



## Monoblock Directional Control Valve RM 230 light

Preliminary Version

### Key valve features

RM 230 light is a monoblock valve, designed for max. operating pressures up to 210 bar and max. pump flows up to 70 l/min.

It is available with 1 to 4 sections per valve.

It is designed with an open center for fixed displacement pumps.

The valve can be operated manually, with cable or by pneumatic, electro-pneumatic and hydraulic remote control.

The valve offers excellent operating characteristics because of the specially designed spools for different applications.

Low and uniform spool forces are the result of careful balancing of the flow forces.

### Applications

Typical applications for RM 230 light are tippers, cranes, refuse trucks and agricultural vehicles.

### Further properties and possibilities

- There are many configurations of spools and spool controls which make the valve suitable for a wide range of applications
- Two or more blocks can be connected in series

### Technical data

#### Pressures / Flows

Max. operating pressure per port:

P1, P2, A, B: 210 bar

T1, T2: 20 bar

Max. permissible flow either on port P1 or P2: 70 l/min

Fluid temperature range: -15 °C up to +80 °C

#### Further data

Spool stroke:

Nominal: +/- 6 mm

4:th position: +12 mm

Spool control force spool control 9:

Neutral position: 110 N

Max. spool stroke: 140 N

Detent in: >300 N

Detent out: <100 N

Permissible contamination level: Equal or better than 20/18/14 as per ISO 4406

Viscosity range: 10 – 400 mm<sup>2</sup>/s (cst)  
Higher viscosity allowed at start up

Leakage A, B → T at 100 bar, 32 cst and 40 °C: ≤13 cc/min

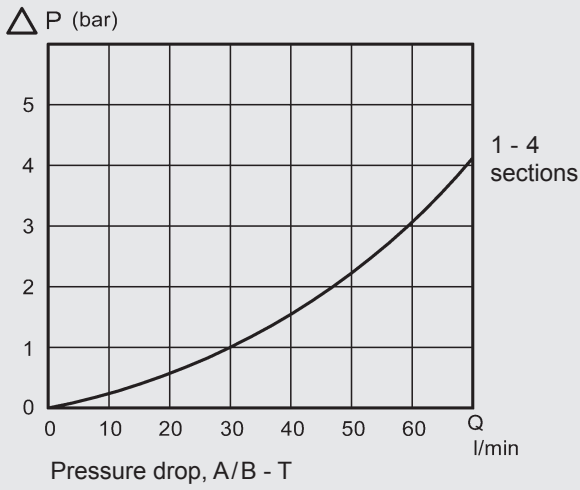
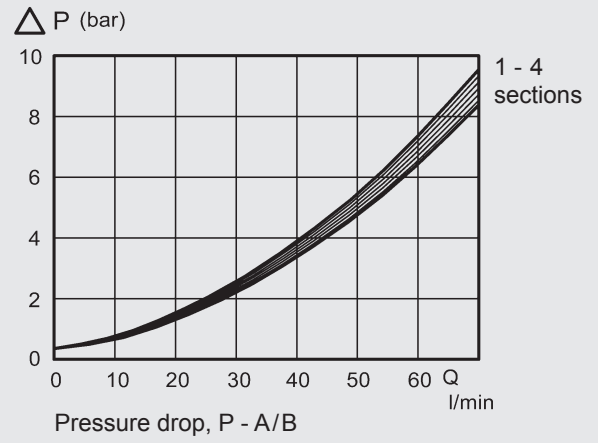
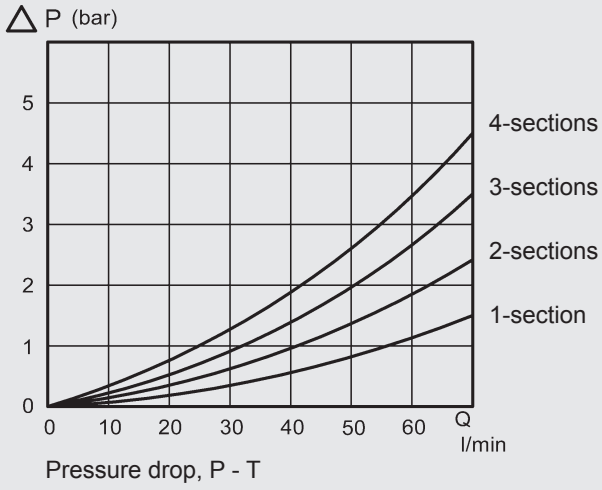
Pressure fluid: Mineral oil and synthetic oil based on mineral oil HL, HLP according to din 51524

Higher values are possible, depending on application. For applications with demands that exceed stated data above, please contact us for consideration.

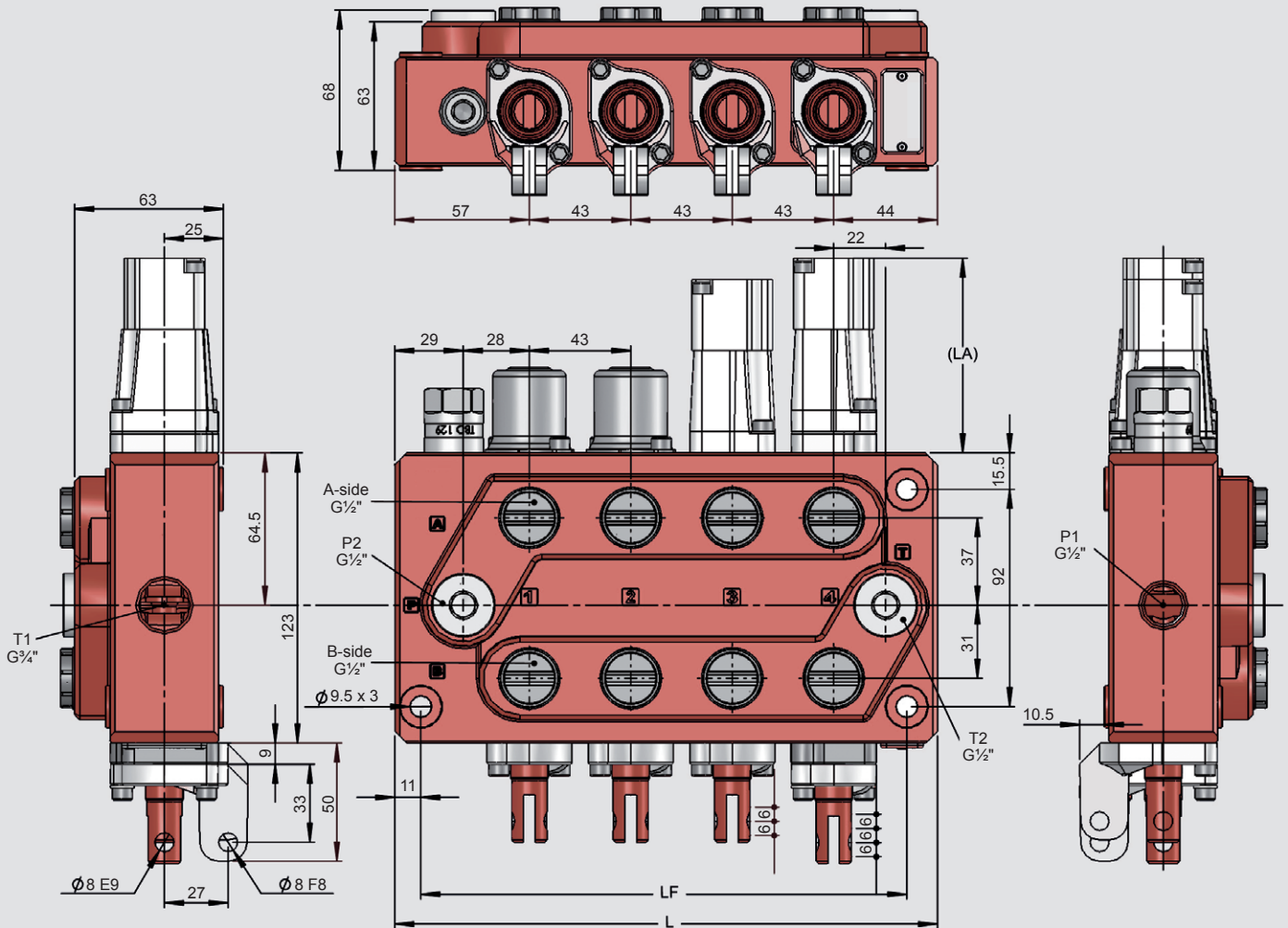
MTTFd value after consultation with HYDAC.

# Pressure drop

Oil temperature / viscosity for all graphs: +40 °C / 32 cSt

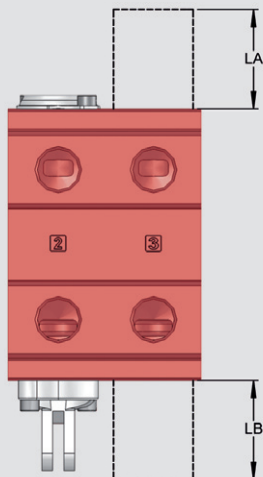


## Dimensions and weight



Weights	Complete valve
1 section	4 kg
2 sections	7 kg
3 sections	9 kg
4 sections	11 kg

Measurements	L [mm]	LF [mm]
1 section	101	77
2 sections	144	120
3 sections	187	163
4 sections	230	206



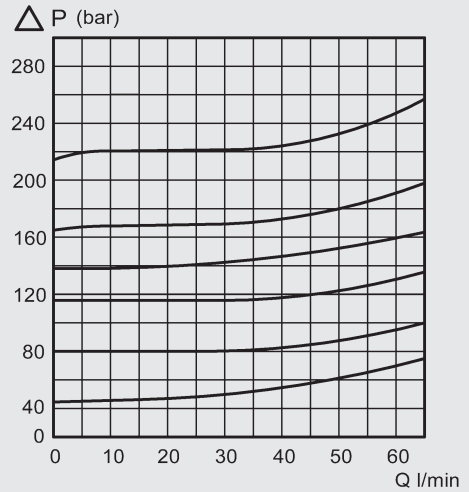
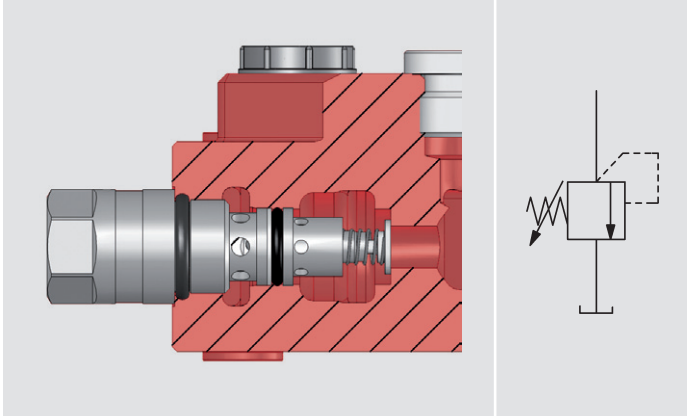
Type	LA [mm]	Type	LB [mm]
9	36.5	M19	41
9M	70	M211	50
9W	85.5	MM	88
10	73	3W	85
11	83	4W	94
13	73	HPD	70
14	73	HPDM	88
P	103	M2K	310
EP	103		
HPD	70		
L61-L63	98.5		
L64	100		

## Main relief valve

### Main relief valve TBD129

The TBD129 is a differential area, direct acting relief valve for the main circuit. The valve is combined with the A-side load check valve.

- Adjustable and sealable
- Setting range: 35 – 210 bar (3.5 – 21.0 MPa)
- Setting range step: 5 bar



## Spool controls – A-Side

<b>Spool Control 9</b> 9 Spring centering, 9M marine version, 9W for cable control	
<b>Spool Control 10</b> Detents at positions 1, 2 and 3	
<b>Spool Control 11</b> Spring centering with detent at position 4	
<b>Spool Control 13</b> Spring centering with detent at position 2	
<b>Spool Control 14</b> Spring centering with detent at position 3	
<b>Spool Control P</b> Pneumatic*	
<b>Spool Control EP</b> Electro / pneumatic on / off**	
<b>Spool Control HPD</b> Hydr. proportional Pilot pressure 6 - 16 bar Max. pilot pressure 25 bar	
<b>Spool Control L61</b> External hydraulic kick-out from inserted spool***	
<b>Spool Control L62</b> External hydraulic kick-out from extended spool***	

### Spool Control L63

External hydraulic kick-out from inserted and extended spool\*\*\*



### Spool Control L64

External hydraulic kick-out from inserted and extended spool, locking neutral position\*\*\*



### Spool Control HLS 200

Spool position indicator.



\* Connection 1/8" BSP

\*\* Power consumption 4.8 W

Rated voltage 24 V

Max voltage variation +/- 10 %

Duty factor 100 %

Connection according to EN175301-803/B

Protection class IP65

\*\*\* Connection 1/4" BSP

## Spool controls – B-Side

### Bracket M19

Bracket for 3-position spool

### Bracket M2

Bracket for 3-position spool, without ear

### Bracket M29

Bracket for 4-position spool

### 3W

Cap for 3-position spool controlled by cable

### Bracket M111

Bracket for 3-position spool, gear ratio 11:1

### 4W

Cap for 4-position spool controlled by cable

### Bracket M211

Bracket for 4-position spool, gear ratio 11:1

### Lever M2K250

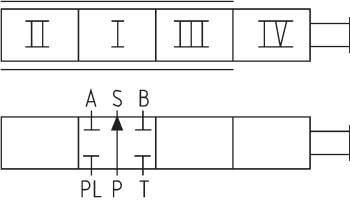
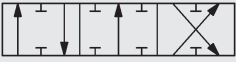
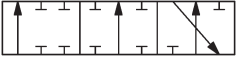
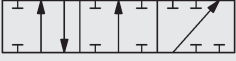
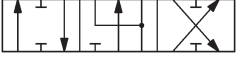
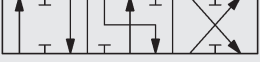


Coordinate lever for spool with 3 or 4 pos.

## Spools

Generally the spools are divided in 3 different flow ranges.

The letter indicating flow ranges is replaced by X. D = 20 – 30 lpm, K = 30 – 50 lpm, Q = 50 – 70 lpm.

In the table only the accessibility of different functions are shown.

	<p><b>Spools for general use</b></p> <p><b>Function</b></p>	<p><b>Code</b></p>
	<p>Double acting spool</p>	<p>1X</p>
	<p>Single acting spool P - A</p>	<p>2X</p>
	<p>Single acting spool P - B</p>	<p>2XB</p>
	<p>Motor spool</p>	<p>4X</p>
	<p>Motor spool A - T</p>	<p>4XA</p>
	<p>Motor spool B - T</p>	<p>4XB</p>
	<p>Double acting spool with 4th pos. for float</p>	<p>3X</p>

The RM 230 spools are available in a variety of flows and styles to accommodate most design requirements.

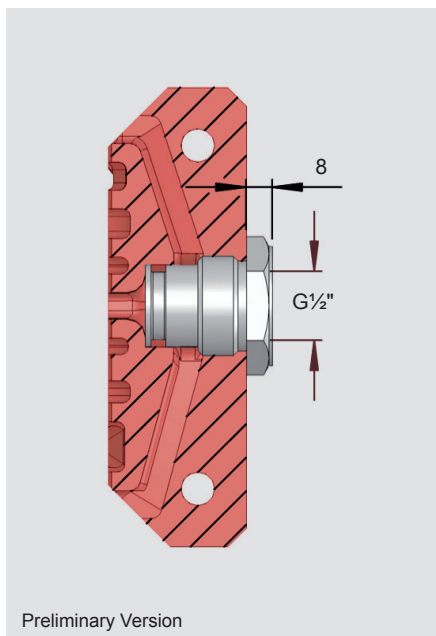
Since the development of spools is a continuous process and all available spools are not described in this data sheet, contact HYDAC for advice on choosing spools in order to optimize your valve configuration.

## High pressure carry-over

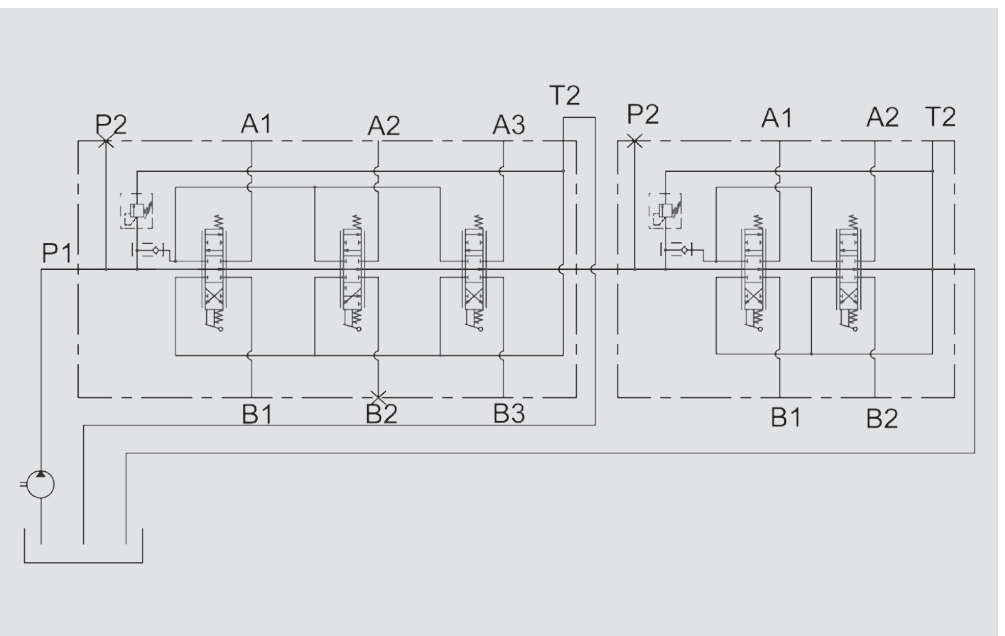
### High pressure carry-over nipple SG21

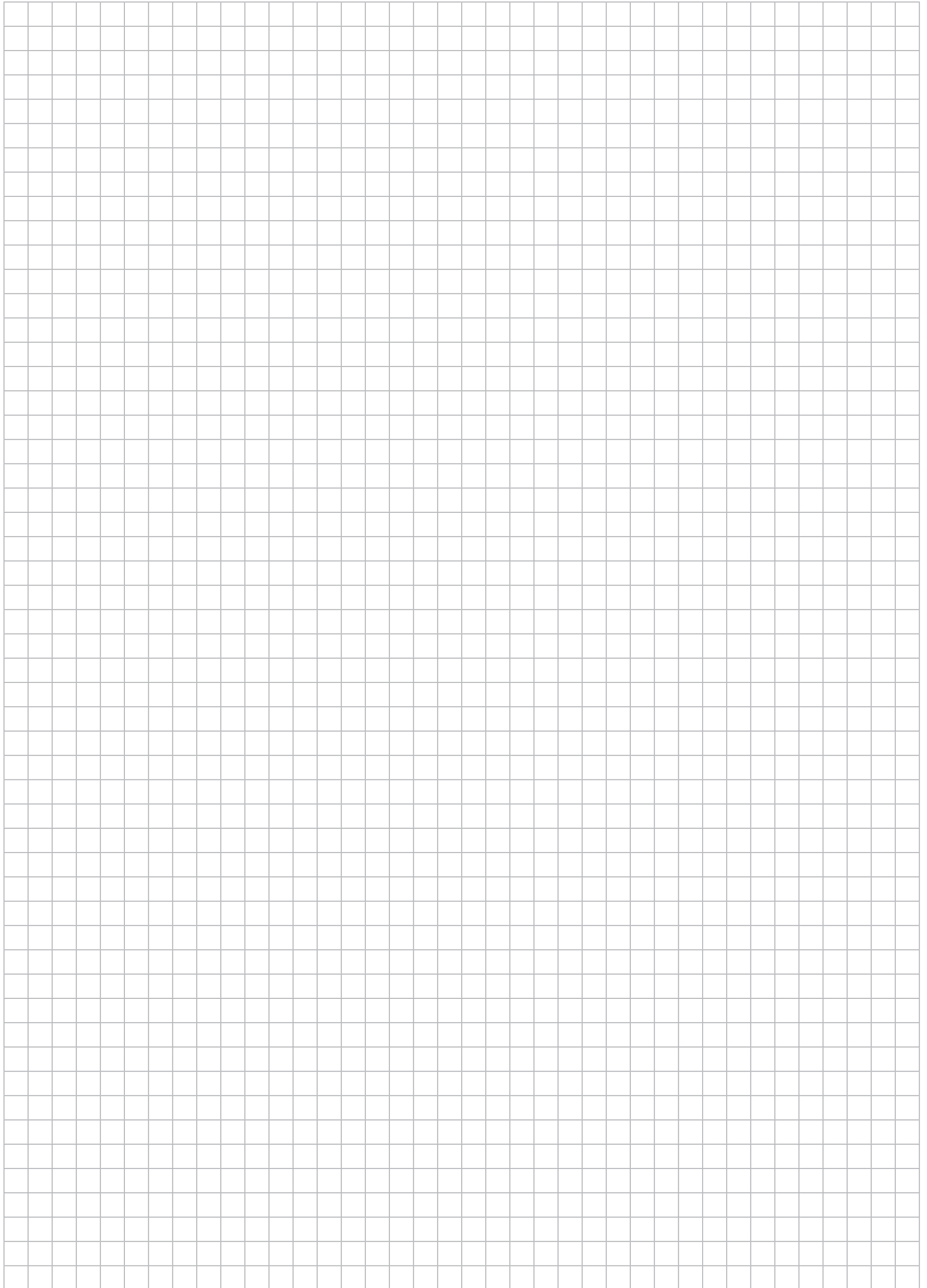
The type SG21 series nipple is used for series mounting of valve blocks when pipe or hose is used between the blocks.

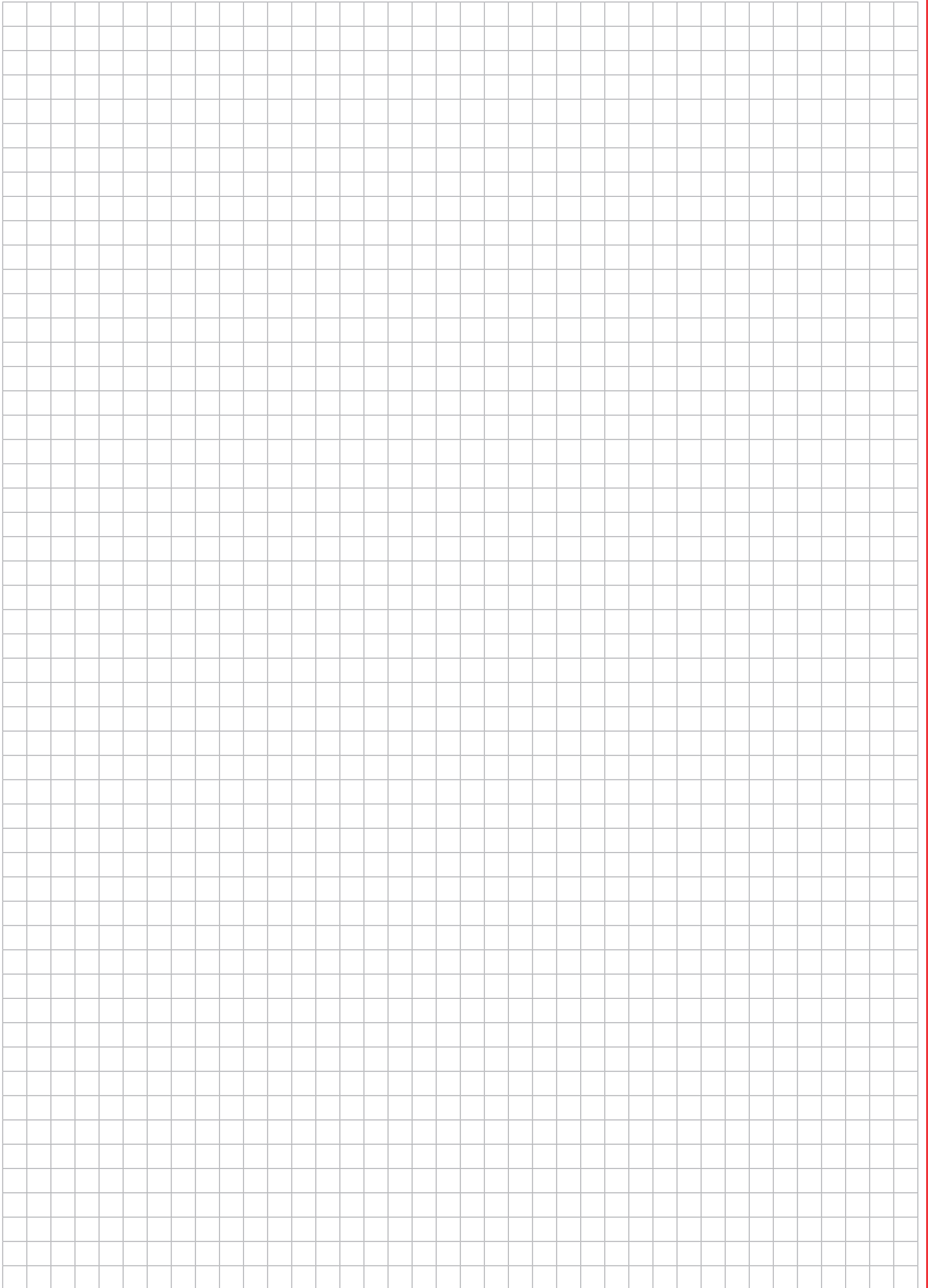
When the high pressure carry-over nipple SG21 is used for series mounting, tank connection T2 for the first valve must always be connected to the tank (see diagram). Valve blocks connected in series give priority of flow to the first block in the series. This means that there will be no flow at block 2 if block 1 is fully activated.



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## Note

The information in this brochure relates to the operating conditions and applications described.

For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.



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