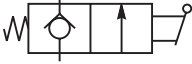
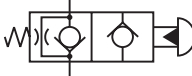
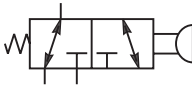



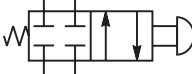



**Contents**

**Manual Valves**

	SERIES	CAVITY	DESCRIPTION	FLOW LPM/GPM	PRESSURE BAR/PSI	PAGE NO.
	DL081	C08-2	2 Position, 2 Way, N.C. Poppet, Pull to Open	30/8	210/3000	MV1
	DL101	C10-2	2 Position, 2 Way, N.C. Poppet, Pull to Open	49/13	210/3000	MV2
	GM0212	C08-2	2 Position, 2 Way, N.O. Poppet, Push to Close	45/12	350/5000	MV3
	GM0233	C08-3	2 Position, 3 Way, Spool Type, Pull to Shift	19/5	350/5000	MV4
	DM103	C10-3	3 Way, Rotary Spool	22/6	240/3500	MV5-MV6
	DM104	C10-4	4 Way, Rotary Spool	7/2	240/3500	MV7-MV8
						
	DM0240XS	C08-4	2 Position, 4 Way, Push to Shift	15/4	350/5000	MV9
	DM0240CS	C08-4	2 Position, 4 Way, Push to Shift	15/4	350/5000	MV10
						
	DMH085C1	C08-4	3 Position, 4 Way, Closed Center, Pull to Shift and Push to Shift	17/5	350/5000	MV11-MV12
	DMH085C4	C08-4	3 Position, 4 Way, Float Center, Pull to Shift and Push to Shift	17/5	350/5000	MV11-MV12
	DMH085C9	C08-4	3 Position, 4 Way, Tandem Center, Pull to Shift and Push to Shift	15/4	350/5000	MV11-MV12
	DMH085C2	C08-4	3 Position, 4 Way, Open Center, Pull to Shift and Push to Shift	15/4	350/5000	MV11-MV12

*DMH085\*\* Series will be available January 1, 2011.*

- 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
- BC**  
Bodies & Cavities
- TD**  
Technical Data



**Technical Information**

- 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
- BC** Bodies & Cavities
- TD** Technical Data

**General Description**

2-Way Manual Poppet Valve. The DL081 Series Valves are suited for emergency lowering applications and on-off flow applications.

**Operation**

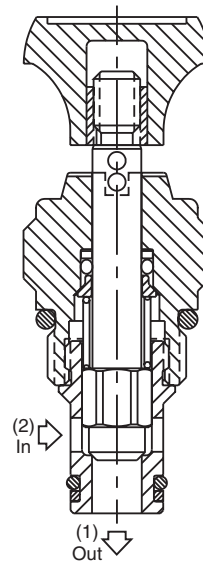
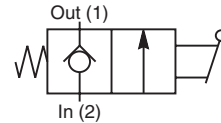
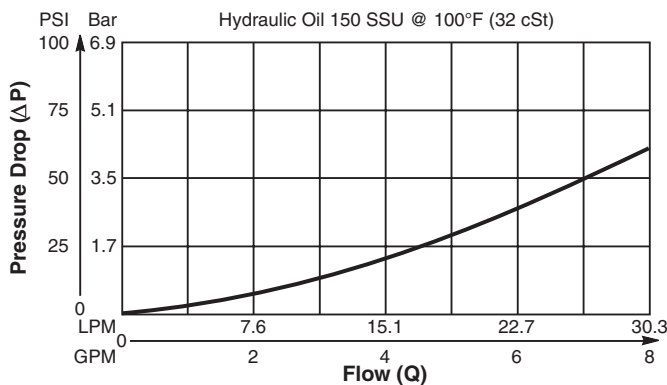
The DL081 Series Valves are mechanically operated check valves. Hydraulic force on the poppet is balanced by having equal area between the poppet seat and the valve stem, allowing the poppet to be manually pulled off the seat. When released, the bias spring will return the valve poppet to its closed position. Back pressure of more than 5.5 Bar (80 PSI) will prevent the bias spring from closing the poppet and must be avoided.

**Features**

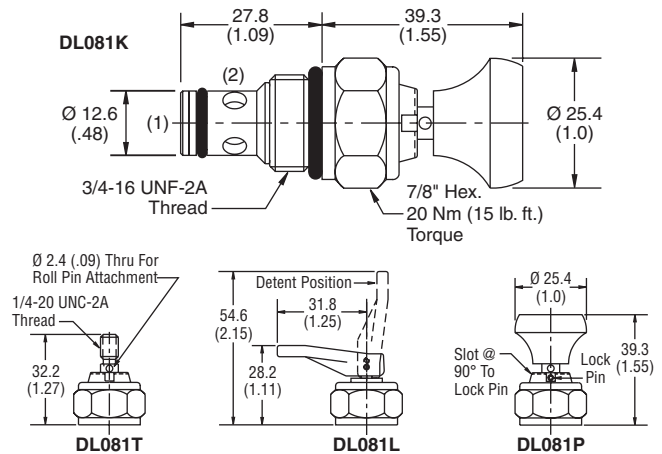
- Low leakage design
- Flip lever, pull handle, or detented pin design
- All external parts zinc plated

**Performance Curve**

Flow vs. Pressure Drop (Through cartridge only)



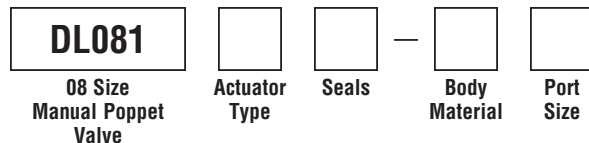
**Dimensions** Millimeters (Inches)



**Specifications**

<b>Nominal Flow</b>	30 LPM (8 GPM)
<b>Max. Inlet Pressure</b>	210 Bar (3000 PSI)
<b>Leakage at 150 SSU (32 cSt)</b>	5 drops/min. (.33 cc/min.) at 210 Bar (3000 PSI)
<b>Max. Allowable Tankline Pressure</b>	5.5 Bar (80 PSI)
<b>Operating Temp. Range (Ambient)</b>	-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)
<b>Cartridge Material</b>	Stem, stainless steel. All other parts hardened steel.
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	0.08 kg (0.17 lbs.)
<b>Cavity</b>	C08-2
<b>Form Tool</b>	Rougher None Finisher NFT08-2F

**Ordering Information**



Code	Actuator Type
K	Knob (852525)
T	Stem
L	Lever
P	Lock Pin

Code	Body Material
Omit	Steel
A	Aluminum

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

Code	Port Size	Body Part No.
Omit		Cartridge Only
4P	1/4" NPTF	(B08-2-*4P)
6P	3/8" NPTF	(B08-2-*6P)
4T	SAE-4	(B08-2-*4T)
6T	SAE-6	(B08-2-*6T)
6B	3/8" BSPG	(B08-2-*6B)

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



**General Description**

2-Way Manual Poppet Valve. The DL101 Series Valves are suited for emergency lowering applications and on-off flow applications.

**Operation**

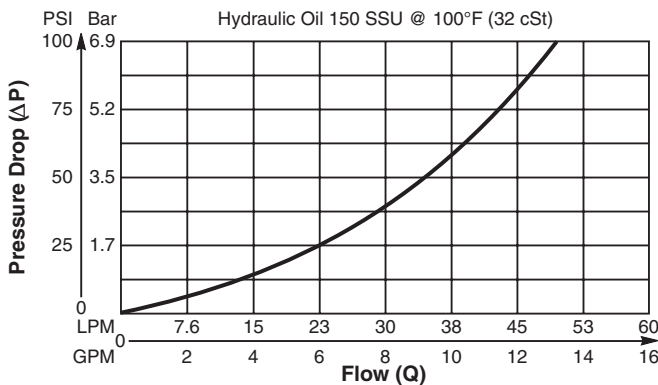
The DL101 Series Valves are mechanically operated check valves. Hydraulic force on the poppet is balanced by having equal area between the poppet seat and the valve stem, allowing the poppet to be manually pulled off the seat. When released, the bias spring will return the valve poppet to its closed position. Back pressure of more than 17.3 Bar (250 PSI) will prevent the bias spring from closing the poppet and must be avoided.

**Features**

- Low shut-off leakage
- Cartridge design
- Pull-to-Open design
- All external parts zinc plated

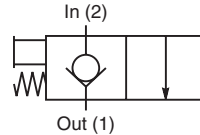
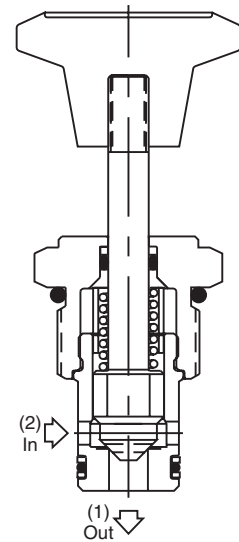
**Performance Curve**

**Pressure Drop vs. Flow (Through cartridge only)**

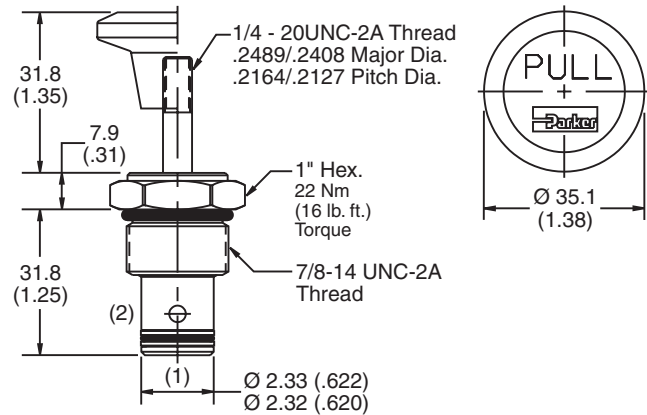


**Specifications**

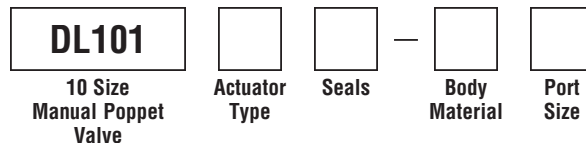
<b>Nominal Flow</b>	48.8 LPM (13 GPM)
<b>Max. Inlet Pressure</b>	240 Bar (3500 PSI)
<b>Leakage at 150 SSU (32 cSt)</b>	5 drops/min. (.33 cc/min.) at 240 Bar (3500 PSI)
<b>Max. Allowable Tankline Pressure</b>	17.3 Bar (250 PSI)
<b>Operating Temp. Range (Ambient)</b>	-40°C to +93.3°C (Nitrile) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
<b>Cartridge Material</b>	Stem, stainless steel. All other parts hardened steel.
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	0.09 kg (0.21 lbs.)
<b>Cavity</b>	C10-2
<b>Form Tool</b>	Rougher None Finisher NFT10-2F



**Dimensions** Millimeters (Inches)



**Ordering Information**



Code	Actuator Type
K	Knob (850020K)
T	Stem

Code	Body Material
Omit	Steel
A	Aluminum

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

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4P	1/4" NPTF	(B10-2-*4P)
6P	3/8" NPTF	(B10-2-*6P)
8P	1/2" NPTF	(B10-2-*8P)
6T	SAE-6	(B10-2-*6T)
8T	SAE-8	(B10-2-*8T)
T8T	SAE-8	(B10-2-T8T)†

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

**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

**BC**

Bodies & Cavities

**TD**

Technical Data

**Technical Information**

- 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
- BC** Bodies & Cavities
- TD** Technical Data

**General Description**

2-Way, 2 Position, Normally Open Manual Poppet Valve.

**Features**

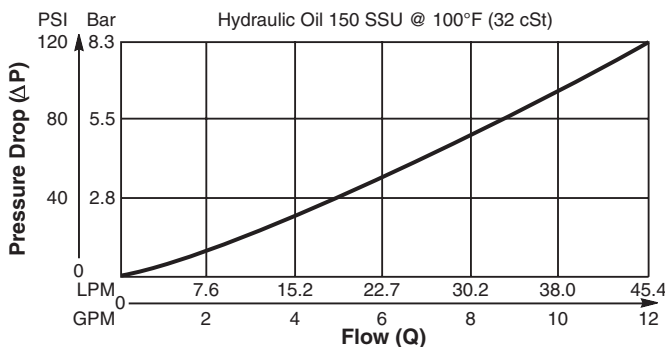
- Hardened poppet for minimal wear and greater durability
- Poppet type construction for minimal internal leakage
- Internal pilot operation provides “power leverage”
- Cavity common with solenoid operated valves
- Screw-on detent is optional
- All external parts zinc plated

**Operation**

In neutral position, pressure applied to port 2 creates pilot flow across the pilot seat causing poppet to lift. Flow passes from port 2 to port 1 until manual operator is pushed forcing pilot into its seat preventing pilot flow to firmly close the poppet. In neutral position, flow is restricted from port 1 to port 2.

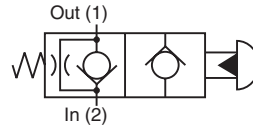
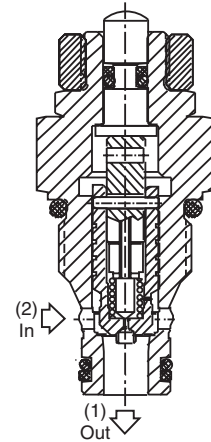
**Performance Curve**

**Pressure Drop vs. Flow (Through cartridge only)**

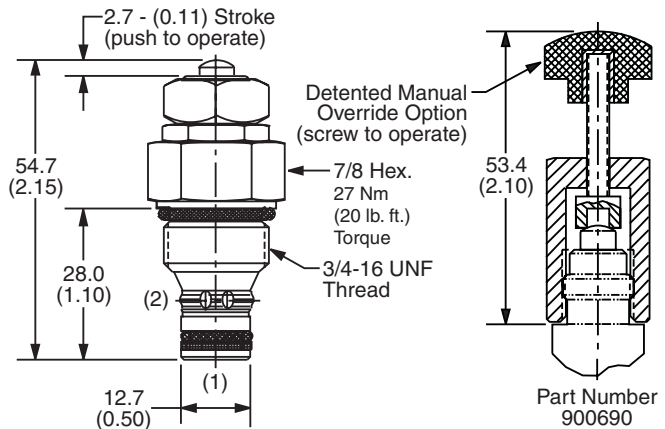


**Specifications**

<b>Rated Flow</b>	45 LPM (12 GPM)
<b>Maximum Input Pressure @ Port 2</b>	350 Bar (5000 PSI)
<b>Leakage at 150 SSU (32 cSt)</b>	0.33 ml/min. (5 drops/min.) @ 210 Bar (3000 PSI)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	.13 kg (.31 lbs.)
<b>Cavity</b>	C08-2 (See BC Section for more details)



**Dimensions** Millimeters (Inches)



**Ordering Information**

<b>GM02 12</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>08 Size Manual Valve Poppet Type Normally Open</b>	<b>Manual Button</b>	<b>Filter Screen</b>	<b>Seals</b>	<b>Body Material</b>	<b>Port Size</b>

Code	Manual Button
0	Non-Detented (Std.)
1	Detented (With use of part #900690)

Code	Body Material
Omit	Steel
A	Aluminum

Code	Filter Screen
0	Not required
1	60 mesh screen

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4P	1/4" NPTF	(B08-2-*4P)
6P	3/8" NPTF	(B08-2-*6P)
4T	SAE-4	(B08-2-*4T)
6T	SAE-6	(B08-2-*6T)
6B	3/8" BSPG	(B08-2-*6B)

Code	Seals / Kit No.
N	Nitrile, Buna-N / (SK30065N-1)
V	Fluorocarbon / (SK30065V-1)

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



**Technical Information**

**General Description**

3-Way, 2 Position Manual Spool Valve. Designed to operate single acting cylinders, pilot circuits and uni-directional motors.

**Features**

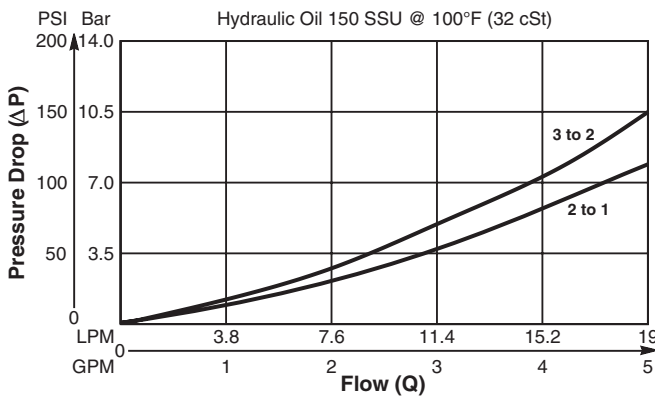
- High flow capacity with reduced space requirements
- One piece cartridge housing ensures internal concentricity
- Low mechanical operating force required
- Detented option available
- All external parts zinc plated

**Operation**

Neutral flow is 2 to 1. Pull to shift for flow from 3 to 2.

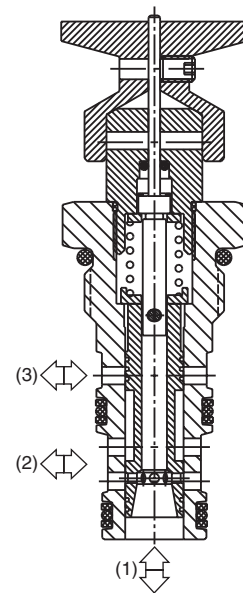
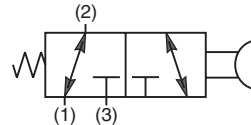
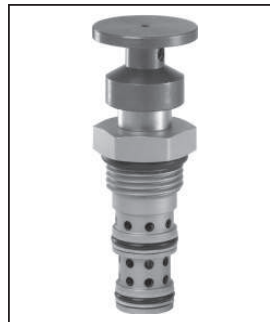
**Performance Curve**

**Pressure Drop vs. Flow** (Through cartridge only)

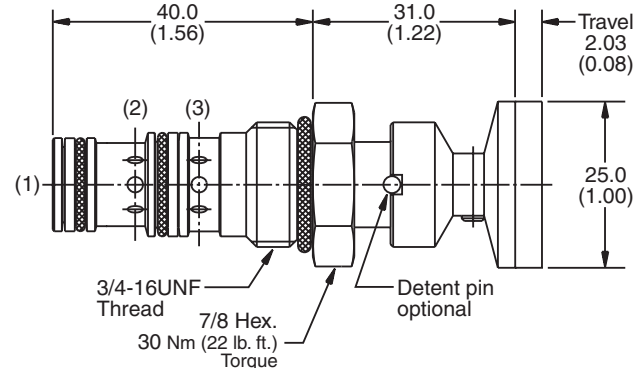


**Specifications**

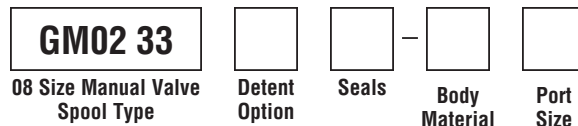
<b>Rated Flow</b>	19 LPM (5 GPM)
<b>Operating Pressure</b>	<b>Side Ports</b> - 350 Bar (5000 PSI) <b>Bottom Port</b> - 35 Bar (500 PSI)
<b>Max. Operating Pushing or Pulling Force Required</b>	5 kg (11 lbs.)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	.10 kg (.20 lbs.)
<b>Cavity</b>	C08-3 (See BC Section for more details)



**Dimensions** Millimeters (Inches)



**Ordering Information**



Code	Detent Option
Omit	Non-Detented (Std.)
1	Detented

Code	Body Material
Omit	Steel
A	Aluminum

Code	Seals / Kit No.
N	Nitrile, Buna-N / (SK30077N-1)
V	Fluorocarbon / (SK30077V-1)

Code	Port Size	Body Part No.
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)

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

- 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
- BC** Bodies & Cavities
- TD** Technical Data

**Technical Information**

- CV** Check Valves
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- TD** Technical Data

**General Description**

3-Way Rotary Spool Valve. The DM103 Series Valves are suited for any 3-way application (such as a selector function) where manual operation is desired. For additional information see Technical Tips pages MV1-MV2.

**Features**

- Several lever and knob options available
- Detented versions available
- Serviceable cartridge design
- All external parts zinc plated

**Operation**

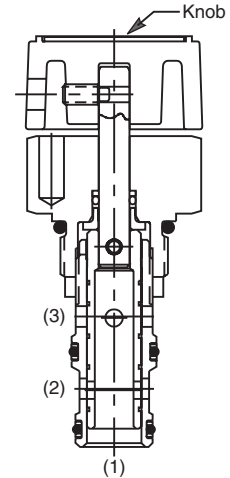
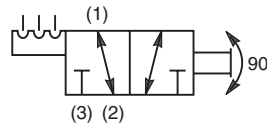
The K, LD, and FKD options require a full 90° rotation to shift the spool from one offset position to the other. The LN and FKN options require a full 45° rotation from center to either offset position. The knob (or lever) position indicator can be positioned anywhere within the 360° circle.

**Specifications**

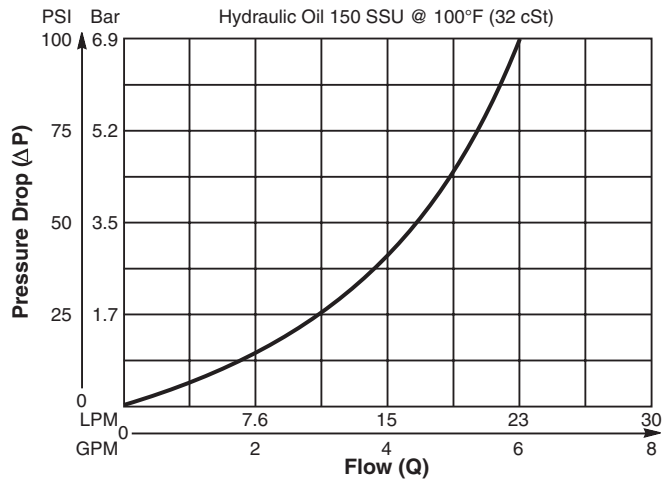
<b>Nominal Flow</b>	22.5 LPM (6 GPM)
<b>Maximum Inlet Pressure</b>	240 Bar (3500 PSI)
<b>Degrees of Rotation</b>	K, LD, and FKD Styles: 90° from Offset to Offset (2 positions) LN, FKN Style: 45° from center to either Offset (3 positions)
<b>Leakage at 150 SSU (32 cSt)</b>	164 cc/min. at 240 Bar (3500 PSI)
<b>Cartridge Material</b>	Stem, stainless steel. All other parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-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)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	0.11 kg (.30 lbs.)
<b>Cavity</b>	C10-3 (See BC Section for more details)
<b>Form Tool</b>	Rougher NFT10-3R Finisher NFT10-3F



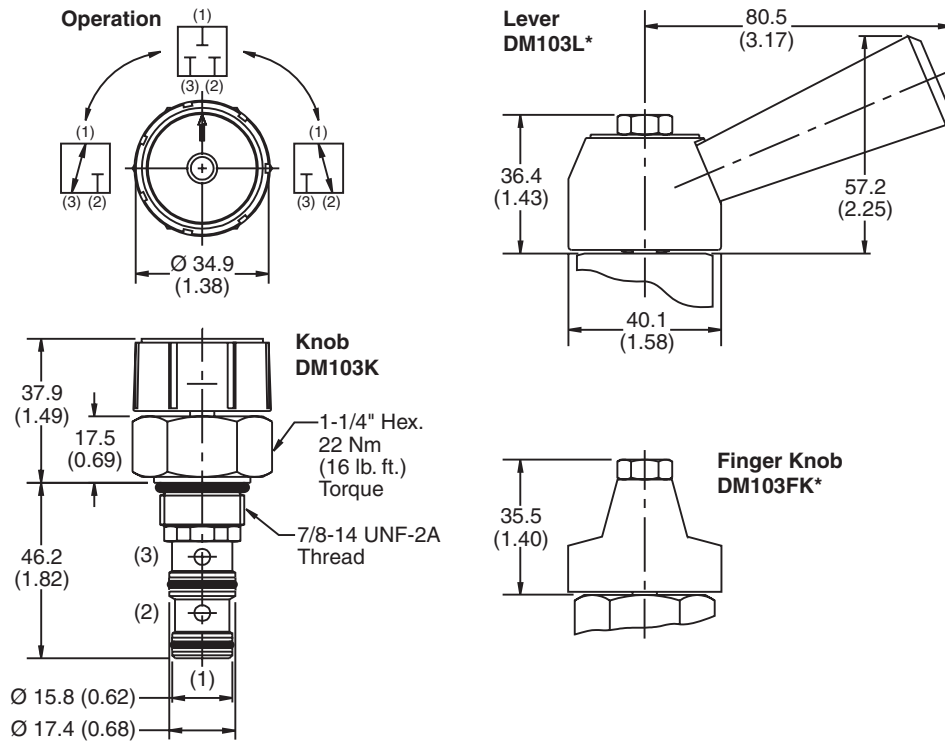
DM103LD



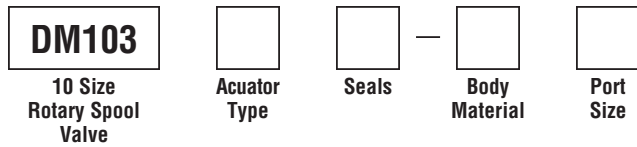
**Performance Curve**  
**Flow vs. Pressure Drop**  
(Through cartridge only)



**Dimensions** Millimeters (Inches)



**Ordering Information**



Code / Actuator Type	
<b>K</b> Knob	
<b>LD</b> Lever with 2 position detent	
<b>LN</b> Lever with 3 position detent	
<b>FKD</b> Finger Knob with 2 position detent	
<b>FKN</b> Finger Knob with 3 position detent	

Code	Seals / Kit. No.
Omit	Nitrile / (SK10-3N)
<b>V</b>	Fluorocarbon / (SK10-3V)

Code	Body Material
Omit	Steel
<b>A</b>	Aluminum

Code	Port Size	Body Part No.
Omit	Cartridge Only	
<b>4P</b>	1/4" NPTF	(B10-3-*4P)
<b>6P</b>	3/8" NPTF	(B10-3-*6P)
<b>8P</b>	1/2" NPTF	(B10-3-*8P)
<b>4T</b>	SAE - 4	(B10-3-*4T)
<b>6T</b>	SAE - 6	(B10-3-*6T)
<b>6B</b>	3/8" BSPG	(B10-3-6B)†
<b>8B</b>	1/2" BSPG	(B10-3-*8B)

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

**Technical Information**

- 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
- BC** Bodies & Cavities
- TD** Technical Data

**General Description**

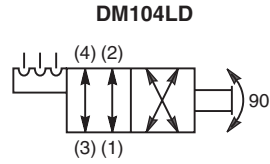
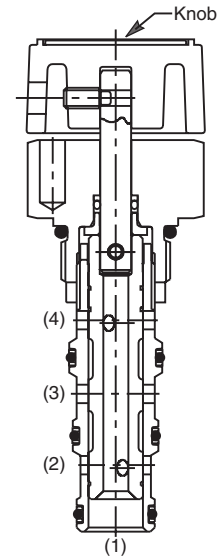
4-Way Rotary Spool Valve. The DM104 Series Valves are suited for all 4-way directional control applications where manual operation is desired.

**Features**

- Several lever and knob options available
- Detented versions available
- Serviceable cartridge design
- All external parts zinc plated

**Operation**

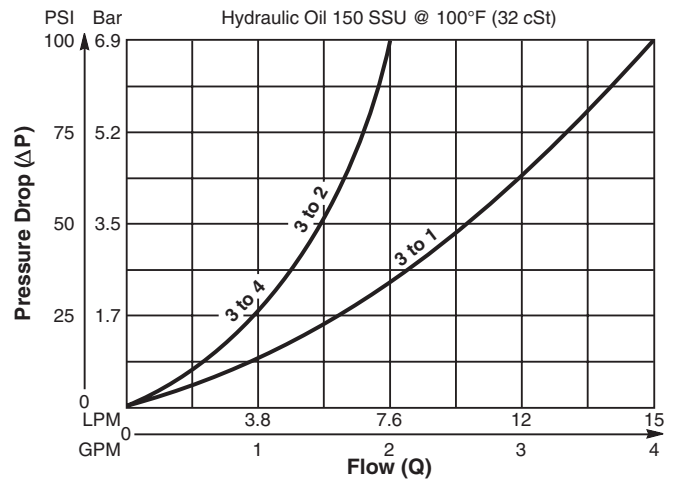
The K, LD, and FKD options require a full 90° rotation to shift the spool from one offset position to the other. The LN and FKN options require a full 45° rotation from center to either offset position. The knob (or lever) position indicator can be positioned anywhere within the 360° circle.



**Specifications**

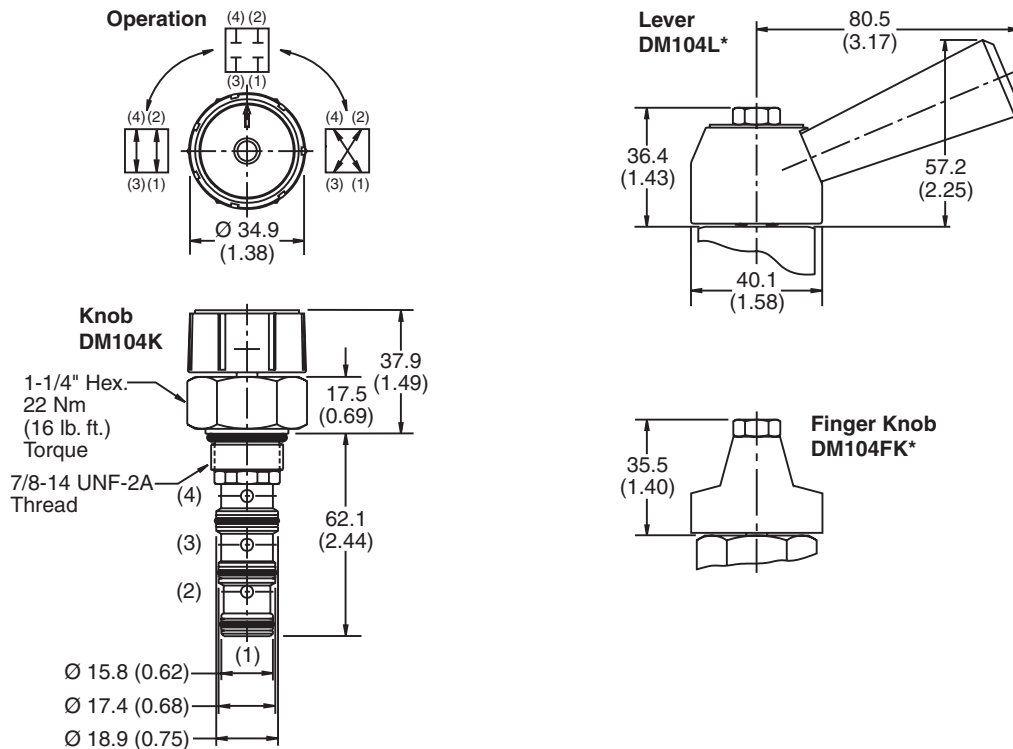
<b>Nominal Flow</b>	7.5 LPM (2 GPM)
<b>Maximum Inlet Pressure</b>	240 Bar (3500 PSI)
<b>Degrees of Rotation</b>	K, LD, and FKD Styles: 90° from Offset to Offset (2 positions) LN and FKN Styles: 45° from center to either Offset (3 positions)
<b>Leakage at 150 SSU (32 cSt)</b>	164 cc/min. at 240 Bar (3500 PSI)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-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)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	0.11 kg (.30 lbs.)
<b>Cavity</b>	C10-4 (See BC Section for more details)
<b>Form Tool</b>	Rougher NFT10-4R Finisher NFT10-4F

**Performance Curve**  
**Flow vs. Pressure Drop**  
(Through cartridge only)

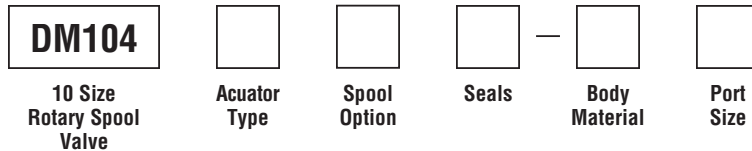




**Dimensions** Millimeters (Inches)



**Ordering Information**



Code / Actuator Type	Diagram
<b>K</b> Knob	
<b>LD</b> Lever with 2 position detent	
<b>LN</b> Lever with 3 position detent	
<b>FKD</b> Finger Knob with 2 position detent	
<b>FKN</b> Finger Knob with 3 position detent	

Code / Spool Option	Diagram
<b>1</b> Closed Center	
<b>8</b> Tandem Center	

Code	Seals / Kit. No.
Omit	Nitrile / (SK10-4N)
<b>V</b>	Fluorocarbon / (SK10-4V)

Code	Body Material
Omit	Steel
<b>A</b>	Aluminum

Code	Port Size	Body Part No.
Omit	Cartridge Only	
<b>6P</b>	3/8" NPTF	(B10-4-*6P)
<b>6T</b>	SAE - 6	(B10-4-*6T)
<b>8T</b>	SAE - 8	(B10-4-*8T)
<b>6B</b>	3/8" BSPG	(B10-4-6B)†

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

Technical Information

- 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
- BC Bodies & Cavities
- TD Technical Data

**General Description**

4-Way, 2 Position, Reversing Manual Spool Valve. Designed to operate double acting cylinders, pilot circuits and bi-directional motors.

**Features**

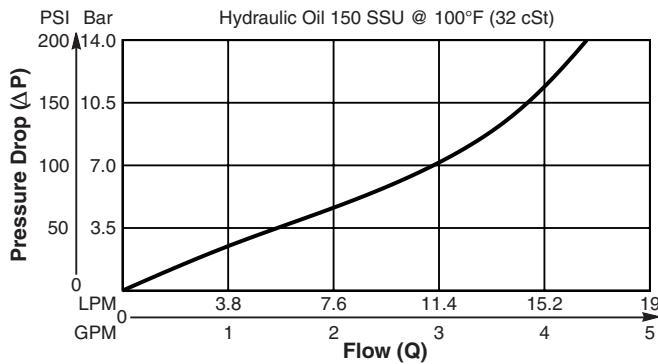
- High flow capacity with reduced space requirements
- One piece cartridge housing ensures internal concentricity
- Low mechanical operating force required
- Detented option available
- All external parts zinc plated

**Operation**

Neutral, flow is 3 to 4 and 2 to 1. Push to shift for flow 3 to 2 and 4 to 1

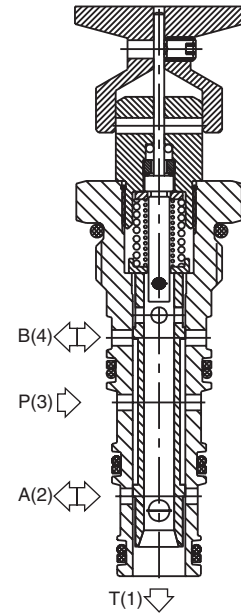
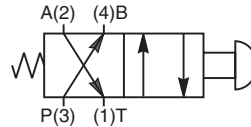
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

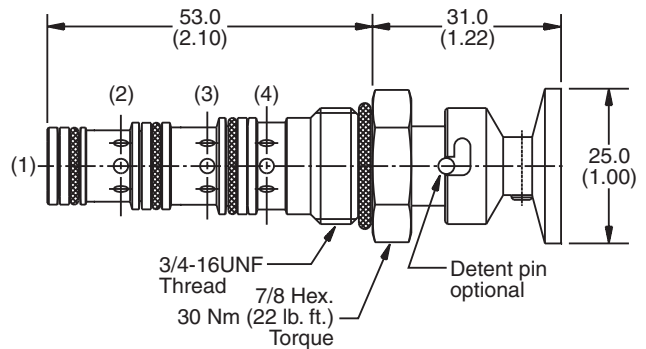


**Specifications**

<b>Rated Flow</b>	15 LPM (4 GPM)
<b>Operating Pressure</b>	<b>Side Ports</b> - 350 Bar (5000 PSI) <b>Bottom Port</b> - 35 Bar (500 PSI)
<b>Max. Operating Pushing or Pulling Force Required</b>	5 kg (11 lbs.)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	.10 kg (.20 lbs.)
<b>Cavity</b>	C08-4 (See BC Section for more details)



**Dimensions** Millimeters (Inches)



**Ordering Information**

**GM02 40XS**

08 Size Manual Valve Spool Type Reversing

Detent Option

Seals

Body Material

Port Size

Code	Detent Option
Omit	Non-Detented (Std.)
1	Detented

Code	Body Material
Omit	Steel
A	Aluminum

Code	Seals / Kit No.
N	Nitrile, Buna-N / (SK30078N-1)
V	Fluorocarbon / (SK30078V-1)

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4T	SAE-4	(B08-4-*4T)
6T	SAE-6	(B08-4-*6T)
6B	3/8" BSPG	(B08-4-*6B)

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



**Technical Information**

**General Description**

4-Way, 2 Position, Normally Closed Manual Spool Valve. Designed to operate double acting cylinders, pilot circuits and bi-directional motors.

**Features**

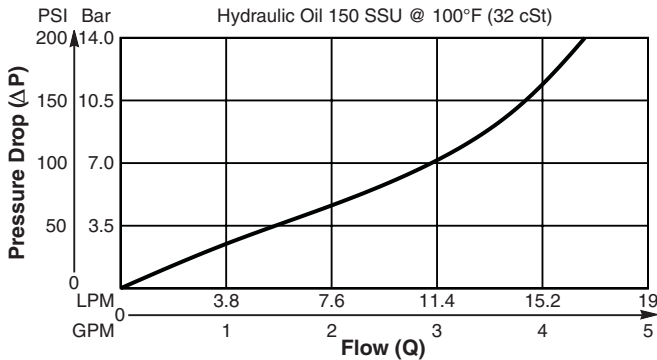
- High flow capacity with reduced space requirements
- One piece cartridge housing ensures internal concentricity
- Low mechanical operating force required
- Detented option available
- All external parts zinc plated

**Operation**

Neutral, all ports blocked. Push to shift for flow 3 to 2 and 4 to 1.

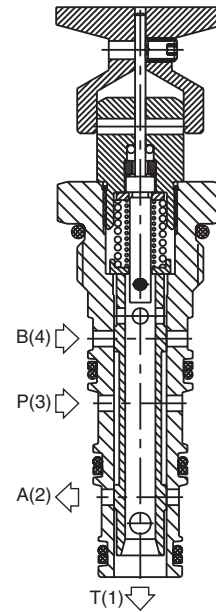
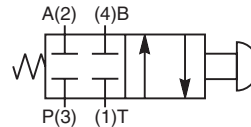
**Performance Curve**

Pressure Drop vs. Flow (Through cartridge only)

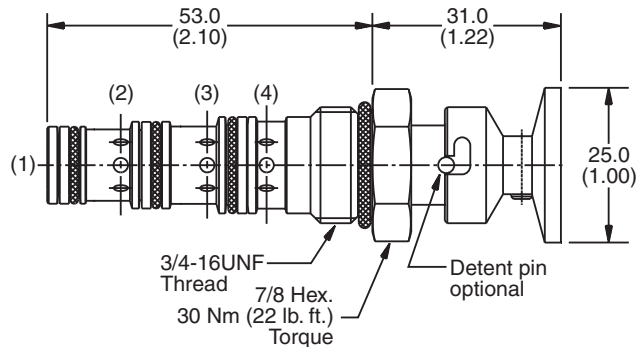


**Specifications**

<b>Rated Flow</b>	15 LPM (4 GPM)
<b>Operating Pressure</b>	<b>Side Ports</b> - 350 Bar (5000 PSI) <b>Bottom Port</b> - 35 Bar (500 PSI)
<b>Max. Operating Pushing or Pulling Force Required</b>	5 kg (11 lbs.)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-40°C to +93.3°C (Nitrile, Buna-N) (-40°F to +200°F) -31.7°C to +121.1°C (Fluorocarbon) (-25°F to +250°F)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	.12 kg (.25 lbs.)
<b>Cavity</b>	C08-4 (See BC Section for more details)



**Dimensions** Millimeters (Inches)



**Ordering Information**

**GM02 40CS**

08 Size Manual Valve    Detent Option    Seals    Body Material    Port Size  
Spool Type    Normally Closed

Code	Detent Option
Omit	Non-Detented (Std.)
1	Detented

Code	Body Material
Omit	Steel
A	Aluminum

Code	Seals / Kit No.
N	Nitrile, Buna-N / (SK30078N-1)
V	Fluorocarbon / (SK30078V-1)

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4T	SAE-4	(B08-4-*4T)
6T	SAE-6	(B08-4-*6T)
6B	3/8" BSPG	(B08-4-*6B)

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

- 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
- BC** Bodies & Cavities
- TD** Technical Data

Technical Information

- 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
- BC Bodies & Cavities
- TD Technical Data

**General Description**

4-Way, 3 Position, Closed Center Manual Spool Valve. Designed to operate double acting cylinders, pilot circuits and bi-directional motors.

**Features**

- High flow capacity with reduced space requirements
- One piece cartridge housing ensures internal concentricity
- Low mechanical operating force required
- Detented option available
- All external parts zinc plated

**Operation**

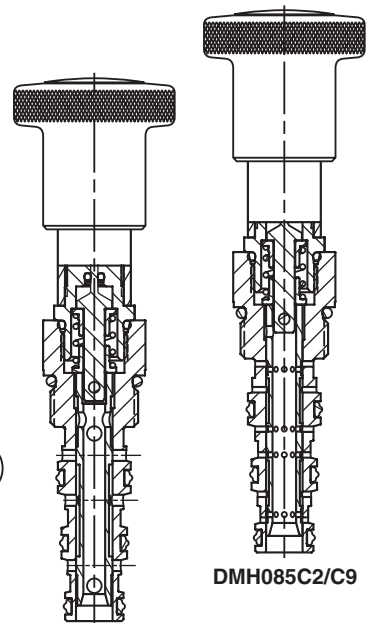
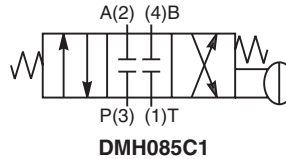
Push to shift for flow 3 to 2 and 4 to 1. Pull to shift for flow 3 to 4 and 2 to 1.

**NOTE:**

*This series will be available January 1, 2011.*

**Specifications**

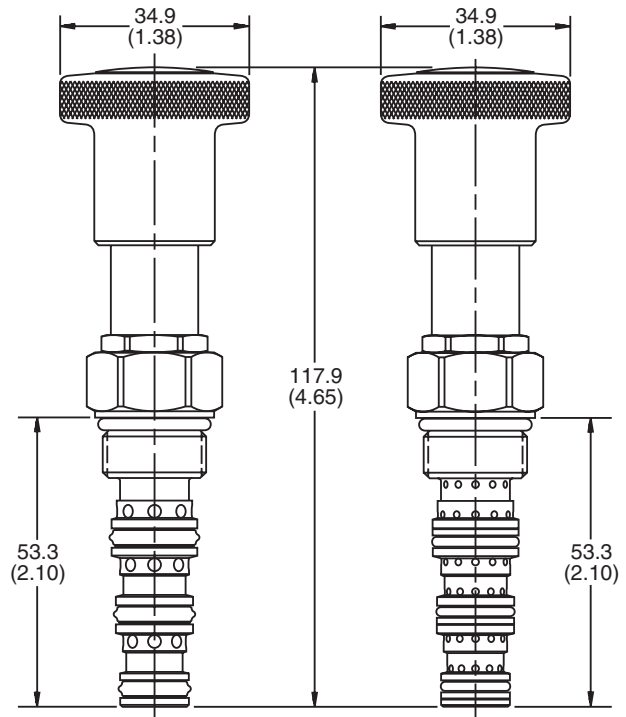
<b>Rated Flow</b>	<b>C1</b> 17 LPM (4.5 GPM) <b>C2</b> 15 LPM (4.0 GPM) <b>C4</b> 19 LPM (5.0 GPM) <b>C9</b> 15 LPM (4.0 GPM)
<b>Operating Pressure</b>	<b>Side Ports</b> - 350 Bar (5000 PSI) <b>Bottom Port</b> - 35 Bar (500 PSI)
<b>Max. Operating Pushing or Pulling Force Required</b>	5 kg (11 lbs.)
<b>Cartridge Material</b>	All parts steel. All operating parts hardened steel.
<b>Operating Temp. Range/Seals</b>	-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)
<b>Fluid Compatibility/Viscosity</b>	Mineral-based or synthetic with lubricating properties at viscosities of 45 to 2000 SSU (6 to 420 cSt)
<b>Filtration</b>	ISO code 16/13, SAE Class 4 or better
<b>Approx. Weight</b>	.12 kg (.25 lbs.)
<b>Cavity</b>	C08-4 (See BC Section for more details)



DMH085C1/C4

DMH085C2/C9

**Dimensions** Millimeters (Inches)



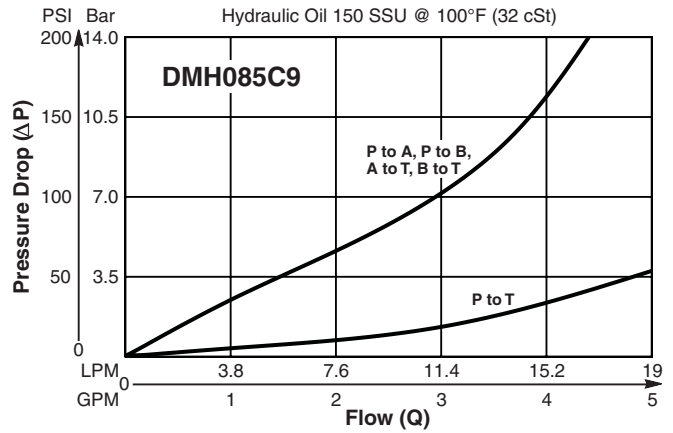
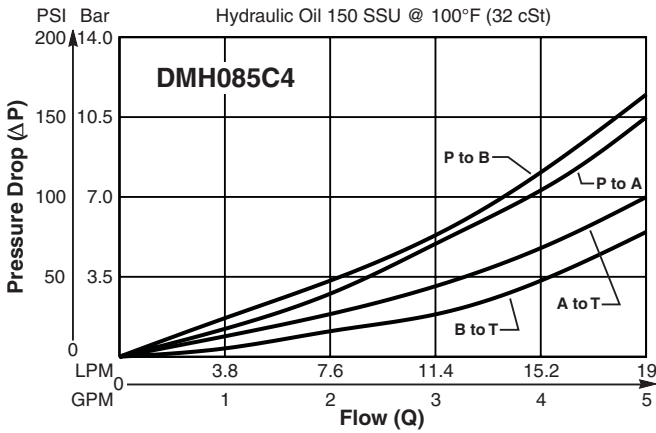
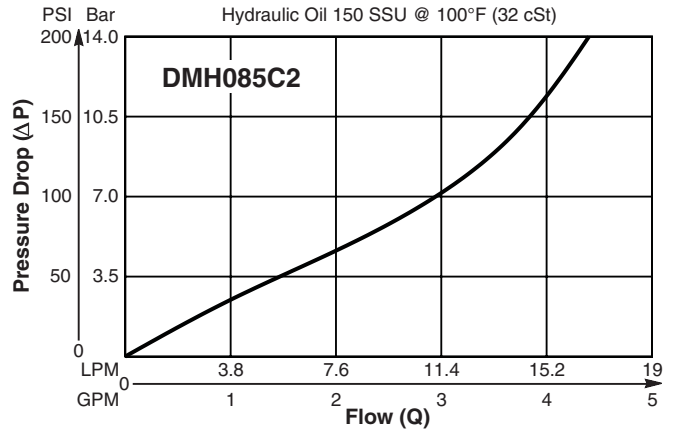
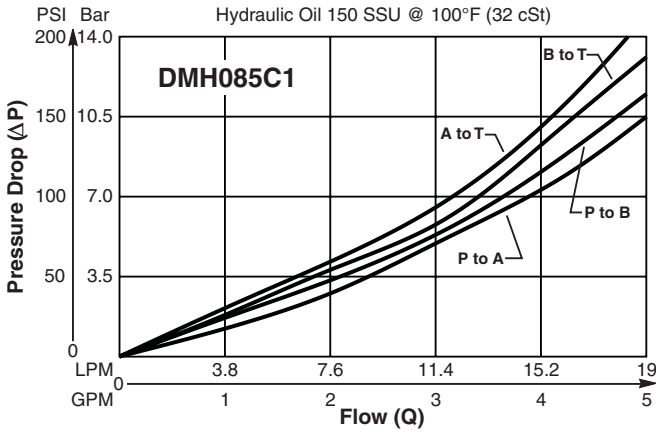
DMH085C1/C4

DMH085C2/C9

**Note:** "D"-Rings are standard on all spool configurations, but optional Buna/Fluorocarbon configurations as shown on the C2/C9 drawing are also available.

**Performance Curves**

Pressure Drop vs. Flow (Through cartridge only)

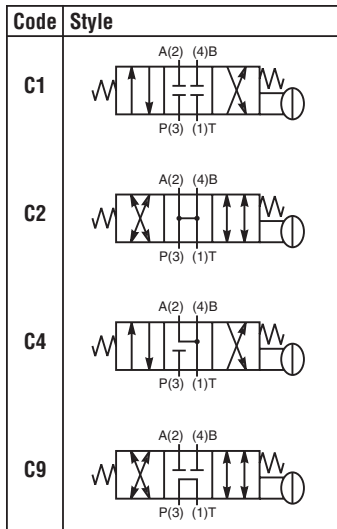


**Ordering Information**

**DMH085**

08 Size, 4-Way Spool Type Manual Valve    Style    Detent Option    Seals    Body Material    Port Size

**NOTE:**  
 This series will be available January 1, 2011.



Code	Detent Option
Omit	Non-Detented (Std.)
D	Detented

Code	Body Material
Omit	Steel
A	Aluminum

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

Code	Port Size	Body Part No.
Omit	Cartridge Only	
4T	SAE-4	(B08-4-*4T)
6T	SAE-6	(B08-4-*6T)
6B	3/8" BSPG	(B08-4-*6B)

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

- 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
- BC** Bodies & Cavities
- TD** Technical Data