

SystemStak™

Pressure Controls: Counterbalance, Sequence and Pressure Reducing Valves

DGMR(1)-3-40
DGMX*-3-40

General Description

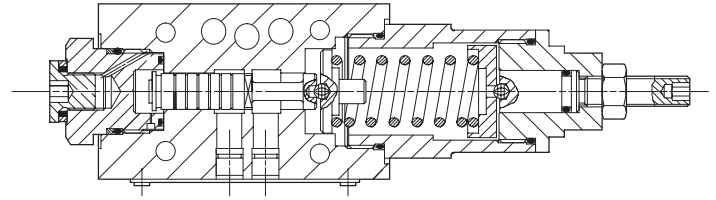
These single-stage valves operate by the application of pressure on the end of the valve spool, acting against a spring which is loaded by means of the adjustment mechanism.

In the counterbalance and sequence valves the spool is offset by the spring such that flow cannot pass through the valve. When the force exerted by the pilot pressure on the spool end exceeds the force of the main spring, the spool is moved to allow flow through the valve.

In the pressure reducing valve the flow path is normally open and is closed as the pilot pressure exceeds the setting of the valve. Excessive pressure in the reduced-pressure line is prevented by a pressure relieving function.

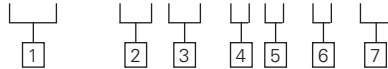
Pressure adjustment options of control knob (with or without keylock) or screw/locknut design are available.

Typical Section



Model Code

DGM *(*) -3- ** (*) - * * - * - 40



1 Type

- R** – Counterbalance function
- R1** – Sequence function
- X1** – Pressure reducing, underlapped
- X2** – Pressure reducing, overlapped
- X3** – Pressure reducing, overlapped, low leakage

2 Function ports

- For DGMR only:**
- TA** – Counterbalance control function in “T” port, controlled by pressure in “A” port
- For DGMR1 only:**
- PP** – Sequence control in “P” port, controlled by

- pressure in “P” port
- For DGMX only:**
- PA** – Pressure reducing function in line P, piloted from A
- PB** – Pressure reducing function in line P, piloted from B
- PP** – Pressure reducing function in line P, piloted from P

3 Adjuster location

- Option on DGMX only
- L** – Adjuster at “A”-port end of valve
- Blank** – Adjuster at “B”-port end of valve

4 Pressure adjustment range

- For DGMX only:**
- Y** – 1,40-7,0 bar (21-101 psi)
- R** – 1,40-45,0 bar (21-652 psi)
- For DGMR and DGMX:**
- A** – 3-30 bar (43.5-435 psi)
- B** – 3,5-70 bar (51-1000 psi)
- C** – 10-140 bar (145-2000 psi)
- F** – 20-250 bar (290-3625 psi)

5 Pressure adjustment/locking method

- H** – Handknob
- K** – Micrometer with keylock
- W** – Screw and locknut

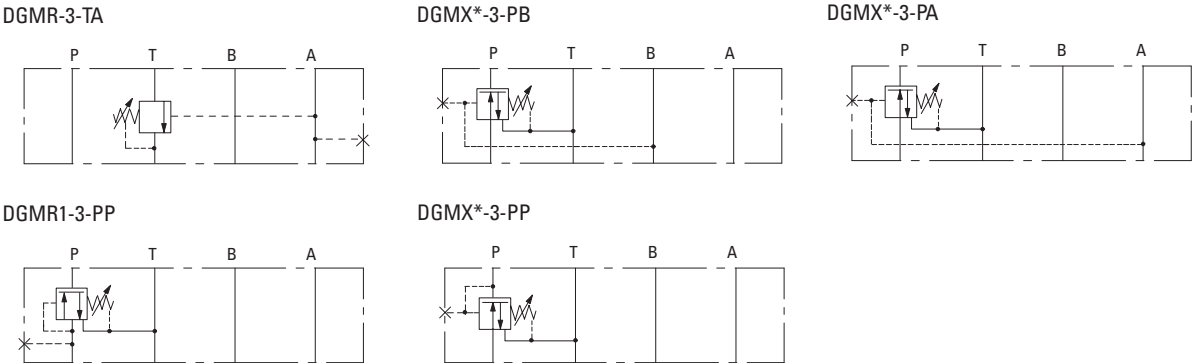
6 Gauge port

- B** – G1/8 ” (1/8 BSPF)
- S** – SAE 4(7/16”-20 UNF-2B)

7 Design number, 40 series

Subject to change.
Installation dimensions unchanged for design numbers 40 to 49 inclusive.

Functional Symbols



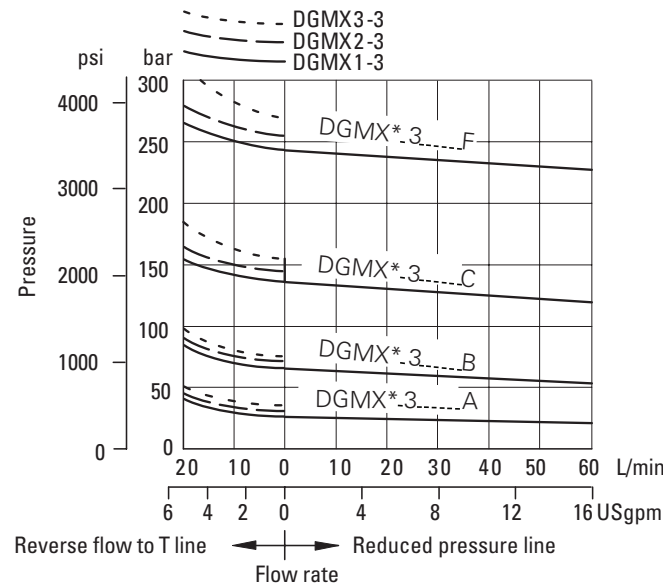
Operating Data

Maximum flow rate	60 L/min (16 USgpm)
Maximum operating pressure	315 bar (4500 psi)
Pressure drops	See graphs
Mounting position	Optional
Mass Approx.	DGMR*- 1.3kg (2.9lb) DGMX*- 1.3kg (2.9lb)

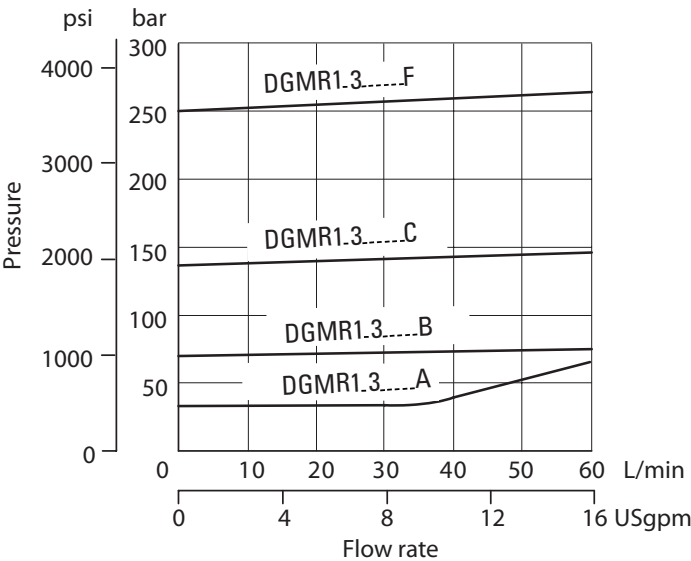
Performance Data

Typical performance with mineral oil at 21 cSt (102 SUS) and at 50°C (122°F).

DGMX*-3-P*



DGMR1-3-PP

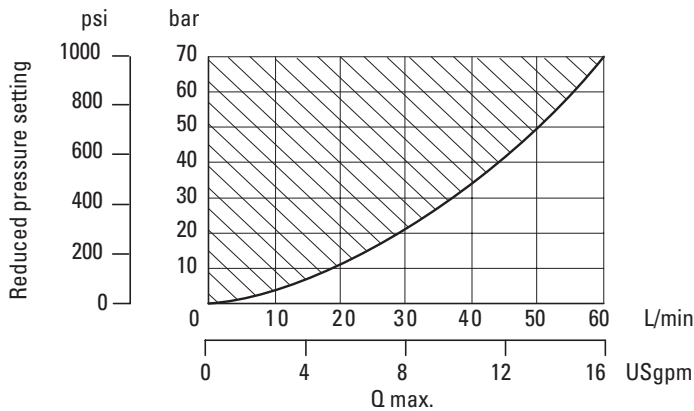


Performance Data

(contd...)

DGMX*-3-P*

Low Pressure/Flow Rate Minimum Performance



Effect of Back-Pressure

The effective reduced pressure is equal to the valve adjustment setting plus any back-pressure in line T

Dead Head Leakage

Typical leakage flow at 250 bar inlet pressure from reduced pressure line into T at "Dead Head" condition (i.e. No flow required at the reduced pressure outlet.)

This leakage flow must be provided at the inlet line P in order to maintain the reduced outlet pressure.

DGMX1-3 = 1600
DGMX2-3 = 400
DGMX3-3 = 80

Installation Dimensions

in mm (inches)

DGMR-3-TA-**-*-40

DGMR1-3-PP-**-*-40

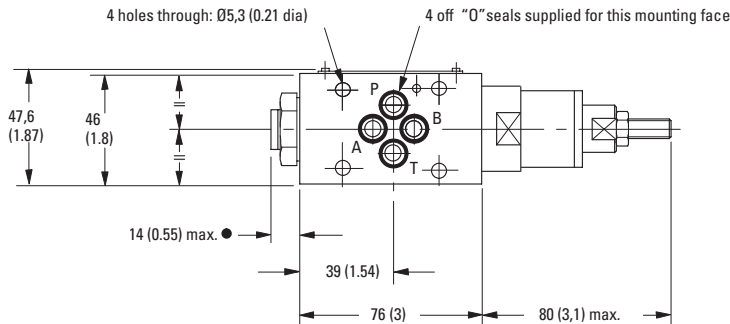
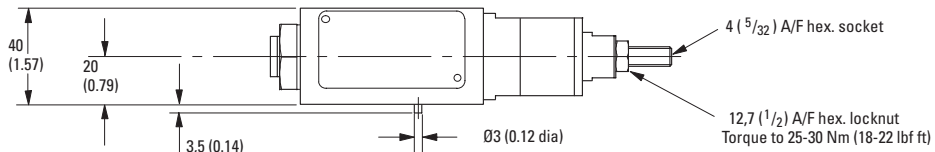
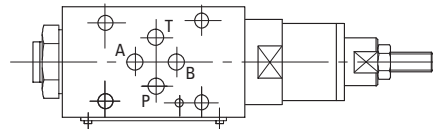
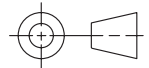
DGMX(*)-3-P*(L)-**-*-40

Models with type W adjuster

To adjust valve setting slacken off locknut and turn adjuster screw. ■

■ Turn clockw to increase pressure; counter-clockwise to decrease pressure.

Re-tighten locknut after completing adjustment. DGMX2-3-**-*L models have adjuster and end cap/gage port locations interchanged from positions shown.



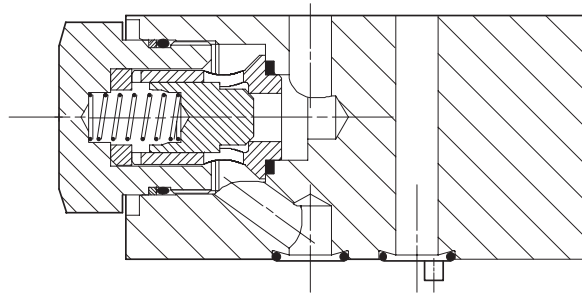
● For gage port thread options see model code 6,
(pressure plug fitted)

DGMDC-3-41

Typical Section

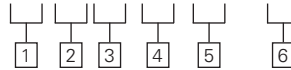
General Description

These valves allow free flow in one direction in the line in which the check valve element(s) is (are) located; flow in the opposite direction is not possible.



Model Code

DGMDC -3- * - * * (-* *) - 41



1 Direction of flow

X – Free flow away from actuator
Y – Free flow towards actuator

2 Check location

A – A line
B – B line
P – P line with free flow towards actuator (X)
T – T line with free flow away from actuator (Y)

3 Check valve opening/ cracking pressure

K – 1 bar (14.5 psi)
M – 2,5 bar (36 psi)
N – 5 bar (72 psi)

4 Check location (second element of dual model)

Only available as model type
DGMDC-3-Y-A*-B*-4*
B – B line

5 Check valve opening/ cracking pressure (second function of dual model)

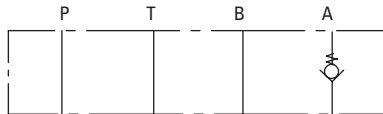
Options as in 3

6 Design number, 40 series

Subject to change. Installation dimensions unchanged for design numbers 40 to 49 inclusive.

Functional Symbols

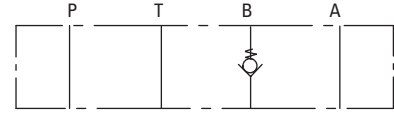
DGMDC-3-X-A*



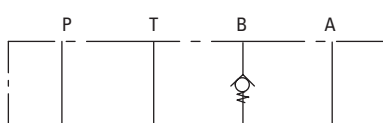
DGMDC-3-Y-A*



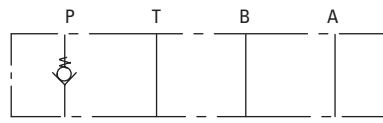
DGMDC-3-X-B*



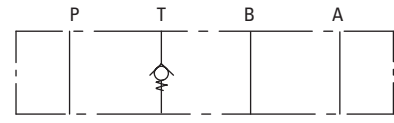
DGMDC-3-Y-B*



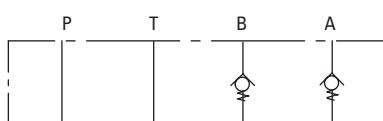
DGMDC-3-Y-P*



DGMDC-3-X-T*



DGMDC-3-Y-A*-B*



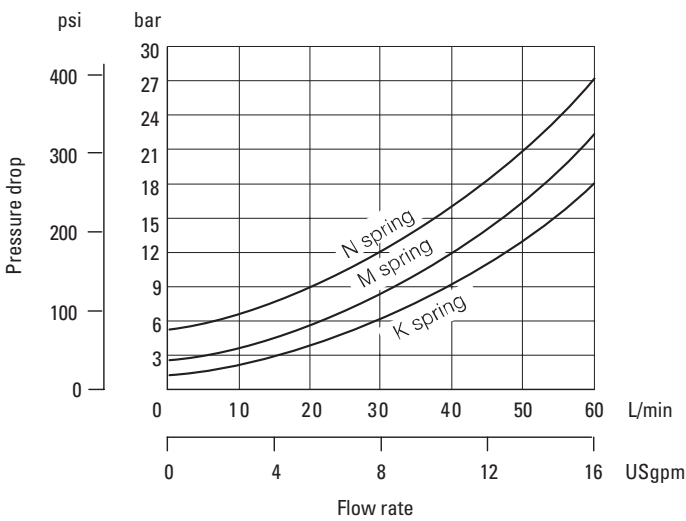
Operating Data

Maximum flow rate	60 L/min (16 USgpm)
Maximum operating pressure	315 bar (4500 psi)
Pressure drops	See graphs
Mounting position	Optional
Mass approximate	1 kg (2.2 lb)

Performance Characteristics

Typical performance with mineral oil at 21 cSt (102 SUS) and at 50°C(122°F) ●

Pressure drop: free flow through check valve



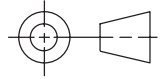
● For other viscosities, see “Further Information”.

Internal Leakage Across Closed Check Valve

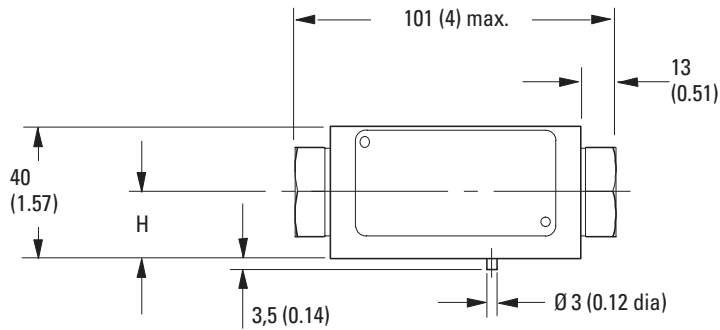
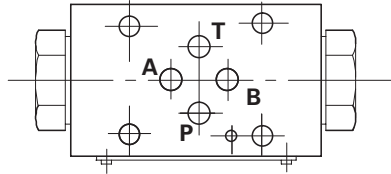
Less than 0,25 ml/min (0.015 in³/min) at 250 bar (3625 psi)

M

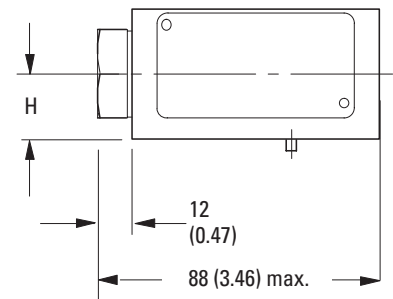
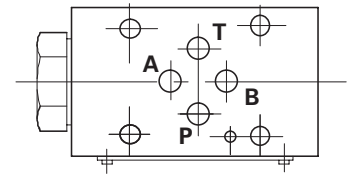
Installation Dimensions in mm (inches)



DGMDC-3-Y-A*-B*-41

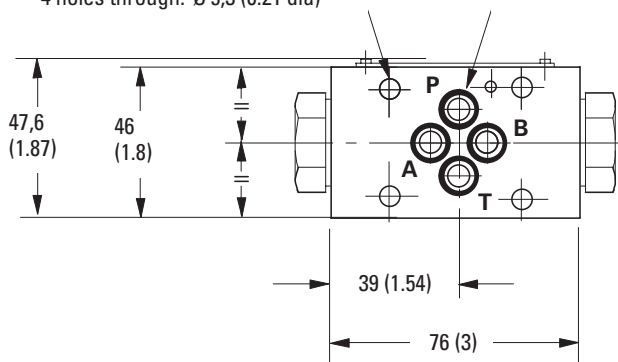


DGMDC-3-X-A*-41
DGMDC-3-X-T*-41
DGMDC-3-Y-A*-41
DGMDC-3-Y-P*-41

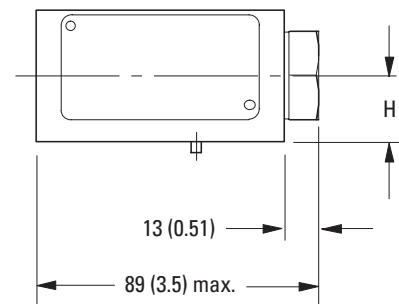


4 holes through: Ø 5,3 (0.21 dia)

4 off "O" seals supplied for this mounting face



DGMDC-3-X-B*-41
DGMDC-3-Y-B*-41



Model Type	H
DGMDC-3-X-A*-41	
DGMDC-3-X-B*-41	16,75
DGMDC-3-Y-P*-41	(0.66)
DGMDC-3-X-T*-41	
DGMDC-3-Y-A*-41	23,25
DGMDC-3-Y-B*-41	(0.92)
DGMDC-3-Y-A*-B*-41	