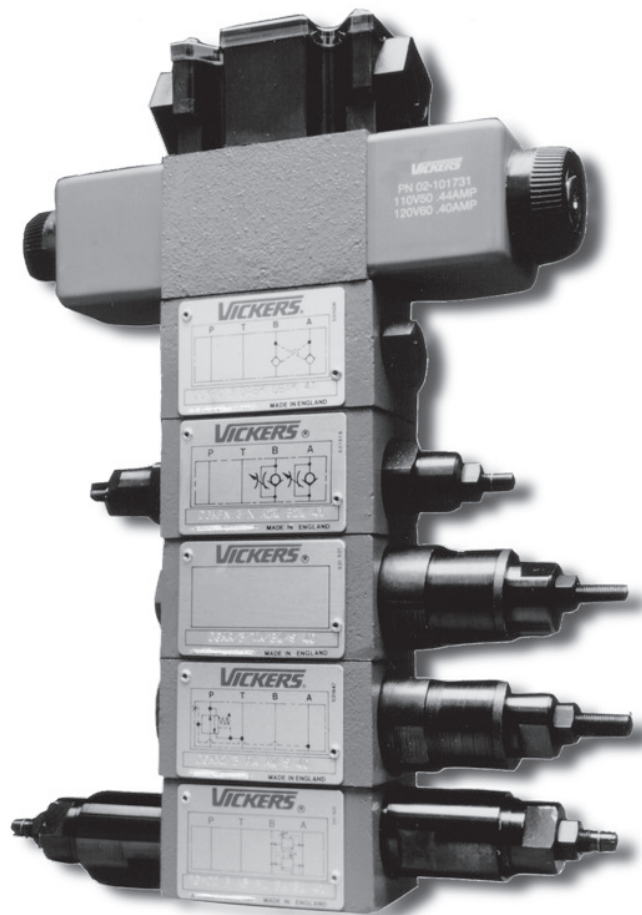


# VICKERS® SystemStak® Valves



ISO 4401-03; NFPA-D03; 315 bar (4500 psi); 60 L/min (15.7 USgpm)

# Relief Valves

## DGMC-3-4\*

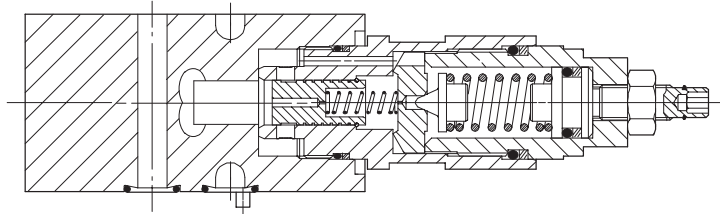
## DGMC2-3-4\*

### General Description

These two-stage adjustable pressure relief valves limit the maximum pressure in the line(s) controlled by the integral relief valve elements.

Pressure adjustment options of control knob (with or without keylock) or screw/locknut design are available. The two-stage operation is basically identical to long-established balanced piston valves, described in detail in Vickers Industrial hydraulics manual.

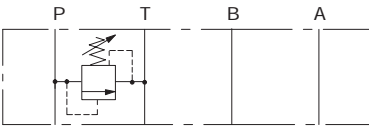
### Typical Section



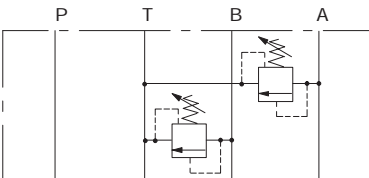
### Functional Symbols

For simplicity these two-stage valves are represented as single-stage models

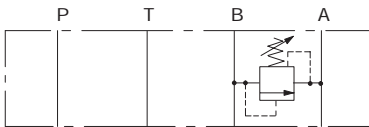
DGMC-3-PT-\*\*



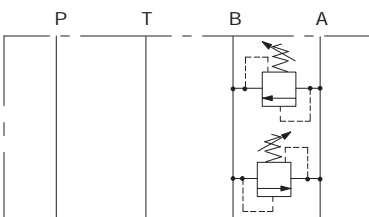
DGMC2-3-AT-\*\*-BT-\*\*-\*\*



DGMC-3-BA-\*\*-\*\*



DGMC2-3-AB-\*\*-BA-\*\*-\*\*



### Model Code for Relief Valves

**DGMC(2)-3-\*\*-\*\*-\* \* (-B\* - \* \*)- \*-4\***



#### 1 Type

2 = Dual relief function  
Omit for single relief function

#### 2 First function

Single relief, or first line of dual models

Code	Pressure limited in	Discharge into	Usage
PT	P	T	Single only
AB	A	B	Single, or dual with BA
BA	B	A	Single only
AT	A	T	Single, or dual with BT
BT	B	T	Single only

#### 3 Pressure adjustment range, first function

A = 3-50 bar (43.5-725 psi)  
B = 3-100 bar (43.5-1450 psi)  
C = 10-200 bar (145-2900 psi)  
G = 50-315 bar (725-4500 psi)

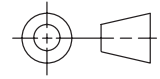
#### 4 Pressure adjustment/ locking method, first function

H = Handknob  
K = Mcrometer with keylock  
W = Screw and locknut

## Installation Dimensions in mm (inches)

### DGMC(2)-3\*\*-\*\*(-B\*\*-\*\*-)4\*

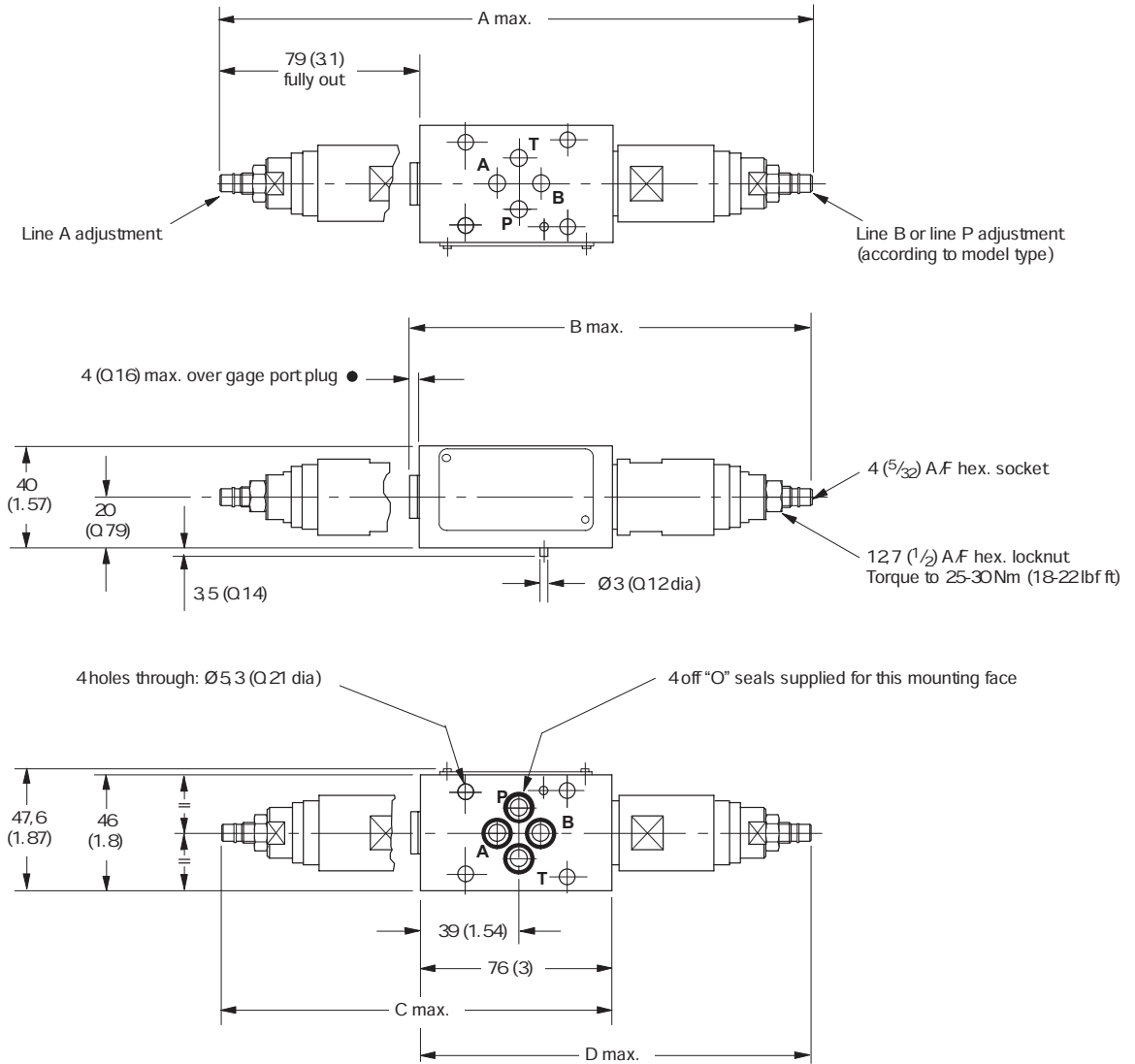
Models with type W adjuster



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

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

Re-tighten locknut after completing adjustment

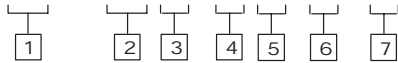


Model	A	B	C	D
DGMC-3AT- <i>W</i> -4*	-	-	154 (6.1)	-
DGMC-3BT- <i>W</i> -4*	-	-	-	156 (6.2)
DGMC-3AT- <i>W</i> -*4*	-	160 (6.3)	-	-
DGMC-3PT- <i>W</i> -4*	-	-	-	156 (6.2)
DGMC-3PT- <i>W</i> -*4*	-	160 (6.3)	-	-
DGMC2-3AT- <i>W</i> BT- <i>W</i> -4*	234 (9.2)	-	-	-

● For gage port thread options see model code B

## Model Code for Counterbalance, Sequence and Pressure Reducing Valves

**DGM \*(\*) -3- \*\* (\*) - \* \* - \* - 4\***



### 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 DGMK 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 DGMK only  
 L = Adjuster at "A" port end of valve  
 Blank = Adjuster at "B" port end of valve

### 4 Pressure adjustment range

For DGMK only:  
 Y = 1,40-7,0bar (21-101 psi)  
 R = 1,40-45,0bar (21-652 psi)  
 For DGMR and DGMK:  
 A = 3-30bar (43,5-435 psi)  
 B = 3,5-70bar (51-1000 psi)  
 C = 10-140bar (145-2000 psi)  
 F = 20-250bar (290-3625 psi)

### 5 Pressure adjustment/ locking method

H = Handknob  
 K = Mcrometer with keylock  
 W = Screw and locknut

### 6 Gage port

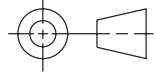
B = G<sup>1/8"</sup> (1/8 BSPF)  
 S = SAE 4 (7/16" -20UNF-2B)

### 7 Design number, 40 series

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

## Installation Dimensions in mm (inches)

DGMR-3-TA-\*\*-\*-4\*  
 DGMR1-3-PP-\*\*-\*-4\*  
 DGMX(\*)-3-P\*(L)-\*\*-\*-4\*



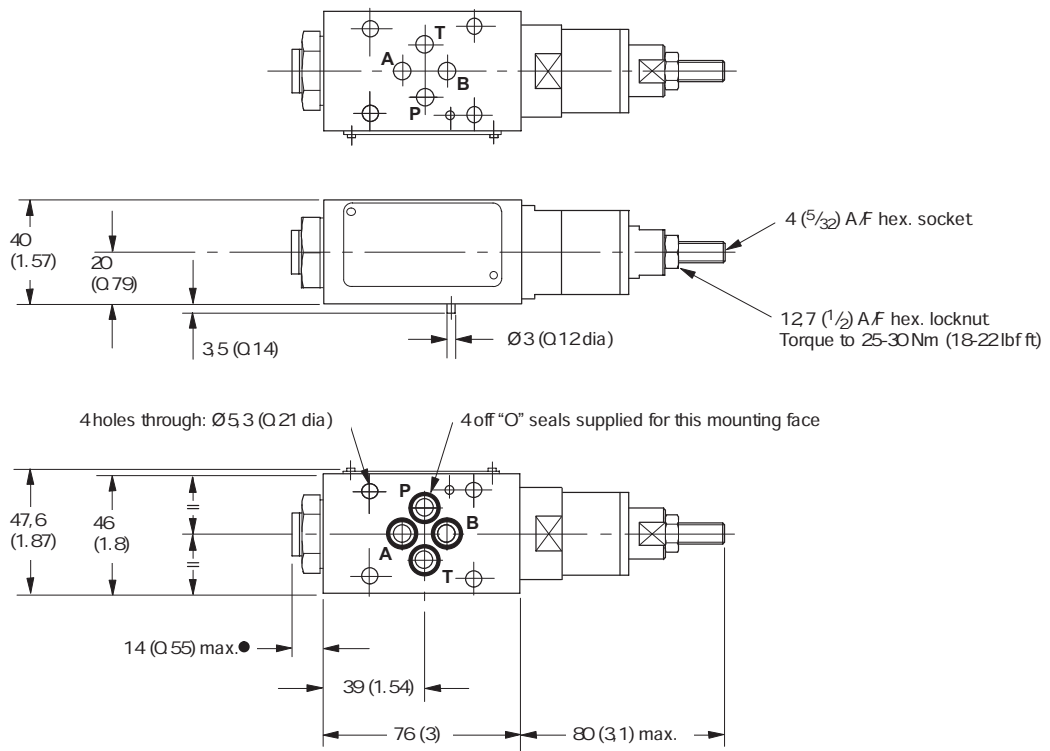
### Models with type W adjuster

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

■ Turn clockwise 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)

# Direct Check Valves DGMDC-3-4\*

## General Description

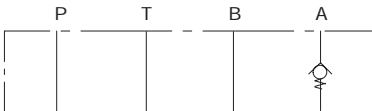
These valves allow free flow in one direction in the line in which the check valve element(s) is (are) located; flow in the opposite direction is not possible.

## Functional Symbols

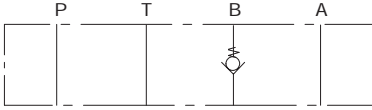
DGMDC-3-X-A\*



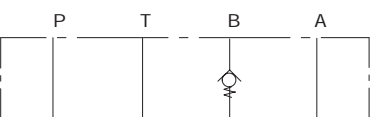
DGMDC-3-Y-A\*



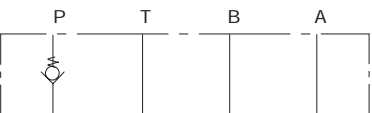
DGMDC-3-X-B\*



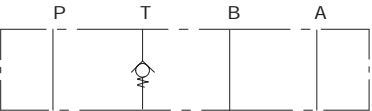
DGMDC-3-Y-B\*



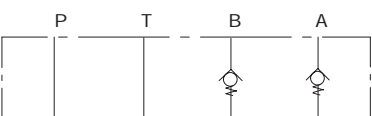
DGMDC-3-Y-P\*



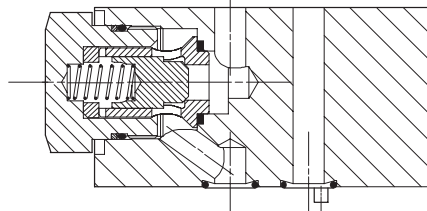
DGMDC-3-X-T\*



DGMDC-3-Y-A\*-B\*

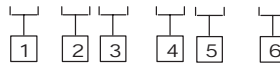


## Typical Section



## Model Code for Direct Check Valves

**DGMDC-3- \* - \* \* (- \* \* )-4\***



### 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 Y in 1  
T = T line; with X in 1

### 3 Check valve opening/cracking pressure

K = 1 bar (14.5psi)  
M = 2.5 bar (36psi)  
N = 5 bar (72psi)

### 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

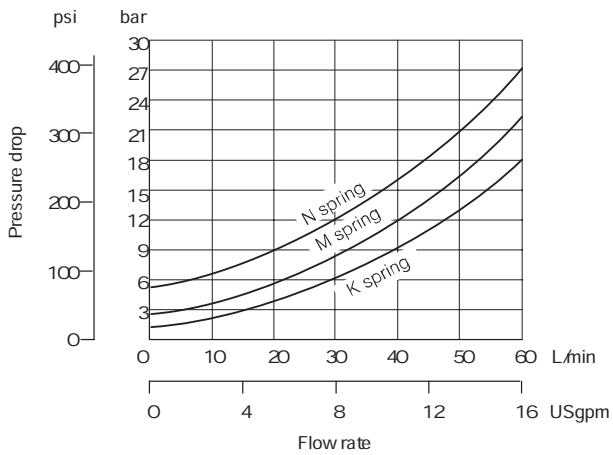
### 6 Design number, 40 series

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

## 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

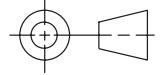


● For other viscosities, see "Further Information".

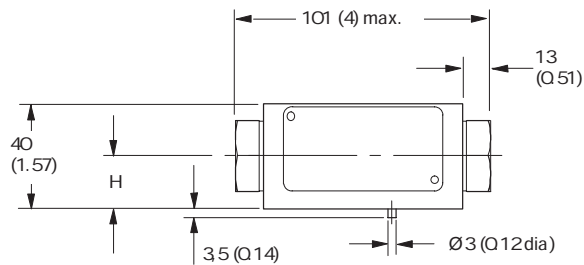
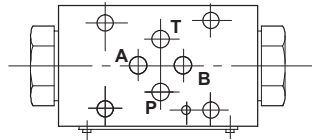
### Internal Leakage Across Closed Check Valve

Less than 0.25 ml/min (0.015 in<sup>3</sup>/min) at 250 bar (3625 psi)

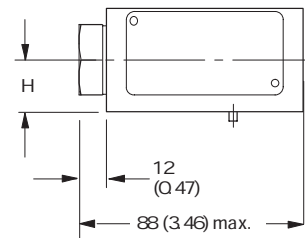
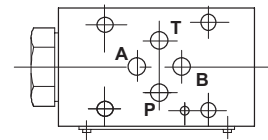
# Installation Dimensions in mm (inches)



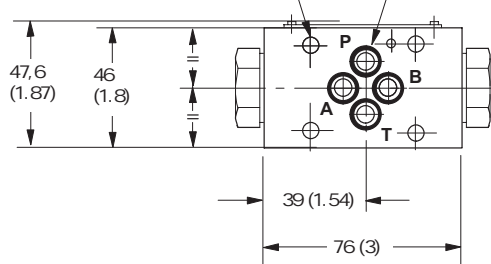
**DGMDC-3-Y-A\*-B\*-4\***



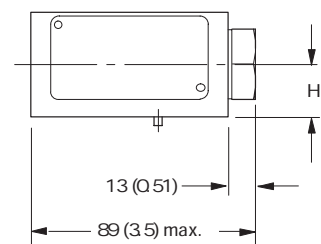
**DGMDC-3-X-A\*-4\***  
**DGMDC-3-X-T\*-4\***  
**DGMDC-3-Y-A\*-4\***  
**DGMDC-3-Y-P\*-4\***



4 holes through: Ø5.3 (Q21 dia)      4 off "O" seals supplied for this mounting face



**DGMDC-3-X-B\*-4\***  
**DGMDC-3-Y-B\*-4\***



Model type	H
DGMDC-3-X-A*-4*	16.75
DGMDC-3-X-B*-4*	(0.66)
DGMDC-3-Y-P*-4*	
DGMDC-3-X-T*-4*	23.25
DGMDC-3-Y-A*-4*	(0.92)
DGMDC-3-Y-B*-4*	
DGMDC-3-Y-A*-B*-4*	



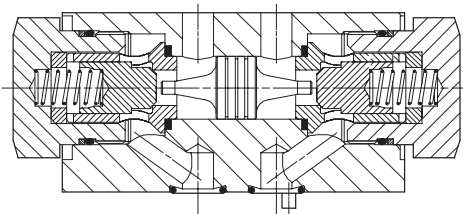
# Pilot Operated Check Valves DGMPC-3-4\*

## General Description

These valves provide pilot operated check functions in one or both service lines (A or B), the operating pilot supply coming from the opposite service line. Thus with pressure in one service line the check valve in the other service line will be open (subject to system/actuator pressures being correct for the valve area ratios).

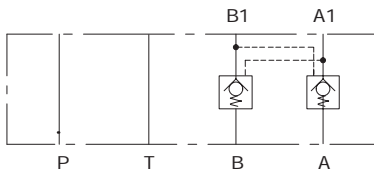
A 3:1 area ratio of pilot piston to check valve seat is supplemented by an optional 1Q:1 decompression feature.

## Typical Section

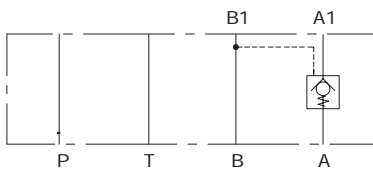


## Functional Symbols

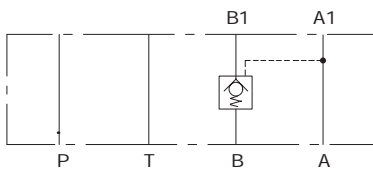
DGMPC-3-(D)AB\*-(D)BA\*



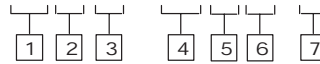
DGMPC-3-(D)AB\*



DGMPC-3-(D)BA\*



## Model Code for Pilot Operated Check Valves DGMPC-3-(D)\*\* \* [- (D)\*\* \*] - 4\*



**1 Decompression feature**  
D = 1Q1 decompression ratio  
Omit if not required

**2 Function**  
AB = Check in line A, pilot operated from line B  
BA = Check in line B, pilot operated from line A (single check model only)

**3 Check valve opening/cracking pressure**  
K = 1 bar (14.5 psi)  
M = 2.5 bar (36 psi)  
N = 5 bar (72 psi)

**4 Decompression feature (second function of dual models)**  
As in **1**  
Omit for single line models, and if not required for dual models

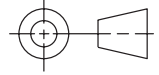
*Note: "D" must be specified here, for dual models, if called for in **1***

**5 Second function of dual models**  
BA = Check in line B, pilot operated from line A  
Omit for single line models

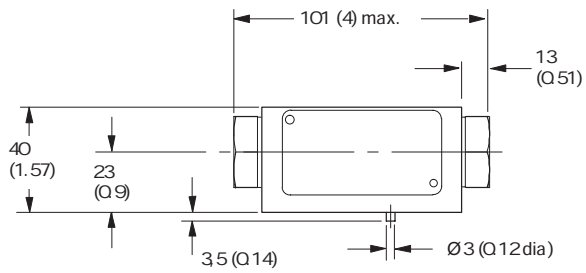
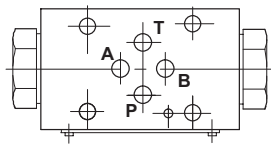
**6 Check valve opening/cracking pressure (second function of dual models)**  
Options as in **3**  
Omit for single line models

**7 Design number, 40 series**  
Subject to change. Installation dimensions unchanged for design numbers 40 to 49 inclusive.

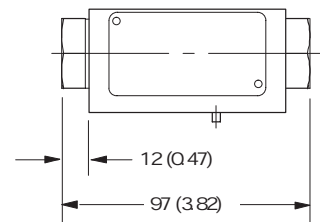
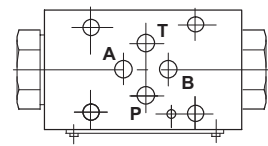
# Installation Dimensions in mm (inches)



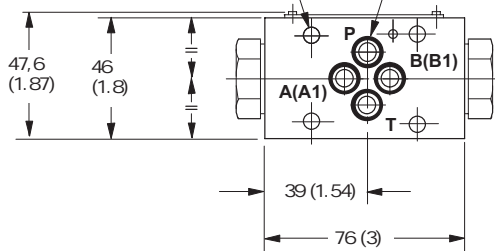
**DGMPC-3-(D)AB\*-(D)BA\*-4\***



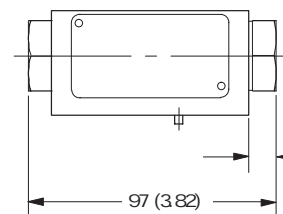
**DGMPC-3-(D)AB\*-4\***



4 holes through: Ø5.3 (0.21 dia)      4 off "O" seals supplied for this mounting face



**DGMPC-3-(D)BA\*-4\***



# Flow Restrictor Valves DGMFN-3-4\*

## General Description

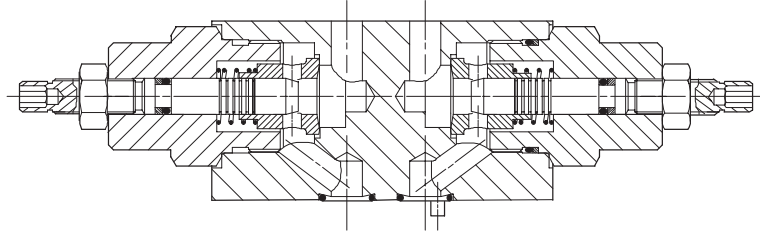
These valves regulate flow by means of an adjustable orifice which is not pressure compensated, and flow through the valve is entirely dependent upon pressure drop at any particular setting of the orifice.

Dual service-line models with an integral non-return valve around each control orifice provide for meter-in or meter-out control; single line versions of these are available.

For flow restriction in P or T lines (where reverse free flow is not required) models without check valves are available.

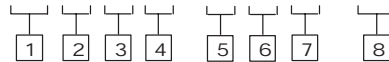
Adjustment options are either screw/locknut or handknob.

## Typical Section



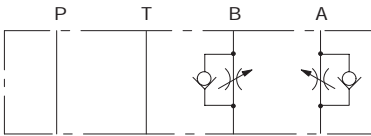
## Model Code for Flow Restrictor Valves

**DGMFN-3- \* - \* \* \* (- \* \* \* )-4\***

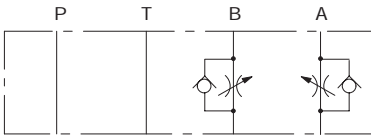


## Functional Symbols

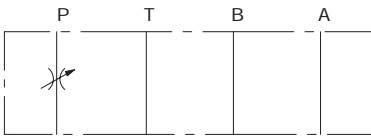
DGMFN-3-X-A\*\*-B\*\*



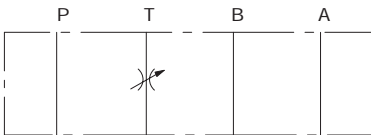
DGMFN-3-Y-A\*\*-B\*\*



DGMFN-3-Z-P\*\*



DGMFN-3-Z-T\*\*



### 1 Direction of flow control (with respect to machine actuator)

X = Meter-in control, applicable to lines A and B

Y = Meter-out control, applicable to lines A and B

Z = Meter-in control, line P only and meter-out control, line T only.

### 6 Type of control needle/orifice (second line of dual models)

Options as in 3

Omit for single models

### 2 Location of control function (single model or first line of dual model)

P = Line P (single model only)

T = Line T (single model only)

A = Line A (single model or first line of dual model)

B = Line B (single model only)

### 7 Adjuster type (second line of dual models)

Options as in 4

Omit for single models

### 3 Type of control needle/orifice (single model or first line of dual model)

1 = Fine control

2 = Standard control

### 4 Adjuster type (single model or first line of dual model)

H = Handknob

W = Screw/locknut

### 5 Control in second line

B = Line B (use for dual models with "A" specified at 2)

Omit for single models

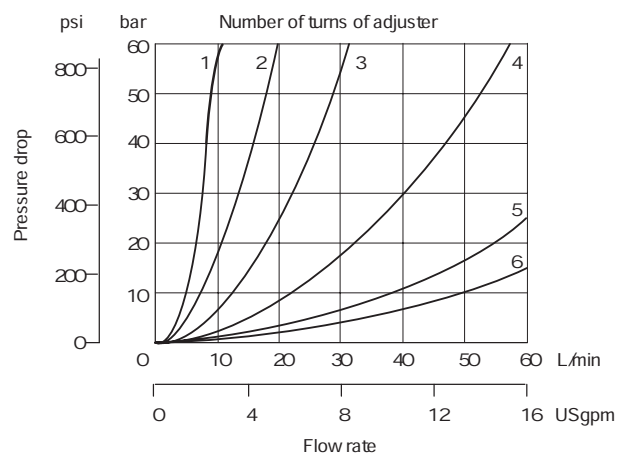
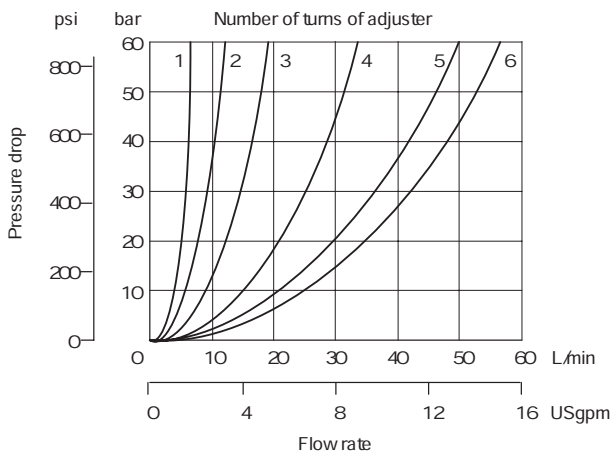
# Performance Characteristics

## Pressure Drop

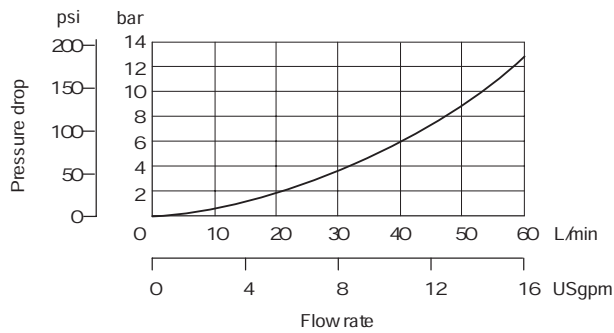
Typical performance with mineral oil at 21 cSt (102 SUS) and at 50°C (122°F)●

Type "1" needle (see model codes 3 and 6 )

Type "2" needle (see model codes 3 and 6 )



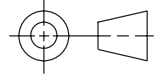
## Free flow through check valve



● For other viscosities see "Further Information".

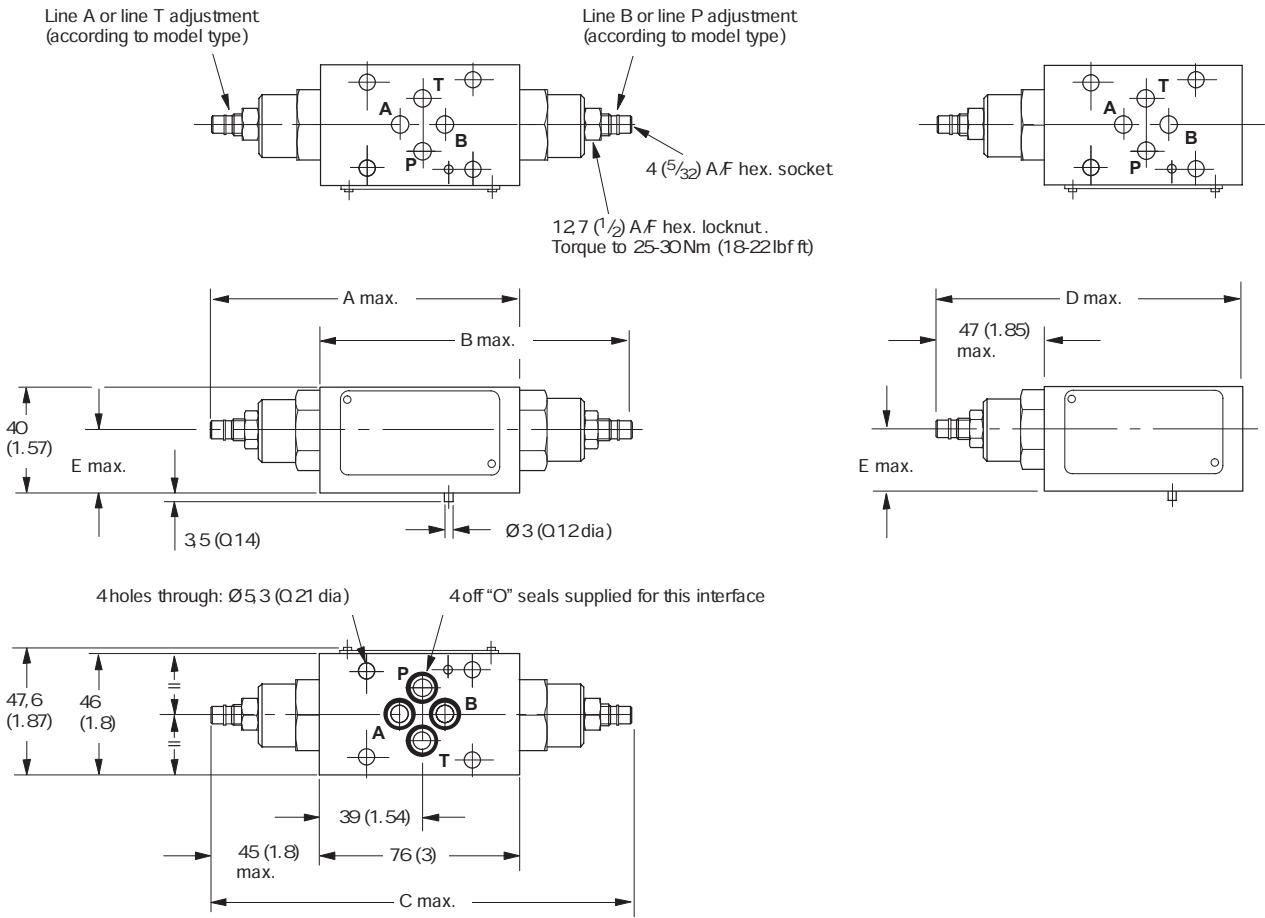
# Installation Dimensions in mm (inches)

**DGMFN-3-X-\*\*\*(-\*\*\*)-4\***  
**DGMFN-3-Y-\*\*\*(-\*\*\*)-4\***  
**DGMFN-3-Z-\*\*\*-4\***

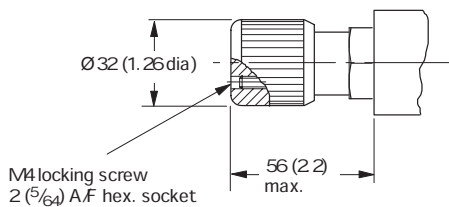


## Models with type W adjuster

To adjust valve setting, slacken off locknut and turn screw. Re-tighten locknut after completing adjustment.



## Type H adjuster



■ Turn clockwise to decrease flow (increase restriction); counter-clockwise to increase flow (reduce restriction).

Model	A	B	C	D	E
DGMFN-3-X-A*W-4*	121 (4.76)	-	-	-	16.75 (0.7)
DGMFN-3-X-A*W-B*W-4*	-	-	167 (6.6)	-	16.75 (0.7)
DGMFN-3-X-B*W-4*	-	122 (4.8)	-	-	16.75 (0.7)
DGMFN-3-Y-A*W-4*	121 (4.76)	-	-	-	23.25 (0.9)
DGMFN-3-Y-A*W-B*W-4*	-	-	167 (6.6)	-	23.25 (0.9)
DGMFN-3-Y-B*W-4*	-	122 (4.8)	-	-	23.25 (0.9)
DGMFN-3-Z-P*W-4*	-	-	-	123 (4.8)	16.75 (0.7)
DGMFN-3-Z-T*W-4*	-	-	-	123 (4.8)	23.25 (0.9)