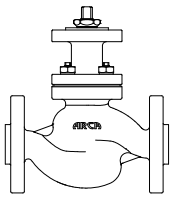
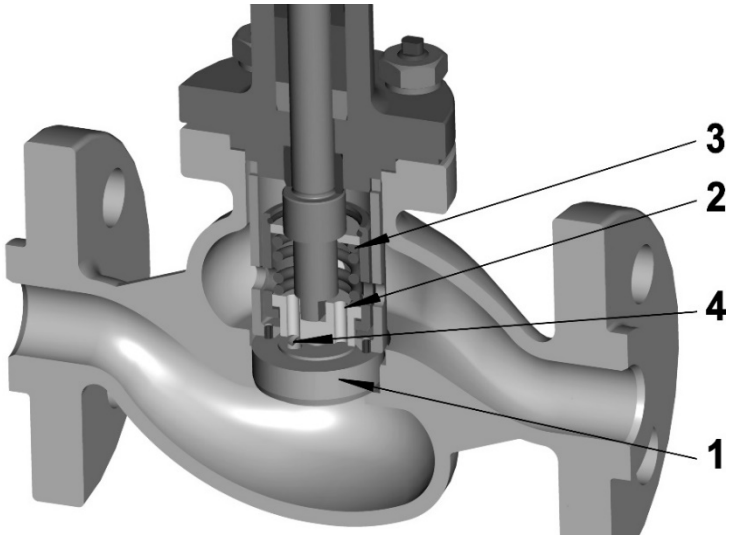
Technical Data Sheet
ECOTROL® Rotary Control Valve



TD 8C D 6H D

Functional description:

The valve trim consists of 2 sealing discs (1) and (2) with lapped surfaces, pressed together by a spring (3) and the differential pressure. The lower disc (1) is firmly fixed in the valve body; the upper disc (2) is connected with the valve shaft and is turned by the actuator in a range of 0° (valve closed) to 90° (valve fully open).



Each disc has 1-2 bores for the flow passage; however, the lower (fixed) disc has additional radial flow channels (4), of which the cross-section increases in the direction of the respective bore (analogues to a V-Port plug). Depending of the position of the upper, rotating throttle disc a certain cross-section of this V-groove is released and thus the flow through the valve is ultimately specified.

Valve closed

Valve 50% open

Valve 100% open

General Data

Series	**8C D / 6H D**
Nominal size DN / NPS	**15 - 32 / ½“ - 1“**
Nominal pressure PN / ANSI	**16 - 250 / Class 150 - 1500**
Characteristic	inherent, nearly square base
Rangeability	100:1
Throttle disc guiding	circumference guided
Seat leakage	metal sealing: IEC 60534-4 leakage class IV (0,01% of Kvs value); option: leakage class V
Heating jacket (optional)	connections: flanges DN 15 PN 40 (1/2“ ANSI 150/300)

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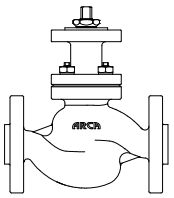


TD 8C D 6H D

Materials

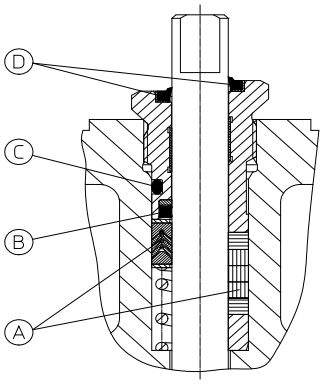
	EN	for temperatures	ASTM	for temperatures
Body material	1.0619 GP240GH	-10 to 400°C	A 216 WCB	-10°C/-29°C to 425°C
	1.4408 G-X 5 CrNiMo 19 11 2	-196 to 400°C	A 351 CF8M	-46°C to 400°C
	1.6220 G20Mn5	-50 to 345°C	A 352 LCC	-46°C to 345°C
	1.7357 G17CrMo5-5	-10 to 530°C	A 217 WC6	-10°C/-29°C to 500°C
Bonnet material	1.4408 for body materials 1.7357: 1.7335	-196 to 400°C -10 to 530°C	A 351 CF8M A182F12Cl.3	-46°C to 400°C -10°C/-29°C to 500°C

Valve trim materials

Material No.	Throttle disc 1 (fixed)	Throttle disc 2 (rotating)	Pressure spring	max. allowable medium temperatures
11	1.4112 hardened	1.4112 hardened	1.4310	same as stem seal, max. 300°C
21	Nitronic 60	Nitronic 60	1.4310	same as stem seal, max. 300°C
31	Wolfram carbide	Wolfram carbide	1.4310	same as stem seal, max. 300°C
91	any other	any other	1.4310	same as stem seal, max. 300°C
12	1.4112 hardened	1.4112 hardened	Inconel X750®	same as stem seal, max. 400°C
22	Nitronic 60	Nitronic 60	Inconel X750®	same as stem seal, max. 500°C
32	Wolfram carbide	Wolfram carbide	Inconel X750®	same as stem seal, max. 500°C
92	any other	any other	Inconel X750®	acc. to material

Stem sealing

Seal type	Seal (pos. A)	Profile ring (pos. B)	O-ring (pos. C)	Wiper ring (pos. D)	Allowed medium temperature (pressure)	Bonnet flange (DEK)	Comments
maintenance-free double seal	PTFE V-ring	EPDM	EPDM	NBR	-29 ~ 180°C (≤ PN 63)	1: standard	preloaded with stainless steel spring
maintenance-free double seal	PTFE V-ring	FKM	FKM	NBR	-20 ~ 200°C (≤ PN 63)	1: standard	preloaded with stainless steel spring
adjustable	PTFE braided	-	-	NBR	-29 ~ 250°C	1: standard	manual adjustable
adjustable	reinforced graphite/Inconel	-	-	NBR	-29 ~ 400°C	1: standard	manual adjustable
adjustable	pure graphite	-	-	NBR	-29 ~ 500°C	1: standard	manual adjustable
maintenance-free double seal	PTFE V-Ring	EPDM	EPDM	NBR	-46 ~ 200°C (≤ PN 63)	5: insulating column	low temperature



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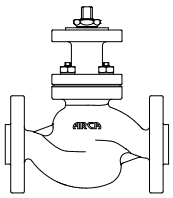
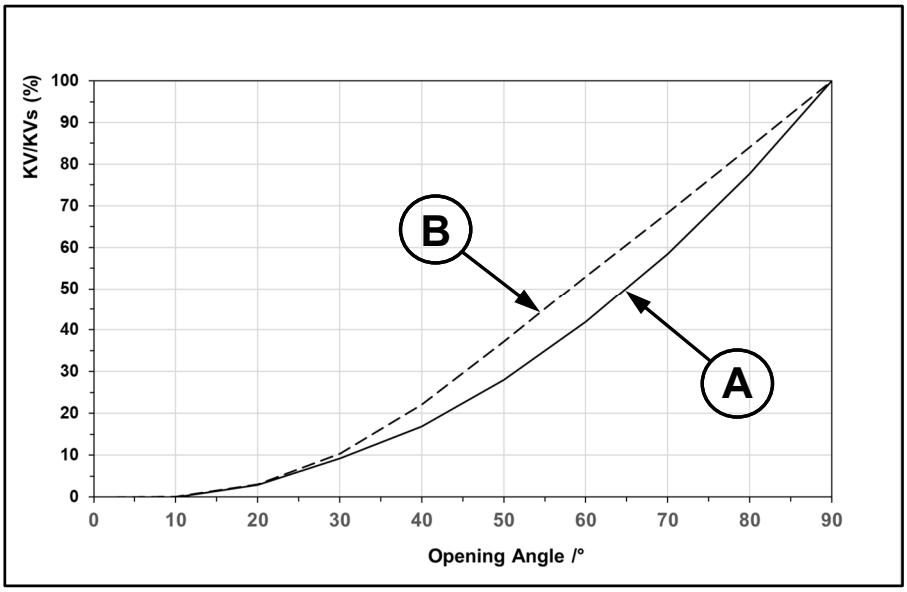


TD 8C D 6H D

KVs-values and characteristics

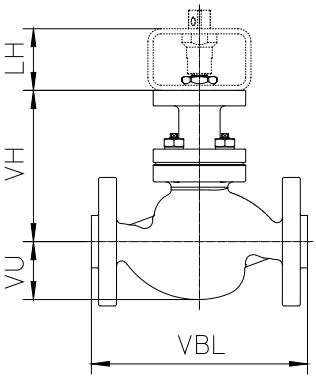
KVs (m^3/h)	Nos. of flow channels	characteristic
0,010	1	A
0,016	1	A
0,025	1	A
0,040	1	A
0,063	1	A
0,10	1	A
0,16	1	A
0,25	2	A
0,40	2	A
0,63	2	B
1,00	2	B



Weight and dimensions

ECOTROL® Rotary control valve 8C D and 6H D
Dimensions (in mm) of valves with flanges
acc. to DIN EN 1092-1 resp. ANSI Class 150/300/600/1500 RF/RTJ

Valve type	DN / ANSI NPS		15 / 1/2“	20 / -	25 / 1“	32 / -
8C D	VBL PN16-PN40		130	150	160	180
	VBL PN 63		210	230	230	260
	VBL Class 150 RF		184	-	184	-
	VBL Class 150 RTJ		-	-	197	-
	VBL Class 300 RF		190	-	197	-
	VBL Class 300 RTJ		201	-	210	-
	VBL Class 600 RF		203	-	210	-
	VBL Class 600 RTJ		201	-	210	-
	VH	DEK1	147			
		DEK5	on request			
	VU		44	51	56	65
	LH*		60			
	Weight (kg)**		7,5	7,5	8,5	8,5
6H D	VBL PN 100		210	-	230	-
	VBL PN 160		210	-	230	-
	VBL PN 250		230	-	260	-
	VBL Class 900/1500 RF		273	-	273	-
	VBL Class 900/1500 RTJ		273	-	273	-
	VH	DEK1	147			
		DEK5	on request			
	VU		47	-	59	-
	LH*		60			
	Weight (kg)**		13,5		17,5	



***) option: yoke DIN EN ISO 5210 F07 with backlash-free stem coupling SW17**
****) weight without actuator, without yoke**

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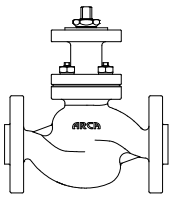
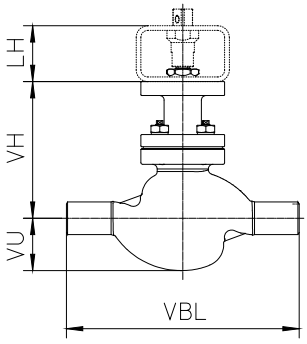


TD 8C D 6H D

ECOTROL® Rotary control valve 8C D and 6H D

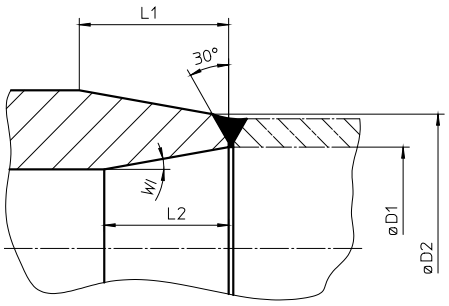
Dimensions (in mm) of valves with butt-weld ends (SE) and butt-weld ends with spool pieces (VE)

Valve type	DN / ANSI NPS		15 / 1/2“	20 / -	25 / 1“	32 / -
8C D	VBL PN16-PN63 SE		250	-	250	250
	VBL PN16-PN63 VE		350	350	350	350
	VBL Class 150/300/600 SE		250	-	250	-
	VBL Class 150/300/600 VE		350	350	350	350
	VH	DEK1	147			
		DEK5	on request			
	VU		44	51	56	65
	LH*		60			
	Weight (kg)**		7,0	7,0	8,0	8,0
6H D	VBL PN 100/160 SE		-	-	260	-
	VBL PN 100/160 VE		360	360	360	360
	VBL PN 250 SE		-	-	260	-
	VBL PN 250 VE		360	360	360	360
	VBL Class 900/1500 SE		-	-	260	-
	VBL Class 900/1500 VE		360	360	360	360
	VH	DEK1	147			
		DEK5	on request			
	VU		59	-	59	-
	LH*		60			
	Weight (kg)**		11		13,5	



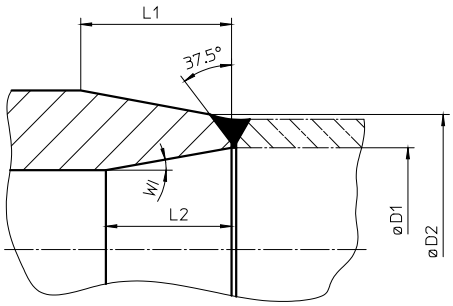
***) option: yoke DIN EN ISO 5210 F07 with backlash-free stem coupling SW17**
****) weight without actuator, without yoke**

Butt-weld ends acc. to DIN EN 12627



DN	PN	Pipe AD	ØD1	ØD2	L1	WA	L2	WI
15	40	21,3	17,3	22	48	0°	>33,6	1,9°
	63	21,3	17,3	22	48	0°	>33,6	1,9°
25	40	33,7	28,5	35	48	0°	>33,6	2,9°
	63	33,7	28,5	35	48	0°	>33,6	2,9°
	100	33,7	28,5	35	>48	10°	>33,6	0°
	160	33,7	27,9	35	>48	10°	>33,6	0°
	250	33,7	26,5	35	>48	10°	>33,6	0°

Butt-weld ends acc. to ASME B16.25



NPS	Sched.	Pipe AD	D1	D2	L1	WA	L2	WI
½	40	21,3	15,8	22	48	0°	>33,6	0,6°
	80	21,3	13,87	22	48	0°	>33,6	0°
1	40	33,7	26,94	35	>48	10°	>33,6	0°
	80	33,7	24,6	35	>48	10°	>33,6	0°
	160	33,7	21	35	>48	10°	>33,6	0°
	XXS	33,7	15,52	35	>48	10°	>33,6	0°

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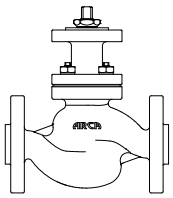

TD 8C D 6H D

Required and allowable torques

Valve type	Connection	max. differential pressure bar	Md required Nm	Md allowable Nm
8C D	DIN EN ISO 5210 F07	100	10	40
6H D	DIN EN ISO 5210 F07	250	16	40

Sense of rotation: valve opens left-handed.
Note: the mounted actuator should have adjustable end stops in both directions.

ECOTROL® 8C D / 6H D model code

0. Operating data		**6. Connections**		**13. Seat/plug seal** [1]	
Medium:		0	Flanges with raised face (Standard)	0	Leakage class IV (metal to metal)
Temp.:	°C	1	Flanges c/w groove	1	Leakage class V (metallic lapped)
Press. P_1:	bar abs.	2	Flanges c/w tongue	**14. Stem seal** [1]	
Press. P_2:	bar abs.	3	Flanges c/w projection/recess	1	PTFE/V-Ring/EPDM square ring
P Design	bar g	4	Butt-weld ends	2	PTFE/V-Ring/VITON square ring
T Design	°C	5	Butt-weld ends c/w spool pieces	3	Latty 6118/ETF Inconel
1. Series		7	RTJ	4	Graphite 0901
8C	ECOTROL® 8C	9	Others (acc. to spec.)	5	Graphite/PTFE 6226/6232
6H	ECOTROL® 6H	**7. Body materials** [1]		9	Special design (acc. to spec.)
2. Top flange		2	1.0619	**15. Yoke/actuator**	
1	Standard	3	1.4408	0	w/o
5	Ext. bonnet (insulating column)	4	1.7357	1	DIN EN ISO 5210 F07 c/w backlash-free stem coupling SW17
9	Special design acc. to spec.	5	1.6620		
3. Trim		6	A216WCB	2	c/w actuator ARCATORQUE® 841
D	Rotary valve plug (1-stage)	7	A351CF8M	**20. Special design**	
4. Nominal diameter (DN) – DIN/ ANSI		8	A217WC6	0	Standard
15	DN 15 resp. ANSI ½“	9	Others (acc. to spec.)	1	AD 2000
20	DN 20 (only in DIN available)	**8. Throttle disc guiding**		2	NACE
25	DN 25 resp. ANSI 1“	0	Circumference guide (Standard)	3	Oxygen version
32	DN 32 (only in DIN available)	**9. KVs Wert**		9	Others (acc. to spec.)
5. Pressure rating (PN)		xxx	KVs value acc. to table	**21. Material inspections (pressure retaining parts)**	
40	PN 40	**10. Characteristic**			
63	PN 63	in	inherent	0	w/o
100	PN 100	**11. Throttle discs material** [1]		1	EN 10204-2.1
160	PN 160	1	1.4112 hardened	2	EN 10204-3.1
250	PN 250	2	Nitronic 60	3	EN 10204-3.2
150	Class 150	3	Wolfram carbide	9	Others (acc. to spec.)
300	Class 300	9	Others	**22. Final inspections**	
600	Class 600	**12. Pressure spring material** [1]		0	None
900	Class 900	1	1.4310	1	EN 10204-2-1
1500	Class 1500	2	Inconel X750®	2	EN 10204-3.1
				3	EN 10204-3.2
				9	Others (acc. to spec.)

1) In accordance with customer specifications, or selected by the manufacturer in accordance with customer specifications (medium, pressure, temperature, etc.).

Example:

8C1 - D – 15 - 63 - 0 - 2	*Stelle 1-7 / basic data*

Series 8C – with standard bonnet – rotary valve plug 1-stage - DN15 - PN63 - flange EN1092 B1 - body 1.0619

0 – 0,063 - in - 1 - 1 - 0 - 5 - 0 - 1	*Stelle 8-15 / valve trim- seal*

Throttle disc circumference guided - KVs 0,063 - inherent characteristic - throttle disc made of 1.4112 hardened – pressure spring 1.4310 - leakage class IV – stem seal Graphite/PTFE 6226/6232 – standard yoke F07 with backlash-free stem coupling SW17

0 - 2 - 2	*Stelle 20-22 / version/inspections*

Standard – material inspections EN 10204 3.1 – final inspections EN 10204 3.1

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