

# Flow Control Valves

## Series MTKA, MTQA, MTCA



- robust, uncomplicated, reliable
- these valves do not require maintenance. This lowers costs and reduces the risk of a system failure.
- can be provided with customised mechanical or electrical actuation
- flow rates are unaffected by temperature change or when the higher load pressure alternates between the outlet ports
- line mounting design

## 1 Description

Series MTKA, MTQA and MTCA priority flow control valves provide a constant, pressure-compensated, flow of hydraulic fluid in one direction. They divide an inlet flow into a constant, priority, flow and a surplus flow. The priority flow setting can be fixed or adjustable and the valves are used to regulate the speed of hydraulic actuators (cylinders, motors, etc.).

### 1.1 MTKA flow control valve

The MTKA priority flow control valve divides the inlet flow into a priority flow (fixed, or manually adjustable) and a surplus flow. The surplus flow can be pressurised and can therefore be supplied to an additional actuator. The pressure in the inlet line corresponds to that of the actuator with the highest load.

When used as a 2-way flow control valve, the surplus flow outlet port (B) is plugged. For this application, please order the .../20 special feature.

### 1.1.1 MTQA flow control valve

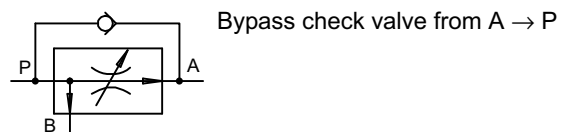
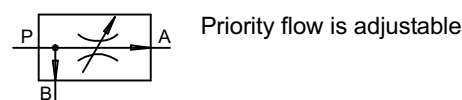
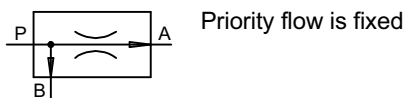
The MTQA priority flow control valve divides the inlet flow into a priority flow (fixed, or manually adjustable) and a surplus flow. The whole inlet flow is protected by an adjustable pressure relief valve. The surplus flow from port R should be returned directly to tank. The pressure in the inlet line corresponds to that of the actuator.

### 1.1.2 MTCA flow control valve

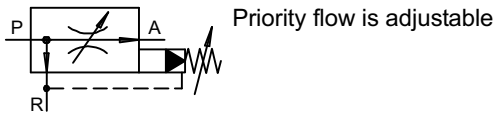
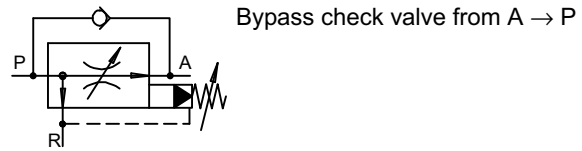
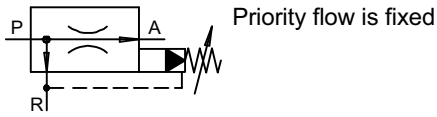
The MTCA priority flow control valve divides the inlet flow into a priority flow (fixed, or manually adjustable) and a surplus flow. Both flows can be pressurised independently of each other and both are protected by an adjustable pressure relief valve functioning in the inlet flow. The pressure in the inlet line corresponds to that of the actuator with the highest load. If the priority flow stops (e.g. when cylinder reaches its end stop), then the oil is throttled down from load pressure and is combined with the surplus flow. If the surplus flow also stops, then the total inlet flow is relieved at the relief valve setting and exits through port T to tank.

## 2 Symbols

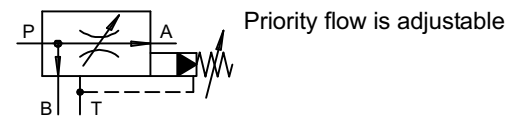
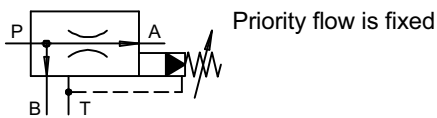
### 2.1 MTKA...



## 2.2 MTQA...



## 2.3 MTCA...



P = pump  
A = priority flow  
B = surplus flow  
R = return line to tank  
T = tank (no back pressure)

## 3 Technical data

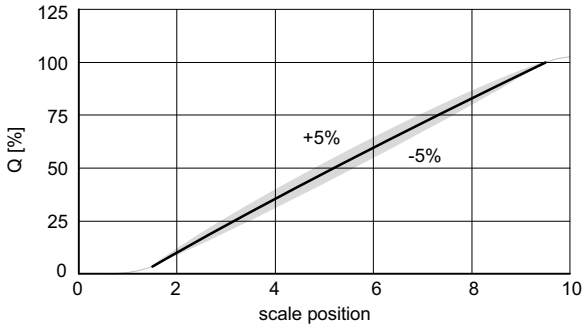
Hydraulic characteristics	Description, value, unit	
	MTKA, MTQA	MTCA
Maximum operating pressure	315 bar	
Nominal flow rate Q (inlet flow)	max. 70 l/min	max. 80 l/min
Priority flow, fixed setting <sup>1)</sup>	3, 6, 9, 12, 16, 25, 32, 40, 50 and 65 l/min	
Priority flow, adjustable <sup>1)</sup>	VE=0-6 l/min, VG=0-8 l/min, VA=0-12 l/min, VK=0-20 l/min, VB=0-25 l/min, VH=0-35 l/min, VC=0-50 l/min, VD=0-65 l/min	
Control accuracy	± 5 %	
Pressure differential $\Delta p$	3,5 to 5 bar	4 to 10 bar
Fluids	mineral oil to DIN 51524 and DIN 51525 (other fluids on request)	
Fluid cleanliness	NAS 1638 class 9, ISO 4406 class 20/18/15	
Fluid temperature range	-20 to +80 °C	
Viscosity range	10 to 300 mm <sup>2</sup> /s	
Leakage, priority flow, at min. control setting <sup>2)</sup>	max. 50 cm <sup>3</sup> /min for MTKA.../20" max. 250 cm <sup>3</sup> /min	

1) for other priority flows/flow ranges, contact Bucher

2) measured with surplus flow not under pressure

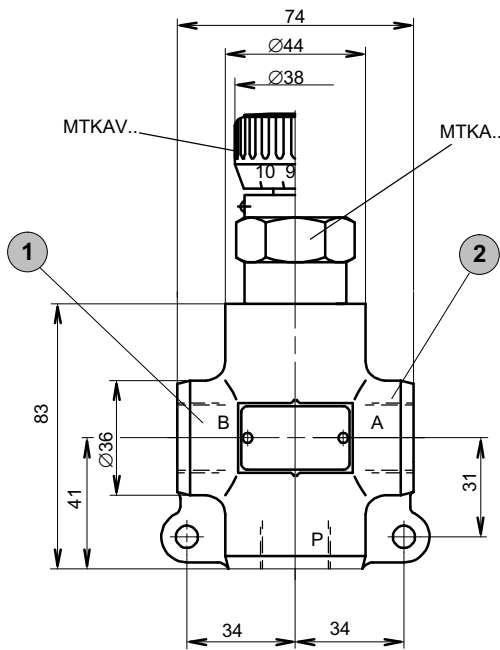
## 4 Performance graphs

The values refer to a viscosity of 33 mm<sup>2</sup>/s. Flow from P to A varies with the scale setting (adjustable models).

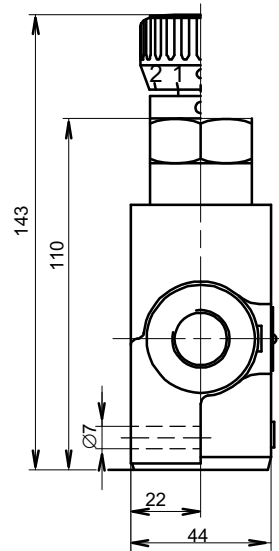


## 5 Dimensions

### 5.1 MTKA



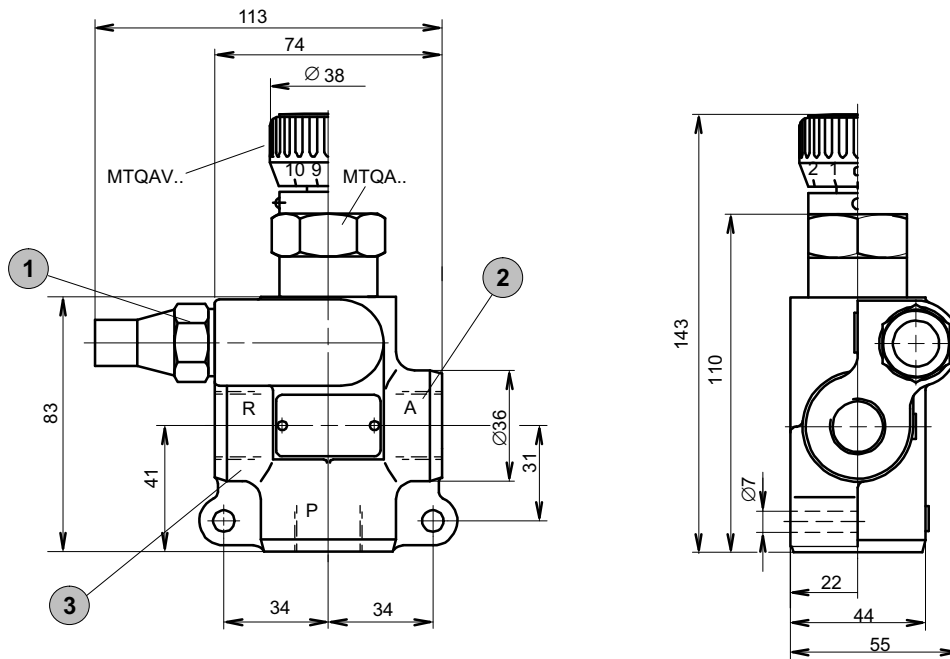
Size of ports P, A and B = M22x1,5 or G1/2"



Weight 1,2 kg

1	Surplus flow (closed at .../20)
2	Priority flow

## 5.2 MTQA

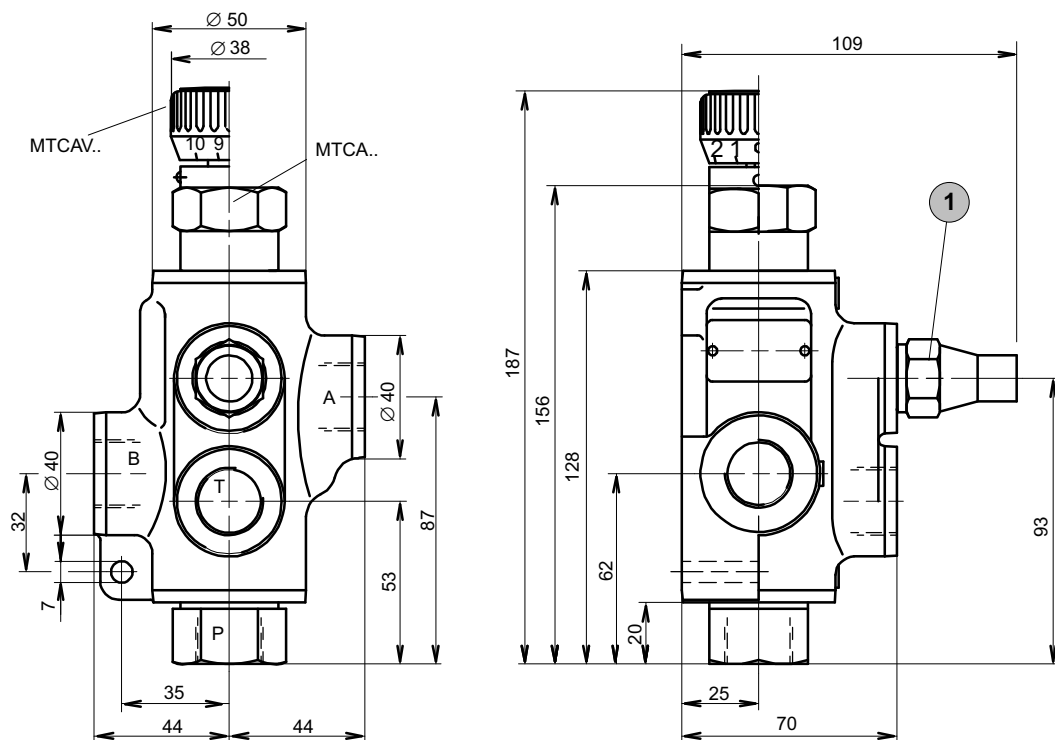


Size of ports P, A and B = M22x1,5 or G1/2"

Weight: 1,3 kg

<b>1</b>	Pressure setting stamped here
<b>2</b>	Priority flow
<b>3</b>	Return line to tank

## 5.3 MTCA



Size of ports P, A, B and T = M22x1,5 or G1/2"  
Weight: 2,6 kg

<b>1</b>	Pressure setting stamped here
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## 6 Ordering code

### 6.1 MTKA.., MTQA..

		M T K A		V A		R		-		M 2 2		/		Q = 1) P = 2)		
Flow control valve	MTKA, MTQA															
Adjustable priority flow range	0 to 6	l/min	=	VE												
	0 to 8	l/min	=	VG												
	0 to 12	l/min	=	VA												
	0 to 20	l/min	=	VK												
	0 to 25	l/min	=	VB												
	0 to 35	l/min	=	VH												
	0 to 50	l/min	=	VC												
	0 to 65	l/min	=	VD												
Fixed priority flow rate															=	..
1) Clearly specify the required constant flow rate - see Section 3 for options																
Bypass check valve from A to P															=	R
	without														=	*
Design no.	(to be inserted by the factory)															
Ports A, B, P and R	M22x1,5		=		M22											
	G 1/2"		=		G12											
Option	.../20 = 2-way-flow control valve (only for MTKAV)															

2) Clearly specify the required pressure setting in the order text, MTQA only

### 6.2 MTCA..

		M T C A		V A		-		M 2 2		/		Q = 1) P = 2)			
Flow control valve	MTCA														
Adjustable priority flow range	0 to 6	l/min	=	VE											
	0 to 8	l/min	=	VG											
	0 to 12	l/min	=	VA											
	0 to 20	l/min	=	VK											
	0 to 25	l/min	=	VB											
	0 to 35	l/min	=	VH											
	0 to 50	l/min	=	VC											
	0 to 65	l/min	=	VD											
Fixed priority flow rate														=	..
1) Clearly specify the required constant flow rate - see Section 3 for options															
Design no.	(to be inserted by the factory)														
Ports A, B, P and T	M22x1,5		=		M22										
	G 1/2"		=		G12										
Special features	(to be inserted by the factory)														

2) Please specify the required pressure setting in the order text

Use flow control valve SRR.. for application with proportional magnet (see data sheet 100-P-000090-..).

**[info.kl@bucherhydraulics.com](mailto:info.kl@bucherhydraulics.com)**

**[www.bucherhydraulics.com](http://www.bucherhydraulics.com)**

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