

RE 26 861/02.03

Replaces: 12.02

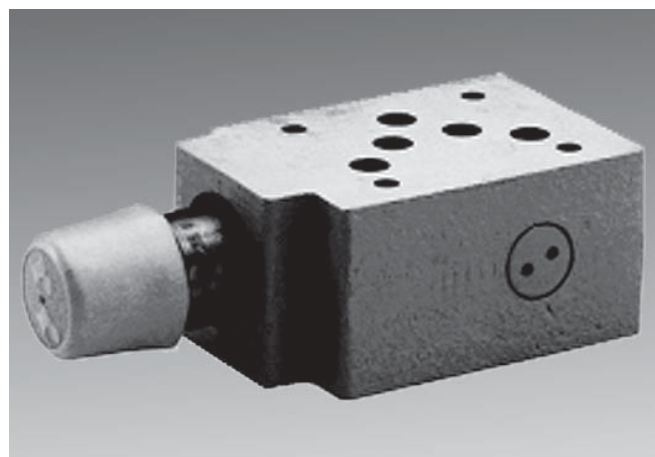
**Pressure reducing valve, pilot operated
Type ZDR 10 V**

Nominal size 10

Series 3X

Maximum operating pressure 315 bar

Maximum flow 100 L/min



R 83/5

Type ZDR 10 VA5-3X/...Y...

Overview of contents

Contents	Page
Features	1
Ordering details	1
Preferred types	2
Symbols	2
Function, section	2
Technical data	3
Characteristic curves	3
Unit dimensions	4

Features

- Sandwich plate valve
- Porting pattern to DIN 24 340 Form A, ISO 4401 and CETOP–RP 121 H
- 4 pressure stages
- 4 adjustment elements:
 - Rotary knob
 - Sleeve with hexagon and protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale
- Check valve, optional (VA, VB)
- Pressure gauge connection, optional

Ordering details

Sandwich plate = Z	Z	DR	10	V		– 3X /	Y		*	Further details in clear text
valve										
Pressure reducing valve		= DR								No code = NBR seals
Nominal size 10			= 10							V = FKM seals
Pilot operated				= V						(other seals on request)
Reduced pressure in port A2					= A					⚠ Attention!
Reduced pressure in port B2					= B					The compatibility of the seals and pressure
Reduced pressure in port P1					= P					fluid has to be taken into account!
Adjustment elements										No code = With check valve
Rotary knob					= 4					(not possible for version VP)
Sleeve with hexagon and protective cap					= 5					M = Without check valve
Lockable rotary knob with scale					= 6 ¹⁾					Y = Internal pilot oil supply, external pilot oil drain
Rotary knob with scale					= 7					
Series 30 to 39						= 3X				50 = Secondary pressure up to 50 bar
(30 to 39: unchanged installation and connection dimensions)										100 = Secondary pressure up to 100 bar
										200 = Secondary pressure up to 200 bar
										315 = Secondary pressure up to 315 bar

¹⁾ H-key with Material No. **R900008158** is included within the scope of supply

© 2003

by Bosch Rexroth AG, Industrial Hydraulics, D-97813 Lohr am Main

All rights reserved. No part of this document may be reproduced or stored, processed, duplicated or circulated using electronic systems, in any form or by any means, without the prior written authorisation of Bosch Rexroth AG.

In the event of contravention of the above provisions, the contravening party is obliged to pay compensation.

Preferred types (readily available)

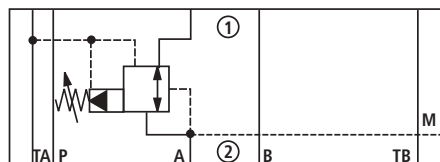
Type	Material number
ZDR 10 VA5-3X/50Y	R900434583
ZDR 10 VA5-3X/100Y	R900436537
ZDR 10 VA5-3X/200Y	R900444003
ZDR 10 VB5-3X/100Y	R900457022
ZDR 10 VB5-3X/200Y	R900462912
ZDR 10 VP5-3X/100YM	R900411309

Type	Material number
ZDR 10 VP5-3X/200YM	R900411311
ZDR 10 VP5-3X/315YM	R900438840

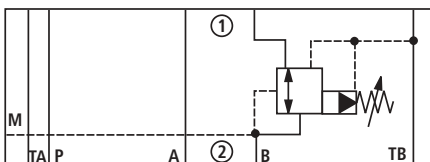
Further preferred types and standard units can be found in the EPS (Standard Price List).

Symbols (① = component side, ② = subplate side)

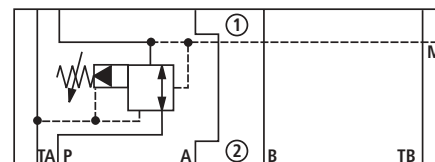
Type ZDR 10 VA...-3X/...YM...



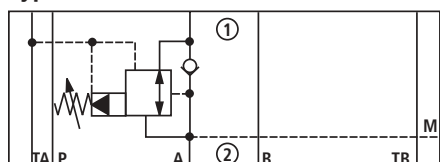
Type ZDR 10 VB...-3X/...YM...



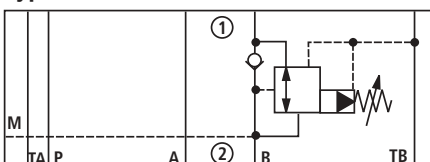
Type ZDR 10 VP...-3X/...YM...



Type ZDR 10 VA...-3X/...Y...



Type ZDR 10 VB...-3X/...Y...



Function, section

Pressure valves type ZDR 10 V are pilot operated pressure valves of sandwich plate design.

They are used to reduce a system pressure.

The valves consist of the cartridge (1) and a housing (2). The reduced pressure is set via the adjustment element (4).

Version "VP"

At rest, the valve is normally open, and fluid can flow unhindered from port P2 to port P1. Pressure in port P1 is simultaneously also present at the main spool (6), via orifice (5), and on the spring loaded inner side of the main spool (6). The pressure is also present via orifice (9) on the pilot poppet (8).

When the pressure in port P2 exceeds the pressure level set at the spring (7), then the pilot poppet (8) opens. Pressure fluid then flows from the spring loaded inner side of the main spool (6) via orifice (9),

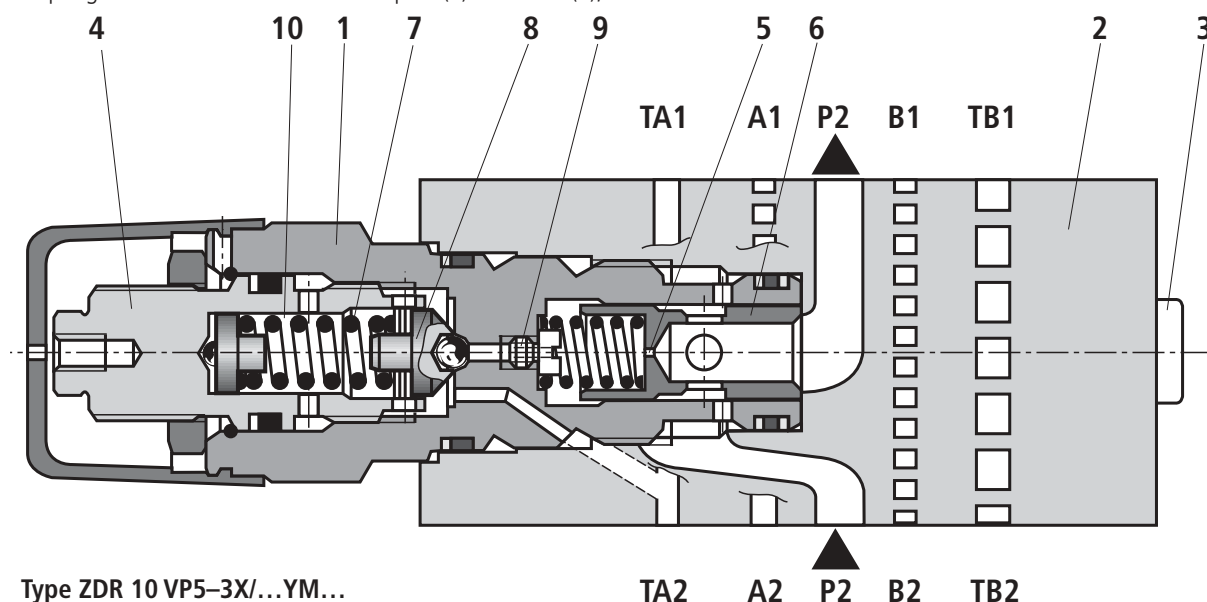
and the pilot poppet (8) into the spring chamber (10) to tank. The main spool (6) moves into the control position and holds the pressure set at spring (7) in port P1 constant. Pilot oil drain from spring chamber (10) is via port TA.

Versions "VA" and "VB"

For versions VA and VB, the pressure is reduced in ports A2 or B2.

In order to allow free reverse flow from port A2 to A1, or B2 to B1 an optional check valve may be included (this is not possible for version VP).

An optional pressure gauge connection (3) allow the secondary pressure to be monitored.



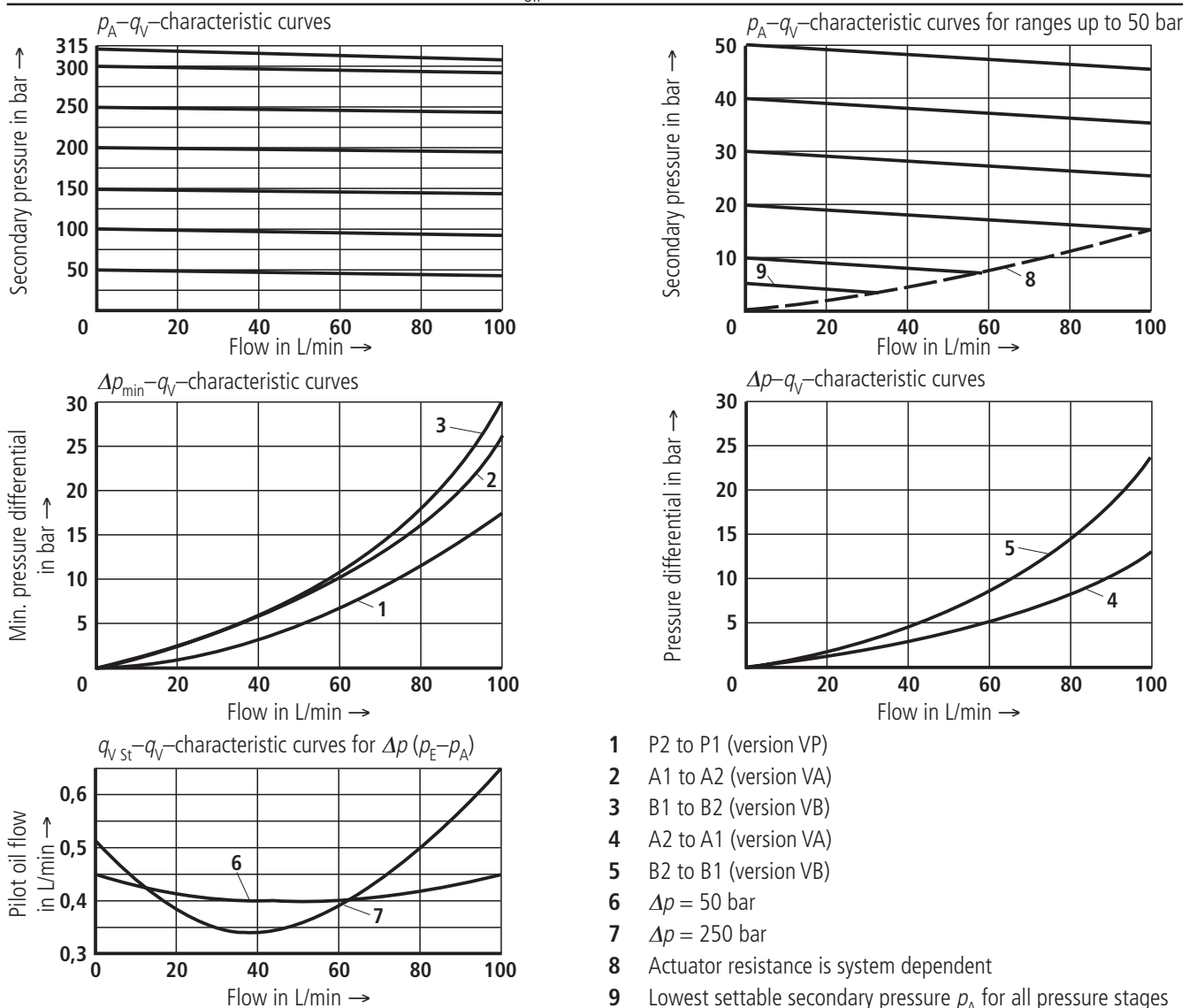
Technical data (for applications outside these parameters, please consult us!)

Settable pressure	bar	Up to 50; up to 100; up to 200, up to 315
Inlet pressure (ports A1, B1 or P2)	bar	Up to 315
Secondary pressure (ports A2, B2 or P1)	bar	Up to 315
Back pressure (ports TA, TB)	bar	Up to 160
Flow, max.	L/min	Up to 100
Pressure fluid		Mineral oil (HL, HLP) to DIN 51 524 ¹⁾ ; Fast bio-degradable pressure fluid is 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
Pressure fluid temperature range	°C	– 30 to + 80 (NBR seals)
		– 20 to + 80 (FKM seals)
Viscosity range	mm ² /s	10 to 800
Cleanliness class to ISO code		Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C) class 20/18/15 ³⁾
Ambient and storage temperature range	°C	– 30 to + 80 (NBR seals)
		– 20 to + 80 (FKM seals)
Weight	kg	Approx. 2.3 (versions VA and VP); approx. 2.7 (version VB)

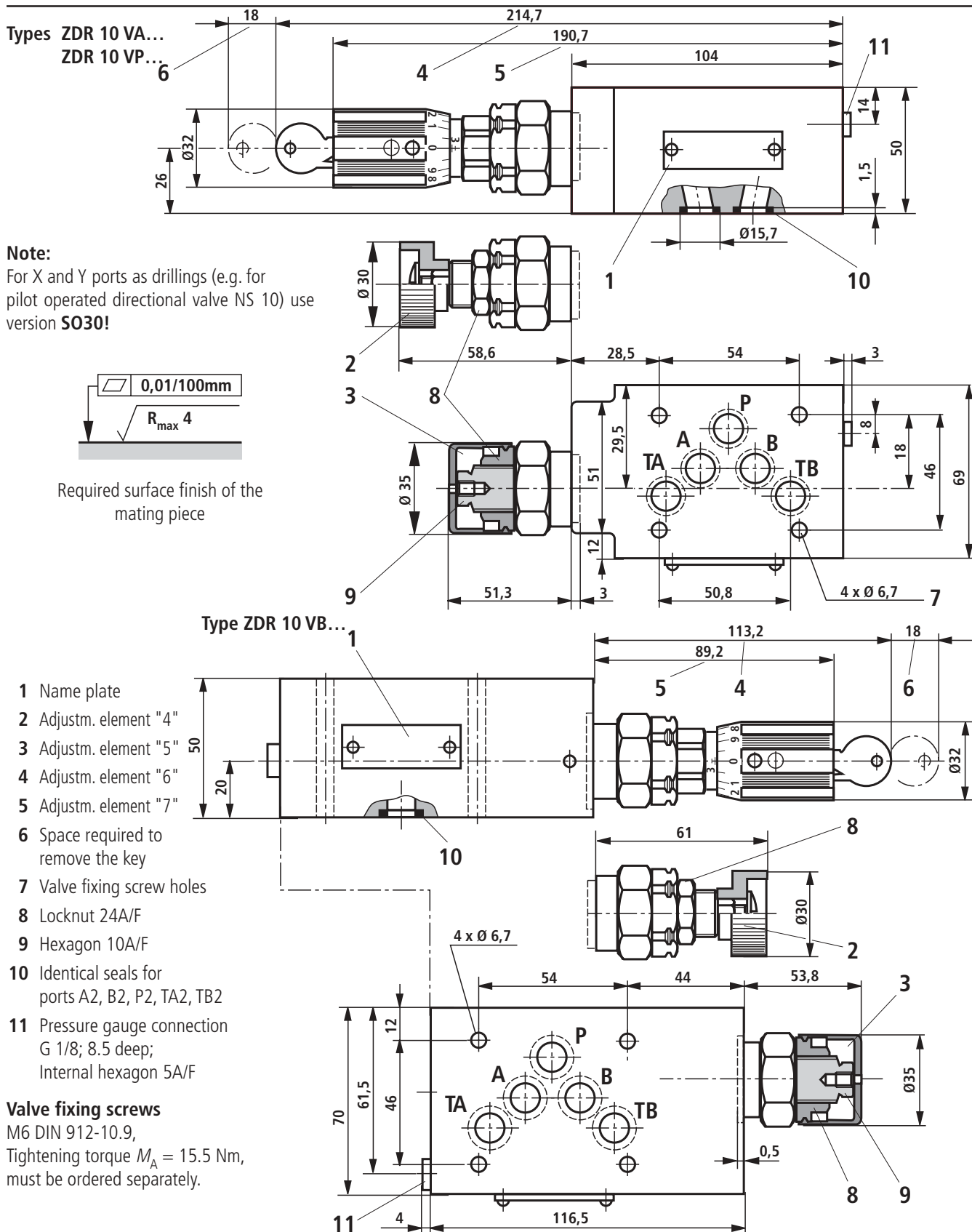
¹⁾ Suitable for NBR **and** FKM seals ³⁾ The cleanliness class stated for the components must be adhered too in hydraulic systems. Effective

²⁾ **Only** suitable for FKM seals 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.

Characteristic curves (measured with HLP46, $\vartheta_{oil} = 40\text{ °C} \pm 5\text{ °C}$)



Unit dimensions (dimensions in mm)



Bosch Rexroth AG Industrial Hydraulics

D-97813 Lohr am Main
Zum Eisengießer 1 • D-97816 Lohr am Main
Telefon 0 93 52 / 18-0
Telefax 0 93 52 / 18-23 58 • Telex 6 89 418-0
eMail documentation@boschrexroth.de
Internet www.boschrexroth.de

Bosch Rexroth Limited

Cromwell Road, St Neots,
Cambs, PE19 2ES
Tel: 0 14 80/22 32 56
Fax: 0 14 80/21 90 52
E-mail: info@boschrexroth.co.uk

The data specified above only serves to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The details stated do not release you from the responsibility for carrying out your own assessment and verification. It must be remembered that our products are subject to a natural process of wear and ageing.