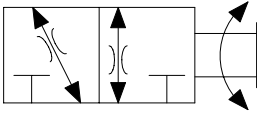
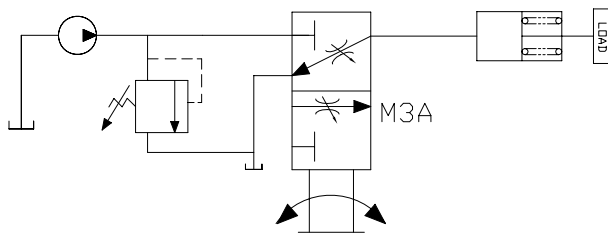


3 Way 2 Position Manual Valves

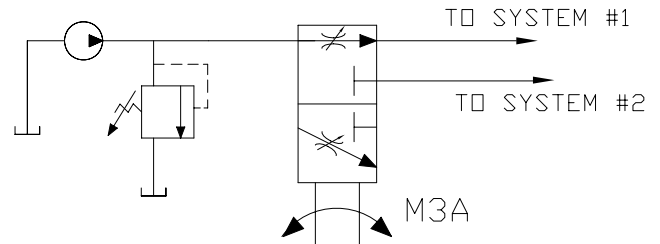
	GPM	PSI	LPM	BAR	MODEL	PAGE
	12	3000	45	207	DF-M3A	

Typical Schematic

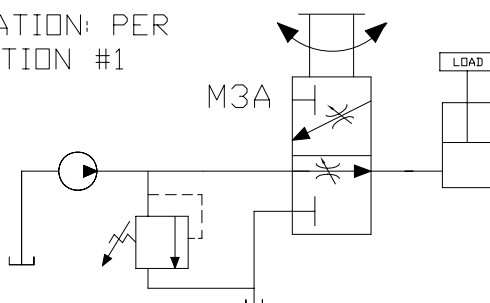
Typical application for a M3A depends on the porting used. The M3A can be used in a clutch application with porting option #1, for a single acting cylinder control with porting option #2, and for a selector application with porting option #3.



CLUTCH APPLICATION: PER PORTING OPTION #1



SELECTOR APPLICATION: PER PORTING OPTION #3



SINGLE ACTING CYLINDER CONTROL: PER PORTING OPTION #2

WARNING: The specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

DF-M3A Manual Rotary Spool Valve, 3 Way 2 Position

DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, 3 way 2 position, manual rotary spool valve.

OPERATION

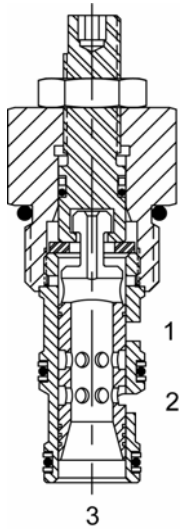
The DF-M3A when rotated fully to the clockwise position, the cartridge directs flow from (3) to (2) or (2) to (3) and blocks flow at (1).

When rotated fully to the counterclockwise position, the cartridge directs flow from (1) to (3) or (3) to (1) and blocks flow at (2).

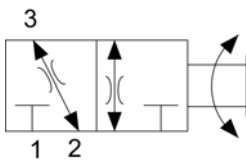
All ports are closed in transition.

FEATURES

- Hardened parts for long life.
- Industry common cavity.



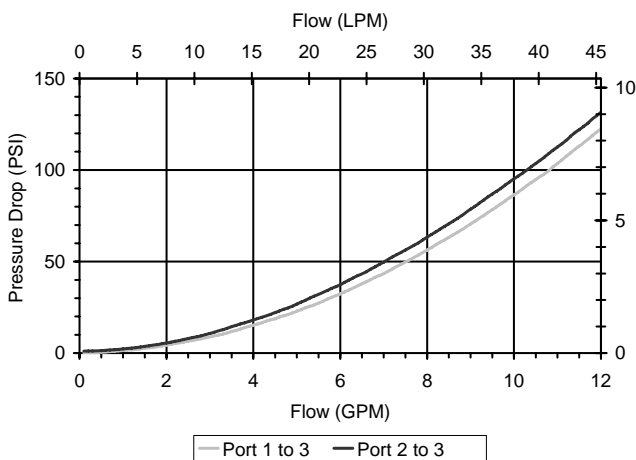
HYDRAULIC SYMBOL



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for pressure drop in both positions.

PERFORMANCE

Actual Test Data (Cartridge Only)

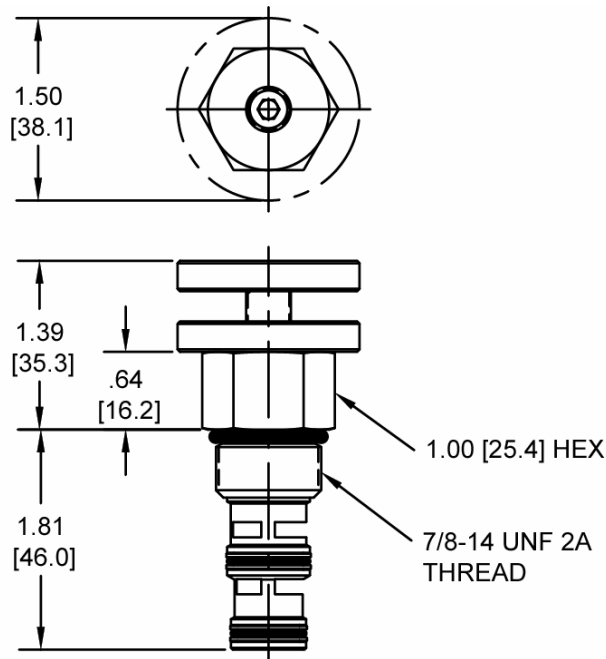


VALVE SPECIFICATIONS

Nominal Flow	12 GPM (45 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min)
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.49 lbs. (.22 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 3W
Cavity Tools kit (form tool, reamer, tap)	40500001
Seal Kit	21191210

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DIMENSIONS



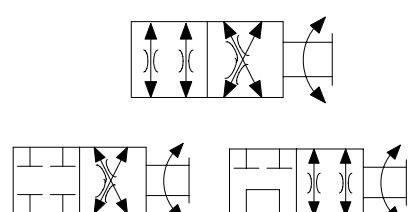
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

DF-M3A		-	-	
OPTIONS				BODIES
Buna Standard	00		Blank	Without Body
Viton Standard	V0		N	¼" BSP Ports
Buna, Knob	OK		S	#6 SAE Ports
Viton Knob	VK			

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4 Way 2 Position Manual Valves

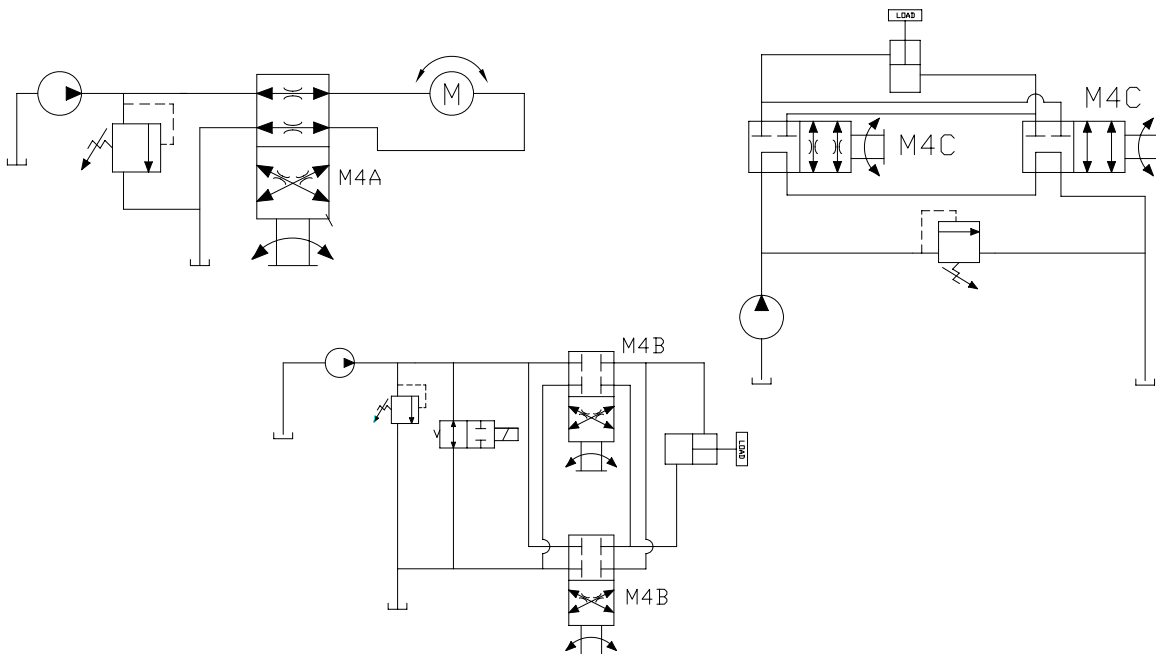
	GPM	PSI	LPM	BAR	MODEL	PAGE
	10	3000	38	207	DG-M4A	
	15	3000	57	207	DG-M4B	
	12	3000	45	207	DG-M4C	

Typical Schematic

Typical application for the M4A is directional motor control.

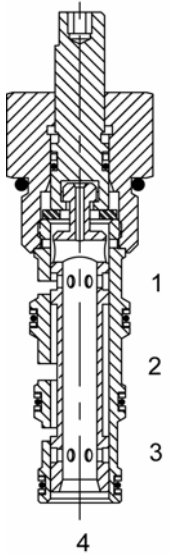
Typical application for the M4B is directional cylinder control in a parallel circuit.

Typical application for the M4C is directional cylinder control in a series circuit.



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DG-M4A Manual Spool Rotary Valve, 4 Way 2 Position, Criss Cross



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, manual rotary spool valve, 4 way 2 position, criss cross

OPERATION

The DG-M4A, when rotated fully to clockwise position, the cartridge directs flow between (2) to (3) and (1) to (4).

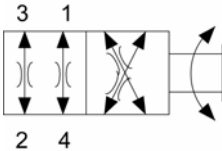
When rotated fully to counterclockwise position, the cartridge directs flow between (3) to (4) and (1) to (2).

All ports are closed in transition.

FEATURES

- Hardened parts for long life.
- Industry common cavity.

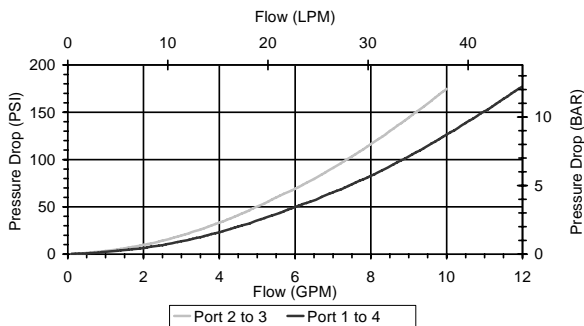
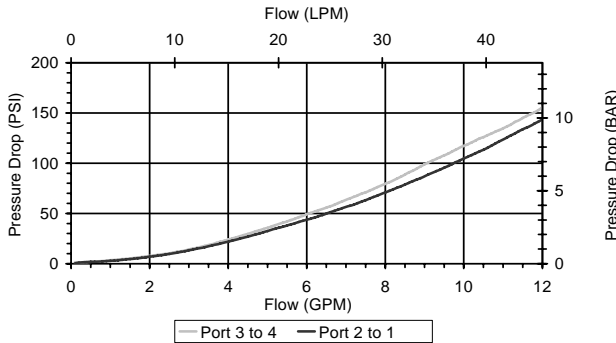
HYDRAULIC SYMBOL



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions.
See chart for pressure drop in both positions.

PERFORMANCE

Actual Test Data (Cartridge Only)

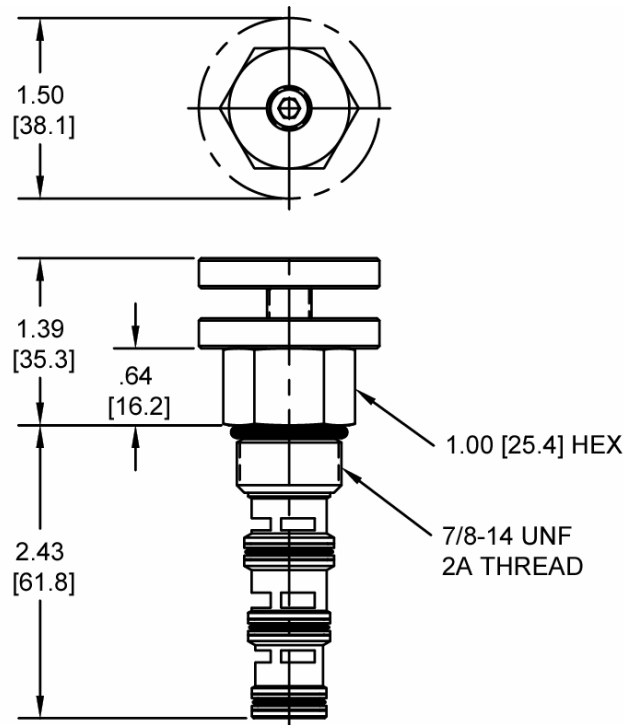


VALVE SPECIFICATIONS

Nominal Flow	10 GPM (38 LPM)
Rated Operating Pressure	8 GPM (30 LPM) from (2) to (3)
Typical Internal Leakage (150 SSU)	3000 PSI (207 bar)
Viscosity Range	5 cu in/min (82 ml/min) per path
Filtration	36 to 3000 SSU (3 to 647 cSt)
Media Operating Temperature Range	ISO 18/16/13
Weight	-40° to 250° F (-40° to 120° C)
Operating Fluid Media	.32 lbs. (.15 kg)
Cartridge Torque Requirements	General Purpose Hydraulic Fluid
Cavity	30 ft-lbs (40.6 Nm)
Cavity Tools kit (form tool, reamer, tap)	DELTA 4W
Seal Kit	40500002
	21191214

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DIMENSIONS



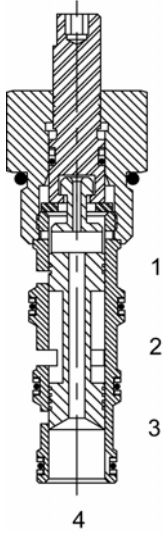
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

DG-M4A - - -			
OPTIONS			BODIES
Buna Standard	00	Blank	Without Body
Viton Standard	V0	N	¼" BSP Ports
Buna, Knob	0K	S	#6 SAE Ports
Viton Knob	VK		

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DG-M4B Manual Rotary Spool Valve, 4 Way 2 Position, Closed Center



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, 4 way 2 position, manual rotary spool valve, closed center.

OPERATION

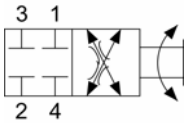
The DG-M4B when rotated fully to clockwise position, this valve blocks flow at all ports.

When rotated fully total counterclockwise position, the cartridge directs flow between (2) and (1), as well as (3) and (4).

FEATURES

- Hardened parts for long life.
- Industry common cavity.

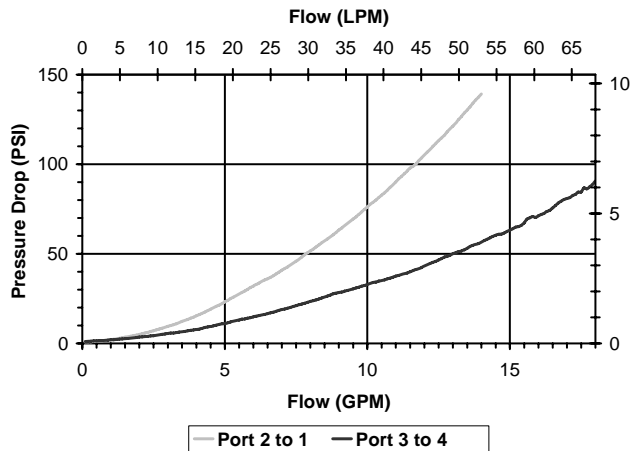
HYDRAULIC SYMBOL



May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions. See chart for pressure drop.

PERFORMANCE

Actual Test Data (Cartridge Only)

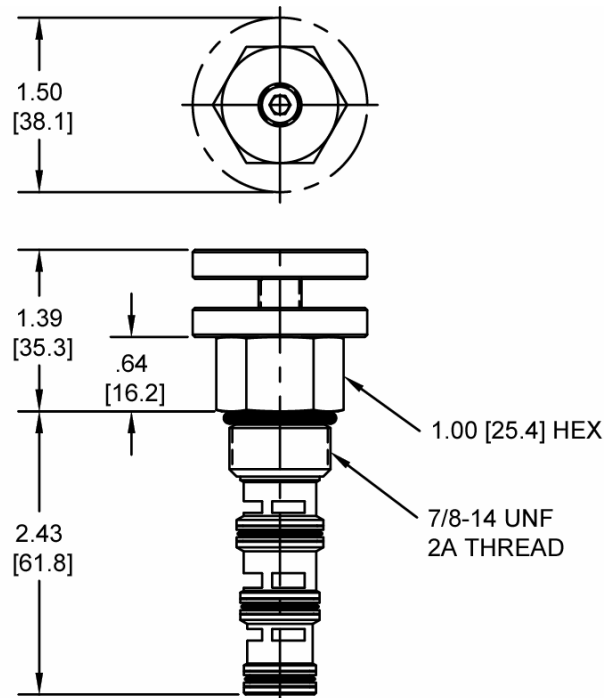


VALVE SPECIFICATIONS

Nominal Flow	15 GPM (57 LPM)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.33 lbs (.15 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Tools kit (form tool, reamer, tap)	40500002
Seal Kit	21191214

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DIMENSIONS



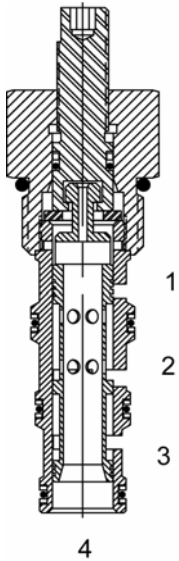
(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

DG-M4B		-	-	
OPTIONS				BODIES
Buna Standard	00		Blank	Without Body
Viton Standard	V0		N	¼" BSP Ports
Buna, Knob	0K		S	#6 SAE Ports
Viton Knob	VK			

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DG-M4C Manual Rotary Spool Valve, 4 Way 2 Position, Tandem Center



DESCRIPTION

10 size, 7/8-14 thread, "Delta" series, 4 way 2 position, manual rotary spool valve tandem center.

OPERATION

The DG-M4C when rotated fully to clockwise position, the cartridge allows flow from (2) to (4) and blocks flow at (1) and (3).

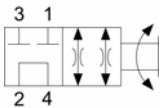
When rotated fully total counterclockwise position, the cartridge allows flow between (2) and (3) and between (1) and (4).

All ports are closed in transition.

FEATURES

- Hardened parts for long life.
- Industry common cavity.

HYDRAULIC SYMBOL

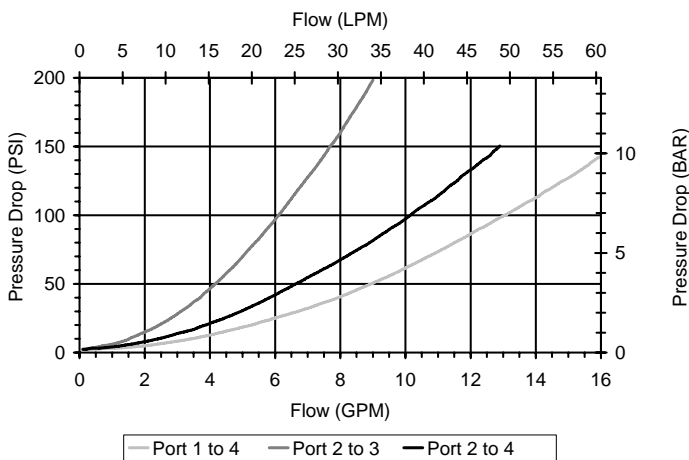


May be used as metering product. Valve has approximately 3.5 turns adjustment from extreme clockwise fully to counterclockwise positions.

See chart for fully open and fully closed pressure drop.

PERFORMANCE

Actual Test Data (Cartridge Only)

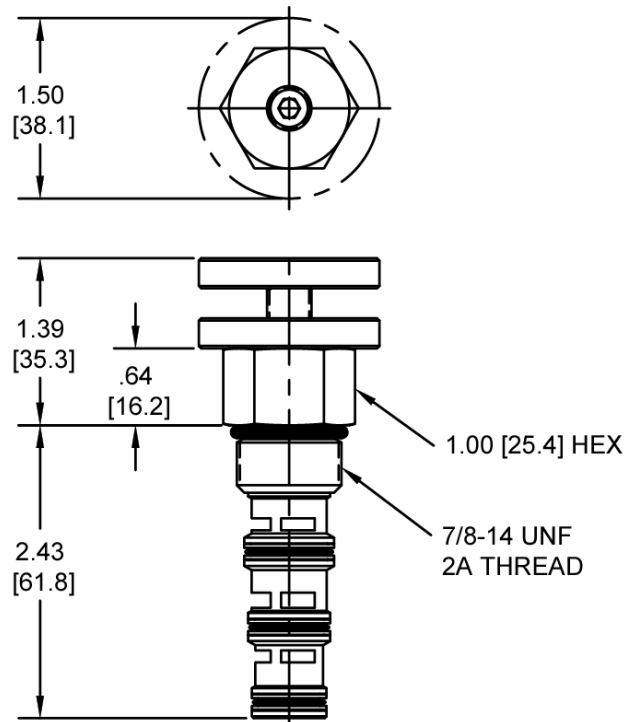


VALVE SPECIFICATIONS

Nominal Flow	12 GPM (45 LPM)
	8 GPM (30 LPM) from (2) to (3)
Rated Operating Pressure	3000 PSI (207 bar)
Typical Internal Leakage (150 SSU)	5 cu in/min (82 ml/min) per path
Viscosity Range	36 to 3000 SSU (3 to 647 cSt)
Filtration	ISO 18/16/13
Media Operating Temperature Range	-40° to 250° F (-40° to 120° C)
Weight	.52 lbs. (.23 kg)
Operating Fluid Media	General Purpose Hydraulic Fluid
Cartridge Torque Requirements	30 ft-lbs (40.6 Nm)
Cavity	DELTA 4W
Cavity Tools kit (form tool, reamer, tap)	40500002
Seal Kit	21191214

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DIMENSIONS



(for bodies style and sizes see section "Accessories")

ORDERING INFORMATION

DG-M4C - - -			
OPTIONS			BODIES
Buna Standard	00	Blank	Without Body
Viton Standard	V0	N	¼" BSP Ports
Buna, Knob	0K	S	#6 SAE Ports
Viton Knob	VK		

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