



Nordhydraulic
HYDAC INTERNATIONAL

Directional control valve RS 160



Solutions that power your visions

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Data sheet

Directional control valve / RS 160



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

RS 160 is a sectional build valve in size 3/8" and of modular design for maximal flexibility that's especially in combination with the wide range of available standard parts.

The valve is designed for high performance applications in mainly open centre systems but also in closed centre systems.

The valve is very robust and well suitable for demanding mobile applications.

The modular system includes different types of inlets, sections and outlets. The valve is as standard possible to configure for up to 10 sections.

The lands in the sections are machined in order to make it possible to meet the most extended demands on controllability.

The sections are symmetric which makes it possible to use the valve both as "Left Hand Inlet" and "Right Hand Inlet".

2 or several valves can be connected to each other in a range of different ways just by using the possibilities to configure the in- and outlets in different ways.

Applications

RS 160 is designed as a flexible valve for a wide range of applications, but typical applications are cranes, wheel loaders and agriculture applications within the flow range for the valve.



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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 RS 160 and available components, please contact Nordhydraulic.



Technical data - dimensions

Pressures / flow

Max. system pressure 350 bar (35,0 MPa)
 Max. continuous system pressure 300 bar (30,0 MPa)
 Nominal flow rated 45 l/min
 Recommended pump flow max 70 l/min
 Tank line pressure, continuous max 25 bar
 Tank line pressure, intermittent max 50 bar

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.

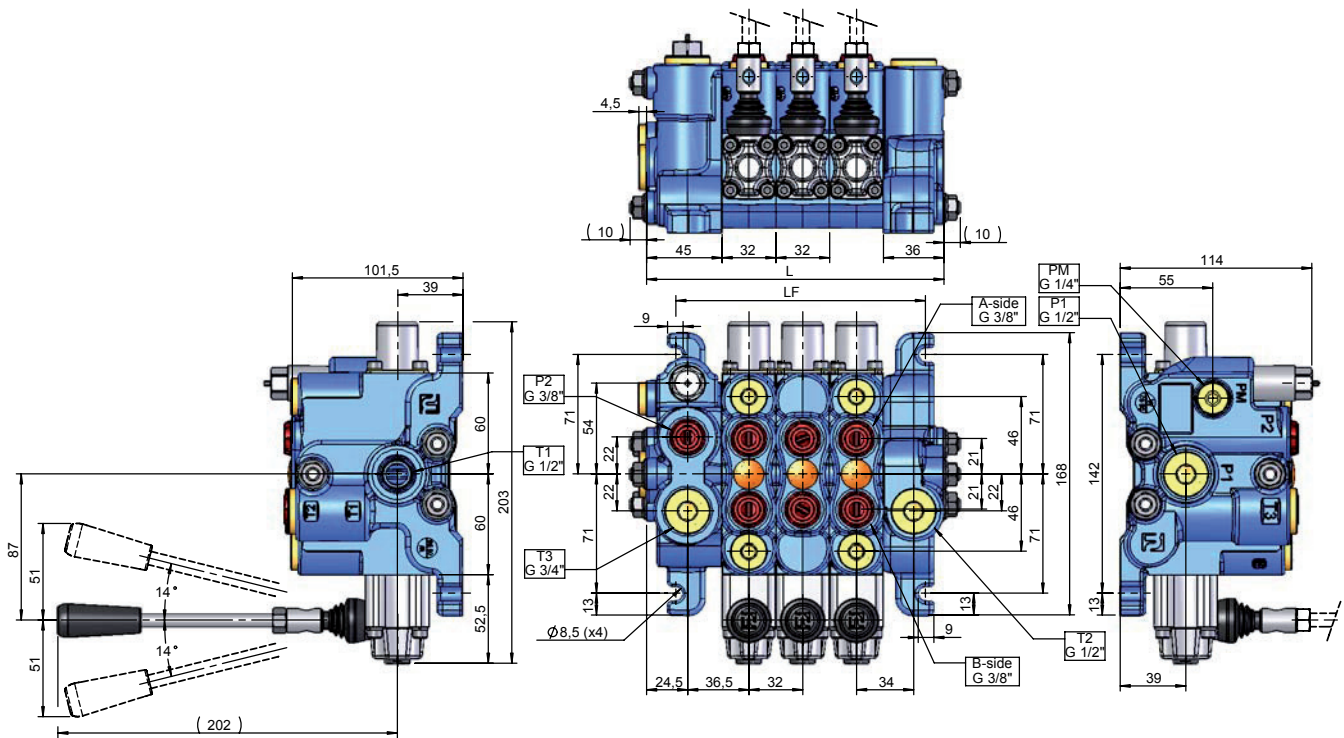
Mineral oil and synthetic oil based on mineral oil are recommended.

Recommended temperature range for continuous operation: -15°C - + 80°C.

Pressure drops

Pressure drops for a 3-sectional valve

Pressure drop P - T 4 bar at 45 l/min
 Pressure drop P - A/B 9 bar at 45 l/min
 Pressure drop A/B - T 6 bar at 45 l/min



Sections	L mm	LF mm
1	113	84,5
2	145	116,5
3	177	148,5
4	209	180,5
5	241	212,5
6	273	244,5
7	305	276,5
8	337	308,5
9	369	340,5
10	401	372,5

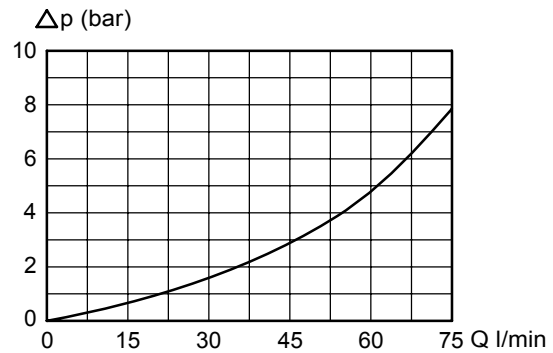
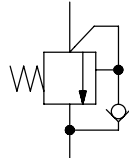
Main relief and service port valves

Main relief and service port valve TBS110

Relief valve with anti cavitations valve TBS110 is used both as chock valve and as main relief valve.

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

Setting range step: 10 bar.



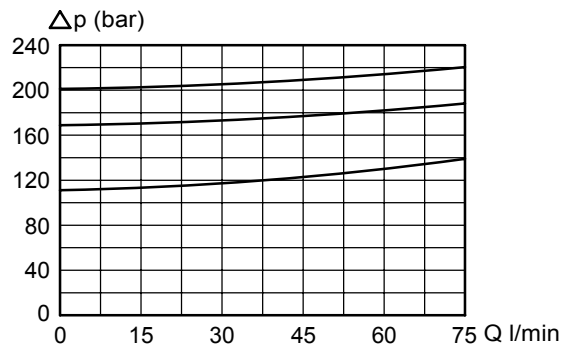
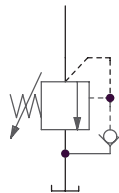
Anticavitation characteristics TBS, TBBS and SB 110

Main relief and service port valve TBBS110

The adjustable type, TBBS110 is used as alternative main relief valve.

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

Setting range step: 10 bar.



Pressure drop characteristics relief valve function

Anticavitation valve SB110

The anticavitation valve service to ensure that, in the event of a lower pressure in the cylinder port than in the tank, oil can be drawn from the system oil tank to the consumer.



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



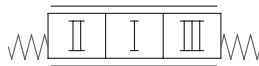
Spools

	Spools for general use			
	Function	20 l/min	45 l/min	65 l/min
	Double acting spool	12AA	14AA	16AA
	Single acting spool P - A	22AA	24AA	26AA
	Double acting spool with 4th pos. for float	32AA	34AA	136AA
	Motor spool	42AA	44AA	46AA
	Regenerativ spool	82AA	84AA	86AA

Spool control

Spool control 9

Spring centered spool control on A-side. (with Left Hand Inlet LHI)



Spool control 10

Detents at positions 1, 2 and 3.



Spool control 11

Spring centering with detent at position 4.



Spool control 14

Spring centering with detent at position 3.



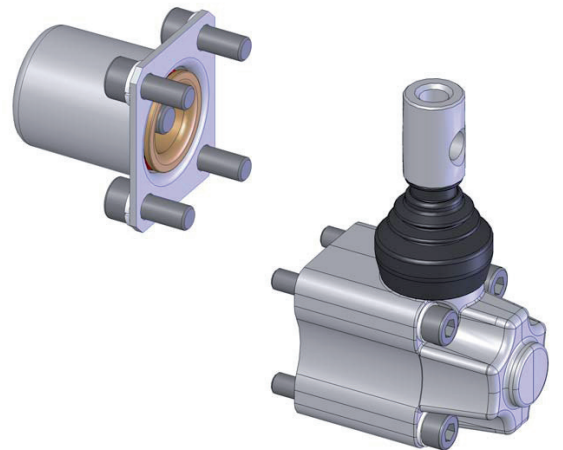
Spool control P

Pneumatic, connection G 1/8" BSP.



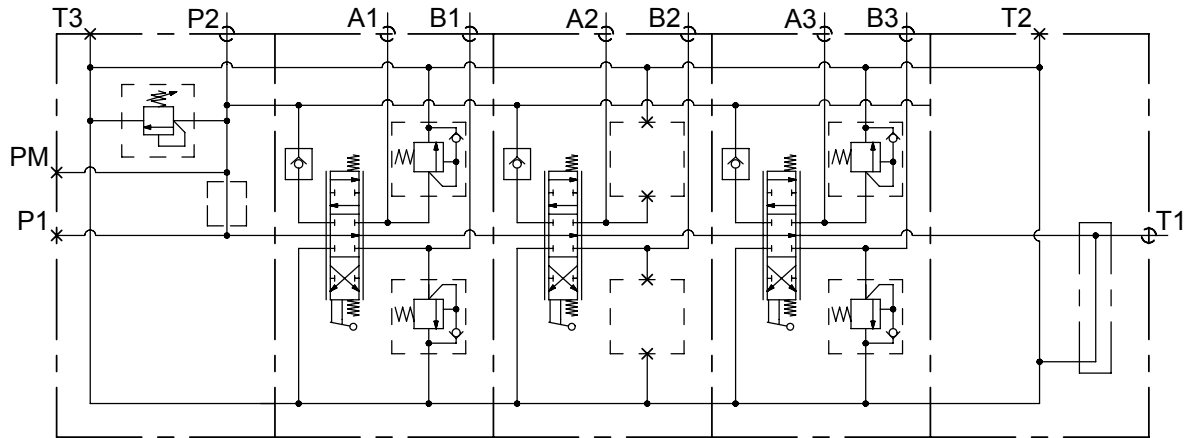
Spool control HPD

Hydr. proportional.



Lever cup and lever mechanism on B-side on valve with LHI (left hand inlet)

Typical hydraulic circuit diagram



The schematic shows a 3-sectional valve configured for an ordinary open centre system

Inlet I01G with main relief valve TBBS110.

Section 1, S02G with check and anti cavitations valve TBS100 in both A and B-ports.

Spool for double acting function, spring centred and with lever.

Section 2, S02G with cavities for check valves plugged.

Spool for double acting function, spring centred and with lever.

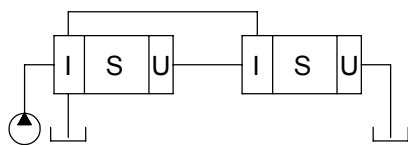
Section 3 S02G with check and anti cavitations valve TBS100 in both A and B-ports.

Spool for double acting function, spring centred and with lever

Outlet U01G

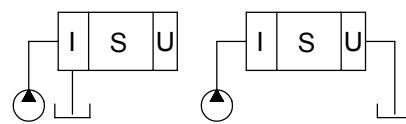
Configurations

I stand for inlet, S for sections and U for outlet. Standard circuit within a single valve assembly is of type parallel.



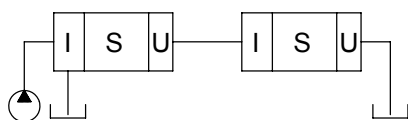
K1

K1 means circuit of type parallel



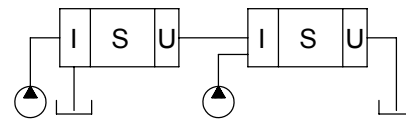
K3

K3 stands for separate circuits



K2

K2 means tandem or series parallel



K5

K5 stands for tandem with a second pump to the second valve