

2WRCE.../H

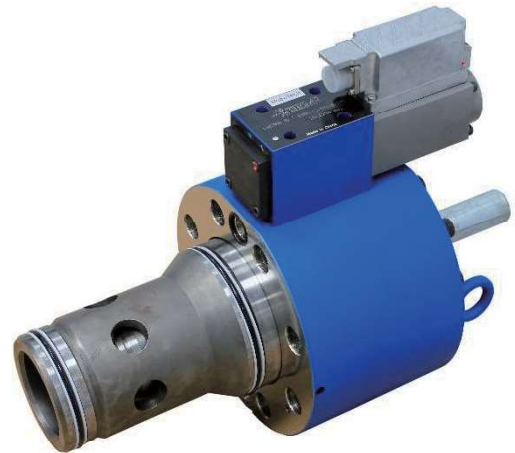
Pilot - operated two position two way plug-in
proportional throttle valve
with electrical position feedback
with or without integrated amplifier

Nominal size: 50 ~ 100

Series: 1X

Maximum operating pressure: 315bar

Rated flow: 7200L/min($\Delta p=5\text{bar}$) Document number: RD A1J101_2306a



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Features

- Pilot-operated proportional valve
 - Main spool with electrical position feedback
 - The pilot valve adopts a spool-sleeve structure with servo-class performance
 - Mounted on an integrated block: The socket holes comply with ISO 7368 (DIN24342)
 - Digital amplifier
 - Interchangeable with similar products from Europe and America
 - Pilot valve
- For nominal diameters below 50: 6-mm proportional servo valve
For nominal diameters from 63 to 100: 10-mm proportional servo valve

Ordering details

2	WRC	E	50	D	1800	-	1X	/	H	G24	K31	/	A1	V	*
01	02	03	04	05	06		07		08	09	10		11	12	13

01	2	2/2
02	WRC	High-response cartridge valve
03	No code	Without integrated amplifier
	E	With integrated amplifier
04	50	Nominal size 50
	63	Nominal size 63
	80	Nominal size 80
	100	Nominal size 100

Control Function

05	D	With control port
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Rated flow ($\Delta p = 35\text{bar}$ / metering notch)

06	1800	1800 l/min	NS 50
	2800	2800 l/min	NS 63
	4350	4350 l/min	NS 80
	7200	7200 l/min	NS 100

2	WRC	E	50	D	1800	-	1X	/	H	G24	K31	/	A1	V	*
01	02	03	04	05	06		07		08	09	10		11	12	13

07	1X	Product series (The installation dimensions from 10 to 19 are the same)
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Pilot Valve

08	H	High-response valve
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09	G24	Powered by 24V DC
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Controller interface

10	K4	Socket compliant with DIN EN 175301 - 803 standard (ordered separately)	
	K31	Seven-pin socket compliant with DIN EN 175201 - 804 standard (ordered separately)	2WRCE

Command value of amplifier

11	A1	Control input signal 0 - 10V, actual value feedback 0 - 10V
	F1	Control input signal 4 - 20mA, actual value feedback 4 - 20mA
	A5	Control input signal 0 - 10V with enable, actual value feedback 0 - 10V
	F5	Control input signal 4 - 20mA with enable, actual value feedback 4 - 20mA

Sealing material

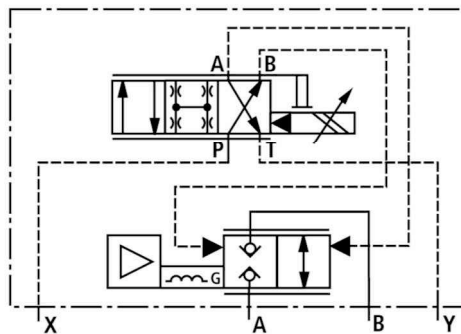
12	M	NBR seals
	V	FKM seals

13	*	Other information descriptions
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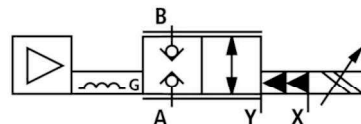
Hydraulic

Symbols

Detailed symbols:



Simplified symbols:



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

General

Nominal size		50	63	80	100
Installation and commissioning guidelines		Optional, preferably horizontal			
Storage temperature range	°C	-20 to +80			
Ambient temperature range	°C	-20 to +50			
Weight	Kg	8.7	11.2	16.8	17

Hydraulic (measured at p = 100 bar, with HLP46 at 40 °C ± 5 °C)

Max. operating pressure	Pilot valve, port X	bar	10~315; preferably 140~160		
	Main valve, ports A, B	bar	≤ 350		
	Port Y	bar	Static < 10 (pilot valve)		
Nominal flow rate $q_{V nom}$ at valve pressure difference $\Delta p = 5 \text{ bar} (\pm 10\%)^1$	L/min	1800	2800	4350	7200
Maximum allowable control oil flow rate	L/min	3500	5500	9000	14000
Nominal stroke	mm	16	19	24	30
Control oil volume	cm ³	18.5	36.3	67.9	132.5
Response time, control signal 0 → 100 %, 150 bar	ms	40	70	80	90
Hydraulic oil		Mineral oil (HL, HLP) compliant with DIN5154 standard;			
Oil temperature range	°C	-20 to +70 (preferably +40 to +50)			
Viscosity	mm ² /s	20 to 380 (preferably 30 to 45)			
Oil cleanliness	Pilot valve	ISO4406: 1999 18/16/13			
	Main valve	ISO4406: 1999 20/18/15			
Hysteresis	%	≤ 0.5			
Return difference	%	≤ 0.2			
Sensitivity	%	≤ 0.2			

Electrical

Voltage type		DC
Signal type		Analog
Power, max.	W	72 (average 24W)
Max. current of a solenoid	A	<2
Electrical connection	2WRC.../H	Socket compliant with DIN EN 175301 - 803 standard
	2WRCE.../H	Seven-pin socket compliant with DIN EN 175201 - 804 standard
Duty	%	100
Max. temperature of the solenoid	°C	150
Valve protection		IP65

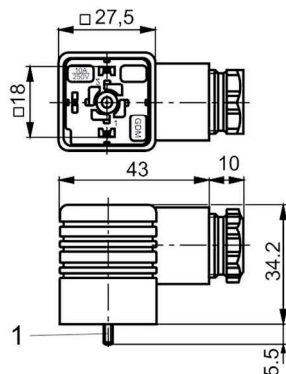
1) Flow under other Δp_x : $q_x = q_{V nom} \cdot \sqrt{\frac{\Delta p_x}{5}}$

Electrical connection

Electrical parameters

Duty		%	100
Solenoid plug	Terminal 1		
	Terminal 2		
LVDT position sensor plug	Power supply	Terminal 3	VDC +15
		Terminal 1	VDC -15
	Feedback signal	Terminal 4	V ±10
		Terminal 2	V 0V reference voltage
Valve protection			IP65

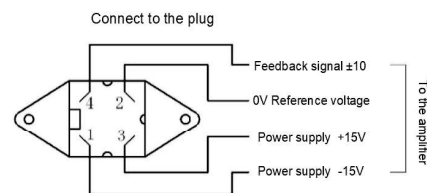
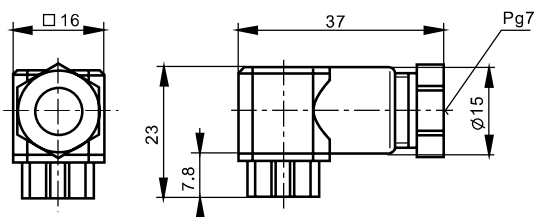
For type 2WRC (without integrated amplifier): Plug compliant with DIN EN 175301 - 803 (ordered separately)



M3 Screw, Torque 0.5 Nm

Black Order separately, Order No.: R00050046

Pilot valve LVDT position sensor plug

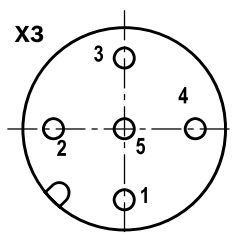


LVDT sensor interface: 4-pin Pg7 - G4W1F (shipped with the valve).

Connection cable: It is recommended to choose LiYCY 4x0.25mm² for lengths within 50 meters.

Main valve LVDT position sensor plug

Pin	Distribution Definition
1	Power +
2	Feedback output
3	Power -
4	NC
5	NC

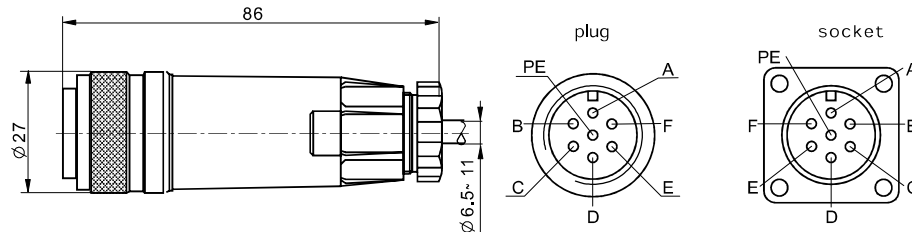


LVDT sensor interface: M12 aviation plug, 5 - pin.
 Connection cable: It is recommended to choose LiYCY 4x0.25mm² for lengths within 50 meters.

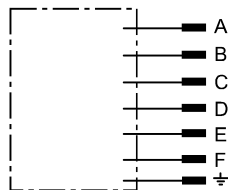
Electrical connections

For type 2WRCE (with integrated amplifier):
 Seven-pin plug compliant with DIN EN 175201 - 804 (ordered separately).

Dimensions: mm



Pin assignment of the plug



Metal nut structure (preferred model)

Order separately, Order No.: R00050406

Plastic nut structure Order separately, Order No.: R00050408

All-metal structure Order separately, Order No.: R00050407

Electrical connection for the 7-pin plug

Function	slot	A1	F1	A5	F5
Power +	A	24VDC (21~40VDC)			
Power -	B	GND			GND, Enable/Actual Value Reference Potential
	C	Feedback value reference point			Enable input: 24VDC(Enable when the voltage is ≥ 11 VDC, disable when the voltage is ≤ 5 VDC)
Command input+	D	0~10V Input impedance $>50k\Omega$	4~20mA Input impedance $<250\Omega$	0~10V Input impedance $>50k\Omega$	4~20mA Input impedance $<250\Omega$
Command input-	E	Input command Reference potential			
Position feedback	F	Actual value 0~10V Maximum load 5mA	Actual value 4~20mA Maximum load 300 Ω	Actual value 0~10V Maximum load 5mA	Actual value 4~20mA Maximum load 300 Ω
	PE	PE is internally short - circuited to the heat sink and the valve body			

Type: LiYCY flexible shielded data transmission wire

Cable number: Determined by the valve signal, plug model and plug pin assignment.

Φ : 0.75mm², for lengths up to 20m;
 1mm², for lengths up to 40m

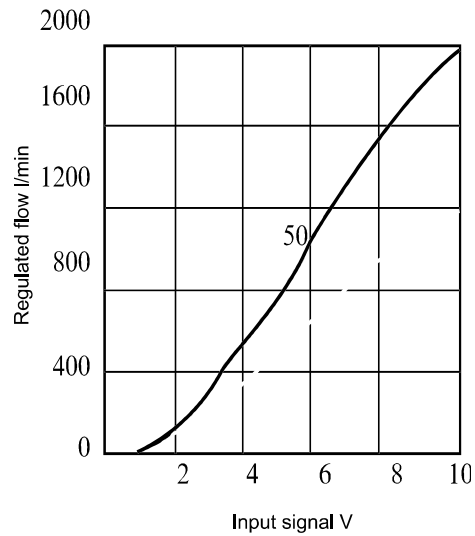
Outer diameter Φ : 9.4...11.8 mm;
 12.7...13.5mm

Note:

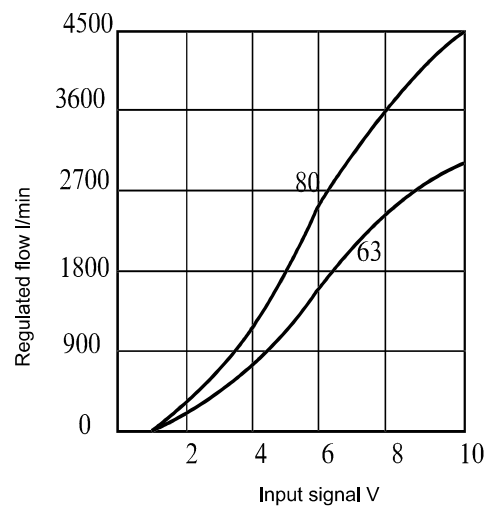
- Nominal supply voltage: 24 VDC
- If the voltage drops below 18 VDC, an internal rapid shutdown will occur, similar to an "enable switch".
- For F1 :
 command $I_{D-E} \geq 3 \text{ mA}$, valve operates.
 command $I_{D-E} \leq 2 \text{ mA}$, valve don't operate.
- The electrical signals generated by the integrated controller (for example, the LVDT feedback signal) are not allowed to be used as functional signals related to the safety of the equipment!

Characteristic curves (46# Anti - wear Hydraulic Oil, oil temperature $\pm 40\pm 5^\circ\text{C}$)

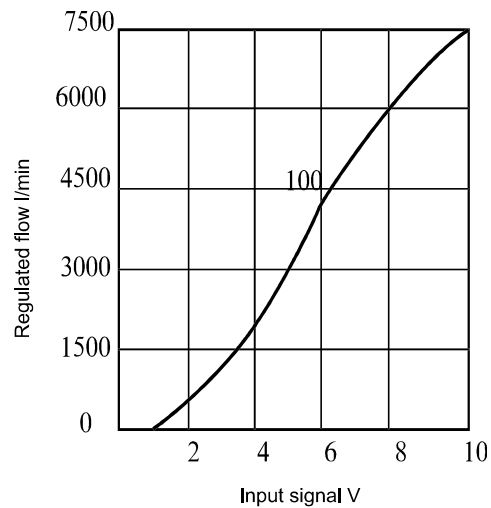
Nominal diameter DN50 with control window



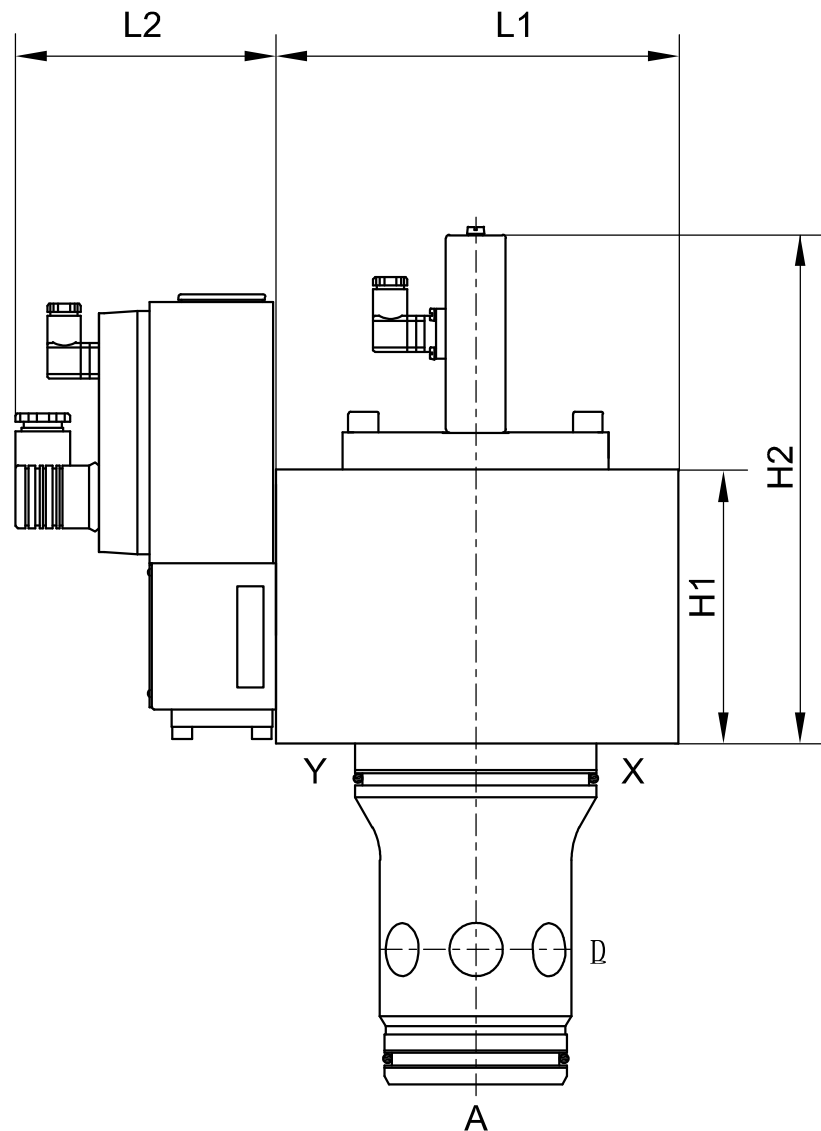
Nominal diameters DN63 and DN80 with control window



Nominal diameter DN100 with control window



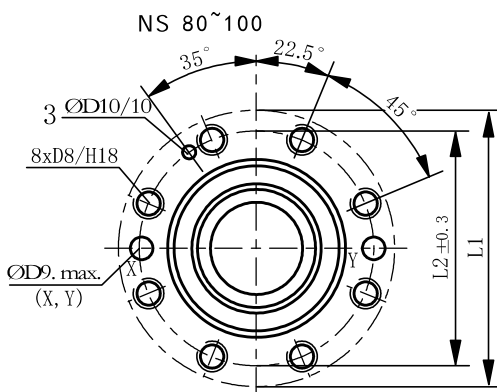
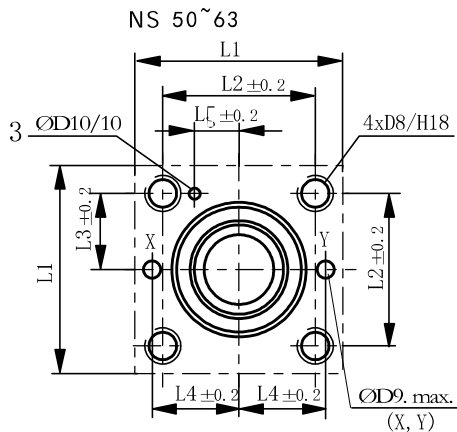
Unit dimensions: (Dimensions in mm)



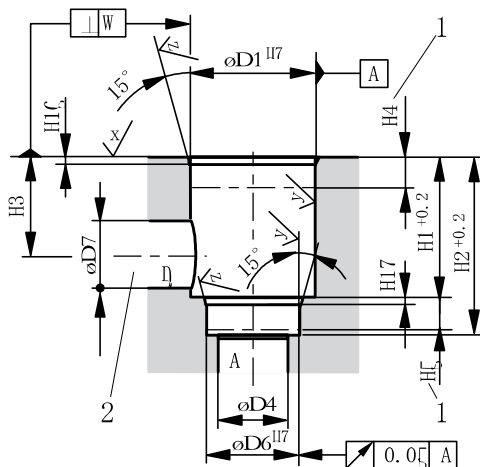
NS	50	63	80	100
L1	140	180		
L1			φ250	φ300
L2	115	127	127	127
H1	125	140	165	185
H2	277	292	306	325

Unit dimensions: ISO7368

Dimensions in mm



The jacks are for 2 WR C in accordance with ISO 7368



Nominal diameter	50	63	80	100
ØD1(H7)	90	120	145	180
ØD4 min	50	63	80	100
ØD4 max	67	89	109	134
ØD6(H7)	68	90	110	135
ØD7	50	63	80	100
ØD7 max	63	80	100	125
ØD8	M20	M30	M24	M30
Max.ØD9	10	12	16	20
ØD10	8	8	10	10
H1	100	130	175	210
H2	122	155	205	245
H3	72	95	130	155
H3 max	65.5	86.5	120	142.5
H4	35	40	40	50
H5	17	20	25	29
H16	4	4	5	5
H17	3	4	5	5
H18	45	65	50	63
L1	140	180	Ø250	Ø300
L2	100	125	Ø200	Ø245
L3	50	62.5		
L4	58	75		
L5	30	38		

Note: D7 max is the maximum value.

When using the maximum size of D7 max, the size of H3 max should be used.

