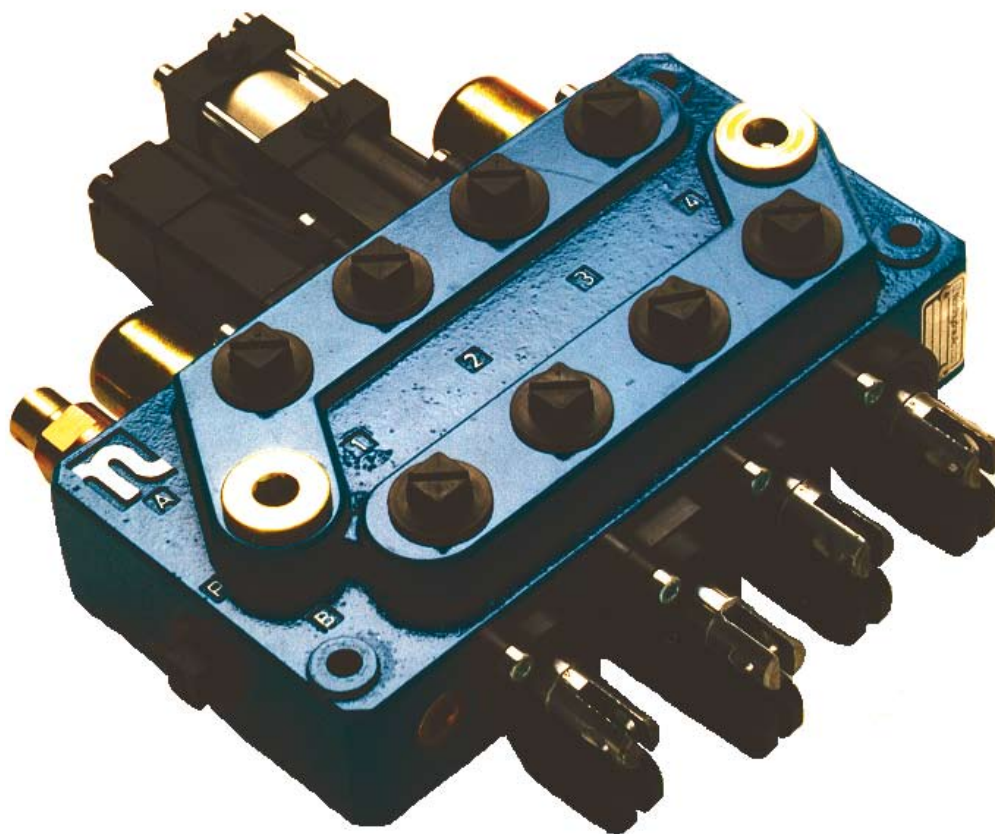




Nordhydraulic
HYDAC INTERNATIONAL

Directional control valve RM 230



Solutions that power your visions

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RM 230

Make use of the Nordhydraulic expertise

Our skilled and experienced design and application engineers are at your disposal, helping you to specify the valve configuration that meets your application requirements.

Key valve features

RM 230 is a mono block valve, designed for system pressures up to 300 bar and pump flows up to 70 l/min.

It is available with 1 to 4 sections per valve.

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

The valve can be operated manually, with cable or by pneumatic and electro-pneumatic 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 are tippers, cranes, refuse trucks and agricultural vehicles.

Further RM 230 properties and possibilities

- There are many varieties 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.

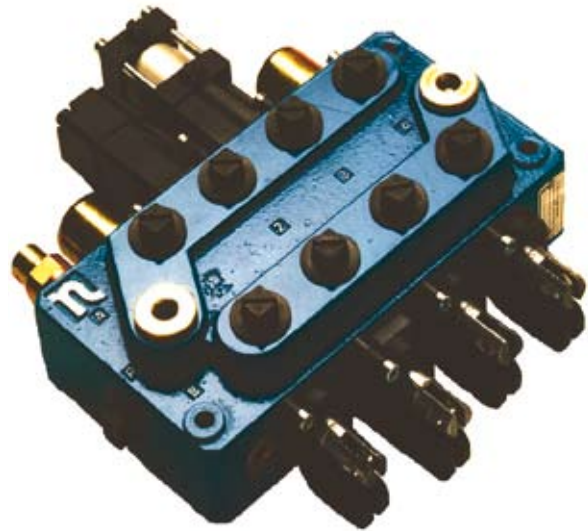


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Data sheet

This data sheet presents a selection of standard components and how to specify these in a valve assembly according to your application requirements. For further information on RM 230 and available components, please contact Nordhydraulic.



Technical data

Pressures / flow

Max. system pressure*300 bar (30,0 MPa)
 Max continuous return line pressure..... 20 bar (2,0 MPa)
 Rated flow..... 50 l/min

* depending on application

Further data

Spring force for spool control 9 in neutral position:
 110 N (11,0 kp).

Spring force for spool control 9 with a fully selected
 spool: 136 N (13,6 kp).

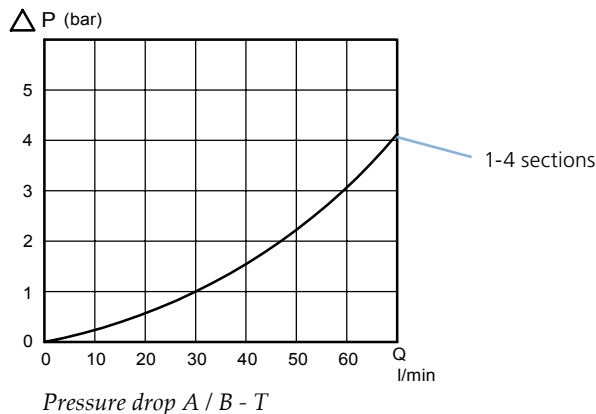
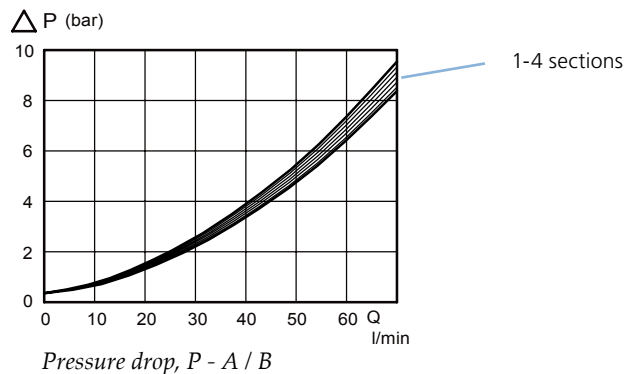
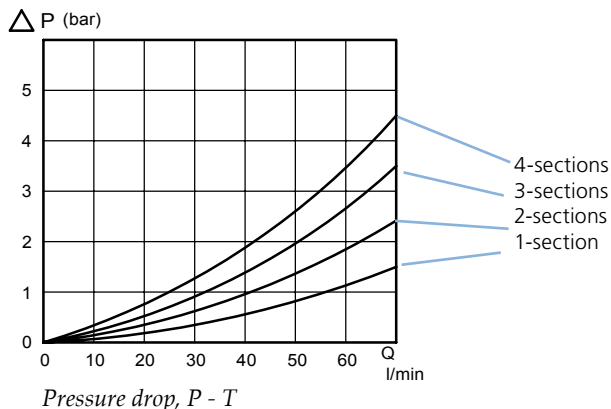
Recommended contamination level at normal duty: equal
 to or better than 18/14 as per ISO 4406.

Hydraulic fluid viscosity range at continuous operation:
 10-400 mm²/s(cSt). Higher viscosity allowed at start up.

Mineral oil and synthetic oil based on mineral oil are
 recommended.

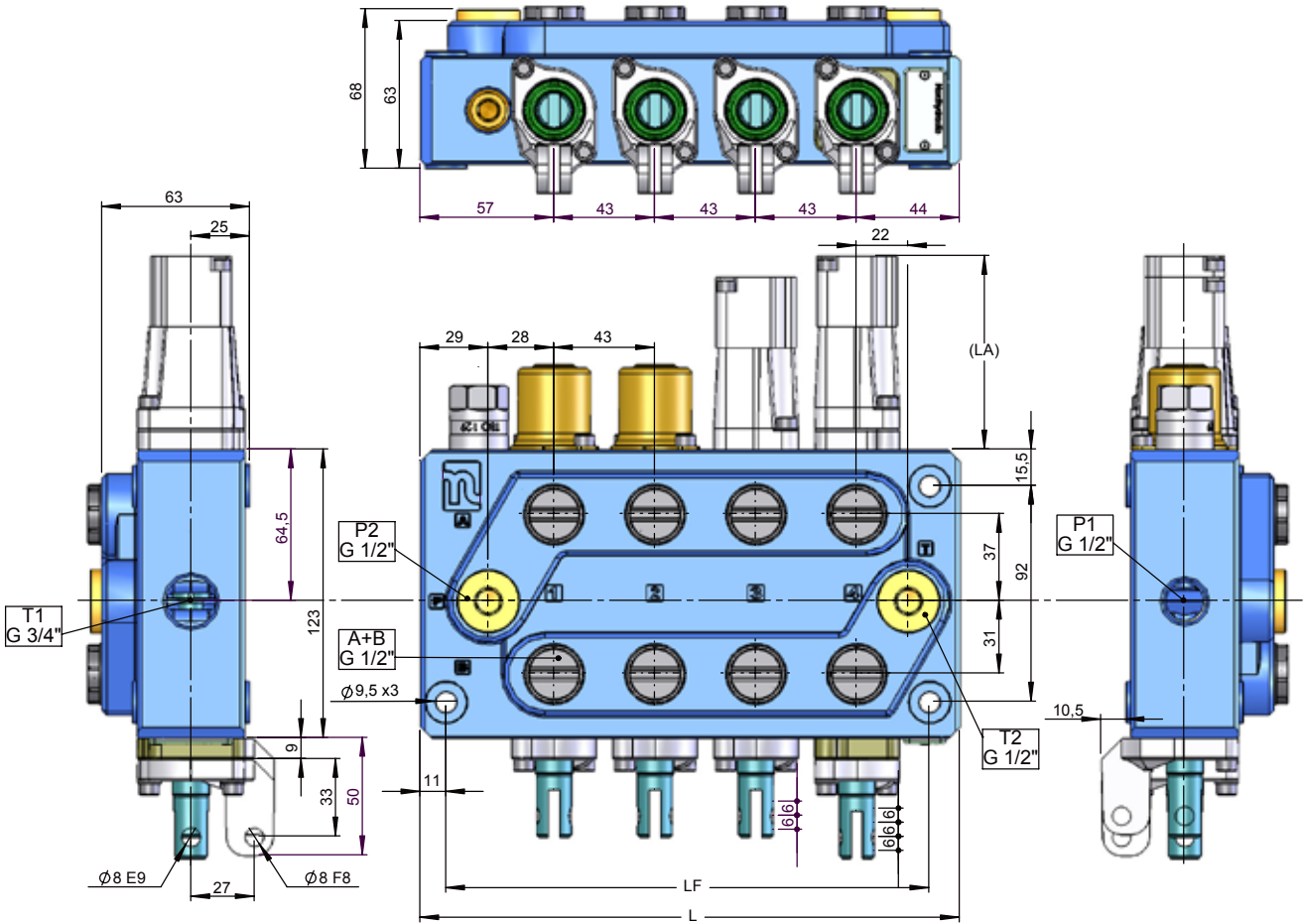
Max. hydraulic fluid temperature range for continuous
 operation: -15°C - + 80°C.

Spool leakage at 100 bar, 32 cSt and 40°C: < 13 cm³/min.



Oil temperature/viscosity for
 all graphs: + 50°C / 32 cSt

Technical data - Dimensions, 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

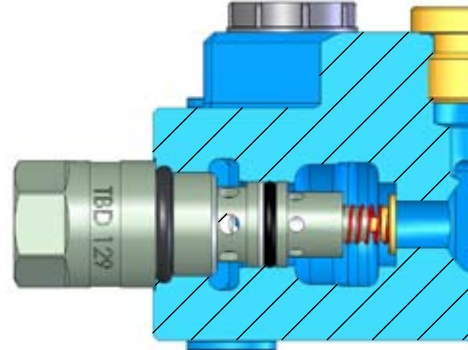
Main relief valve TBD129

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.

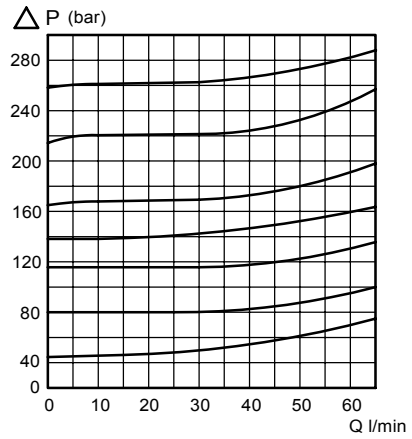
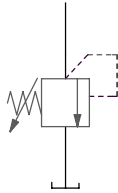
It is adjustable and sealable.

Setting range: 35 - 300 bar (3,5 - 30,0 MPa).

Setting range step: 5 bar.



RM 230



Spool controls - A-side

Spool control 9

9 Spring centering,
9M marine version,
9W for cable control.



Spool control 10

Detents at positions 1,
2 and 3.



Spool control 11

Spring centering with detent
at position 4.



Spool control 13

Spring centering with detent
at position 2.



Spool control 14

Spring centering with detent at
position 3.



Spool control P

Pneumatic*.



Spool control EP

Electro/pneumatic on/off**.

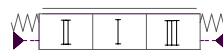


**

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

Spool control HPD

Hydr. proportional.
Pilot pressure 6-16 bar.
Max pilot pressure 25 bar.



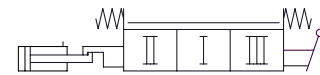
Spool control L61

External hydraulic
kick-out from inserted
spool***.



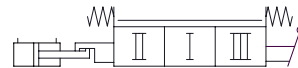
Spool control L62

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 LE11

Spool position indicator. Operating
range 10-30 V. Output voltage,
spool centered : < 1V. External elec-
tronics are required.



* Connection 1/8" BSP

*** Connection 1/4" BSP

Spool controls - B-side

Bracket M19

Bracket for 3-position spool.

Bracket M29

Bracket for 4-position spool.

Bracket M111

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

Bracket M211

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

Bracket M2

Bracket for 3-position spool, without ear.

3W

Cap for 3-position spool controlled by cable.

4W

Cap for 4-position spool controlled by cable.

Lever M2K250

Coordinate lever for spools with 3 or 4 pos.



Spools

	<p>Spools for general use</p>	
	<p>Function</p>	<p>Code</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 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 Nordhydraulic for advice on choosing spools in order to optimize your valve configuration.

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.

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

High pressure carry-over

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.

