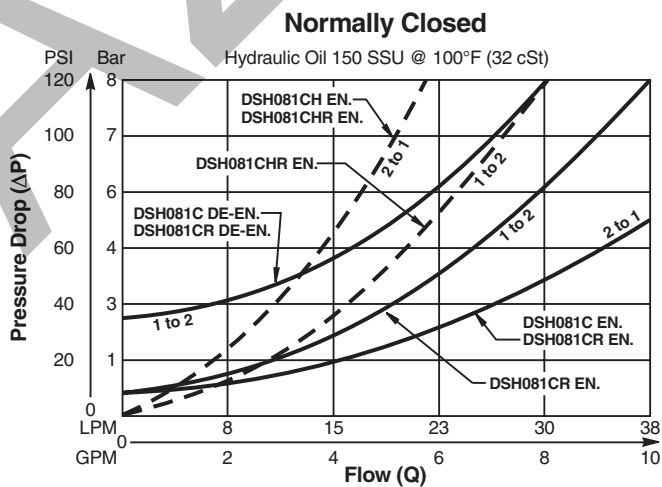
Specifications

Rated Flow	30 LPM (8 GPM)		
Maximum Inlet Pressure	350 Bar (5000 PSI)		
Leakage at 150 SSU (32 cSt)	5 drops/min. (.33 cc/min.)		
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time	C, CR CH, CHR N, NR	Energized 50 ms 30 ms 50 ms	De-Energized 50 ms 50 ms 40 ms
Cartridge Material	All parts steel. All operating parts hardened steel.		
Operating Temp. Range/Seals	-37°C to +93°C (“D”-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)		
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)		
Filtration	ISO 4406 18/16/13, SAE Class 4		
Approx. Weight	.11 kg (.25 lbs.)		
Cavity	C08-2 (See BC Section for more details)		
Form Tool	Rougher Finisher	None NFT08-2F	

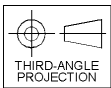
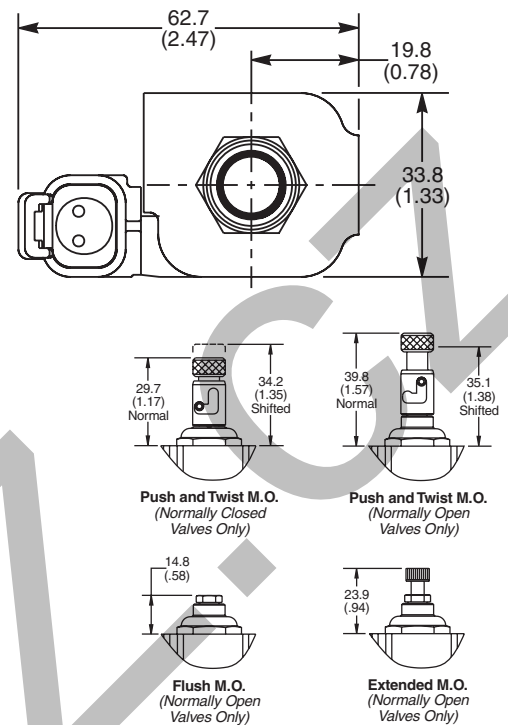
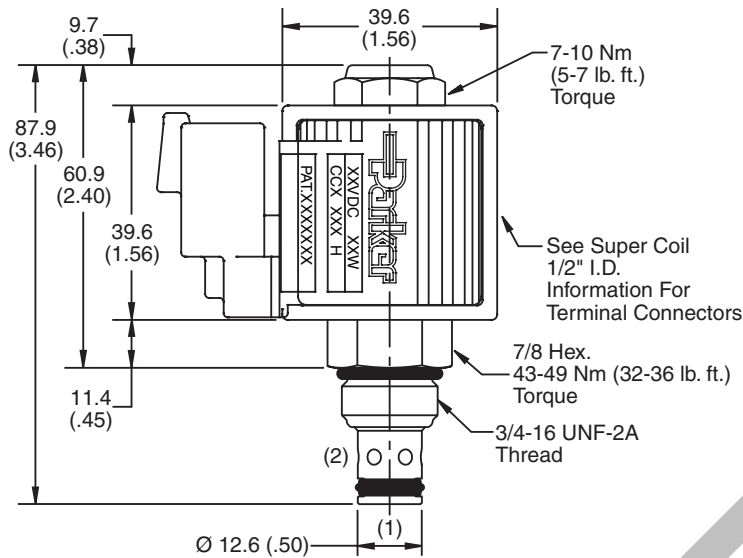


Performance Curves

Pressure Drop vs. Flow (Through cartridge only)



Dimensions Millimeters (Inches)



Ordering Information

DSH081

08 Size
Solenoid Valve

Style

Override
Option

Seals

Screen

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 1/2" Super-Coil (CC series), for ordering information.

Order Bodies Separately
 See section BC

Code / Style	
C Normally Closed Metered reverse flow	
CH Normally Closed Metered reverse flow (Fast response)	
CHR Normally Closed Free reverse flow (Fast response)	
CR Normally Closed Free reverse flow	
N Normally Open Metered reverse flow	
NR Normally Open Free reverse flow	

Code	Override Options
Omit	None
E	Push Type with Extended Rod (N.O. Only)
M	Push Type with Flush Rod (N.O. Only)
T	Push & Twist (N.C. & N.O.)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK08-2)
N	Nitrile (SK08-2)
V	Fluorocarbon / (SK08-2V)

Code	Screen
Omit	None
S	Screen

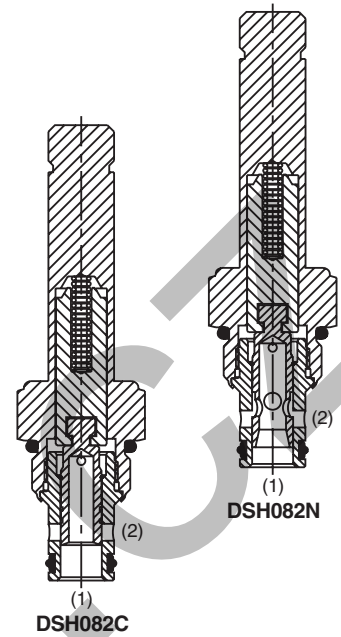
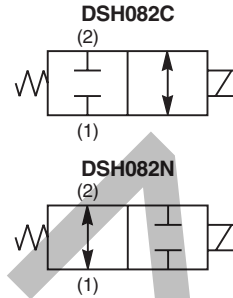
B08	2	
08 size	2-Way Cavity	Port Size
Code	Port Size / Body Material	
6T	SAE-6 / Steel (5000 PSI)	
A6T	SAE-6 / Aluminium (3000 PSI)	

General Description

2-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

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 eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

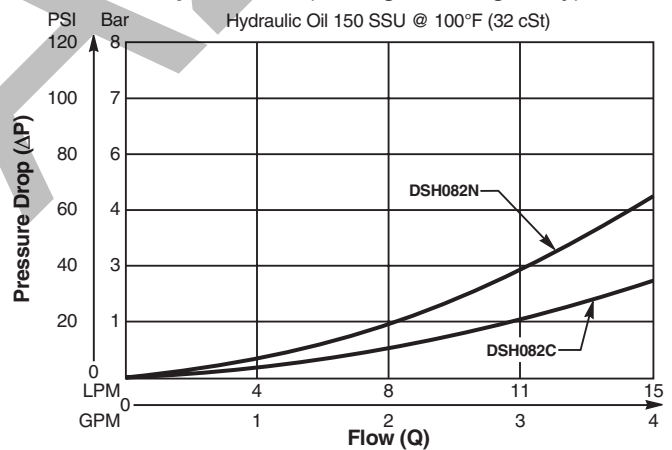


Specifications

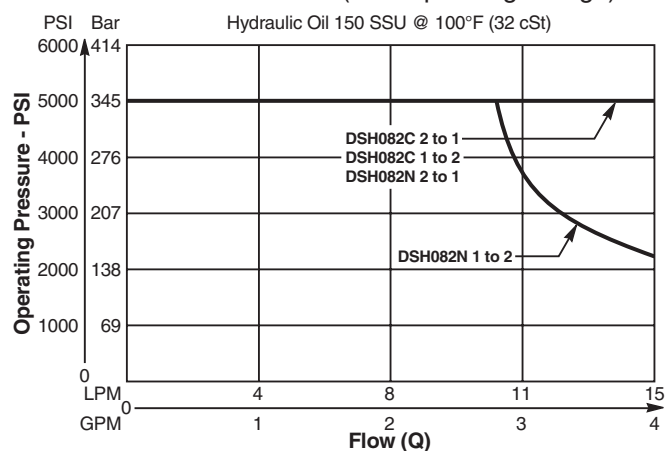
Rated Flow	C - 15.0 LPM (4 GPM) N - 8.4 LPM (2.8 GPM)									
Maximum Inlet Pressure	350 Bar (5000 PSI)									
Leakage at 150 SSU (32 cSt)	160 cc/min. (10 in ³ /min.) at 350 Bar (5000 PSI)									
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).									
Response Time	<table><tr><td></td><td>Energized</td><td>De-Energized</td></tr><tr><td>C</td><td>40 ms</td><td>40 ms</td></tr><tr><td>N</td><td>40 ms</td><td>40 ms</td></tr></table>		Energized	De-Energized	C	40 ms	40 ms	N	40 ms	40 ms
	Energized	De-Energized								
C	40 ms	40 ms								
N	40 ms	40 ms								
Cartridge Material	All parts steel. All operating parts hardened steel.									
Operating Temp. Range/Seals	-35°C to +93°C (“D”-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)									
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)									
Filtration	ISO 4406 18/16/13, SAE Class 4									
Approx. Weight	.11 kg (.25 lbs.)									
Cavity	C08-2 (See BC Section for more details)									
Form Tool	Rougher None Finisher NFT08-2F									

Performance Curves

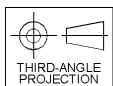
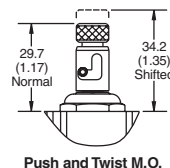
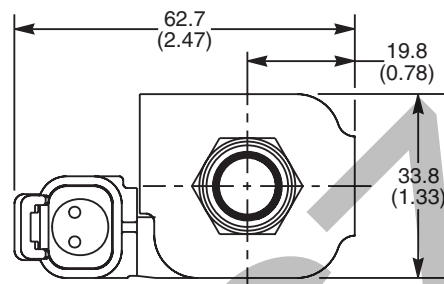
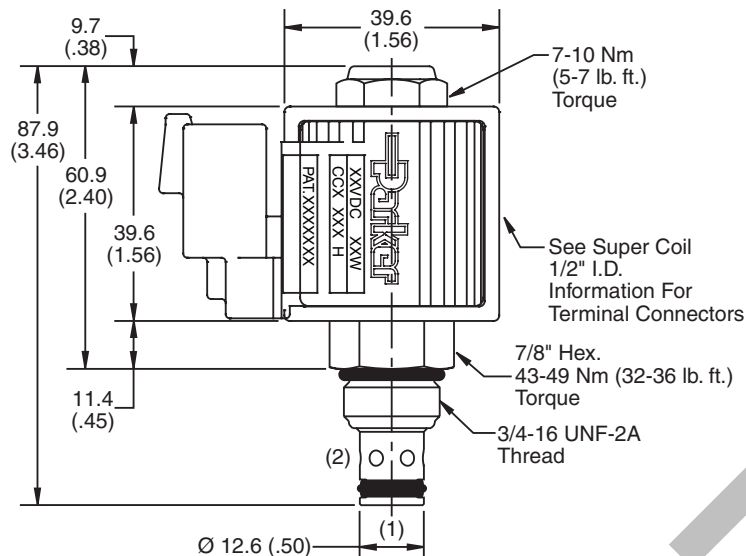
Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



Dimensions Millimeters (Inches)



Ordering Information

DSH082

08 Size
Solenoid Valve

Style

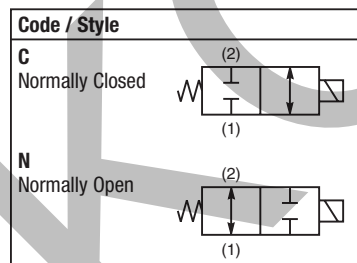
Override
Option

Seals

Screen

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 1/2" Super-Coil (CC series), for ordering information.



Code	Override Options
Omit	None
T	Push & Twist* (N.C. & N.O.)

*Requires Super Coil.

Code	Seals / Kit No.
Omit	"D"-Ring / (SK08-2)
N	Nitrile (SK08-2)
V	Fluorocarbon / (SK08-2V)

Code	Screen
Omit	None
S	Screen

Order Bodies Separately
See section BC

B08	2	
08 size	2-Way Cavity	Port Size

Code	Port Size / Body Material
6T	SAE-6 / Steel (5000 PSI)
A6T	SAE-6 / Aluminium (3000 PSI)

General Description

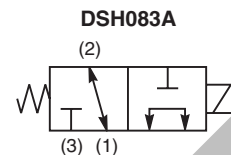
3-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

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
- All external parts zinc plated

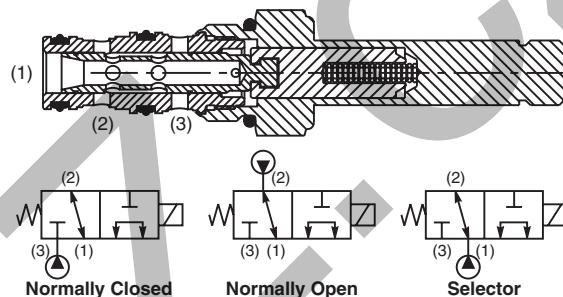
Specifications

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.) DSH083N - 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/Seals	-37°C to +93°C ("D"-Ring) (-45°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)	
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)	
Filtration	ISO 4406 18/16/13, SAE Class 4	
Approx. Weight	.13 kg (.28 lbs.)	
Cavity	C08-3 (See BC Section for more details)	
Form Tool	Rougher	NFT08-3R
	Finisher	NFT08-3F

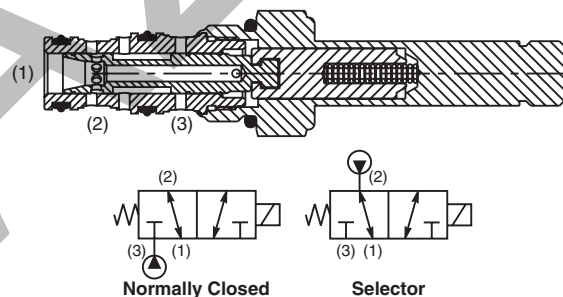


Construction/Symbols

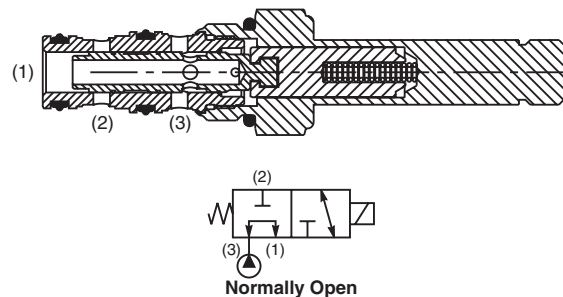
DSH083A



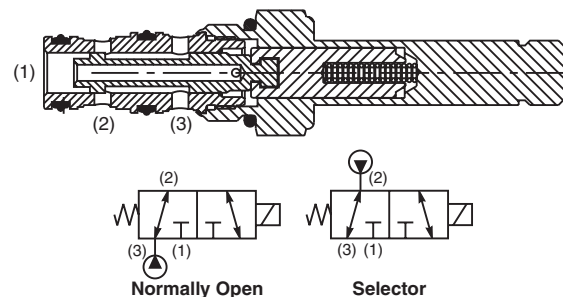
DSH083B



DSH083C

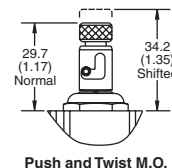
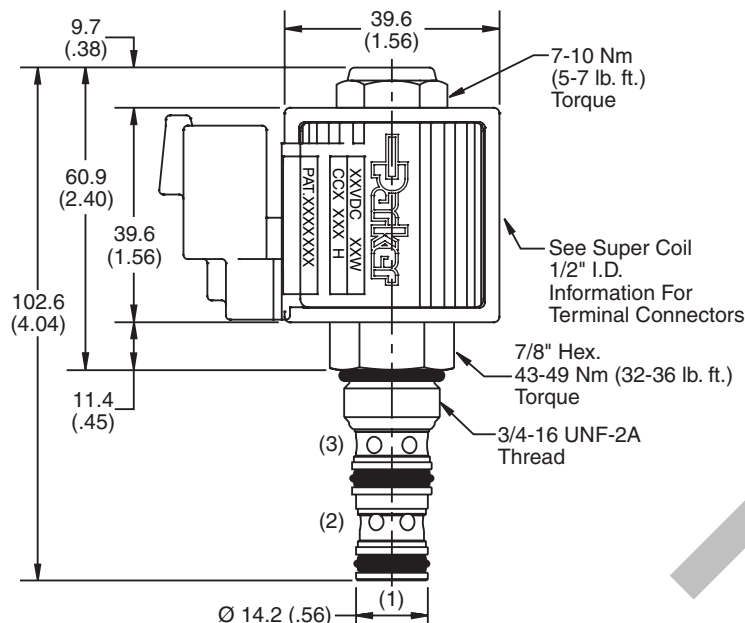


DSH083N



CV
Check Valves
SH
Shuttle Valves
LM
Load/Motor Controls
FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
MV
Manual Valves
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
CB
Cartridge Bodies
BC
Bodies & Cavities
TD
Technical Data

Dimensions Millimeters (Inches)



Ordering Information

DSH083

08 Size
Solenoid Valve

Style

Override
Option

Seals

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 1/2" Super-Coil (CC series), for ordering information.

Code	Style
A	
B	
C	
N	

Code	Override Options
Omit	None
T	Push and Twist* (N.C. & N.O.)

*Requires Super Coil.

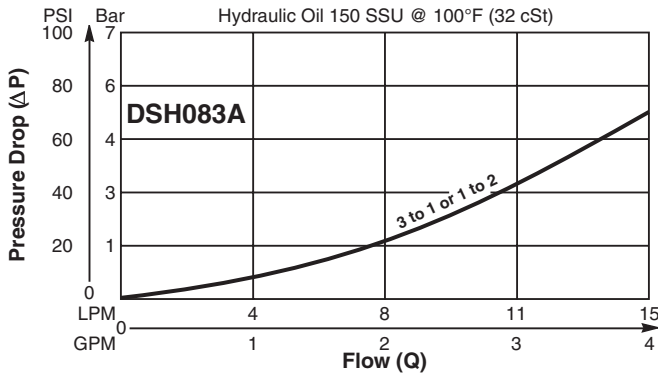
Code	Seals / Kit No.
Omit	"D"-Ring / (SK08-3)
N	Nitrile (SK08-3)
V	Fluorocarbon / (SK08-3V)

Order Bodies Separately
See section BC

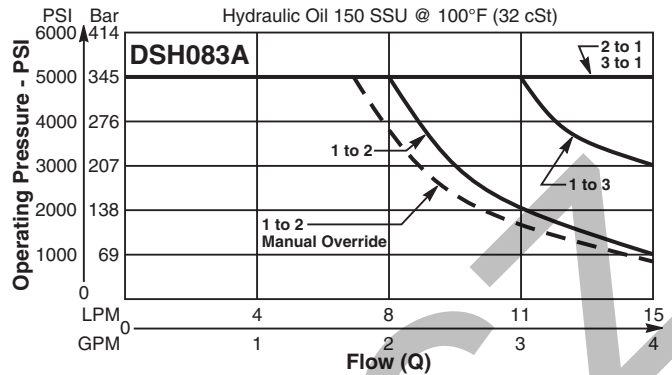
B08	—	3	—	
08 size		3-Way Cavity		Port Size

Code	Port Size / Body Material
6T	SAE-6 / Steel (5000 PSI)
A6T	SAE-6 / Aluminium (3000 PSI)

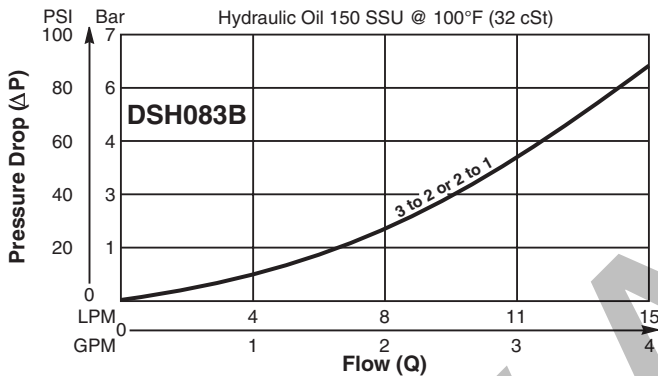
Pressure Drop vs. Flow (Through cartridge only)



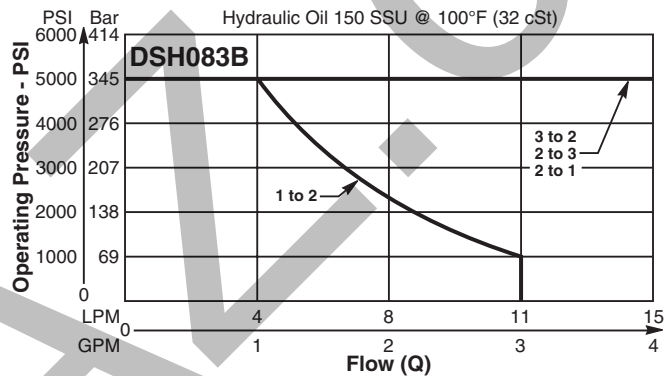
Shift Limit Characteristics (Min. Operating Voltage)



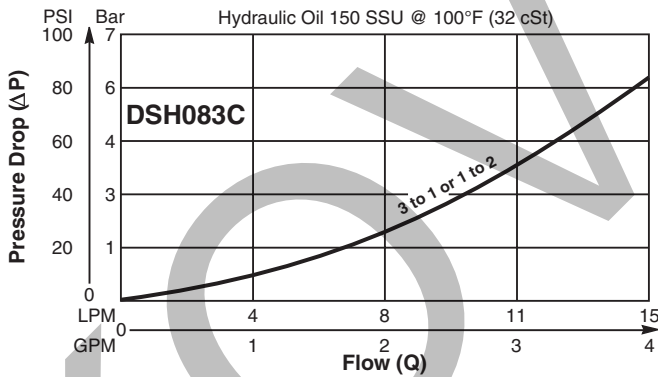
Pressure Drop vs. Flow (Through cartridge only)



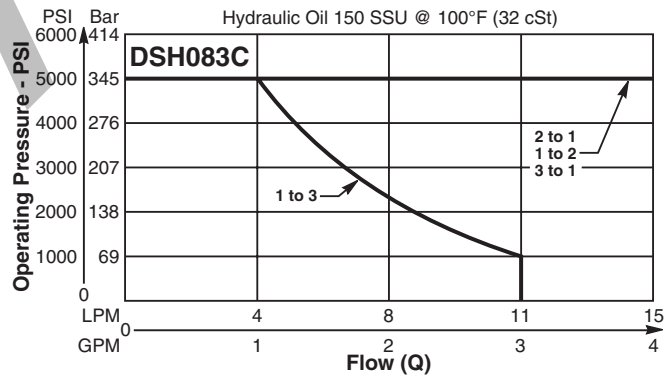
Shift Limit Characteristics (Min. Operating Voltage)



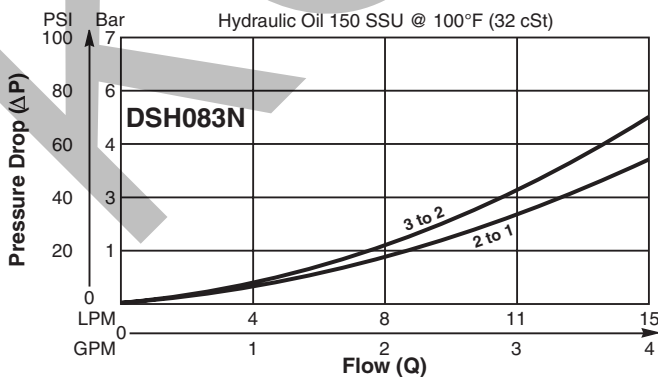
Pressure Drop vs. Flow (Through cartridge only)



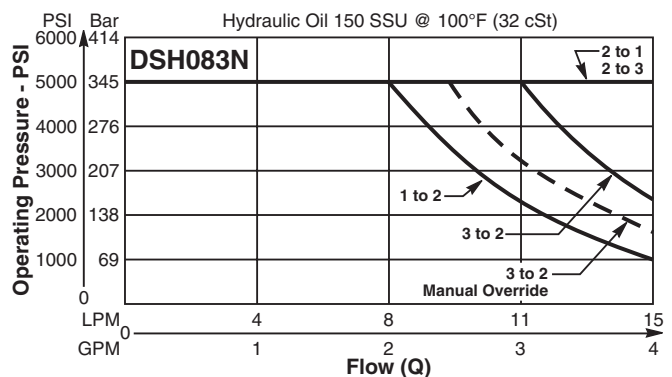
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



CV
Check Valves
SH
Shuttle Valves
LM
Load/Motor Controls
FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
MV
Manual Valves
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
CB
Cartridge Bodies
BC
Bodies & Cavities
TD
Technical Data

General Description

4-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

Features

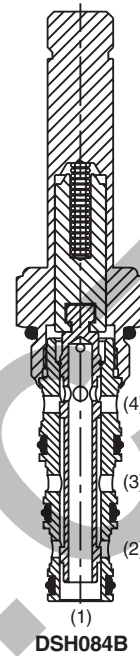
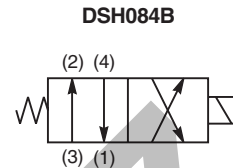
- High flow capacity with reduced space requirements
- Standard valve bodies and common cavities
- One-piece encapsulated coil with minimal amperage draw
- Manual overrides, seal variations and other options available
- No dynamic seals
- Variety of coil terminations
- Polyurethane "D"-Ring eliminates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

Specifications

Rated Flow	11-15 LPM (3-4 GPM) See Shift Limit Characteristics
Max. Inlet Pressure	350 Bar (5000 PSI)
Leakage at 150 SSU (32 cSt)	160 cc/min. (10 in ³ /min.) at 350 Bar (5000 PSI) DSH084B - 240 cc/min. (15 in ³ /min.)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	Energized - 50 ms De-energized - 30 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-37°C to +93°C ("D"-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO 4406 18/16/13, SAE Class 4
Approx. Weight	.13 kg (.29 lbs.)
Cavity	C08-4 (See BC Section for more details)
Form Tool	Rougher NFT08-4R Finisher NFT08-4F

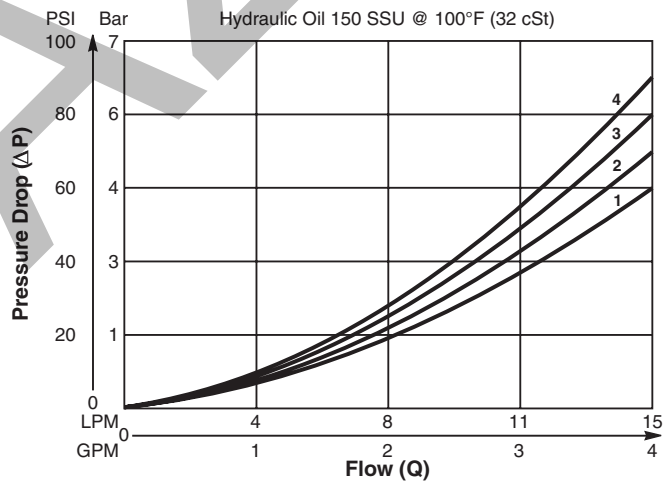
Curve Selection Chart

SPOOL CODE	NEUTRAL					SHIFTED				
	4 to 1	3 to 2	2 to 1	3 to 1	3 to 4	4 to 1	3 to 2	2 to 1	3 to 1	3 to 4
B	4	3	—	—	—	—	—	2	—	4
E1	—	—	—	—	—	—	—	2	—	3
M	—	—	3	—	1	—	—	—	—	—
N	—	—	—	—	—	4	3	—	—	—
M9	—	—	3	—	1	—	—	—	4	—

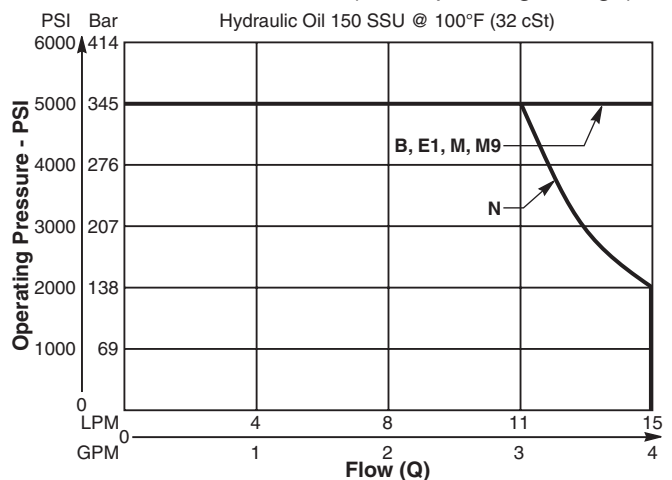


Performance Curves

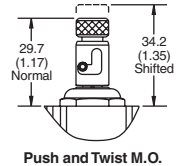
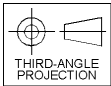
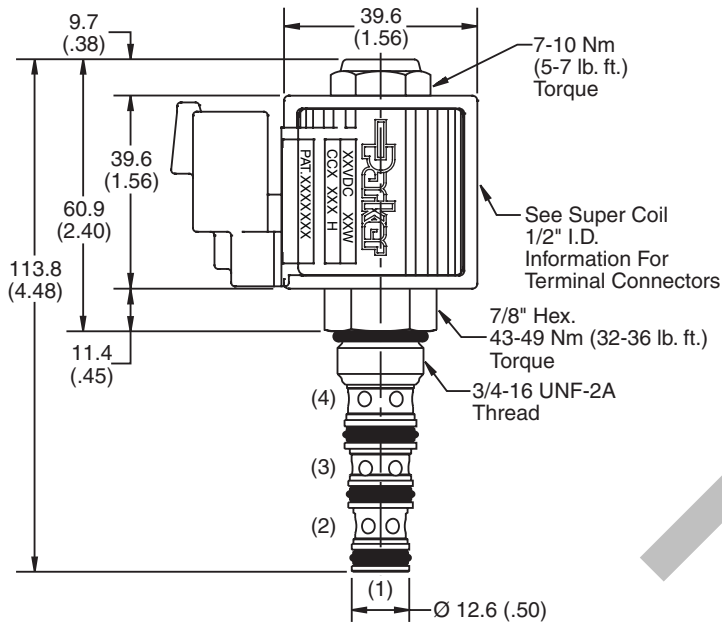
Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



Dimensions Millimeters (Inches)



Ordering Information

DSH084

08 Size
Solenoid Valve

Style

Override
Option

Seals

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 1/2" Super-Coil (CC series), for ordering information.

Code	Style
B	
N	
E1	
M	
M9	

Code	Override Options
Omit	None
T	Push & Twist*

*Requires Super Coil.

Code	Seals / Kit No.
Omit	"D"-Ring / (SK08-4)
N	Nitrile (SK08-4)
V	Fluorocarbon / (SK08-4V)

Order Bodies Separately
See section BC

B08	—	4	—	
08 size		4-Way Cavity		Port Size

Code	Port Size / Body Material
6T	SAE-6 / Steel (5000 PSI)
A6T	SAE-6 / Aluminium (3000 PSI)

General Description

2-Way Poppet Valves. For additional information see Technical Tips on pages SV1-SV5.

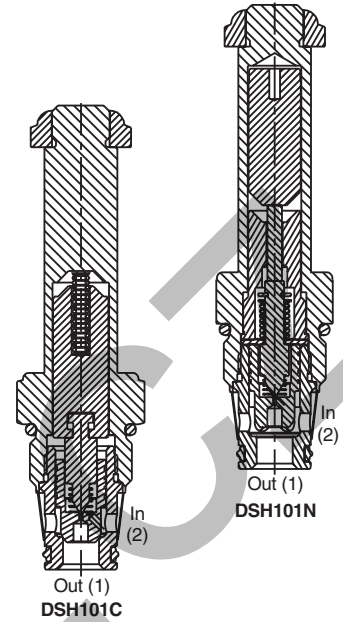
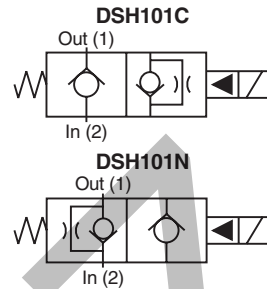


Features

- Replaceable, one piece encapsulated coils with minimal amperage draw
- Various coil terminations and voltages
- Various manual override options
- Fast response available, (CH and CHR) rated at 30 LPM (8 GPM)
- Polyurethane "D"-Ring eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

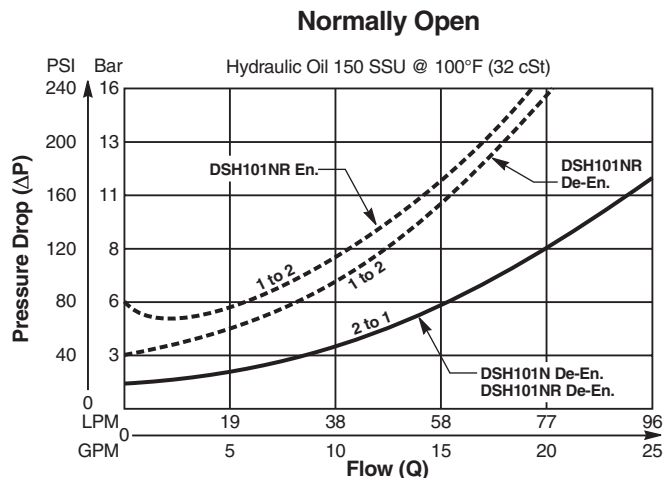
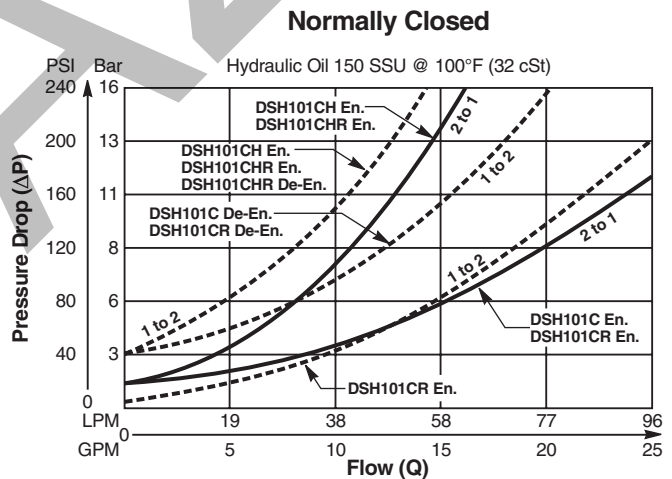
Specifications

Rated Flow	60 LPM (15 GPM)		
Maximum Inlet Pressure	350 Bar (5000 PSI)		
Leakage at 150 SSU (32 cSt)	5 drops/min. (.33 cc/min.)		
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time	C, CR CH, CHR N, NR	Energized 80 ms 50 ms 70 ms	De-Energized 150 ms 50 ms 35 ms
Cartridge Material	All parts steel. All operating parts hardened steel.		
Operating Temp. Range/Seals	-37°C to +93°C ("D"-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)		
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)		
Filtration	ISO 4406 18/16/13, SAE Class 4		
Approx. Weight	.20 kg (0.41 lbs.)		
Cavity	C10-2 (See BC Section for more details)		
Form Tool	Rougher Finisher	None NFT10-2F	

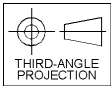
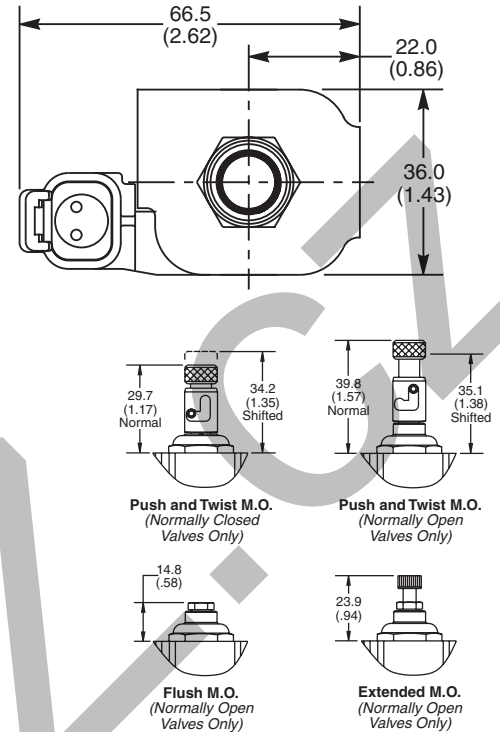
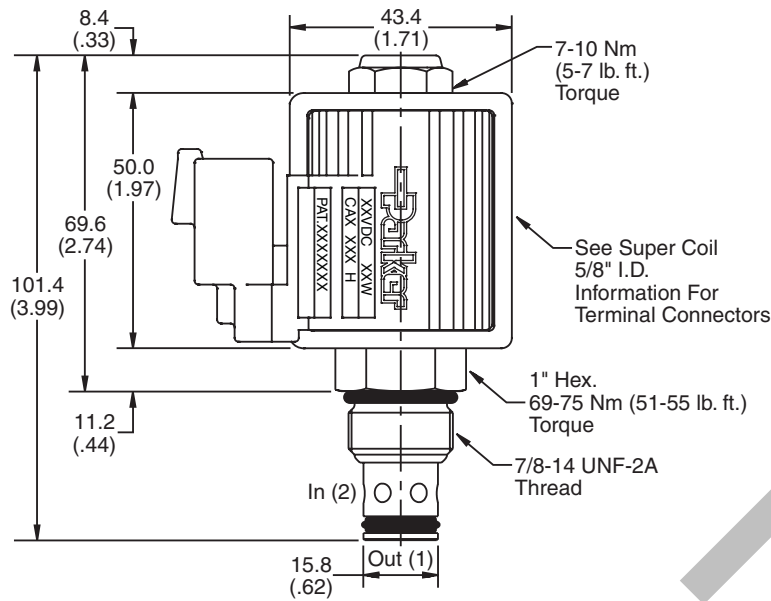


Performance Curves

Pressure Drop vs. Flow (Through cartridge only)



Dimensions Millimeters (Inches)



Ordering Information

DSH101 ☐ ☐ ☐ ☐ ☐

10 Size Solenoid Valve **Style** **Override Option** **Seals** **Screen**

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.

Order Bodies Separately
 See section BC

Code / Style	
C Normally Closed Metered reverse flow	
CH Normally Closed Metered reverse flow (Fast response)	
CHR Normally Closed Free reverse flow (Fast response)	
CR Normally Closed Free reverse flow	
N Normally Open Metered reverse flow	
NR Normally Open Free reverse flow	

Code	Override Options
Omit	None
E	Push Type with Extended Rod (N.O. Only)
M	Push Type with Flush Rod (N.O. Only)
T	Push & Twist (N.C. & N.O.)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK10-2)
N	Nitrile (SK10-2)
V	Fluorocarbon / (SK10-2V)

Code	Screen
Omit	None
S	Screen

B10 — **2** —

10 size 2-Way Cavity Port Size

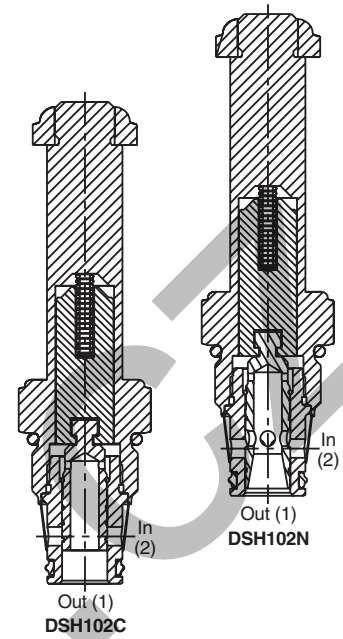
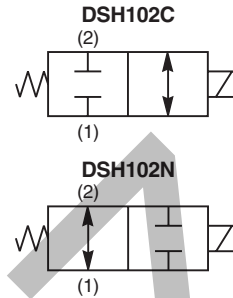
Code	Port Size / Body Material
8T	SAE-8 / Steel (5000 PSI)
A8T	SAE-8 / Aluminium (3000 PSI)

General Description

2-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

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 eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

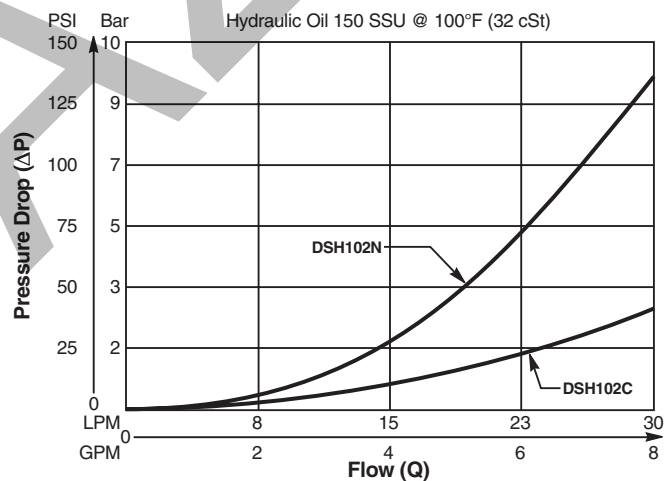


Specifications

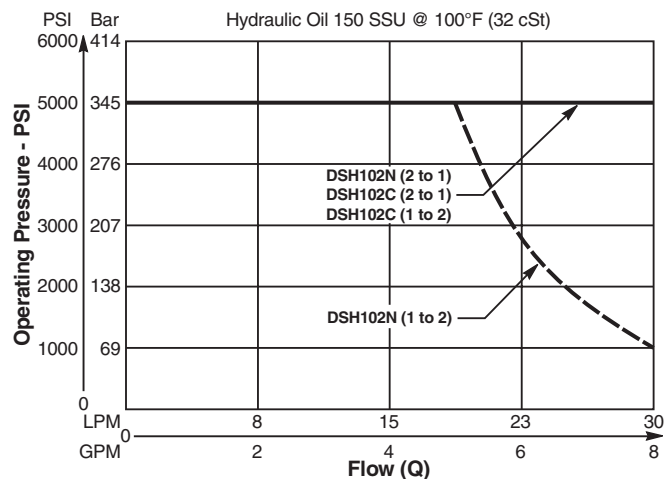
Rated Flow	C - 30 LPM (8.0 GPM) N - 19 LPM (5.0 GPM)		
Maximum Inlet Pressure	350 Bar (5000 PSI)		
Leakage at 150 SSU (32 cSt)	160 cc/min. (10 in ³ /min.)		
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time	C N	Energized 30 ms 50 ms De-Energized 20 ms 25 ms	
Cartridge Material	All parts steel. All operating parts hardened steel.		
Operating Temp. Range/Seals	-37°C to +93°C ("D"-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)		
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)		
Filtration	ISO 4406 18/16/13, SAE Class 4		
Approx. Weight	.18 kg (.40 lbs.)		
Cavity	C10-2 (See BC Section for more details)		
Form Tool	Rougher Finisher	None NFT10-2F	

Performance Curves

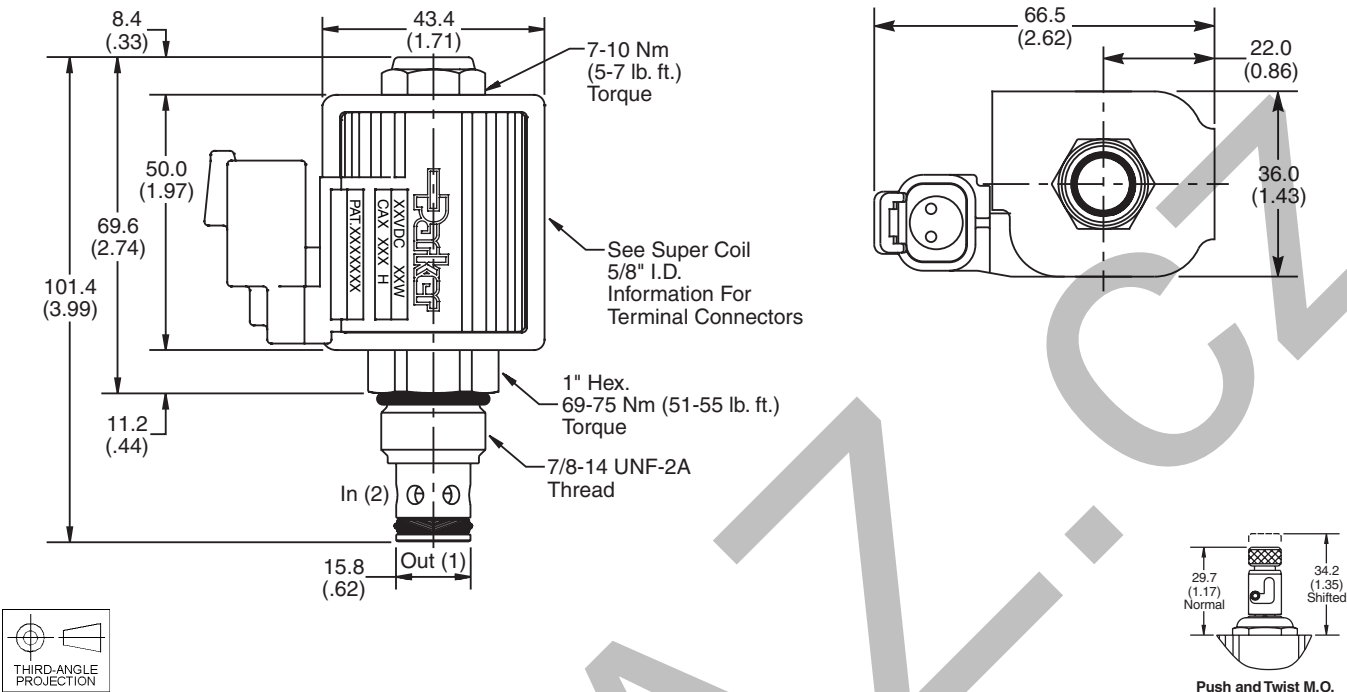
Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



Dimensions Millimeters (Inches)

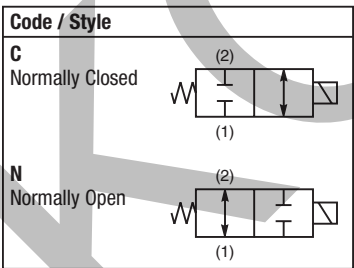


Ordering Information

DSH102				
10 Size Solenoid Valve	Style	Override Option	Seals	Screen

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.



Code	Override Options
Omit	None
T	Push & Twist* (N.C. & N.O.)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK10-2)
N	Nitrile (SK10-2)
V	Fluorocarbon / (SK10-2V)

Code	Screen
Omit	None
S	Screen

Order Bodies Separately
See section BC

B10	-	2	-	
10 size		2-Way Cavity		Port Size

Code	Port Size / Body Material
8T	SAE-8 / Steel (5000 PSI)
A8T	SAE-8 / Aluminium (3000 PSI)

CV
Check Valves
SH
Shuttle Valves
LM
Load/Motor Controls
FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
MV
Manual Valves
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
CB
Cartridge Bodies
BC
Bodies & Cavities
TD
Technical Data

General Description

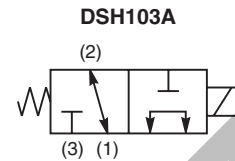
3-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

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 eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

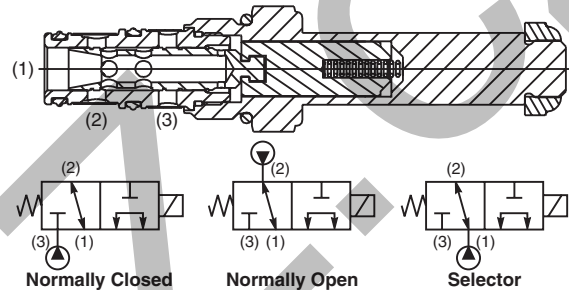
Specifications

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	
Maximum Inlet Pressure	N.O.	15.0 LPM (4.0 GPM)
	N.C.	15.0 LPM (4.0 GPM)
	Selector	30.0 LPM (8.0 GPM)
	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.)	
	DSH103N - 250 cc/min. (15 in ³ /min.)	
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).	
	50 ms to 100 ms	
Response Time	All parts steel. All operating parts hardened steel.	
	Operating Temp. Range/Seals	
	-37°C to +93°C ("D"-Ring) (-35°F to +200°F)	
	-34°C to +121°C (Nitrile) (-30°F to +250°F)	
	-26°C to +204°C (Fluorocarbon) (-15°F to +400°F)	
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)	
	Filtration	
	ISO 4406 18/16/13, SAE Class 4	
Approx. Weight	.19 kg (.42 lbs.)	
	Cavity	
	C10-3 (See BC Section for more details)	
Form Tool	Rougher NFT10-3R	
	Finisher NFT10-3F	

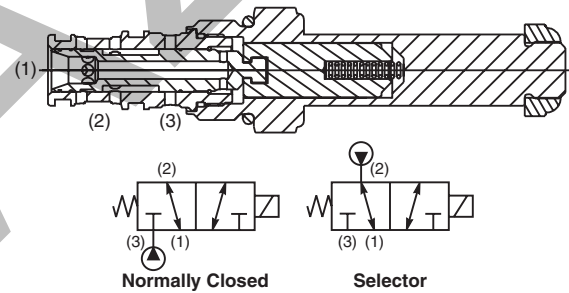


Construction/Symbols

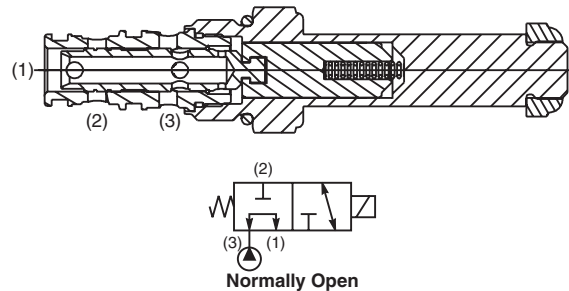
DSH103A



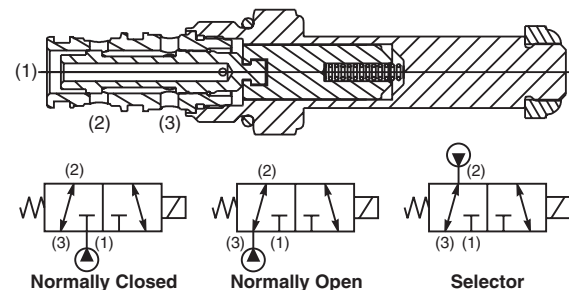
DSH103B



DSH103C

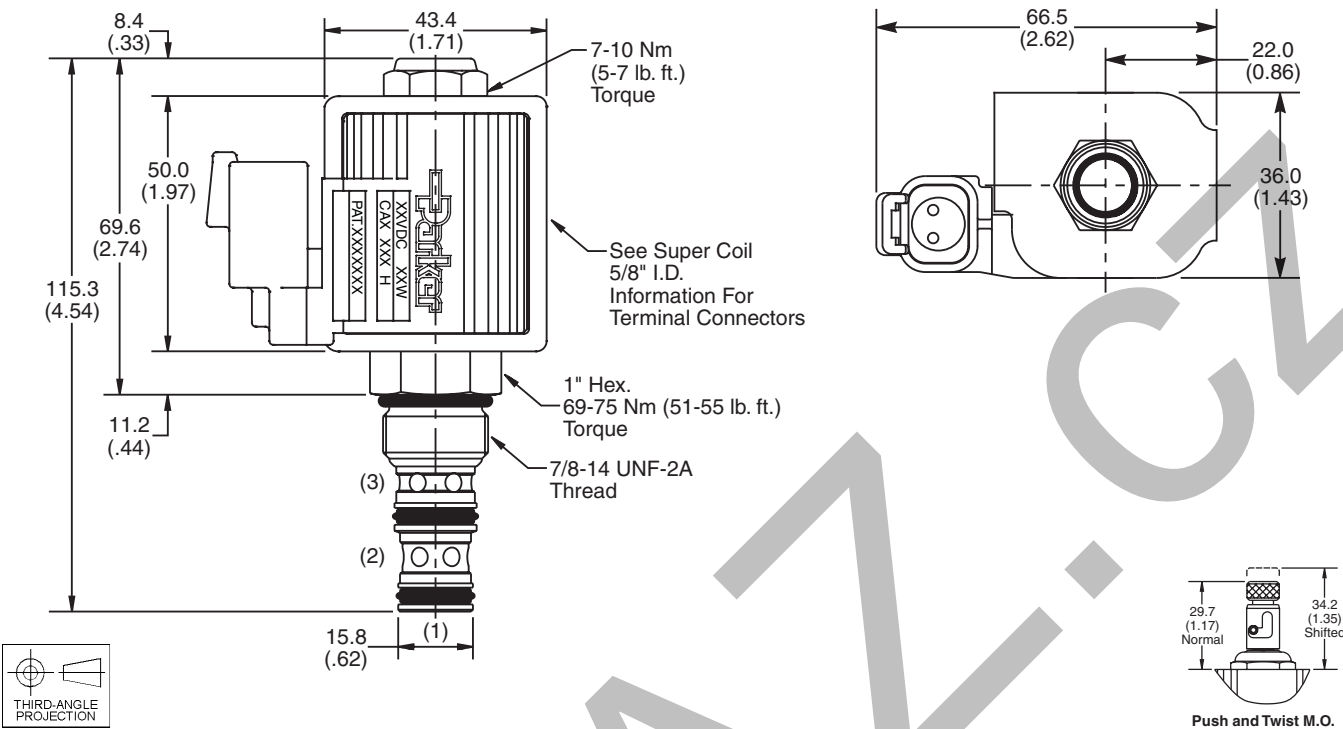


DSH103N



CV
Check Valves
SH
Shuttle Valves
LM
Load/Motor Controls
FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
MV
Manual Valves
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
CB
Cartridge Bodies
BC
Bodies & Cavities
TD
Technical Data

Dimensions Millimeters (Inches)



Ordering Information

DSH103 ☐ Style ☐ Override Option ☐ Seals

10 Size Solenoid Valve

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.

Code	Style
A	
B	
C	
N	

Code	Override Options
Omit	None
T	Push & Twist (N.C. & N.O.)

Code	Seals / Kit No.
Omit	"D"-Ring / (SK10-3)
N	Nitrile (SK10-3)
V	Fluorocarbon / (SK10-3V)

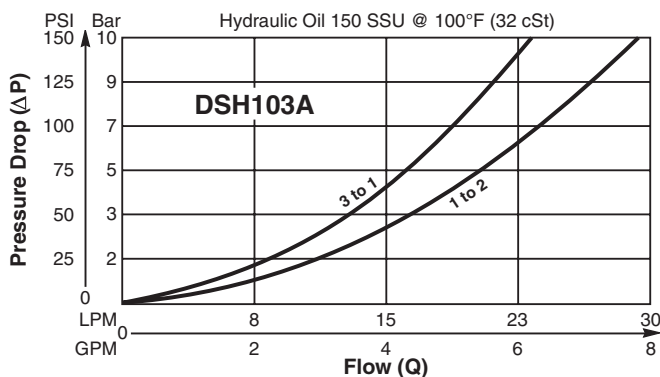
Order Bodies Separately
See section BC

B10 - **3** -

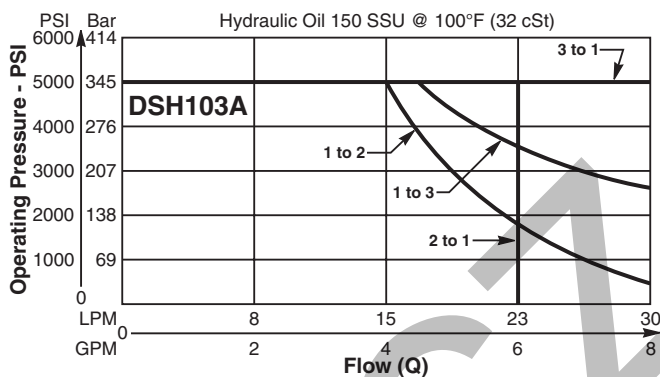
10 size 3-Way Cavity Port Size

Code	Port Size / Body Material
8T	SAE-8 / Steel (5000 PSI)
A8T	SAE-8 / Aluminium (3000 PSI)

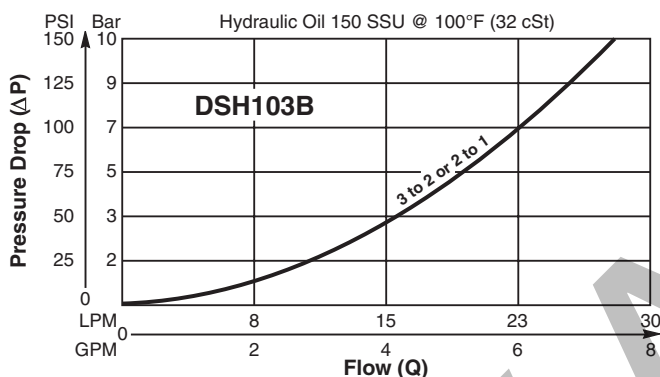
Pressure Drop vs. Flow (Through cartridge only)



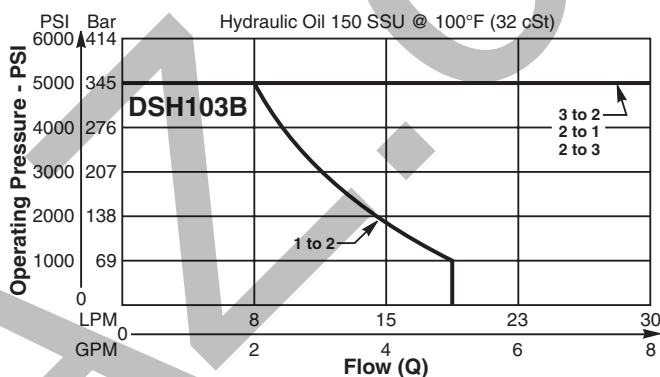
Shift Limit Characteristics (Min. Operating Voltage)



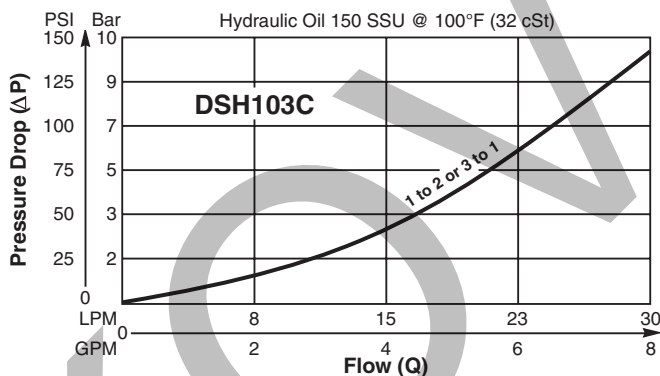
Pressure Drop vs. Flow (Through cartridge only)



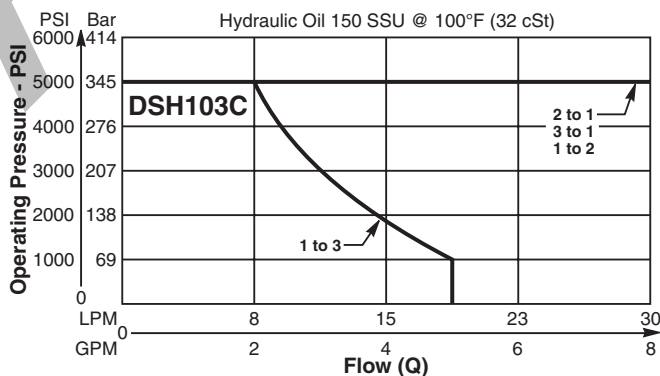
Shift Limit Characteristics (Min. Operating Voltage)



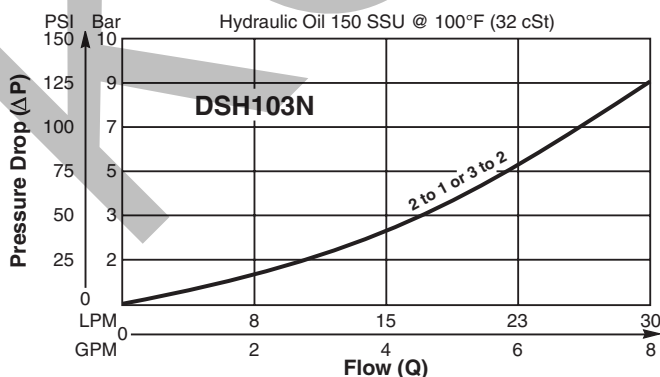
Pressure Drop vs. Flow (Through cartridge only)



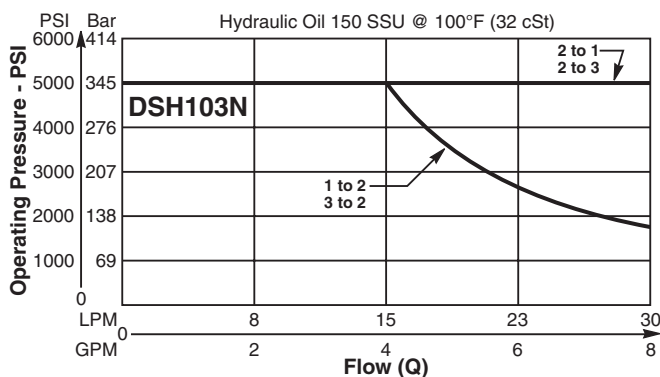
Shift Limit Characteristics (Min. Operating Voltage)



Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



CV
Check Valves
SH
Shuttle Valves
LM
Load/Motor Controls
FC
Flow Controls
PC
Pressure Controls
LE
Logic Elements
DC
Directional Controls
MV
Manual Valves
SV
Solenoid Valves
PV
Proportional Valves
CE
Coils & Electronics
CB
Cartridge Bodies
BC
Bodies & Cavities
TD
Technical Data

General Description

4-Way Spool Valves. For additional information see Technical Tips on pages SV1-SV5.

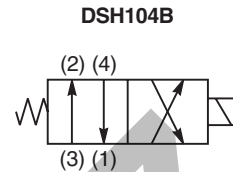


Features

- 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 eliminates need for backup rings
- Nylon inserted jam-nut provides secure holding in high vibration applications
- All external parts zinc plated

Specifications

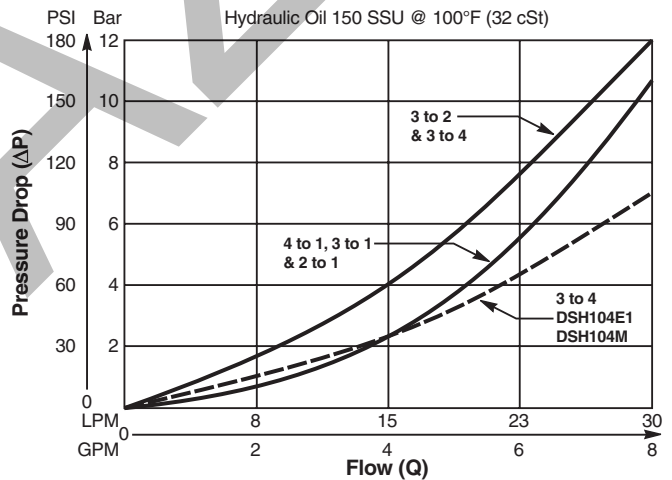
Rated Flow	25 - 38 LPM (6.5 - 10 GPM) See Shift Limit Characteristics
Maximum Inlet Pressure	350 Bar (5000 PSI)
Leakage at 150 SSU (32 cSt)	160 cc/min (10 in ³ /min) DSH104B - 320 cc/min (19.5 in ³ /min)
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).
Response Time	Energized - 30 - 60 ms De-energized - 30 - 60 ms
Cartridge Material	All parts steel. All operating parts hardened steel.
Operating Temp. Range/Seals	-37°C to +93°C ("D"-Ring) (-35°F to +200°F) -34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
Filtration	ISO 4406 18/16/13, SAE Class 4
Approx. Weight	.20 kg (.44 lbs.)
Cavity	C10-4 (See BC Section for more details)
Form Tool	Rougher NFT10-4R Finisher NFT10-4F



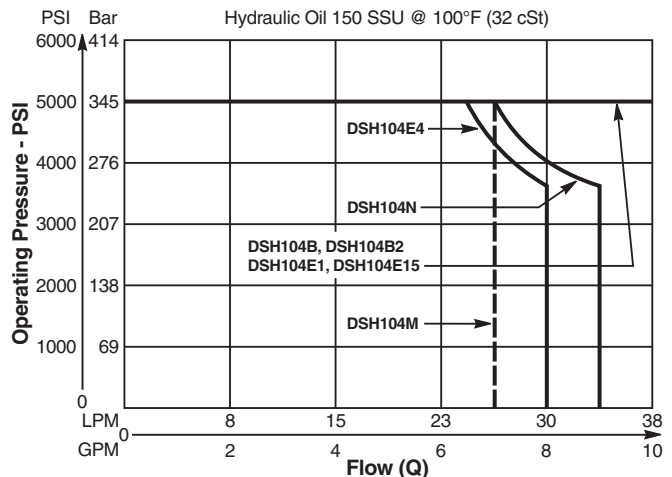
DSH104B

Performance Curves

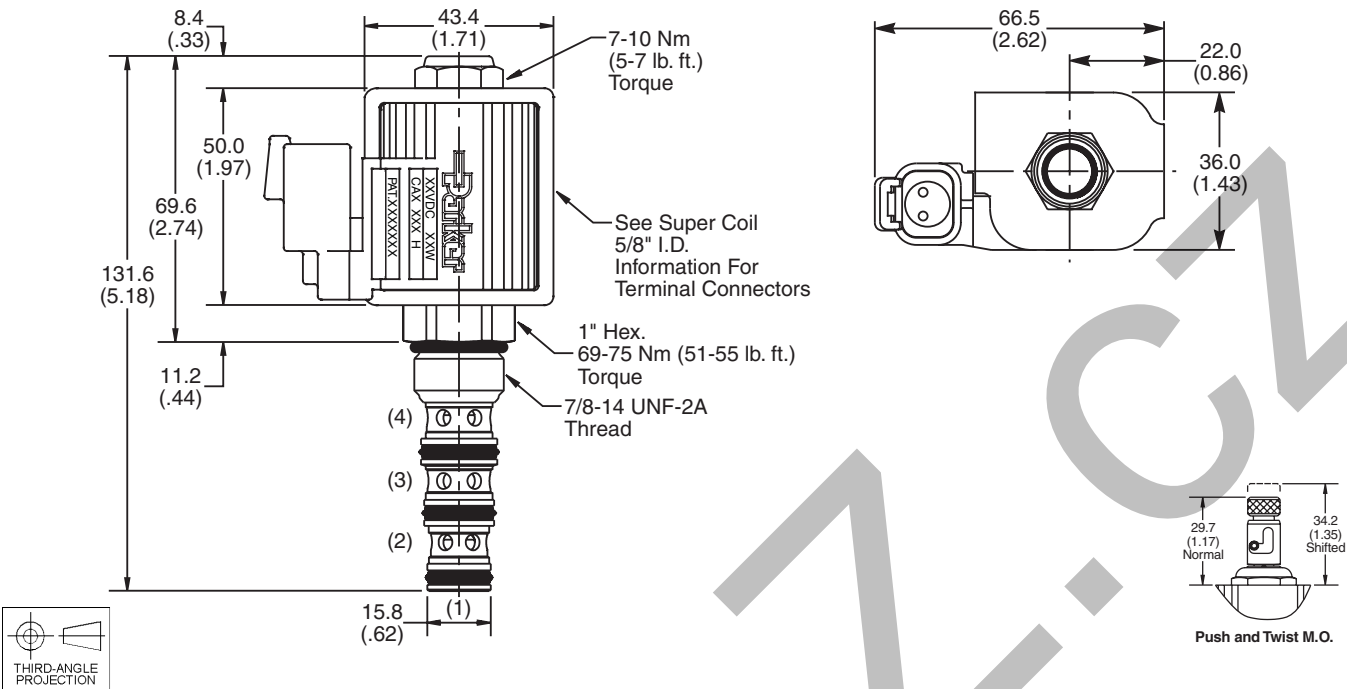
Pressure Drop vs. Flow (Through cartridge only)



Shift Limit Characteristics (Min. Operating Voltage)



Dimensions Millimeters (Inches)



Ordering Information

DSH104

10 Size Solenoid Valve

Style

Override Option

Seals

Code	Style
B	
B2	
E1	
E4	
E15	
H	
M	
N	

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.

Code	Override Options
Omit	None
T	Push & Twist

Code	Seals / Kit No.
Omit	"D"-Ring / (SK10-4)
N	Nitrile (SK10-4)
V	Fluorocarbon / (SK10-4V)

Order Bodies Separately
See section BC

B10 - **4** - **Port Size**

10 size 4-Way Cavity Port Size

Code	Port Size / Body Material
8T	SAE-8 / Steel (5000 PSI)
A8T	SAE-8 / Aluminium (3000 PSI)

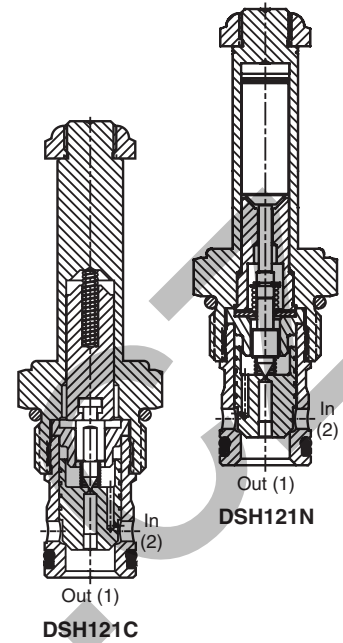
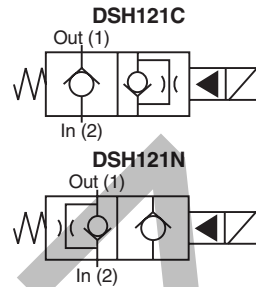
- CV
- Check Valves
- SH
- Shuttle Valves
- LM
- Load/Motor Controls
- FC
- Flow Controls
- PC
- Pressure Controls
- LE
- Logic Elements
- DC
- Directional Controls
- MV
- Manual Valves
- SV
- Solenoid Valves
- PV
- Proportional Valves
- CE
- Coils & Electronics
- CB
- Carpack Bodies
- BC
- Bodies & Cavities
- TD
- Technical Data

General Description

2-Way Poppet Valves. For additional information see Technical Tips on pages SV1-SV5.

Features

- Replaceable, one piece encapsulated coils with minimal amperage draw
- Various coil terminations and voltages
- Various manual override options
- All external parts zinc plated



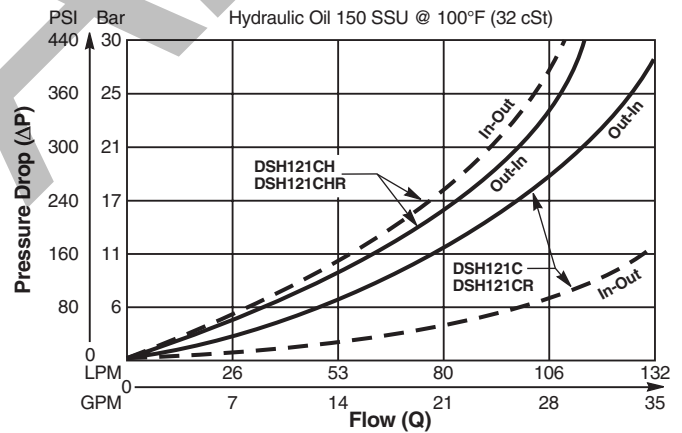
Specifications

Rated Flow	90 LPM (24 GPM)		
Maximum Inlet Pressure	350 Bar (5000 PSI)		
Leakage at 150 SSU (32 cSt)	5 drops/min. (.33 cc/min.)		
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time		Energized	De-Energized
	C, CR	100 ms	150 ms
	CH, CHR	60 ms	60 ms
	N, NR	70 ms	150 ms
Cartridge Material	All parts steel. All operating parts hardened steel.		
Operating Temp. Range/Seals	-34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)		
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)		
Filtration	ISO 4406 18/16/13, SAE Class 4		
Approx. Weight	.29 kg (.65 lbs.)		
Cavity	C12-2 (See BC Section for more details)		
Form Tool	Rougher Finisher	None NFT12-2F	

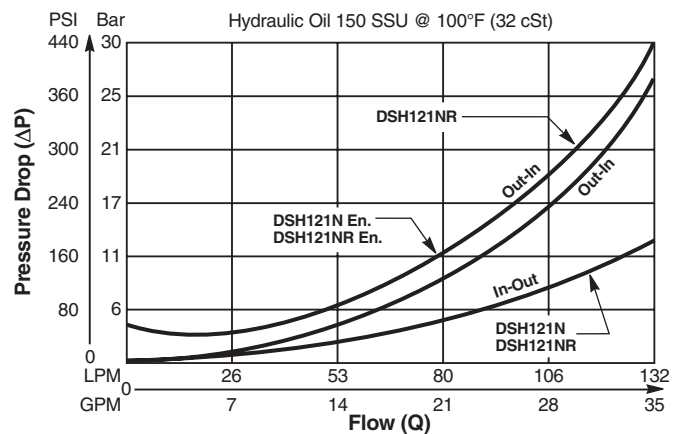
Performance Curves

Pressure Drop vs. Flow (Through cartridge only)

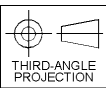
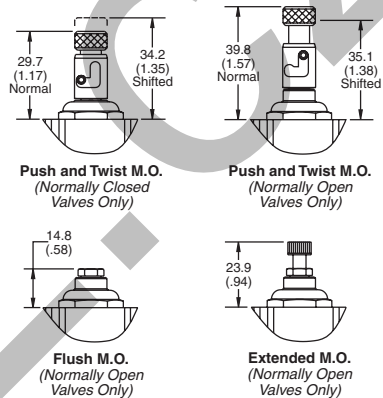
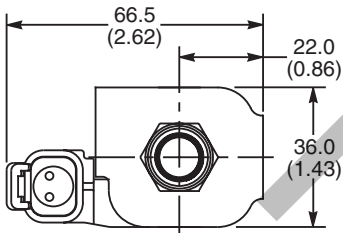
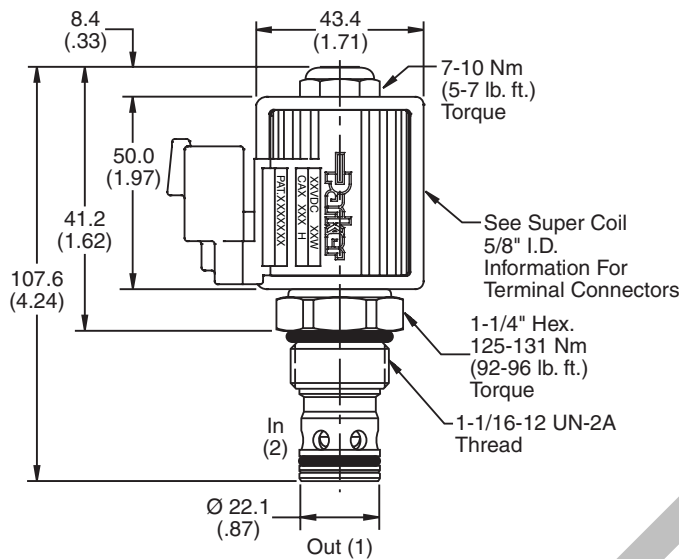
Normally Closed



Normally Open



Dimensions Millimeters (Inches)



Ordering Information

DSH121

12 Size
Solenoid Valve

Style

Override
Option

Seals

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.

Order Bodies Separately
See section BC

Code / Style	
C Normally Closed Metered reverse flow	
CH Normally Closed Metered reverse flow (Fast response)	
CHR Normally Closed Full reverse flow (Fast response)	
CR Normally Closed Free reverse flow	
N Normally Open Metered reverse flow	
NR Normally Open Free reverse flow	

Code	Override Options
Omit	None
E	Push Type with Extended Rod (N.O. Only)
M	Push Type with Flush Rod (N.O. Only)
T	Push & Twist (N.C. & N.O.)

Code	Seals / Kit No.
Omit	Nitrile
V	Fluorocarbon / (SK12-2V)

B12	—	2	—	
12 size		2-Way Cavity		Port Size
Code	Port Size / Body Material			
8T	SAE-8 / Steel (5000 PSI)			
A8T	SAE-8 / Aluminium (3000 PSI)			

General Description

2-Way Poppet Valves. For additional information see Technical Tips on pages SV1-SV5.

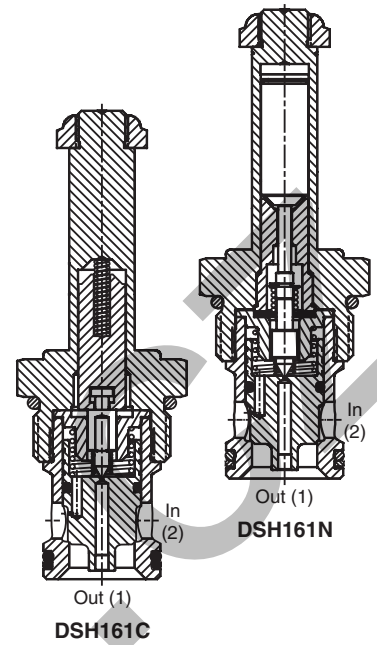
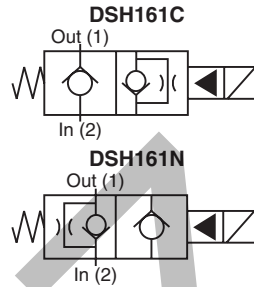


Features

- Replaceable, one piece encapsulated coils with minimal amperage draw
- Various coil terminations and voltages
- Various manual override options
- All external parts zinc plated
- New 350 Bar (5000 PSI) rating

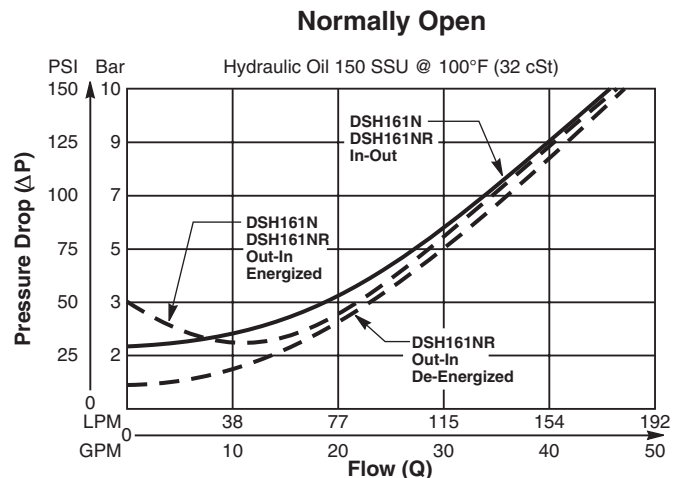
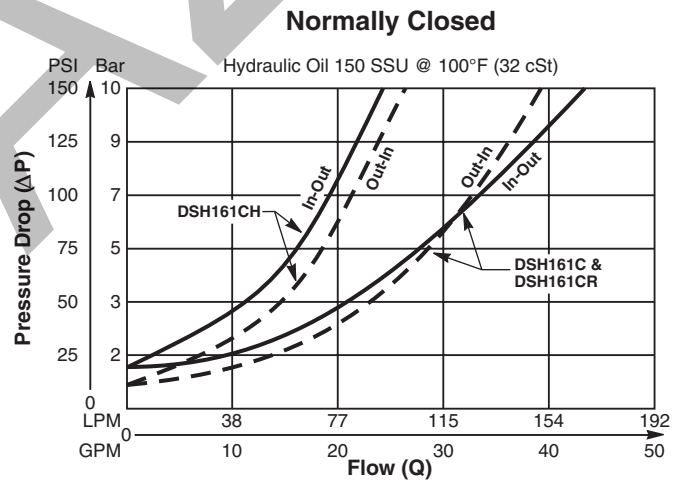
Specifications

Rated Flow	150 LPM (40 GPM)		
Maximum Inlet Pressure	350 Bar (5000 PSI)		
Leakage at 150 SSU (32 cSt)	5 drops/min. (.33 cc/min.)		
Minimum Operating Voltage	85% of rated voltage at 20°C (72°F).		
Response Time		Energized	De-Energized
	C, CR	50 ms	130 ms
	CH	40 ms	60 ms
	N, NR	45 ms	75 ms
Cartridge Material	All parts steel. All operating parts hardened steel.		
Operating Temp. Range/Seals	-34°C to +121°C (Nitrile) (-30°F to +250°F) -26°C to +204°C (Fluorocarbon) (-15°F to +400°F)		
Fluid Compatibility/Viscosity	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)		
Filtration	ISO 4406 18/16/13, SAE Class 4		
Approx. Weight	.34 kg (.75 lbs.)		
Cavity	C16-2 (See BC Section for more details)		
Form Tool	Rougher Finisher	None NFT16-2F	

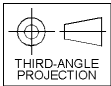
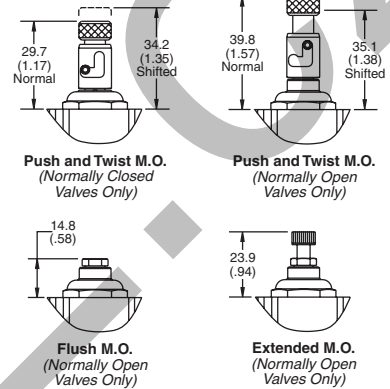
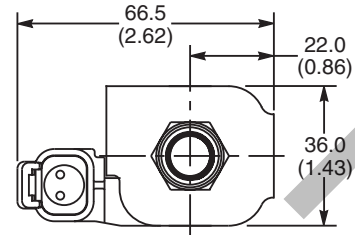
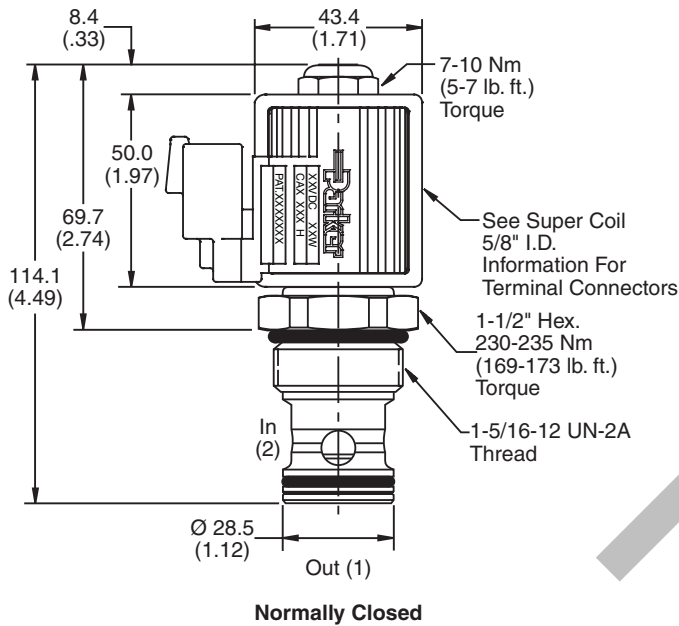


Performance Curves

Pressure Drop vs. Flow (Through cartridge only)



Dimensions Millimeters (Inches)



Ordering Information

DSH161

16 Size
Solenoid Valve

Style

Override
Option

Seals

Highlighted represents preferred options that offer the shortest lead times. Other options may be available, but at extended lead times.

Coil(s) sold separately. Please see section CE of this catalog, 5/8" Super-Coil (CA series), for ordering information.

*Order Bodies Separately
 See section BC*

Code / Style	
C Normally Closed Metered reverse flow	
CH Normally Closed Metered reverse flow (Fast response)	
CR Normally Closed Free reverse flow	
N Normally Open Metered reverse flow	
NR Normally Open Free reverse flow	

Code	Override Options
Omit	None
E	Push Type with Extended Rod (N.O. Only)
M	Push Type with Flush Rod (N.O. Only)
T	Push & Twist (N.C. & N.O.)

Code	Seals / Kit No.
Omit	Nitrile
V	Fluorocarbon / (SK16-2V)

B16

2

16 size

2-Way
Cavity

Port
Size

Code	Port Size / Body Material
16T	SAE-16 / Steel (5000 PSI)
A16T	SAE-16 / Aluminium (3000 PSI)