

# DOUBLE-ECCENTRIC BUTTERFLY VALVE CV 011



## TECHNICAL DATA

Nominal diameter: DN 80 – DN 600  
Face-to-face: EN 558 Series 20 (DIN 3202 T3 K1)  
ISO 5752 Series 20 (DIN 3202 T3 K1)  
API 609 Table 1  
BS 5155 Series 4  
Flange accommodation: DIN 2501 PN 16  
ANSI B 16.5, Class 150  
MSS SP44 Class 150  
AWWA C 207  
AS 2129 Table D and E  
BS 10 Table D and E  
JIS B 2211-5 K  
JIS B 2212-10 K  
Flange Surface Design: DIN 2526 Form A-E, ANSI RF  
Top flange: für EN ISO 5211  
NF E 29-402  
Marking: DIN EN 19  
Tightness check: DIN 3230 T3 BO, BN (Leakage Rate1)  
ISO 5208, Category 3  
API 598 Table 5  
ANSI B 16-104, Class VI  
Temperature range: -40 °C bis +160 °C  
higher temperatures upon request  
Differential pressure: max 16 bar  
Vacuum: 1 mbar absolute (depending on medium and temperature)

Double eccentric wafer type valve for shut-off and control applications in Product and Crude Oil shipbuilding.

## FEATURES

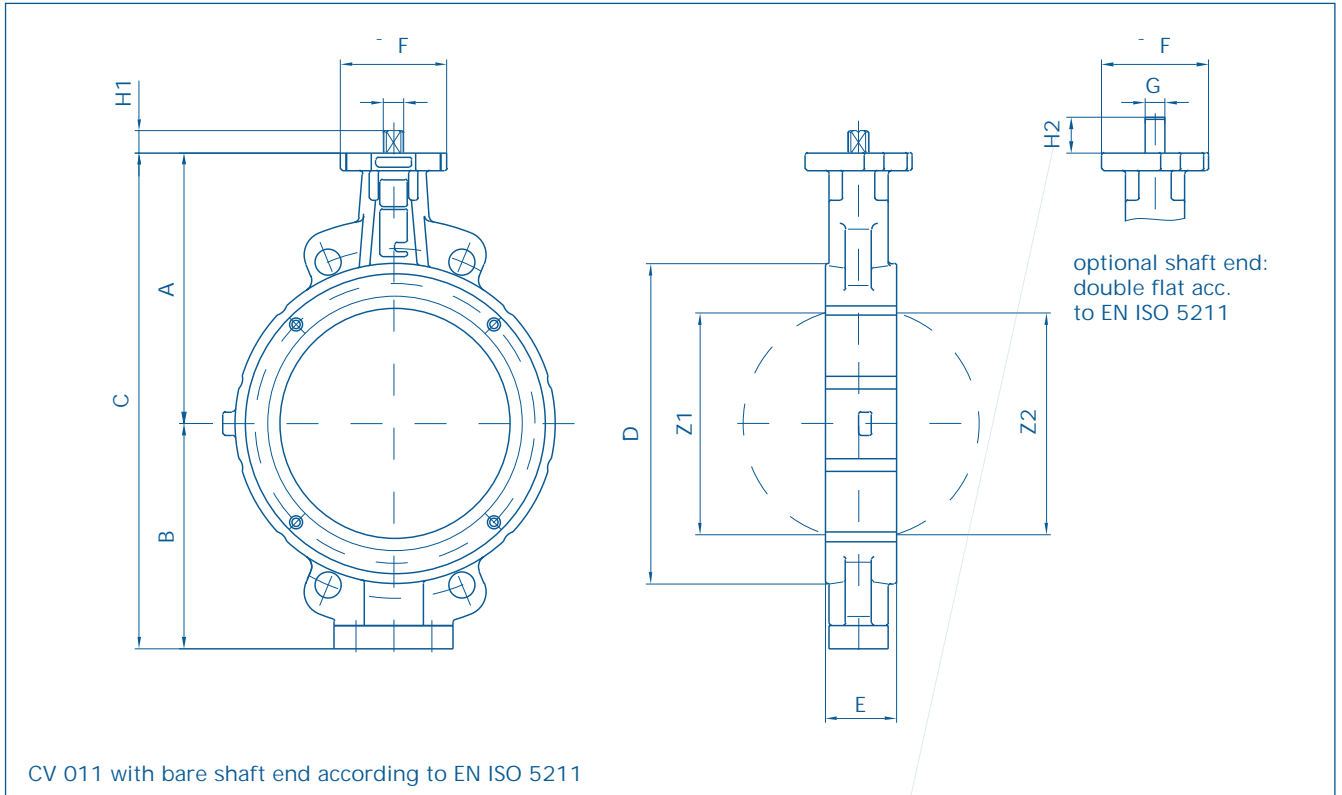
- Disc and shaft are beared double eccentric.
- Minimal friction loss and low torques, because the valve disc lifts itself out of the seat ring.
- Maintenance-free
- Long service life, even at high switching frequencies

## GENERAL APPLICATIONS

- Tanker Shipbuilding (crude oil and products)
- Refineries
- Tank depots



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DN [mm]	Size [in]	Dimensions [mm]											min. Pipe Ø	Weight [kg]	
		A	B	C	D	E	F	Flange	G	H1	H2	Z1			Z2
80	3	157	107	264	138	46	65	F05	14	16	25	67,8	67,8	74	5,0
100	4	168	120	288	150	52	65	F05	14	16	25	94,3	94,3	100	5,7
125	5	180	148	328	188	56	90	F07	17	16	25	115,3	111,4	123	10,6
150	6	205	171	376	213	56	90	F07	17	19	30	139,7	136,5	146	13,3
200	8	229	190	419	270	60	90	F07	17	19	30	189,5	187,0	196	18,7
250	10	266	232	498	321	68	125	F10	22	24	39	238,5	238,5	246	28,9
300	12	293	263	556	377	78	125	F10	22	24	39	293,2	293,2	300	39,8
350	14	332	297	629	414	78	150	F12	*	*	-	326,7	326,7	336	62,3
400	16	363	327	690	487	102	150	F12	*	*	-	366,7	366,7	376	97,0
450	18	412	362	774	530	114	210	F16	*	*	-	426,9	426,9	438	128,0
500	20	437	390	827	574	127	210	F16	*	*	-	480,3	480,3	492	145,0
550	22	456	436	892	635	154	300	F25	*	*	-	525,9	525,9	540	213,0
600	24	498	461	959	675	154	300	F25	*	*	-	572,4	572,4	588	248,0

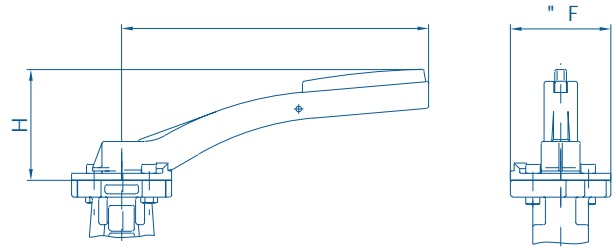
\* according to the mounted actuator.

Subject to change without notice.

# ACTUATORS CV 011

## HAND LEVER

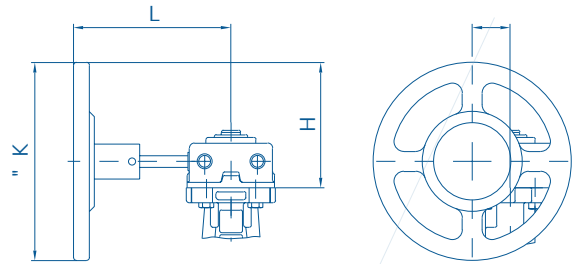
DN [mm]	Size [in]	Hand Lever	F	H	L	Weight [kg]
80-100	3-4	Size II	65	80	195	0,15
125-150	5-6	Size III	90	100	276	0,50



## WORM GEAR

DN [mm]	Size [in]	Gear	H	J	K	L	Weight [kg]
80-100	3-4	Size IX	89	39	125	152	3,1
125-200	5-8	Size X	127	39	200	159	3,1
250-300	10-12	Size XI	135	52	200	169	4,7
350-450	14-18	Size VI	228	90	356	322	16,0
500-550	20-22	Size VII	278	123	457	406	30,5
600	24	Size VIII	355	154	610	466	45,0

The dimensioning of actuators refers to an operating pressure of 10 bar.

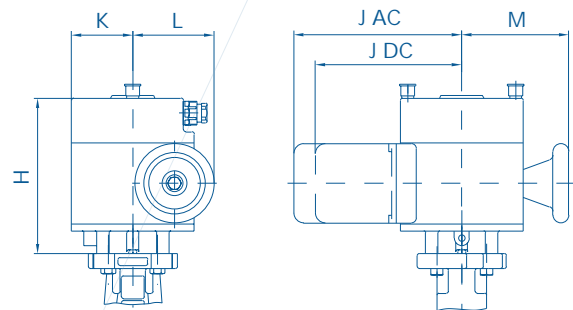


## ELECTRIC ACTUATOR

DN [mm]	Size [in]	Actuator	H	J	K	L	M	Weight [kg]	
80-150	3-6	E 60	158	171	171	62	82	110	5,0
200-250	8-10	E 100	183	206	246	74	121	131	11,5
300-350	12-14	E 150	200	238	278	105	189	155	21,0
400-550	16-22	E 200	212	313	313	124	283	220	34,0

AC = Alternating current  
DC = Three phase current

The dimensioning of actuators refers to an operating pressure of 10 bar.



Other Actuators: See Documentation of the Manufacturer.

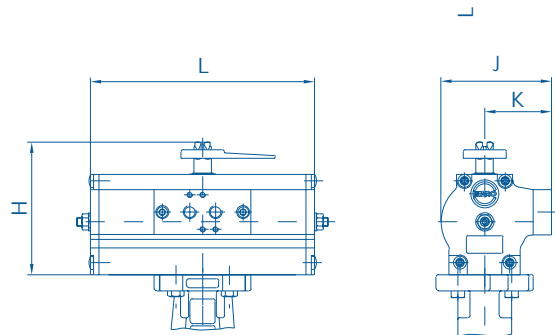
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# ACTUATORS CV 011

## PNEUMATIC DOUBLE ACTING

DN [mm]	Size [in]	Actuator	H	J	K	L	Weight [kg]
80-100	3-4	EB 5	108	88	55	174	1,7
125-150	5-6	EB 6	123	103	62	208	2,6
200	8	EB 8	136	115	68	250	4,3
250-300	10-12	EB 10	155	135	79	312	6,8
350	14	EB 12	182	159	94	367	12,0
400	16	EB 265	232	152	76	390	18,0
450	18	EB 270	278	220	110	445	32,0
500	20	EB 280	278	220	110	600	42,0

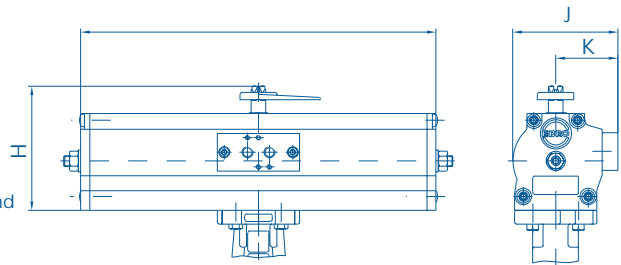
The dimensioning of actuators refers to an operating pressure of 10 bar and a control air pressure of 6 bar.



## PNEUMATIC SPRING RETURN

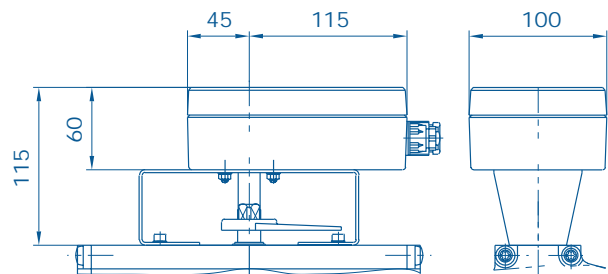
DN [mm]	Size [in]	EBF	Actuator	H	J	K	L	Weight [kg]
80-100	3-4	EB 6		123	103	62	326	5,0
125-150	5-6	EB 8		136	115	68	389	7,7
200	8	EB 10		155	135	79	526	14,3
250	10	EB 12		182	159	94	656	25,4
300	12	EB 265		232	152	76	634	27,0
350	14	EB 270		278	220	110	655	45,0
400	16	EB 280		278	220	110	1020	68,0

The dimensioning of actuators refers to an operating pressure of 10 bar and a control air pressure of 6 bar.



## SWITCH BOX SERIES MSK/NSK

MSK: Switch box with integrated micro limit switches.  
NSK: Switch box with integrated proximity switches.

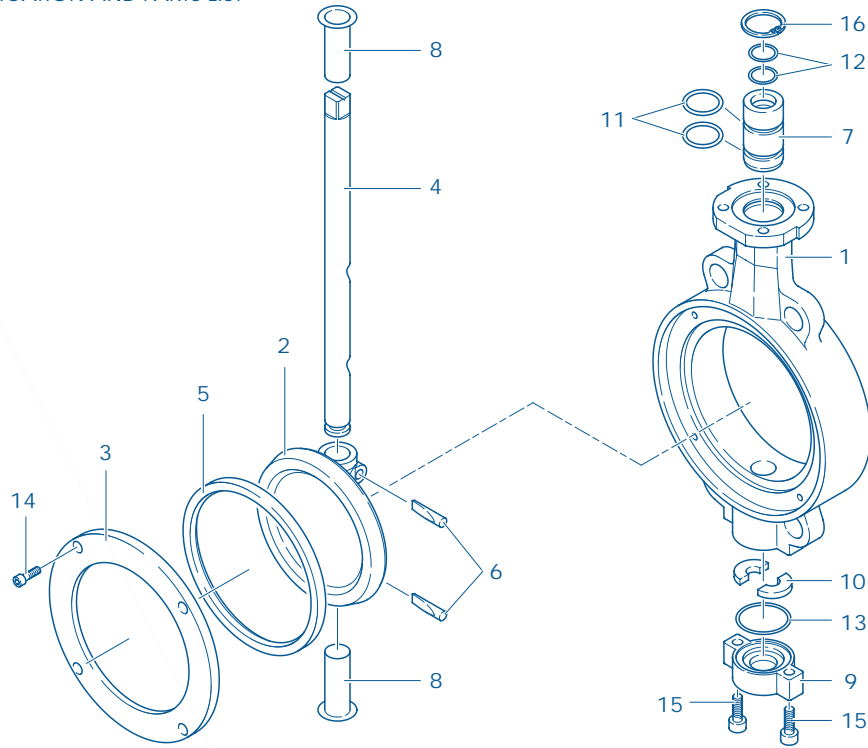


Other Actuators: See Documentation of the Manufacturer.

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## MATERIAL SPECIFICATION AND PARTS LIST



Pt.	Description	Material	MaterialNo.	ASTM	Pt.	Description	Material	Material-No.	ASTM		
1	Body	Nodular Cast Iron	GGG-40.3	0.7043	-	9	Cover plate	Steel	St 37-2	1.0037	A 283 Grade C
2	Disc	Aluminium Bronze	CuAl10Ni	2.0975	C 95800			Stainless Steel	X2CrNiMo17-12-2	1.4404	316 L
		Stainless Steel	G-X6CrNiMo 18-10	1.4408	A 351 CF 8 M	10	Segments	Steel	St 37-2 Tenifer QPQ	1.0202	A 283 Grade B
3	Clamping ring	Steel	St 37-2	1.0037	A 283 Grade C	11	O-ring	NBR	Acrylonitrile butadiene rubber		
		Stainless Steel	X6CrNiMoTi 17-12-21	1.4571	316Ti			FPM	Fluorocarbon caoutchouc	FPM	FKM
4	Shaft	Stainless Steel	X4CrNiMo 16-5-1	1.4418	SS	12	O-ring	NBR	Acrylonitrile butadiene rubber		
								FPM	Fluorocarbon caoutchouc	FPM	FKM
5	Elastomer-seat ring	NBR/St	Acrylonitrile butadiene rubber			13	O-ring	NBR	Acrylonitrile butadiene rubber		
		FPM/St	Fluorocarbon caoutchouc	FPM	FKM			FPM	Fluorocarbon caoutchouc	FPM	FKM
		CSM/St	Chlorsulphonated polyethylene					FPM	Fluorocarbon caoutchouc	FPM	FKM
6	Taper pin	Stainless Steel	X2CrNiMoN 22-5-3	1.4462	F51	14	Hex. Socket screw	Stainless Steel	A 2-70	1.4301	B 8
		Monel 500		2.4375		15	Hex. Socket screw	Stainless Steel	A 2-70	1.4301	B 8
		Aluminium Bronze		2.0975				Stainless Steel	A 2-70	1.4301	B 8
7	Bearing sleeve	Steel	St 37-2 Tenifer QPQ	1.0037	A 283 Grade C	16	Retaining ring	Stainless Steel	X39CrMo17-1	1.4122	SS
		Aluminium Bronze	C-CuAl10Ni	2.0975	C95800						
8	Shaft bearing	PTFE	Polytetrafluorethylen								
		Stainless Steel	X2CrNiMo17-12-2	1.4404	316 L						
											Other materials upon request.

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	DN [mm]	Size [in]	Operating Pressure			
			0 [bar]	6 [bar]	10 [bar]	16 [bar]
- The torque values specified (MD) are based on liquid and lubricant media.	80	3	15	20	20	20
- Powdery (non-lubricant) media Md x 1,3	100	4	23	28	34	45
	125	5	25	30	40	55
- Dry gases/high viscous media Md x 1,2	150	6	30	42	47	60
	200	8	75	122	145	180
- The values specified are based on the initial breakaway torque.	250	10	130	195	230	290
	300	12	250	350	400	450
	350	14	450	550	650	750
- Dynamic torque specification available upon request.	400	16	750	900	1000	1100
	450	18	1100	1300	1500	1800
Regarding the dimensioning of actuators, please contact our engineers.	500	20	1600	1900	2200	2500
	550	22	2500	2800	3000	3200
	600	24	3400	3600	3800	4000

All Values in Nm

	DN [mm]	Size [in]	Opening angle <sub>i</sub>							
			20 <sub>i</sub>	30 <sub>i</sub>	40 <sub>i</sub>	50 <sub>i</sub>	60 <sub>i</sub>	70 <sub>i</sub>	80 <sub>i</sub>	90 <sub>i</sub>
- The K <sub>v</sub> -value (m <sup>3</sup> per hour) is the flow of water at a temperature of 5°C to 30°C ( 41°F to 86°F) at p of 1 bar.	80	3	18	39	62	97	120	147	174	187
	100	4	21	65	82	153	186	244	336	411
- The K <sub>v</sub> -values specified are based on tests carried out by the Delfter Hydraulics Laboratories, the Netherlands.	125	5	35	87	111	240	305	489	673	829
	150	6	50	121	185	302	466	647	934	960
	200	8	102	239	384	520	780	1203	2300	2789
- Permissible velocity of flow V <sub>max</sub> 4,5 m/s for liquids and V <sub>max</sub> 70 m/s for gases.	250	10	181	396	621	1011	1562	2280	3945	4685
	300	12	314	553	873	1368	2226	3427	5240	6292
	350	14	480	900	1400	2100	3200	4300	5900	6900
- The throttle function is linear at an angle 30 <sub>i</sub> to 70 <sub>i</sub> .	400	16	600	1100	1600	2500	4000	6000	8500	10100
	450	18	790	1400	2100	3900	5300	7400	9800	12200
	500	20	980	2000	3300	5200	7500	10600	14800	15900
- Avoid cavitation!	550	22	1200	2300	3700	5600	8700	12200	16800	18200
For further values, please contact our engineers.	600	24	1450	3000	5000	6700	11900	16500	22500	24500