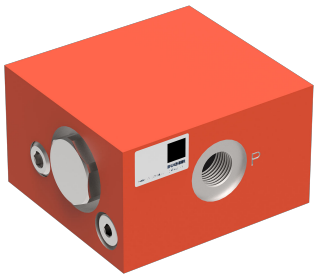
Flow valve
Flow divider

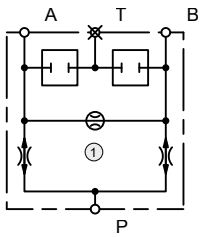
Q_{max} = 100 l/min, p_{max} = 420 bar
Bidirectional,
Type series: MTDA08HD



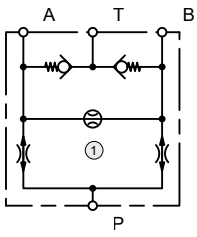
- Mono-block valve
- No maintenance needed, cost-saving
- Flows can be split or merged with accuracy (divide/ combine functions)
- Functions with decompression orifice, make-up valves or crossline relief valve

Symbol

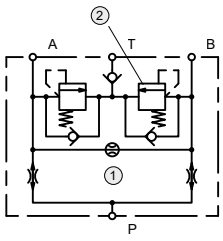
Standard Function "H"



Function "N"
with anti-cavitation check valve



Function "P"
with shock valve and anti-cavitation valve



① Compensating orifice
② Check valve in port T (only in combination with version "P")

Description

Series MTDA08HD flow dividing valves, are hydraulically pressurized and operate automatically. They divide a flow into two parts. When flow passes through a valve in the opposite direction, the part-flows are combined into one single flow (added). The dividing and combining functions are largely independent of the pressures of the divided flows and of the fluid viscosity. In order for the valve to work properly, a continuous flow is required at all ports. For example, if one actuator is no longer able to move, then the other part-flow will also be restricted. If the two actuators served by the flow divider operate at different pressures, then the pressure of the total flow entering the valve will correspond to the higher of the two actuator pressures.

Technical data

General characteristics	Description, value, unit
Function group	flow valve
Function	flow divider
Design	mono-block valve
Characteristic	bidirectional
MTTFd value	150 years
Construction size	nominal size 08
Thread size	G 1/2”
Mounting attitude	horizontal
Minimum ambient temperature	- 20 °C
Maximum ambient temperature	+ 80 °C
Sealing material	NBR (nitril-butadien-rubber / BUNA) seals

Hydraulic characteristics	Description, value, unit
Maximum operating pressure	420 bar
Maximum flow rate	100 l/min
Control flow range	2 ...100 l/min
Division accuracy	± 3.0 %
Flow direction	see symbol
Hydraulic fluid	HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 20 °C
Maximum fluid temperature	+ 80 °C
Viscosity range	10 ... 300 mm^2/s (cSt)
Minimum fluid cleanliness (cleanlineless class according to ISO 4406:1999)	class 20/18/15

NOTE!
Division accuracy +/- 3% of the max. flow rate, based on control flow range of the respective flow divider. Higher division accuracy on request.

NOTE!
We recommend the use of fluids that contain anti-wear additives for mixed-friction operating conditions. Fluids without appropriate additives can reduce the service life of the valves. The user is responsible for maintaining, and regularly checking the fluid quality.

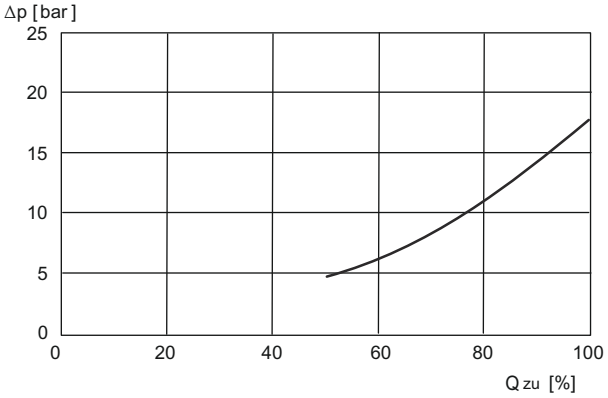
Performance graphs

measured with oil viscosity 35.0 mm²/s (cSt)

Δp = f (Q) Pressure drop-flow rate characteristic

Pressure drop v. flow rate (Qzu 100% = QNenn)

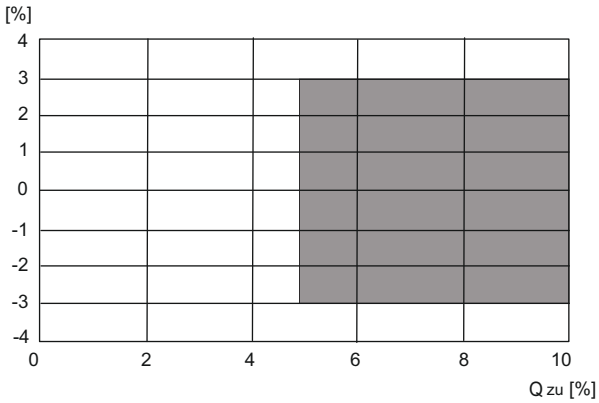
Pressure drop



% = f (Qzu) Division accuracy

Division accuracy v. flow rate (Qzu 100% = QNenn)

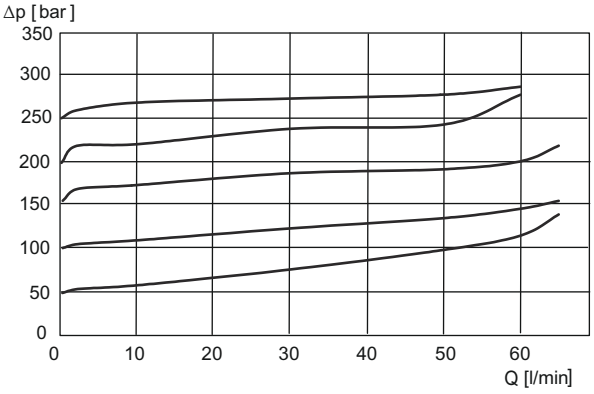
Division accuracy without decompression orifice



p = f (Q) Pressure-flow rate

Anti-shock valve

Q [l/min] = flow rate A/B -> T
Δp [bar] = pressure difference A/B -> T

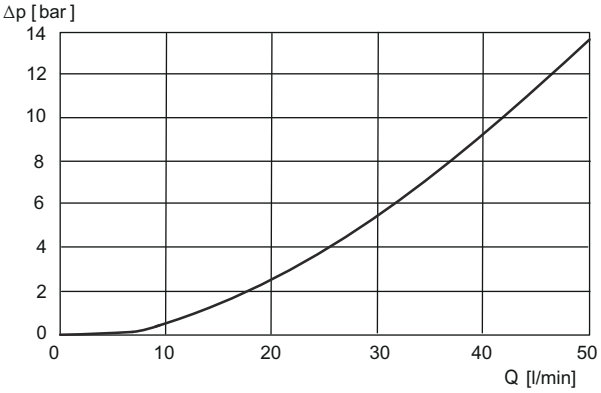


Higher flow rates on request.

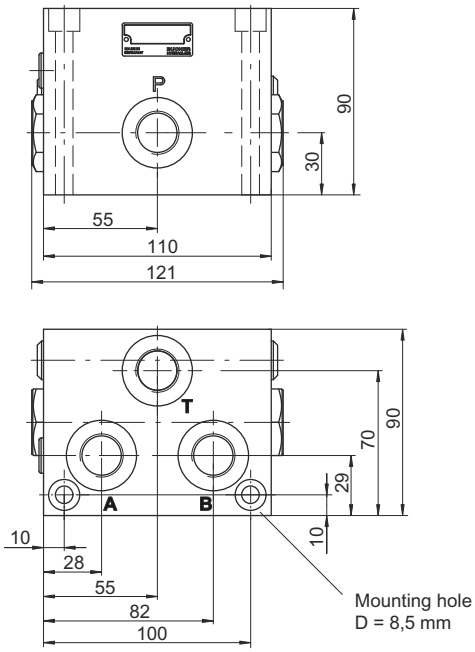
p = f (Q) Pressure-flow rate

Make-up valve

Q [l/min] = flow rate von T -> A/B
Δp [bar] = pressure difference T -> A/B



Installation



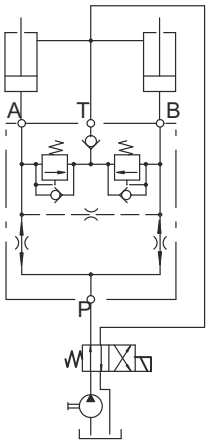
ATTENTION!
Expert and product knowledge is required for the layout of this valve type. Use exclusively for the intended purpose within the indicated values. The valve manufacturer must be consulted for use of the appliance outside the specifications. All applications must be verified by sufficient tests to ensure safety in the application. The ultimate responsibility for safety during installation and use resides with the end appliance manufacturer.

ATTENTION!
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

NOTE!
To prevent the weight of the spool causing division inaccuracies,the valve must be installed so that the spool axis is horizontal. When mounting the valve, make sure that the body is not subjected to any distorting forces. Do not use tapered-thread pipe fittings.

Application examples

The application example shows a typical cylinder application. The flow divider divides the flow into the desired part-flows so that the cylinders extend evenly.



Ordering code

MT	D	A	08	HD	-	004	G12	*	-	H	-	20	P =[2]	D =[3]

MT = Flow divider

D = Bi-directional

A = Threaded ports

08 = Nominal size

HD = High pressure

004 = Nominal flow rate 2 – 4 l/min
006 = Nominal flow rate 3 – 6 l/min
008 = Nominal flow rate 4 – 8 l/min
012 = Nominal flow rate 6 – 12 l/min
016 = Nominal flow rate 8 – 16 l/min
025 = Nominal flow rate 12 – 25 l/min
032 = Nominal flow rate 16 – 32 l/min
050 = Nominal flow rate 25 – 50 l/min
075 = Nominal flow rate 37 – 75 l/min
100 = Nominal flow rate 50 – 100 l/min

G12 = Port threads size G 1/2”

Option
R [1] = Check valve in T line
* = without option

Function
H = Standard
N = with make-up check valve
P [2] = with crossline relief valve

20 = Division ratio 1:2

1) Only valid for using with function P (crossline relief valve).
2) Pressure settings in bar available for the anti-shock valve (measured at 10 l/min test flow) 25, 32, 40, 50, 63, 80, 100 125, 140, 160, 175, 190, 210, 230, 250, 280, 300, 350, 380, (for other pressures, consult Bucher Hydraulics).
The anti-shock valve can process max. 60 l/min.
3) State the diameter of the balancing orifice, if required (e.g. E0.6 - D = 06).

Unequal division on request
In case of unequal division, the division ratio is shown in the flow divider model code:
e.g. 13 = 1 : 1,3
20 = 1 : 2
30 = 1 : 3

Ordering example
Flow range: Q_{zu} = 60 l/min with unequal division of 1:3 / pressure setting P < 190 bar
Flow divider: **MTDA08HD-075G12-P-30 / P = 190**
At an inlet flow rate of 60 l/min the unequal division prod. : 15 l/min at port A and 45 l/min at port B.

Example for division accuracy
Flow range: Q_{zu} = 60 l/min, required division of Q_A/Q_B = 30 l/min (division 1:1)
Flow divider: **MTDA08HD-075G12*-P**
flow range 37 ... 75 l/min / max. flow rate 75 l/min
max. allowable deviation = 75 l/min x ±3% = ± 2,25 l/min
resulting part-flow rate at Q_{zu} = 60 l/min:
port A - Q_{min} = 27,75 l/min / Q_{max} = 32,25 l/min
port B - Q_{min} = 27,75 l/min / Q_{max} = 32,25 l/min

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