

Bosch Rexroth LC32DR20E7X/ normally-open pressure-reducing logic insert

Manufacturer: Bosch Rexroth
Manufacturer part number / published order designation: R900912562
Published model: LC32DR20E7X/

About this compilation

Prepared by Hydmaster from selected manufacturer documentation. Original technical pages follow without cropped drawings, rewritten data or altered units. This cover and index are Hydmaster editorial material, not a manufacturer-issued exact-execution datasheet.

Coverage: selected pages relevant to the identified size and configuration. Other options or neighbouring models retained on an original page apply only where explicitly identified.

Execution notes and conditions

Actual assembly pressure setting, pilot-orifice tuning and current delivery availability are not inferred.

Only the individual factory component is identified; no insert/cover combination or complete valve is created.

Source-page index

Source page numbers below are physical pages of each complete original PDF. The original printed page labels and technical content remain unchanged. Compiled page numbers count this cover/index.

Source A: Bosch Rexroth Pressure Logic Lc Lfa Re21050 2003

Original pages	Compiled pages	Relevant content
1-2	2-3	Manufacturer pressure-function component overview and compiled edition; Component functions and distinction between pressure relief and normally-open pressure reduction
4	4	ISO 7368 receiving cavity dimensions and installation interface
43	5	LCDR normally-open function, type key, closing spring class and individual insert ratings
45	6	LCDR size 32 pressure-flow reference curves; other shared size panel is contextual

RE 21 050/02.03

Replaces: 02.99

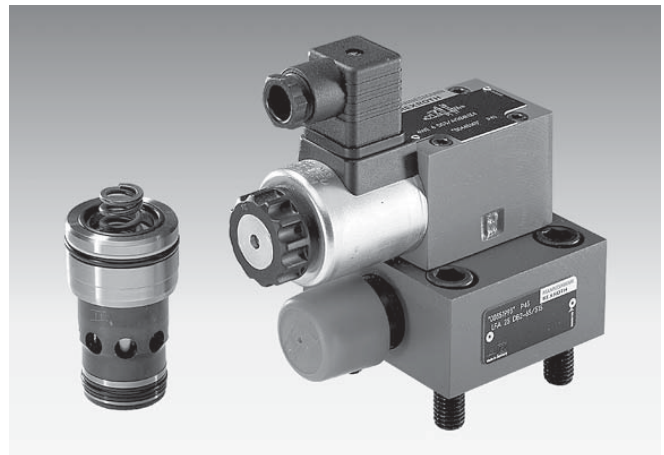
2-way cartridge valves; pressure functions
Cartridge valves type LC...
Control covers type LFA...

Nominal sizes 16 to 100

Series 6X; 7X

Maximum operating pressure 420 bar

Maximum flow 7000 L/min



H/A/D 5593

Cartridge valve type LC 25 DB40E-7X
Control cover type LFA 25 DBW2-7X/315 with manual pressure
adjustment, electrical unloading with built-on directional valve.

Overview of contents

Contents	Page	Contents	Page
Function, section, symbols		Ordering details, symbols and unit dimensions:	
– General	2	– Type DB	18 to 20
– Pressure relief function	2	– Types DBW; DBS	21 to 25
– Pressure reducing function	2 to 3	– Type DBWD	26 to 28
– Pressure sequencing function	3	– Type DBU2	29 to 32
– Cavity and porting pattern	4	– Type DBU3D	33 to 37
Pressure relief function:		– Type DBE	38
– Cartridge valve type LC . DB...:		– Type DBEM	39 to 42
• Ordering details	5	Pressure reducing function:	
• Symbols	5	– Cartridge valve type LC . DR...:	
• Technical data	5	• Ordering details	43
• Characteristic curves	6 to 11	• Symbol	43
• Seal kits	12	• Technical data	43
• Compression springs	12	• Characteristic curves	44 to 46
• Preferred types	12	• Seal kits	47
– Control cover type LFA . DB...:		• Compression springs	47
• Ordering details (general)	13 to 14	– Control cover type LFA . DR...:	
• Technical data	14	• Ordering details (general)	48
• Pilot valves	15	• Symbol	48
• Symbols (basic symbols)	16	• Technical data	49
• R-rings for pilot oil connections	17	• Pilot valve	49
• Seal kits	17	• Symbols (basic symbols)	50
• Fixing screws	17		
• Orifice dimensions	17		

Continued on page 2



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Overview of contents

Contents	Page	Contents	Page
• R-rings for the pilot oil connections • Fixing screws • General dimensions	51 51 52	Pressure sequencing function: – Control cover type LFA . DZ...: • Ordering details (general) • Symbols (basic symbols) • Technical data • R-rings for the pilot oil connections • Seal kits • Fixing screws • Orifice dimensions	61 61 62 62 63 63 63
Ordering details, symbols and unit dimensions:		Ordering details, symbols and unit dimensions:	
– Type DR	53 to 54	– Type DZ	64 to 65
– Type DRW	55 to 56	– Type DZW	66 to 67
– Types DREV; DREZ	57 to 58		
– Types DREVV; DREWZ			

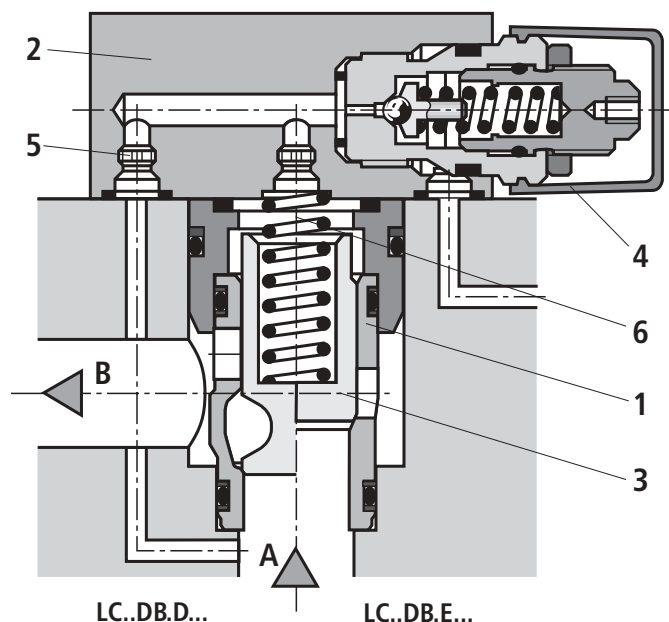
Function, section, symbols

General

The 2-way cartridge valves for pressure control functions are pilot operated poppet or spool valves. The main component designed as a cartridge valve (1) is inserted into a cavity which is standardised to DIN ISO 7368 and is sealed by the control cover (2).

The pilot valve (4) for either manual or electrical proportional pressure control is integrated into the control cover (2) or mounted onto the control cover (2) as a pilot valve with interface connections to DIN 24 340.

By combining the cartridge valve with the control covers different pressure functions can be realised.

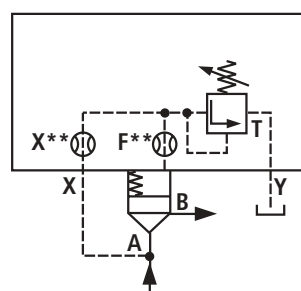


Pressure relief function

Control cover type LFA..DB...

Cartridge valve type LC..DB...

The cartridge valve (1) for the pressure relief function (type LC . DB...) is a poppet valve without an area differential (no effective area at port B). The pressure acting at port A is fed via the pilot supply orifice (5) to the spring side (6) of the element. At pressures below the setting of pilot valve (4) the forces on spool (3) are balanced and the spool remains closed due to the spring force. On reaching the set pressure, spool (3) opens and limits the pressure at port A in relation to the pressure-flow characteristics.



Type LFA..DB...

Type LC..DB...

Pressure reducing function

a) Normally open: Control cover type LFA..DB...

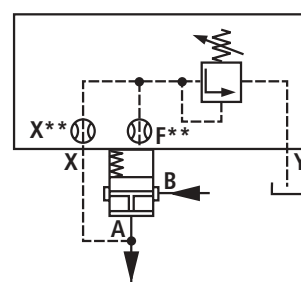
Cartridge valve type LC..DR...

The cartridge valve for the pressure reducing function is a spool valve without an area differential (no effective area at port B).

The same types of cover are used as pilot valves that are used for the pressure relief functions (type LFA..DB...).

The pressure acting at port A is fed to the spring side of the spool via the pilot oil supply orifice. Below the performance limit and pressure set at the pilot valve, the spool is pressure-balanced and is held open by the spring force, so that oil is free to flow from port B to port A.

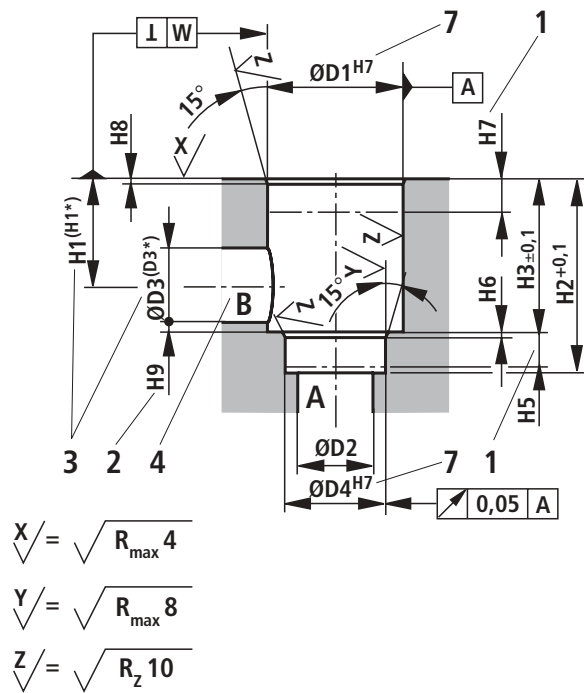
On reaching the set pressure, the spool closes and reduces the pressure at port A in relation to the pressure-flow characteristics.



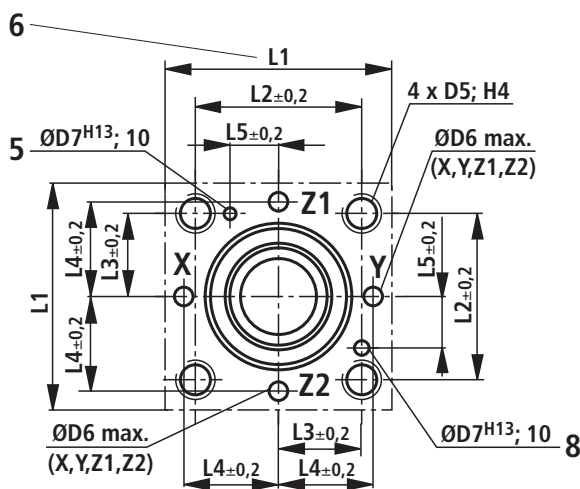
E.g.

Type LFA..DB...

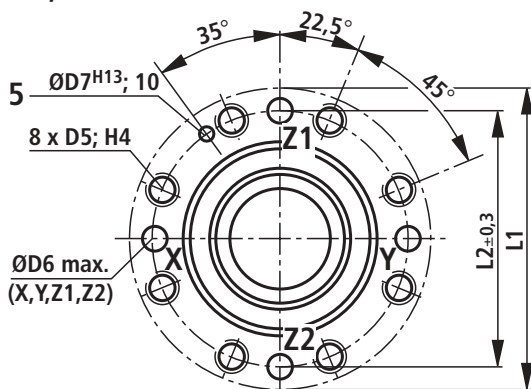
Type LC..DR40...



NS 16 to 63



NS 80, 100



NS	16	25	32	40	50	63	80	100
ØD1 ^{H7}	32	45	60	75	90	120	145	180
ØD2	16	25	32	40	50	63	80	100
ØD3	16	25	32	40	50	63	80	100
(ØD3*)	25	32	40	50	63	80	100	125
ØD4 ^{H7}	25	34	45	55	68	90	110	135
ØD5	M8	M12	M16	M20	M20	M30	M24	M30
ØD6 ¹⁾	4	6	8	10	10	12	16	20
ØD7 ^{H13}	4	6	6	6	8	8	10	10
H1	34	44	52	64	72	95	130	155
(H1*)	29.5	40.5	48	59	65.5	86.5	120	142
H2	56	72	85	105	122	155	205	245
H3	43	58	70	87	100	130	175±0.2	210±0.2
H4	20	25	35	45	45	65	50	63
H5	11	12	13	15	17	20	25	29
H6	2	2.5	2.5	3	3	4	5	5
H7	20	30	30	30	35	40	40	50
H8	2	2.5	2.5	3	4	4	5	5
H9	0.5	1	1.5	2.5	2.5	3	4.5	4.5
L1	65/80	85	102	125	140	180	Ø250	Ø300
L2	46	58	70	85	100	125	Ø200	Ø245
L3	23	29	35	42.5	50	62.5	—	—
L4	25	33	41	50	58	75	—	—
L5	10.5	16	17	23	30	38	—	—
W	0.05	0.05	0.1	0.1	0.1	0.2	0.2	0.2

¹⁾ Max. dim.

- 1 Depth of fit
- 2 Reference dimension
- 3 For diameters of port B other than ØD3 or (ØD3*), the distance from the cover mounting surface to the centre of this hole must be calculated.
- 4 Port B may be moved about the central axis of port A. Care must however be taken to ensure that the fixing holes and control holes are not damaged.
- 5 Drilling for location pin (cover location pin fitted to DIN 24 342)
- 6 **Note on NS 16 porting pattern:**
Length L1 (axis x–y drilling) is 80 mm.
- 7 For Ø ≤ 45 mm → fit H8 is permitted!
- 8 Drilling for locating pin with functions as a main pressure relief valve (cover locating pin has to be appropriately relocated during assembly)

Pressure reducing function

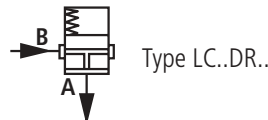
Ordering details: pressure reducing cartridge valve (without associated control cover LFA..DB..)

	LC		DR		E	7X/	
Nominal size 16	= 16						No code =
Nominal size 25	= 25						V =
Nominal size 32	= 32						NBR seals
Nominal size 40	= 40						FKM seals
Nominal size 50	= 50						(other seals on request)
Nominal size 63	= 63						⚠ Attention!
							The compatibility of the seals and pressure fluid has to be taken into account!
Closing pressure approx. 0 bar (without spring)	= 00						7X = (NS 16 to 63) Series 70 to 79
Closing pressure approx. 2 bar	= 20						(70 to 79: unchanged installation and connection dimensions)
Closing pressure approx. 3 bar	= 30 ¹⁾						E = Spool without fine control grooves
Closing pressure approx. 4 bar (standard spring)	= 40						
Closing pressure approx. 5 bar	= 50 ²⁾						
Closing pressure approx. 8 bar	= 80 ³⁾						

Preferred types and standard components can be found in the EPS (Standard Price List).

- ¹⁾ Closing pressure 3.0 bar only for NS 16 for mounting a pilot operated pressure relief valve type DBC . -5X/...S0187 (see catalogue sheet RE 25 802)
- ²⁾ Only for NS 16, 25 and 32
- ³⁾ Special installation space is required (see page 47)

Symbol: cartridge valves



Technical data (for applications outside these parameters, please consult us!)

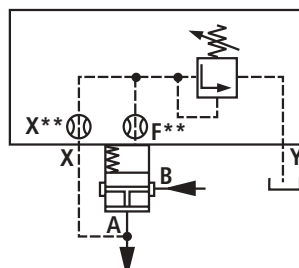
Maximum operating pressure – Ports A and B	bar	315					
Maximum flow (recommended)	NS	16	25	32	40	50	63
– LC..DR20.../..	L/min	100	200	300	750	1000	1600
– LC..DR40.../..	L/min	150	300	450	1000	1300	2000
Pressure fluid		Mineral oil (HL, HLP) to DIN 51 524 ¹⁾ ; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic ester) ²⁾ ; other pressure fluids on request					
¹⁾ Suitable for NBR and FKM seals							
²⁾ Only suitable for FKM seals							
Pressure fluid temperature range	°C	– 30 to + 80 for NBR seals					
		– 20 to + 80 for FKM seals					
Viscosity range	mm ² /s	2.8 to 380					
Cleanliness class to ISO code		Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C) class 20/18/15 ³⁾					

- ³⁾ The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.
For the selection of filters see catalogue sheets RE 50 070, RE 50 076 and RE 50 081.

Preferably use 5 and 8 bar springs for flow control. The usable Δp is available on request.

⚠ Attention!

2-way cartridge valves type LC..DR... are combined with control covers type LFA..DB... (for ordering details see page 13).



Pressure reducing function

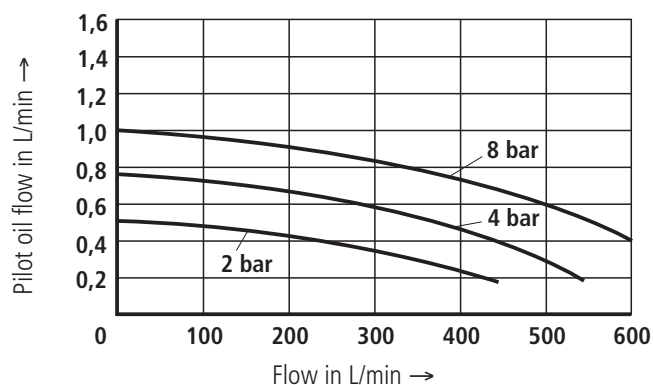
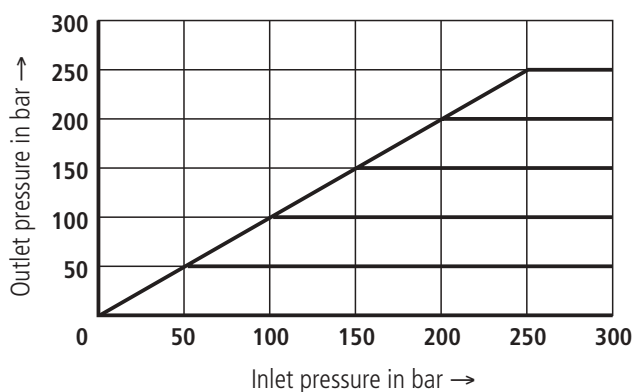
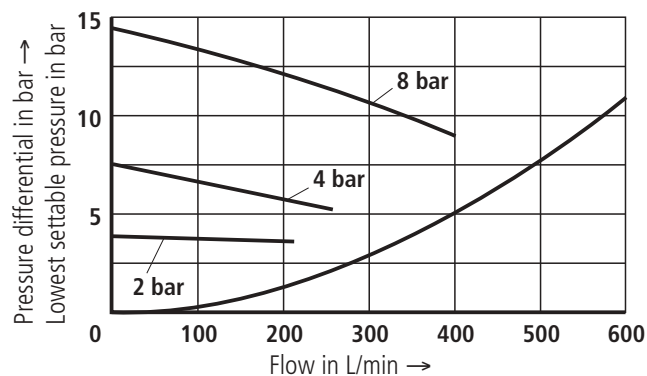
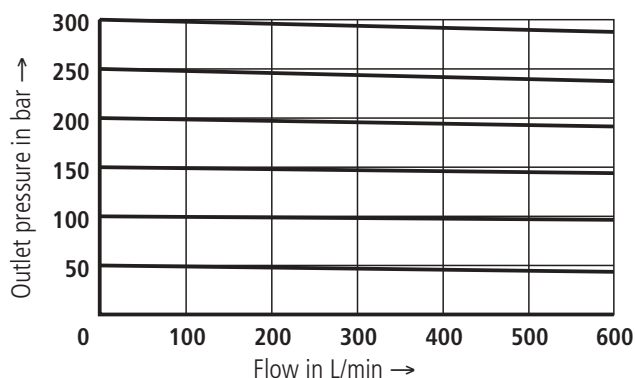
Normally open

E.g.

Type LFA...DB...

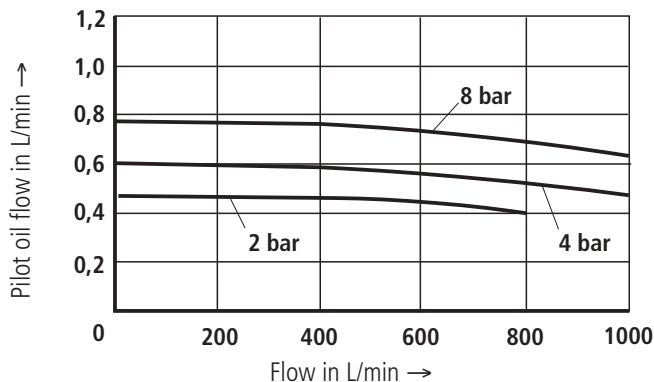
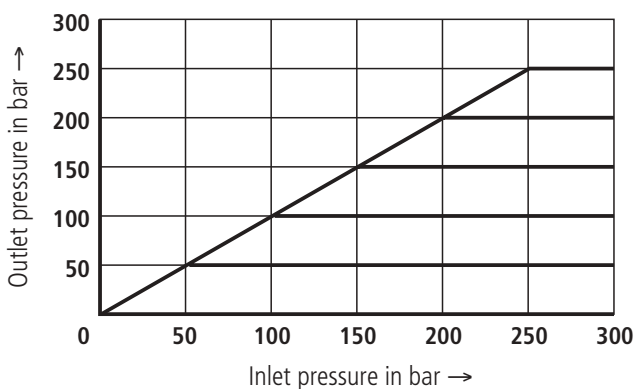
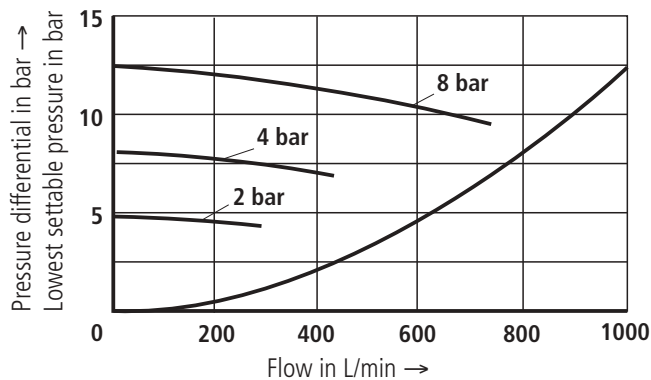
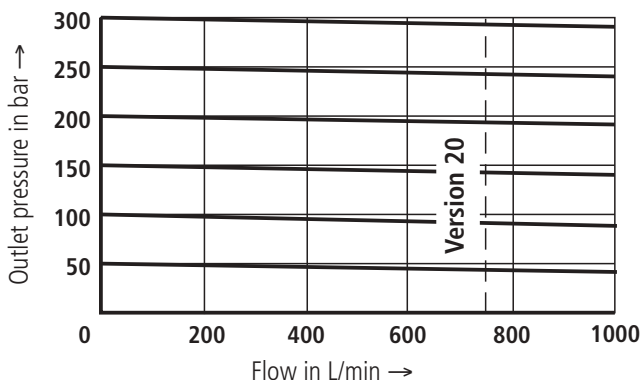
Type LC..DR 40...

LC 32 DR...



Measured at: $p_a = 50\text{ bar}$

LC 40 DR...



Measured at: $p_a = 50\text{ bar}$