

Vickers® SystemStak®



SystemStak® Valves

ISO 4401 size 07; 315 bar (4500 psi); up to 200 L/min (53 USgpm)

General Description

This range of stackable hydraulic controls are designed to be mounted under a size 7 directional valve such as Vickers DG*V-7, solenoid controlled and pilot operated. With their cartridge design they will provide a compact hydraulic circuit at reduced cost with the

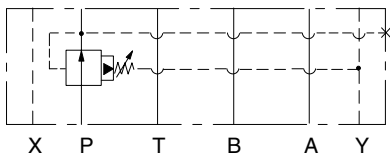
elimination of interconnecting piping. Servicing is simplified with access to working parts achieved without removing valves from an assembled stack.

The units are performance rated up to:
200 L/min (53 USgpm)
315 bar (4500 psi)

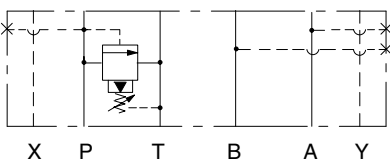
The range comprises:
DGMX-7 . . . Pressure reducing module
DGMC(2)7 Pressure relief module
DGMFN-7 Flow restrictor module
DGMPC-7 Pilot operated check module

Functional Symbols

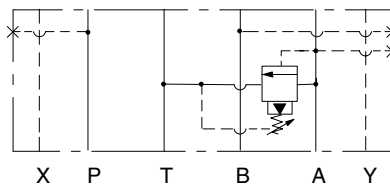
DGMX-7-PP



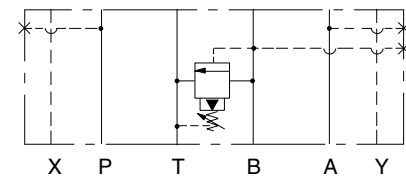
DGMC-7-PT



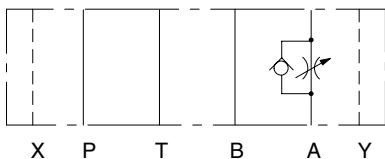
DGMC2-7-AT



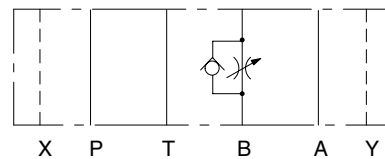
DGMC2-7-BT



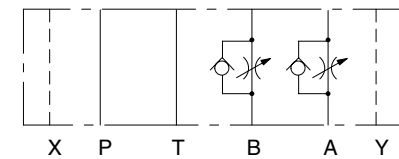
DGMFN-7-Y-A**



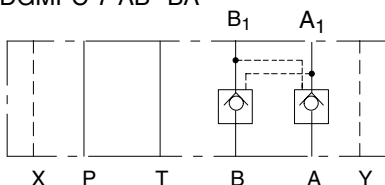
DGMFN-7-Y-B**



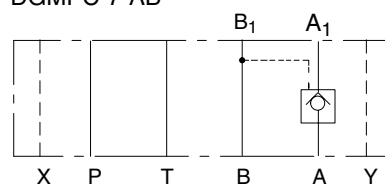
DGMFN-7-Y-A**-B**



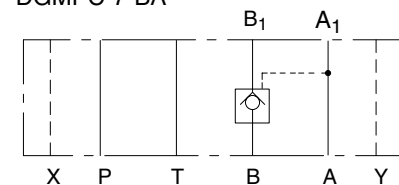
DGMPC-7-AB*-BA*



DGMPC-7-AB*



DGMPC-7-BA*



Pressure Reducing Valve Modules DGMX-7

General Description / Model Code / Operating Data

General Description

These two-stage adjustable pressure reducing modules are used to regulate the downstream pressure in the line in which the integral reducing valve is installed, whilst the upstream pressure fluctuates above the reduced pressure.

The valve elements are formed as cartridges for ease of construction and servicing.

Model Code

(F3-) DGMX-7-PP- * * -10 -B



1 Special seals for phosphate ester fluids

Omit for standard seals; see “Hydraulic fluids” in “Further Information” section.

3 Adjustment method

H = Thimble with lock screw
K = Thimble with keylock

2 Reduced pressure adjustment range

B = 5 to 65 bar (75 to 945 psi)
G = 15 to 315 bar (220 to 4500 psi)

4 Design number, 10 series

Subject to change. Installation dimensions unchanged for design numbers 10-19 inclusive.

Operating Data

Pressure and Flow Limits

Max. pressure
(all ports) 315 bar (4500 psi)

Note that back pressure in line Y, into which the valve’s pilot drain is internally connected, increases the effective pressure setting. For pressure adjustment ranges see “Model Code”.

Max. flow rate
(through any
main line) 160 L/min (42.3 USgpm)

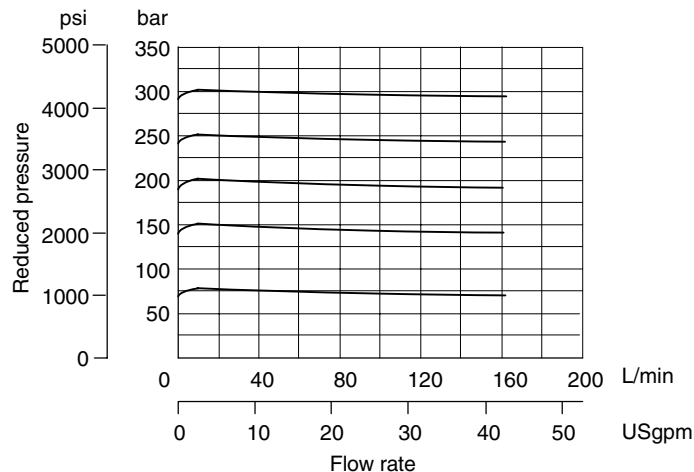
Performance Characteristics

Typical performance with petroleum oil at 36 cSt (169 SUS) and 50°C (122°F).

Pilot
drain flow 0,5 L/min (0.13 USgpm)

Reduced Pressure Underride

At cartridge outlet for various pressure settings.

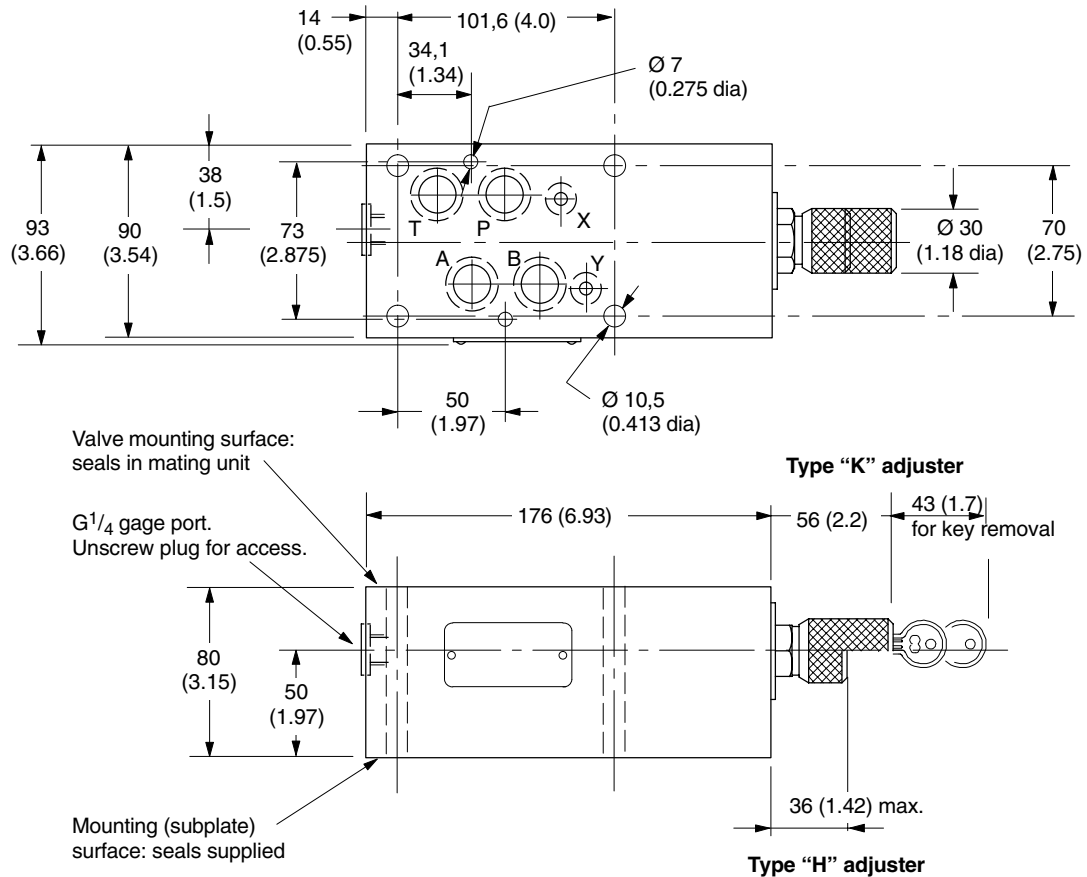
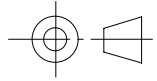


Pressure Reducing Valve Modules DGMX-7

Installation Dimensions in mm (inches)

DGMX-7

3rd angle projection



For all models, to increase pressure setting, unlock and turn the adjuster clockwise, viewed at the adjuster end. Turn counter-clockwise to decrease pressure setting.

Type H adjustment settings can be secured by tightening the lock screw in the end of the thimble.

For dimensions of ISO 4401, size 07 mounting surface and Vickers subplates, see catalog 2425.

For details of Vickers fixing bolt kits, see catalog 2314.

Pressure Relief Valve Modules DGMC(2)-7

General Description / Model Code / Operating Data

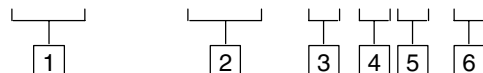
General Description

These two-stage adjustable pressure relief modules are used to limit the maximum pressure in the lines from which the integral relief elements are fed.

The relief elements are formed as cartridges for ease of construction and servicing.

Model Code

(F3-) DGMC(2)-7-- * * -10 -B**



1 Special seals for phosphate ester fluids

Omit for standard seals; see "Hydraulic Fluids" in "Further Information" section.

2 Type

C = Pressure (P) line relief
C2 = Service (A or B) line relief

3 Function

AT = Limits A, discharge to T;
(F3-)DGMC2 models
BT = Limits B, discharge to T;
(F3-)DGMC2 models
PT = Limits P, discharge to T;
(F3-)DGMC models

4 Pressure adjustment range

B = 5 to 65 bar (75 to 945 psi)
F = 10 to 210 bar (150 to 3000 psi)
G = 15 to 315 bar (220 to 4500 psi)

5 Adjustment method

H = Thimble with lock screw
K = Thimble with keylock

6 Design number, 10 series

Subject to change. Installation dimensions unchanged for design numbers 10-19 inclusive.

Operating Data

Pressure and Flow Limits

Max. pressure
(all ports) 315 bar (4500 psi)

Note that back pressure in line T, into which the valve's pilot drain is internally connected, increases the effective pressure setting. For pressure adjustment ranges see "Model Code".

Max. flow rate
(through any main line) 200 L/min (53 USgpm)

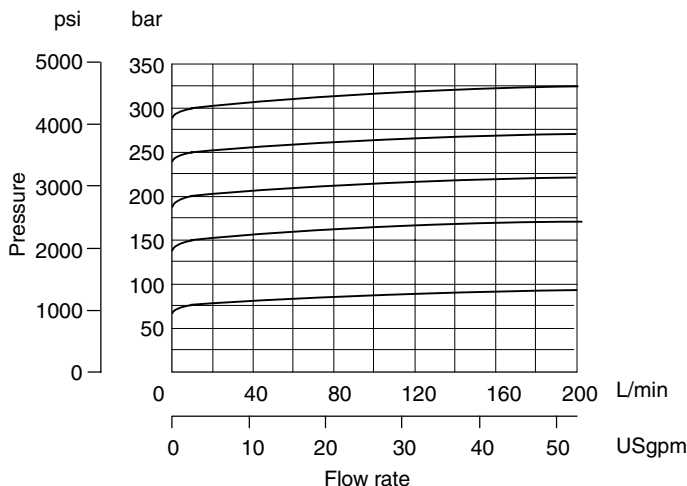
Performance Characteristics

Typical performance with petroleum oil at 36 cSt (169 SUS) and 50°C (122°F).

Pilot drain flow 0,5 L/min (0.13 USgpm)

Pressure Override at Cartridge Inlet

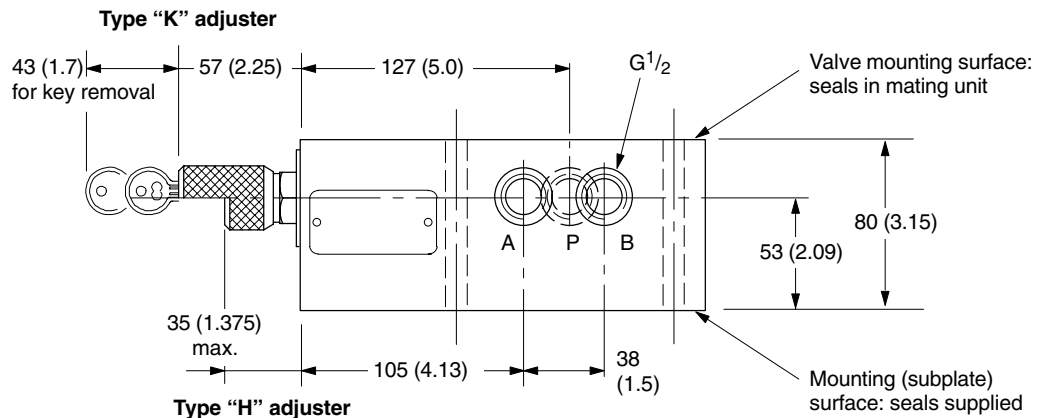
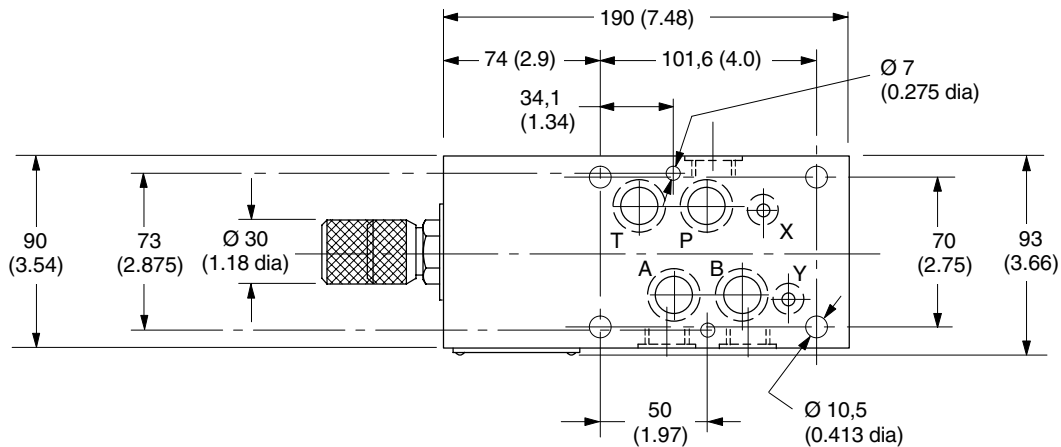
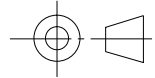
At various pressure settings and cartridge outlet at 0 bar/psi.



Pressure Relief Valve Modules DGMC(2)-7 Installation Dimensions in mm (inches)

DGMC(2)-7

3rd angle projection



For all models, to increase pressure setting, unlock and turn the adjuster clockwise, viewed at the adjuster end. Turn counter-clockwise to decrease pressure setting.

Type H adjustment settings can be secured by tightening the lock screw in the end of the thimble.

For dimensions of ISO 4401, size 07 mounting surface and Vickers subplates, see catalog 2425.

For details of Vickers fixing bolt kits, see catalog 2314.

Flow Restrictor Valve Modules DGMFN-7

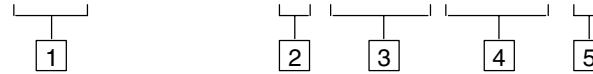
General Description / Model Code / Operating Data

General Description

Regulates flow rate between a CETOP size 7 four-way valve and a hydraulic actuator. Unit is sandwiched between directional valve and subplate or manifold. Single or dual line restrictor models are available for meter-out control, relative to the machine actuator.

Model Code

(F3-) DGMFN-7 -Y-(-A2H)(-B2H)-10



1 Special seals for phosphate ester fluids

Omit for standard seals; see "Hydraulic Fluids" in "Further Information" section.

2 Direction of flow

Meter-out, with respect to machine actuator

3 Control in line A

Standard needle, thimble-with-lockscrew adjustment
Omit when not required

4 Control in line B

Standard needle, thimble-with-lockscrew adjustment
Omit when not required

5 Design number, 10 series

Subject to change. Installation dimensions unchanged for design numbers 10-19 inclusive.

Operating Data

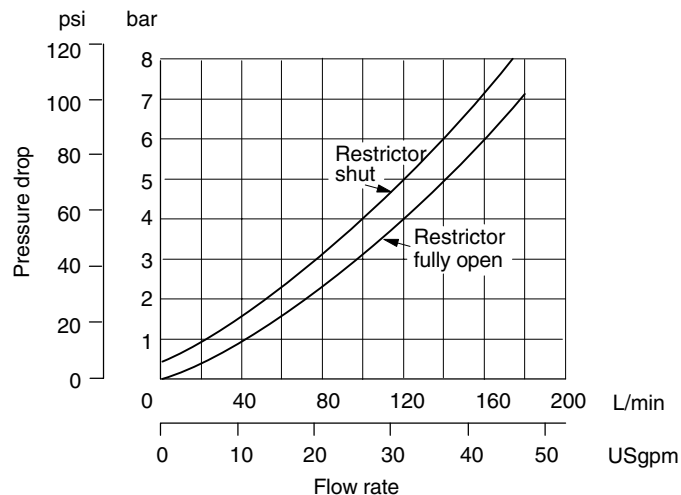
Pressure and Flow Limits

Max. pressure (all ports) 315 bar (4500 psi)
Max. flow rate (through any main line) . . 180 L/min (48 USgpm)

Performance Characteristics

Typical performance with petroleum oil at 36 cSt (169 SUS) and 50°C (122°F).

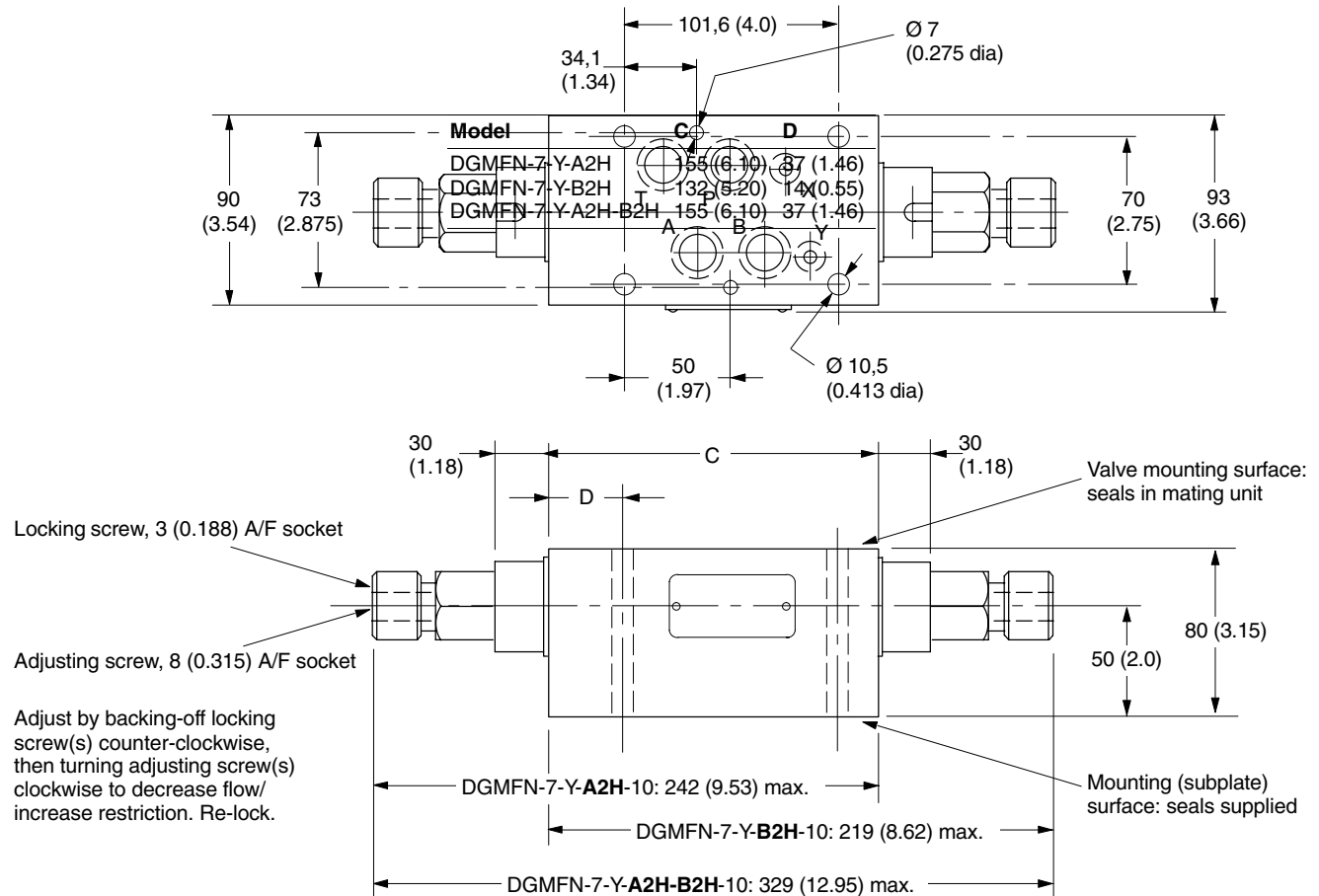
Pressure Drops, Restrictor Lines



Flow Restrictor Valve Modules DGMFN-7 Installation Dimensions in mm (inches)

DGMFN-7

3rd angle projection 



For dimensions of ISO 4401, size 07 mounting surface and Vickers subplates, see catalog 2425.

For details of Vickers fixing bolt kits, see catalog 2314.

Pilot Operated Check Valve Modules DGMPC-7

General Description / Model Code / Operating Data

General Description

These modules provide pilot operated check functions in one or both service lines (A and B), the pilot supply coming from the opposite service line to that in which the check acts. When closed, the check prevents flow from the actuator port to which it is externally connected.

Model Code

(F3-) DGMPC-7 (-ABK)(-BAK)-11



1 Special seals for phosphate ester fluids

Omit for standard seals; see “Hydraulic Fluids” in “Further Information” section.

3 Line B check

Piloted from A, cracking pressure in B: 3,6 bar (55 psi)
Omit when not required

2 Line A check

Piloted from B, cracking pressure in A: 3,6 bar (55 psi)
Omit when not required

4 Design number, 10 series

Subject to change. Installation dimensions unchanged for design numbers 10-19 inclusive.

Operating Data

Pressure and Flow Limits

Max. pressure (all ports) 315 bar (4500 psi)
Max. flow rate (through any main line) 180 L/min (47.6 USgpm)

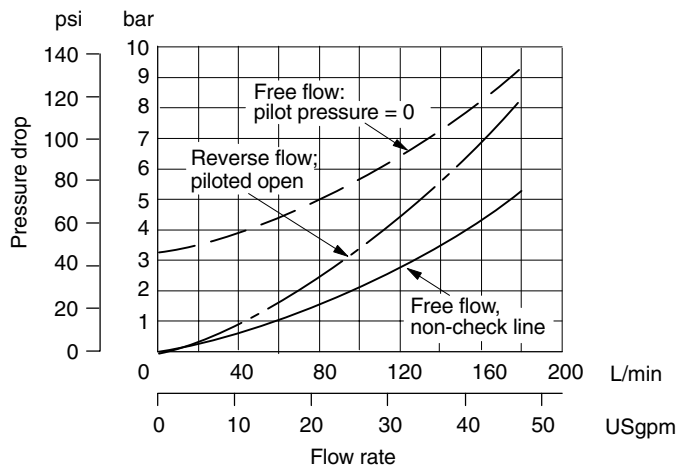
Performance Characteristics

Typical performance with petroleum oil at 36 cSt (169 SUS) and 50°C (122°F).

Check valve's direct

cracking pressure 3,6 bar (55 psi)
Pilot piston/check valve seat area ratio 13:1

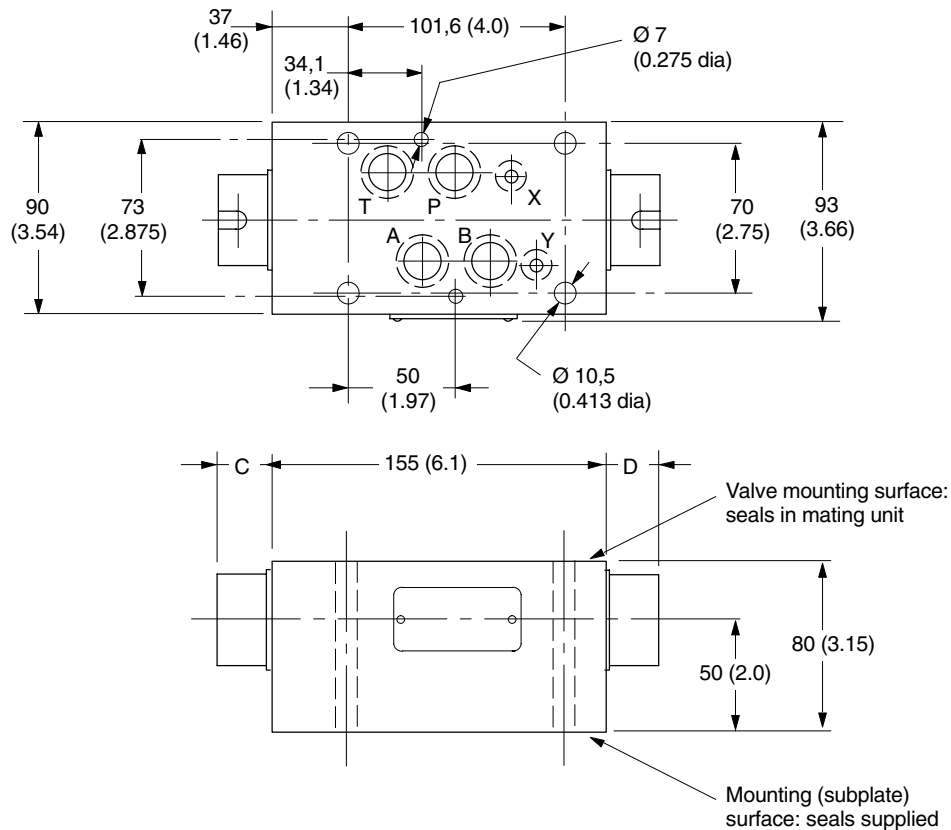
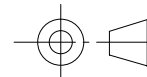
Pressure Drops, A and B Lines



Pilot Operated Check Valve Modules DGMPC-7 Installation Dimensions in mm (inches)

DGMPC-7

3rd angle
projection



For dimensions of ISO 4401, size 07
mounting surface and Vickers subplates,
see catalog 2425.

For details of Vickers fixing bolt kits, see
catalog 2314.

| Model | C | D |
|-----------------|-----------|-----------|
| DGMPC-7-ABK | 28 (1.10) | 18 (0.71) |
| DGMPC-7-BAK | 18 (0.71) | 28 (1.10) |
| DGMPC-7-ABK-BAK | 28 (1.10) | 28 (1.10) |

Further Information

Hydraulic Fluids

Materials and seals used in these valves are compatible with:

Antiwear petroleum oils L-HM
Non-alkyl based

phosphate esters L-HFD

The extreme operating range is 13 to 500 cSt (70 to 2300 SUS) but the recommended running range is 13 to 54 cSt (70 to 250 SUS). For further technical information about fluids see catalog 920.

Contamination Control Requirements

Recommendations on contamination control methods and the selection of products to control fluid condition are included in Vickers publication 9132 or 561, "Vickers Guide to Systemic Contamination Control". The book also includes information on the Vickers concept of "ProActive Maintenance". The following recommendations are based on ISO cleanliness levels at 2 µm, 5 µm and 15 µm.

For products in this catalog the recommended levels are:

0 to 210 bar (3000 psi) 18/16/13

210 to 315 bar

(3000 to 4500 psi) 17/15/12

Temperatures

For petroleum oil:

Min. -20°C (-4°F)

Max. +60°C (140°F)

For water-containing fluids:

Min. +10°C (50°F)

Max. +54°C (130°F)

For other fluids where limits are outside those of petroleum oil, consult fluid manufacturer or Vickers representative. Whatever the actual temperature range, ensure that viscosities stay within those specified under "Hydraulic Fluids".

Ambient for:

All valves at full performance

specification: 0 to +60°C (32 to +140°F)

Mass, approx.

DGMX-7 8,3 kg (18.3 lb)

DGMC(2)-7 8,3 kg (18.3 lb)

DGMFN-7-Y-A2H 7,1 kg (15.6 lb)

DGMFN-7-Y-B2H 5,8 kg (12.8 lb)

DGMFN-7-Y-A2H-B2H . 7,7 kg (17.0 lb)

DGMPC-7 7,3 kg (16.1 lb)

Mounting Attitude

Unrestricted.

Ordering Procedure

Order by full model designation, e.g.

2 off DGMX-7-PP-GH-10-B