ENGINEERING
TOMORROW

Technical Information

DGM**-3 40/41 Design

ISO4401 Size 03;
ANSI/B93.7M-D03

BC430856919687en-000101

SystemStak™ Valves

ISO 4401 Size 03

Build a Compact, Cost-Effective, Reliable Hydraulic System with Danfoss SystemStak ™ Valves

Reduces System Space Requirements

SystemStak valves make compact hydraulic systems in which specific function valves are "sandwich' mounted between a directional valve and a standard mounting surface.

Reduce Cost

SystemStak valves eliminate intervalve piping and leak-prone tube and pipe connections. Installed cost is less than when using conventional valves.

Versatile and Easy to Install

SystemStak valves have all the internal passages necessary to serve the directional valve topping them. Mounting surfaces and port patterns are to international standards: any valve conforming to ISO 4401 size 03; ANSI/B93.7M size D03; NFPA-D03; CETOP 3; and DIN 24340, NG6 mounting interface can be used with these SystemStak valves.

Rugged and Reliable

Internal working parts are produced from hardened steel and mounted in ductile (spheroidal graphite) iron bodies. Excellent reliability is ensured. Working parts are accessible without removing valves from an assembled stack.

SystemStak Systems... Easy to Understand, Easy to Design

SystemStak circuitry is best shown using slightly different symbols than those for traditional valve configurations. Each SystemStak symbol has the same basic form and size as shown in fig. 1.

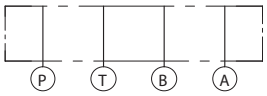


Figure 1

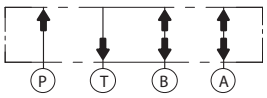


Figure 2

For ease of understanding, remember the directions of flow for each line, and that all four flow paths pass through each valve (see fig. 2). For clarity, directional valves are drawn vertically in SystemStak circuit diagrams (see fig. 3).

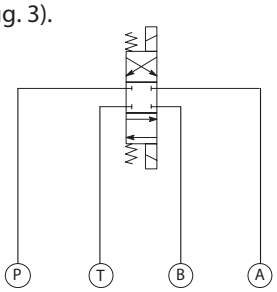


Figure 3

Each station (valve stack) is a combination of functions. When designing and assembling SystemStak valves, care must be taken to ensure that they interact as required by stacking the functions in the correct sequence (fig. 4 is an example).

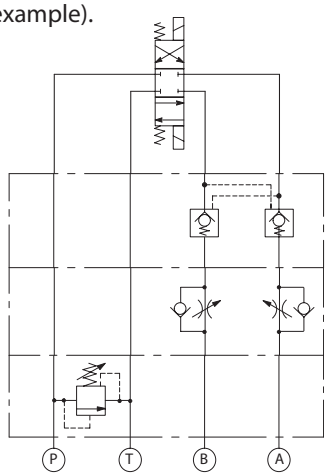


Figure 4

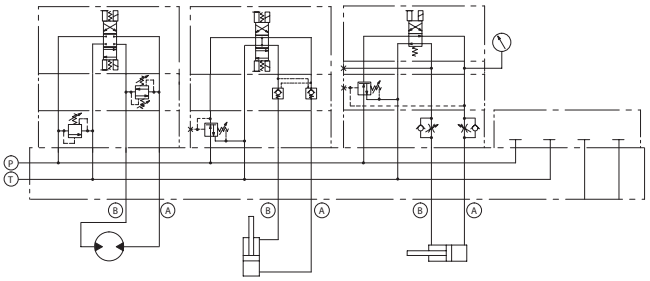


Figure 7

Fig. 7 represents a complete SystemStak system, showing typical use of functions available from this range. The circuit diagram also shows the use of a tapping plate for accessing line pressure readings, and a blanking plate to close off an unused station of a multi-station manifold.

Relief valves should normally be positioned next to the mounting surface (i.e. at the bottom of the stack). When both a flow control and a pilot operated check valve are required, it is recommended that the flow control valve be between the check valve and the actuator to prevent check valve chatter.

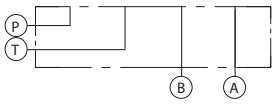


Figure 5

A combination of directional valve, SystemStak valve(s) and subplate/manifold block (fig. 5: single station subplate and fig. 6: multi-station manifold) completes the assembly.

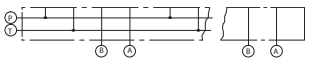


Figure 6

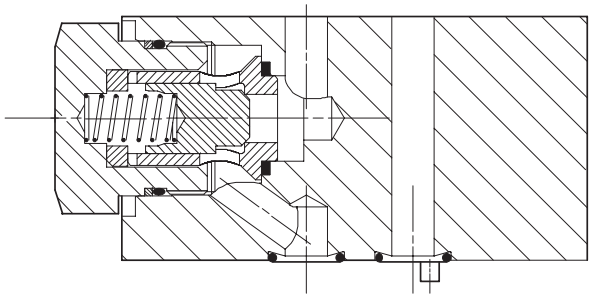
Table of Contents

DGMDC-3-41

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.

Typical Section



Model Code

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

1 2 3 4 5 6

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)

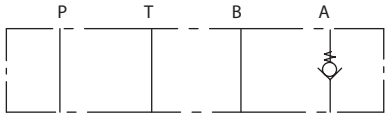
4 **Check location (second element of dual model)**
Only available as model type DGMDC-3-Y-A*-B*-4*
B – B line

5 **Check valve opening/ cracking pressure (second function of dual model)**
Options as in 3

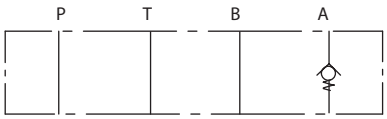
6 **Design number, 40 series**
Subject to change. Installation dimensions unchanged for design numbers 40 to 49 inclusive.

Functional Symbols

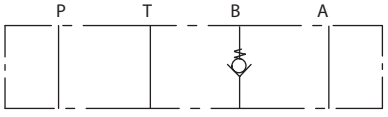
DGMDC-3-X-A*



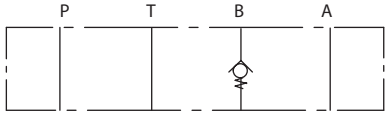
DGMDC-3-Y-A*



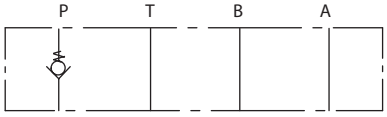
DGMDC-3-X-B*



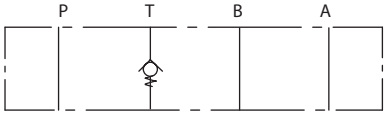
DGMDC-3-Y-B*



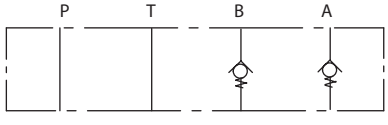
DGMDC-3-Y-P*



DGMDC-3-X-T*



DGMDC-3-Y-A*-B*



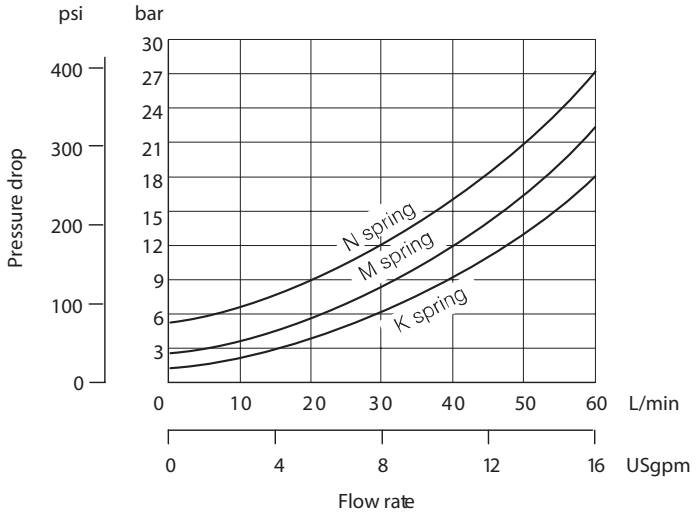
Operating Data

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



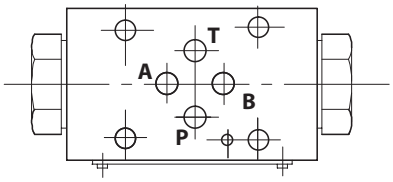
● For other viscosities, see “Further Information”.

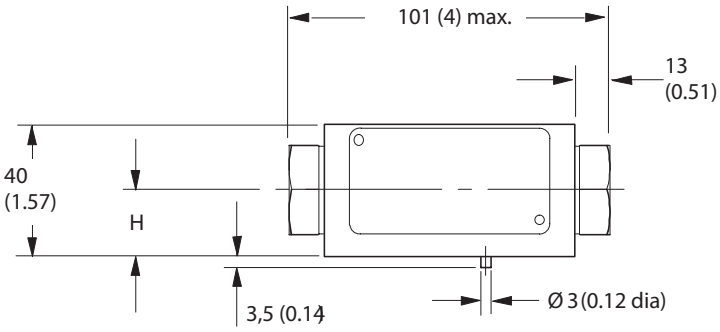
Internal Leakage Across Closed Check Valve

Less than 0,25 ml/min (0.015 in ^{3}/min) at 250 bar (3625 psi)

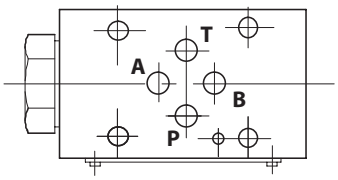
Installation Dimensions in mm (inches)

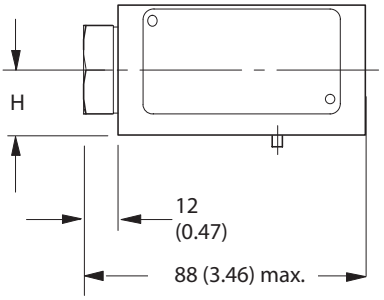
DGMDC-3-Y-A*-B*-41

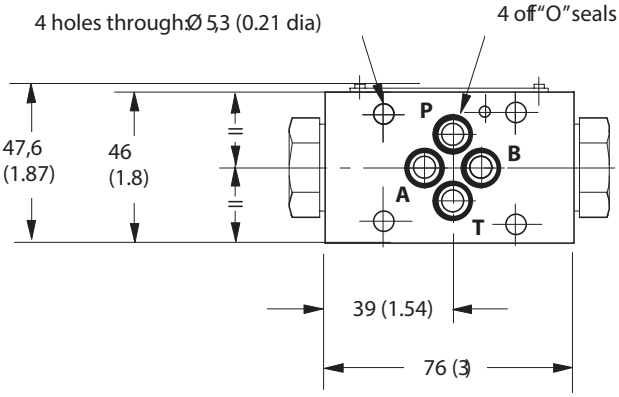




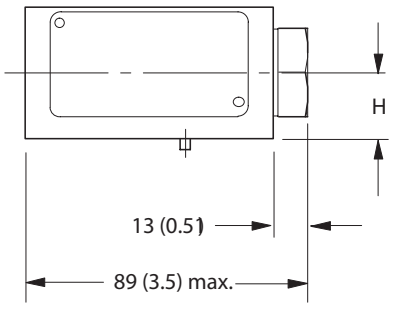
DGMDC-3-X-A*-41
DGMDC-3-X-T*-41
DGMDC-3-Y-A*-41
DGMDC-3-Y-P*-41







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



ModelType	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	