



**BUTTERFLY VALVES WITH PNEUMATIC
ACTUATOR
TYPE VPR/VPS 34100 AND 34102 HF/CF**

34100 AND 34102 SERIES VALVES



VPR 34100 CF (air failure opened valve)



VPR 34100 HF (with hand actuation)



VPR 34100 HFI (High temperature valve = 900°C)

GENERALS

The BUTTERFLY VALVES types 34 100 & 34 102 are control valves design to cover a wide application range for which an absolute closing tightness is not required.

These valves are reliable and carefully built with high quality materials.

The overall design of the butterfly valves, especially focused on control, leads to the adoption of original:

- Butterfly with turbulator to linearize the control characteristic
- Stuffing box with constant tightening by spring washers
- Connection spacer with actuator according to ISO 5211

These valves are used for liquid and gases in cold or hot version. The operating temperature range is from -50°C to 900°C depending on the used material.

The butterfly valves can be used in control or sequential operation. The flow characteristic is approximately equal percentage. In sequential operation the number of operation cycle without maintenance of the valve is at least one million under normal conditions of use.

INSTALLING

The valves are wafer type to be inserted between flanges (NP6 – NP10 – NP16 – NP20 (ANSI 150lbs).

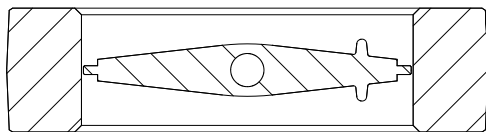
The available dimensions are ND65 to ND1300. They are usually assembled with pneumatic actuators but electrical actuators are also available.

MAINTENANCE

The low number of moving parts combined to the easy access to the packing rings facilitate maintenance and limit the number of spare parts.

34100 AND 34102 SERIES VALVES

SPECIFICITY OF THE TYPE 34 100 BUTTERFLY VALVES

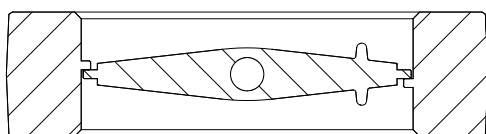


The butterfly valves type 34100 are valves with straight butterfly. The accuracy of the machining of the valve body and butterfly allows a good relative tightness without jamming of the butterfly in its body.

The leakage for a closed valve is 1% of the Cv for the hot version and 0,5% for the cold version.

According to ANSI/FCI 70-2, these valves are class II.

SPECIFICITY OF THE TYPE 34 102 BUTTERFLY VALVES



The butterfly valves type 34102 are similar to the type 34 100 but with improved relative tightness thanks to metal stops machined into the valve body.

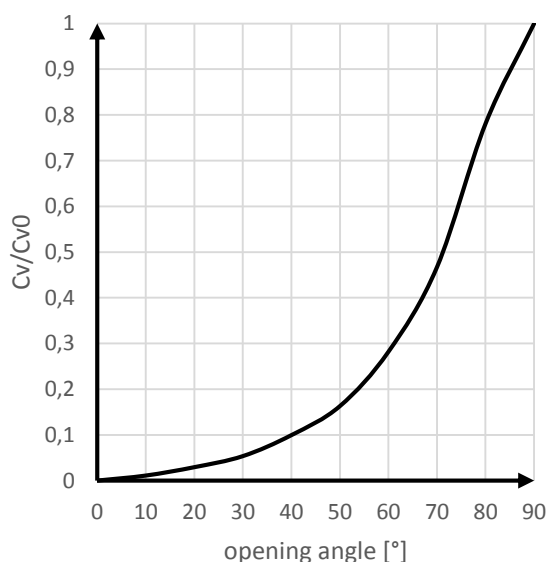
The leakage for a closed valve is 0,2% of the Cv for the hot version and 0,1% for the cold version.

According to ANSI/FCI 70-2, these valves are class III.

FLOW COEFFICIENT CV

CV_0 = Flow coefficient of the completely opened valve

Ø Valve mm	Inch	CV ₀
65	2 ½"	154
80	3"	234
100	4"	490
125	5"	848
150	6"	1410
200	8"	2440
250	10"	4010
300	12"	5990
350	14"	7280
400	16"	9830
450	18"	12300
500	20"	15500
600	24"	23100
700	28"	31400
800	32"	45800
900	36"	61600
1000	40"	77300
1200	48"	116000
1300	52"	136100



Opening valve [°]	CV / CV ₀
0	0
10	0,01
20	0,03
30	0,05
40	0,1
50	0,16
60	0,28
70	0,47
80	0,78
90	1

34100 AND 34102 SERIES VALVES

SPECIFICATIONS

BODY ND 65 à 1300 mm (2"½ à 48") CONNECTION AND ERECTION To insert between the flanges According to standards • EN 1092.1 : PN10/16 • ANSI B 16 1/5 : CLASS 125/150 • JIS B2220, B2238, B2239 : 5/10K • EN 558-1 SÉRIE 20 The shaft of the valve must be perfectly horizontal. (Consult us if it's not) SERVICE CONDITIONS According to pressure and temperature limits given by standards. ALLOWED PRESSURE DROPS According to technical specifications TEMPERATURE CAPABILITIES -50°C to +900°C FLOW DIRECTION Flow turbulator downstream of the open valve LEAKAGE Cold valves T°<250° : • 0,5% CV (active) for the type 34100 • 0,1% CV (active) for the type 34102 Hot valves T°>250° : • 1% CV (active) for the type 34100 • 0,2% CV (active) for the type 34102	ACTUATORS : Pneumatic types • 6225 MK 45 • 6280 MK 60/100/150 • 6350 MK 140/300/360 • 6430 MK 300/600 With rolling diaphragm, floating rod, and spring return. • Control function: Signal 4-20 mA Air supply approx. 5 bars (with pressure regulator) • ON-OFF function: Electric signal 24V/110V/220V Air supply 5 bars max FITTINGS • Standard or simplified manual override: at the actuator head, with only one direction of action, the second being given by the return spring. • Three ways solenoid valve for ON-OFF operation • Electropneumatic positioner for control operation • Single or double position limit switch • Manual reset box • Safety air tank • ...
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34100 AND 34102 SERIES VALVES

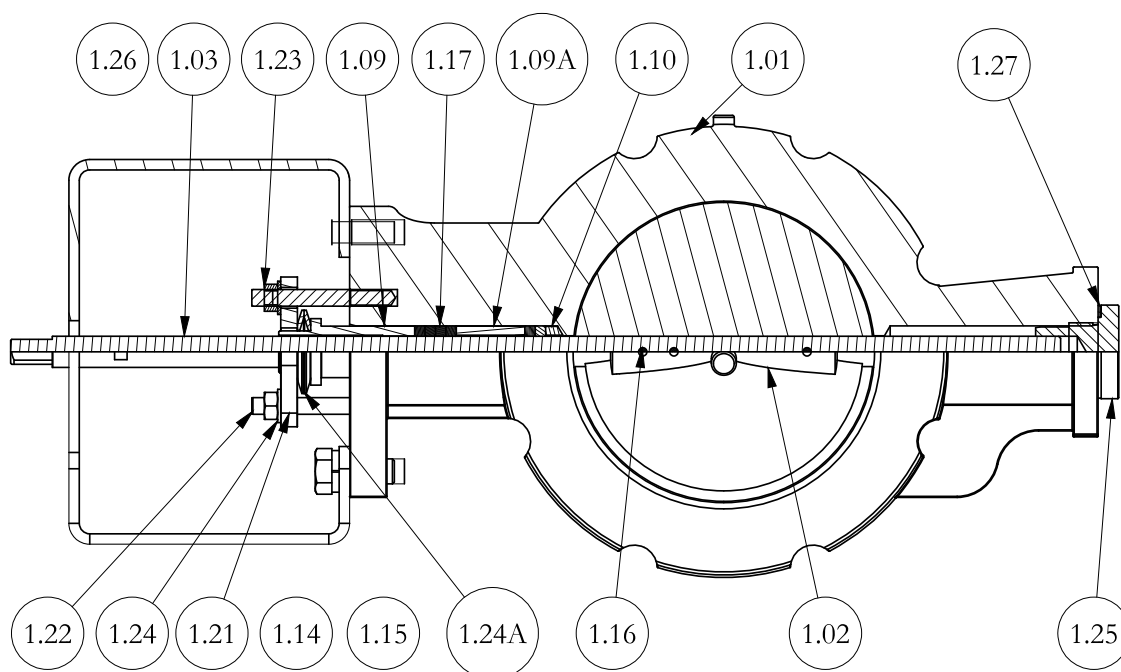
RECOMMENDED VALVE/ACTUATOR ASSEMBLY PER VALVE TYPE ¹

Actuator type	ND		ND	
	CONTROL VALVE		ON-OFF VALVE	
	Air Failure Closing	Air Failure Opening	Air Failure Closing	Air Failure Opening
6225 MK 45	65 to 300	65 to 350	65 to 450	65 to 450
6280 MK 60	200 to 300	250 to 400	400-450	450-500
6280 MK 100	350-400	450-500	500-600	500-600
6280 MK 150	450-500			600-700
6350 MK 140	600-700	600 to 900	700-800	800-900
6350 MK 300	800-900		800-900	
6430 MK 300	1000	1000-1200	1000	1000
6430 MK 600	1200		1000 to 1200	1000 to 1200

¹ Values may differ depending the operating conditions

34100 AND 34102 SERIES VALVES

STANDARD VALVE

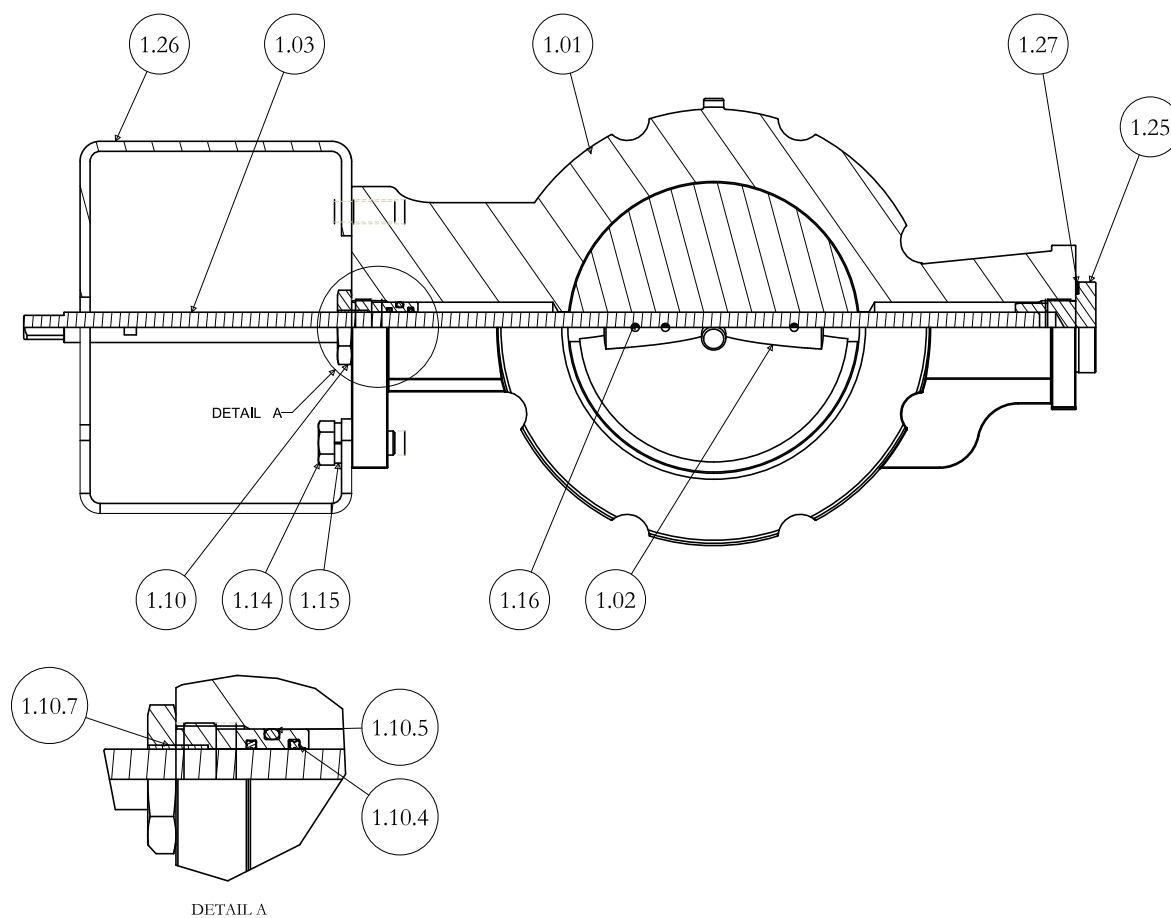


PARTS LIST

TAG	LABEL	MATERIAL	TEMPERATURE (°C)
1.01	VALVE BODY	ENGJL250 ENGJS 400-15 A48CM AISI 309/310S	0 / +250 -25 / +650 -25 / +425 -25 / +950
1.02	BUTTERFLY	ENGJL250 ENGJS 400-15 A48CM AISI 309/310S	0 / +250 -25 / +650 -25 / +425 -25 / +950
1.03	SHAFT	AISI 304L AISI 309/310S	-25 / +650 -25 / +950
1.09	GLAND	Cast Iron	-25 / +650
1.09A	STAY	Cast Iron	-25 / +650
1.10	BOTTOM WASHER	AISI 304L	-25 / +650
1.14	SCREW TH	Class 8.8	
1.15	SPRING WASHER GROWER	Class 8.8	
1.16	BUTTERFLY PIN	Stainless Steel	-25 / +650
1.17	PACKING RINGS	Rings PTFE Rings Graphite	-25 / +100 -25 / +950
1.21	PACKING FLANGE	Galvanized Steel	
1.22	STUD BOLT	AISI 304L	
1.23	NUT	Class 8.8	
1.24	WASHER	Class 8.8	
1.24c	SPRING WASHER	Steel 50 Cr V4	
1.25	CAP	Cast Iron	
1.26	SPACER	Galvanized Steel	

34100 AND 34102 SERIES VALVES

SPECIAL GAS VALVE



PARTS LIST

TAG	LABEL	MATERIAL	TEMPERATURE (°C)
1.01	BODY	ENGJL250	-25 / +250
1.02	BUTTERFLY	FGL250	-25 / +250
1.03	BUTTERFLY SHAFT	AISI 304L	-25 / +650
1.10	BAREL	AISI 304L	-25 / +650
1.10.4	BAREL GASKET	Viton	-25 / +220
1.10.5	BAREL O'RING	Viton	-25 / +220
1.10.7	SELF LUBRIFICATED BUSHING	PTFE + bronze	-25/+280
1.14	SCREW TH	Class 8.8	
1.15	SPRING WASHER GROWER	Class 8.8	
1.16	BUTTERFLY PIN	Stainless steel	
1.25	GAS CAP	Cast iron	
1.25.1	CAP O'RING	Viton	-25/+220
1.26	SPACER	Galvanized Steel	

PNEUMATIC ROLLING DIAPHRAGM ACTUATOR

GENERALITIES

The pneumatic diaphragm actuators type “MK” are actuators with spring return and rolling diaphragm designed for butterfly valves or all rotary valves. They deliver the necessary torque to actuate the valve obturator.

The “MK” actuator may be used for “ON-OFF” with a solenoid valve or for “control” with a positioner. In addition, they may be equipped with a hand wheel actuation and with limit switch.

CHARACTERISTICS

Robustness

The use of high-quality materials with large dimensions ensures that the “MK” series actuators are exceptionally stable over time. Except for stainless steel parts, all other metal parts undergo a suitable surface treatment; thus ensuring an excellent corrosion resistance of the actuators.

Assembly

In four possible positions on the valves can be assemble for AFO and AFC function.
Possibility of field assembly modification without additional parts:

AFO: air failure opening

AFC: air failure closing

Function:

- ON-OFF with a solenoid valve.
- Control with a positioner:
- AFO or AFC according to assembly.

Safety

A stop enclosed in the diaphragm case of actuators serial “MK” protects the moving parts – diaphragm, plates, actuator stem and swivel trap – from the effect of any accidental excessive pressure of pneumatic control signal.

The coupling elements, actuator stem, butterfly valve shaft, are mounted in a rigid housing with an open face allowing monitoring of moving parts. This open face is closed by a protective grid to prevent accidental access.

Hysteresis

The diaphragm case with floating stem actuates the valve shaft through a swivel rod end and a square coupling of lever and shaft.

That mechanism ensures an accurate positioning of the valve disk while reducing the clearance.

The use of spring belongs to a precise type and of a rolling diaphragm with constant effective cross-section results in an approximately linear characteristic of the actuators serial “MK”.

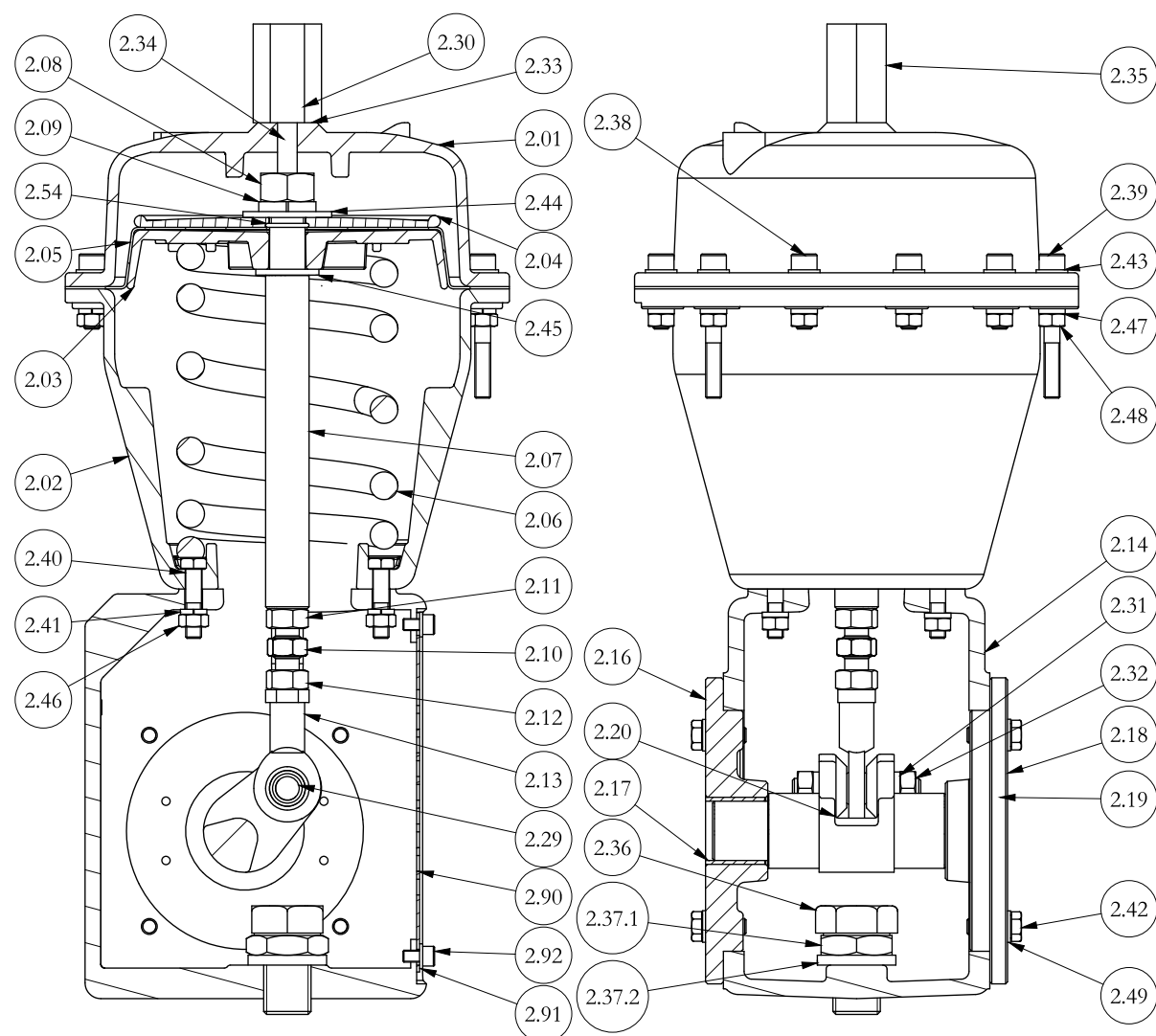
PNEUMATIC ROLLING DIAPHRAGM ACTUATOR

Existing range:

Type of actuator MK	Efficient section [cm ²]	Minimum air supply [bar]	Control range [bar]	Maximal torque at rest [N.m]
6225 MK 45	200	3,6	0,6 - 3,2	45
6280 MK 60	350	2,4	0,4 - 2	60
6280 MK 100	350	3,9	0,8 - 3,5	100
6280 MK 150	350	4,4	1,3 - 4	150
6350 MK 140	500	2,4	0,4 - 2	140
6350 MK 300	500	4,4	1,1 - 4	300
6350 MK 360	500	5,4	1,3 - 5	360
6430 MK 300	800	2,4	0,4 - 2	300
6430 MK 600	800	4,4	1 - 4	600

PNEUMATIC ROLLING DIAPHRAGM ACTUATOR

PNEUMATIC ACTUATOR



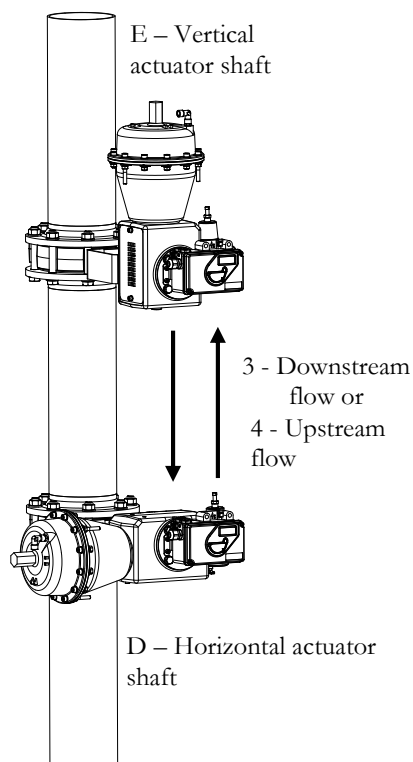
R	Qty	LABEL	MATERIAL
2.01	1	DIAPHRAGM CASING	Aluminum
2.02	1	SPRING CASING	Aluminum
2.03	1	DIAPHRAGM PLATE	Aluminum
2.04	1	PLATE	Aluminum
2.05	1	DIAPHRAGM	Aluminum
2.06	1	SPRING	Steel
2.07	1	ACTUATOR ROD	AISI 420
2.08	1	NUT	Class 8.8
2.09	1	SPRING WASHER	Class 8.8
2.10	1	COUPLING SCREW RIGHT/LEFT	AISI 304
2.11	1	LEFTHANDED NUT	Class 8.8
2.12	1	RIGHTHANDED NUT	Class 8.8
2.13	1	SWIVEL	DIN 12240-4
2.14	1	ACTUATOR CASING	Cast Iron
2.16	1	FRONT SIDE PLATE	Cast Iron
2.17	1	FRONT BUSHING	PTFE
2.18	1	REAR SIDE PLATE	Cast Iron
2.19	1	REAR BUSHING	PTFE

R	Qty	LABEL	MATERIAL
2.20	1	ACTUATOR CRANK SHAFT	Cast Iron
2.29	1	LEVER SHAFT	AISI 304
2.33	1	CAP O'RING	NBR
2.39	3	LONG SCREWS	Class 8.8
2.40	6	SPRING CASING SCREW	Class 8.8
2.41	6	SPRING CASING WASHERS	Class 8.8
2.42	8	SIDE PLATE SCREWS	Class 8.8
2.43	12	WASHERS	Class 8.8
2.44	1	LARGE WASHER	Class 8.8
2.45	1	WASHER	Class 8.8
2.46	6	SPRING CASING NUTS	Class 8.8
2.47	12	SPRING WASHER	Class 8.8
2.48	12	NUTS	Class 8.8
2.49	8	SIDE PLATE WASHERS	Class 8.8
2.54	2	DIAPHRAGM O'RING	NBR
2.90	1	PROTECTION	Aluminum
2.91	2	WASHERS	Class 8.8
2.92	2	SCREW CHC	Class 8.8

OVERALL DIMENSIONS

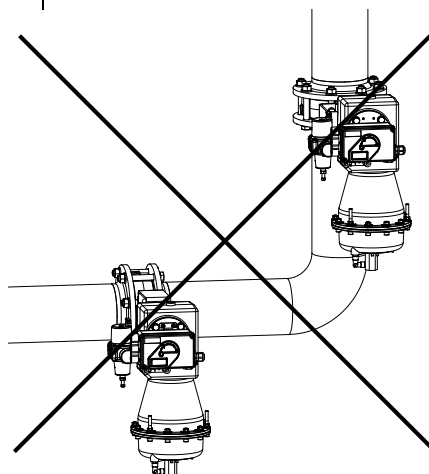
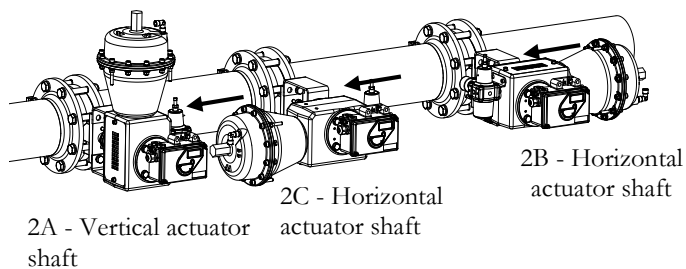
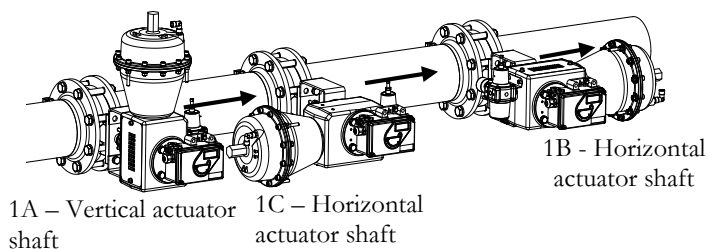
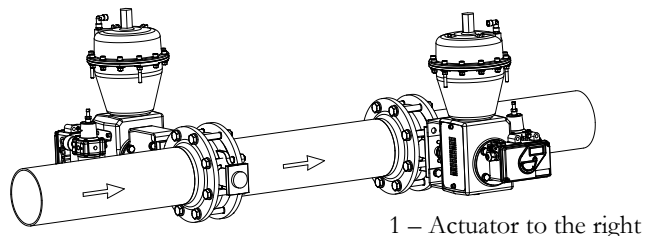
ERECTION

VERTICAL PIPELINE



HORIZONTAL PIPELINE

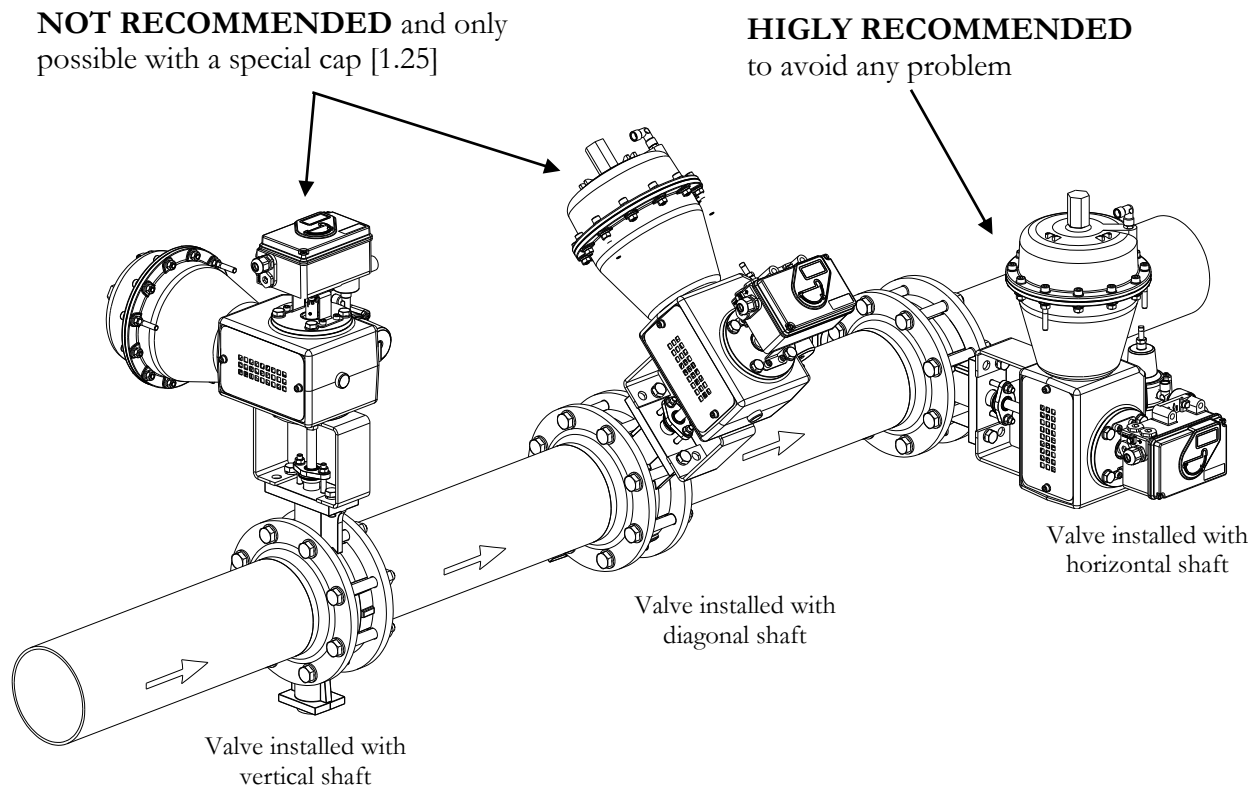
2 - Actuator to the left



* The actuators type 6430 must always be mounted with vertical shaft.

Pipelines	Horizontal	Vertical
Erection	1 - Right 2 - Left	3 - downstream flow 4 - upstream flow
Actuator shaft	A - vertical shaft B - horizontal shaft C - horizontal shaft	D - horizontal shaft E - vertical shaft

OVERALL DIMENSIONS



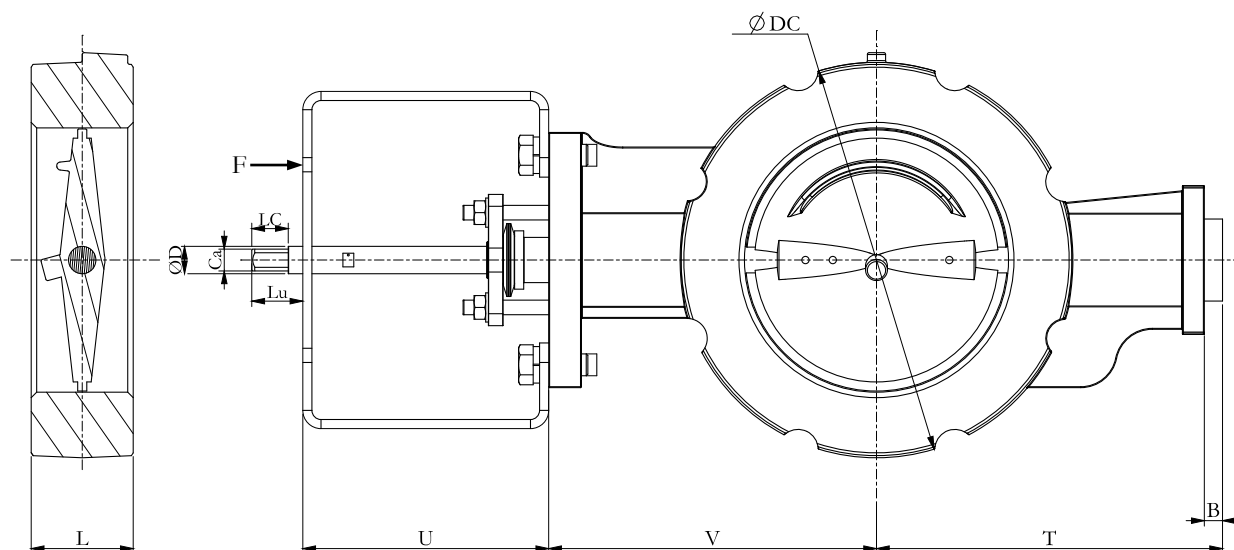
 It is important to install valves with horizontal shaft.

The shaft + butterfly assembly is free to allow thermal expansion and prevent the valve from jamming. If the shaft is not installed in horizontal position, the butterfly will be in contact with the valve body due to the gravity. The control of the valve will be very disturbed because of friction.

If the installation with horizontal shaft is impossible, a special device exists. It must be installed in replacement of the cap [1.25].

OVERALL DIMENSIONS

VALVES OVERALL DIMENSIONS

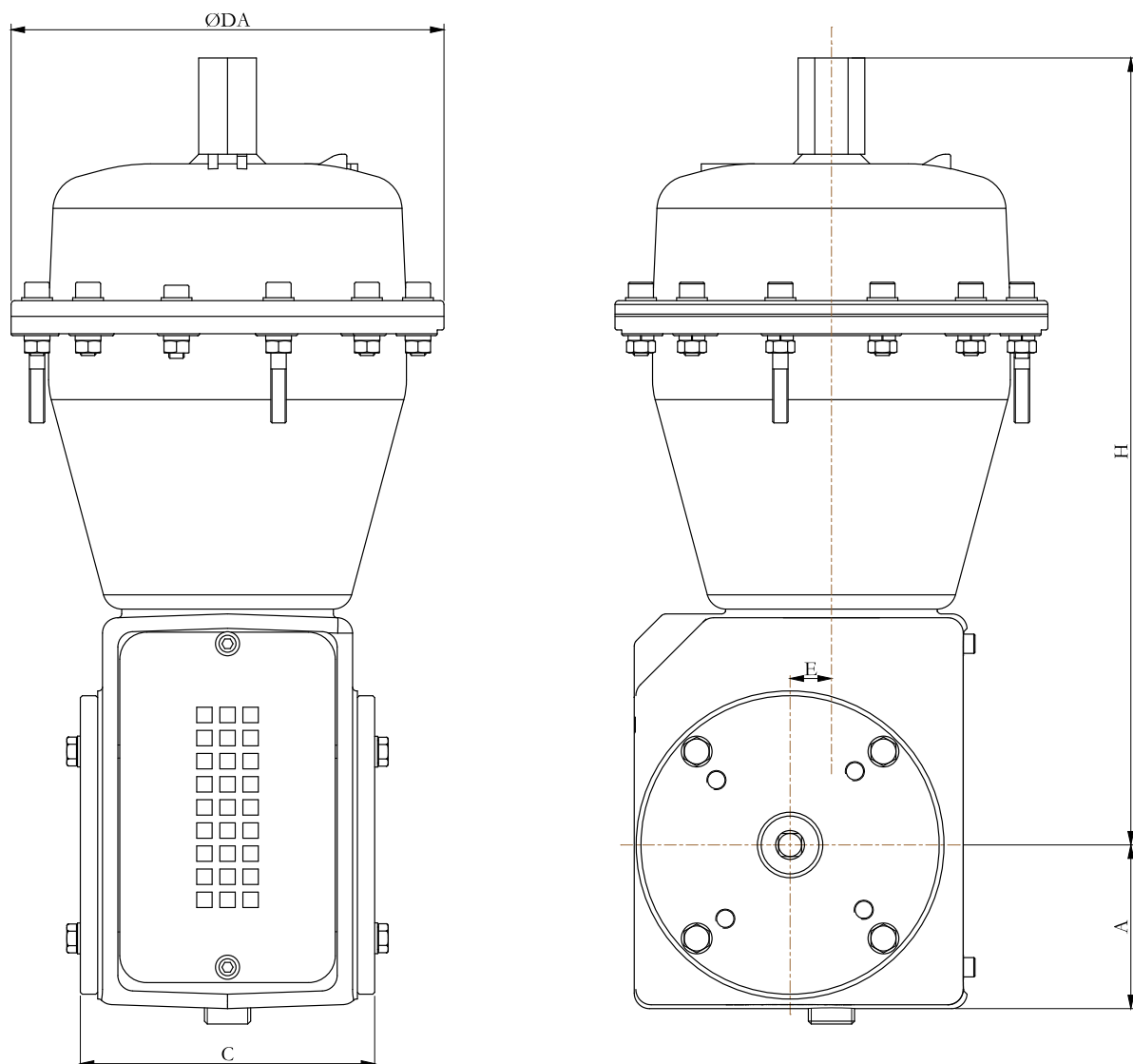


ND	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800	900	1000	1200
B	10	10	10	10	10	10	10	10	12	12	12	12	12	12	12	12	12,5	12,5
V	130	150	170	175	180	230	255	290	330	375	400	420	460	530	587	615	735	830
T	140	160	180	185	190	240	265	300	342	387	412	432	472	542	599	597	747,5	797,5
U	135	135	135	135	135	135	135	135	135	135	135	135	135	150	150	150	150	150
ØDC	122	138	158	186	216	270	322	372	432	484	534	587	684	809	913	1020	1120	1340
L *	46	46	52 50	56 50	56 50	60 50	68 50	78 50	78 50	80 50	80 60	100 80 60	100	100	100	115	115	115
ØD	15	15	15	15	15	20	20	20	25 20	25 20	30 25	30 25	35	35	35	40	40	45
□Ca	12	12	12	12	12	14	14 16	14 16	14 16	14 16	16 20	16 20	16 20	20	20	25 32	32	36
Lc	20	20	20	20	20	20	20 25	20 25	20 25	20 25	25 36	25 36	25 36	36	36	50	50	50
Lu	28	28	28	28	28	28	28	28	28	28	28 52	28 52	28 52	52	52	66	66	66
F	F10	F10	F10	F10	F10	F10	F10	F10	F10	F10 F12	F10 F12	F10 F12	F10 F12	F10 F12	F10 F12			
K	155	155	155	155	155	155	155	155	155	155	155	155	155	155				
P (VPR) (VPS)	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70	140 70

*: other dimensions on request

OVERALL DIMENSIONS

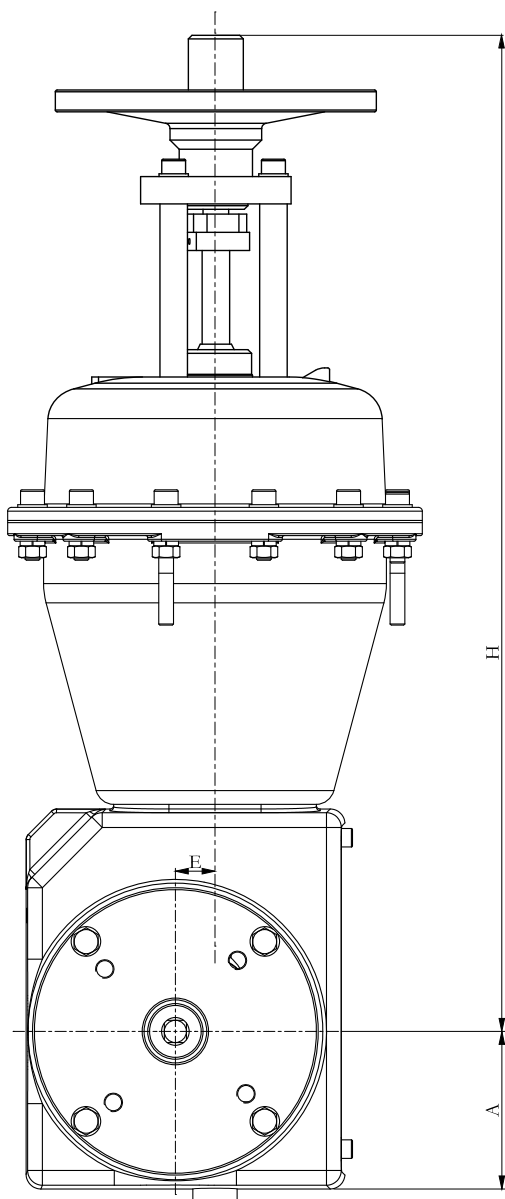
ACTUATORS OVERALL DIMENSIONS



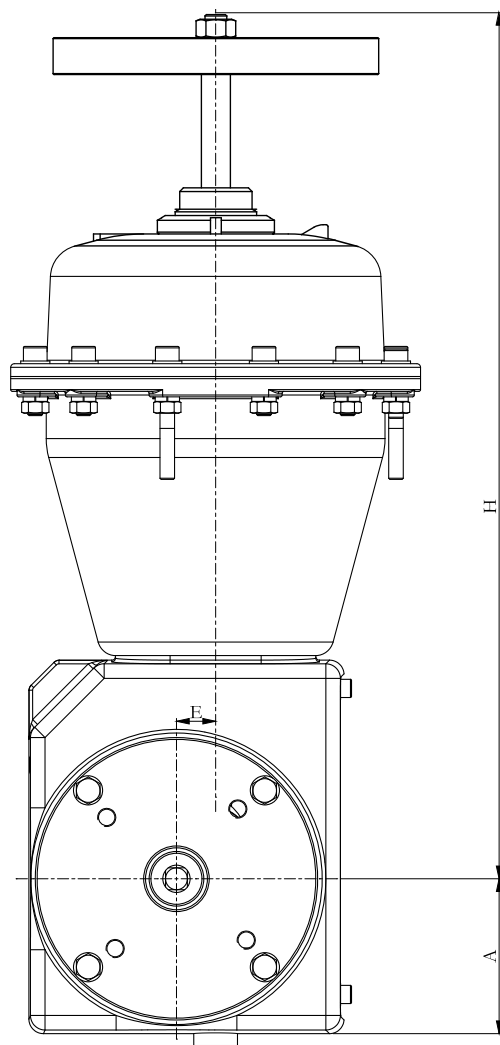
ND	6225	6280	6350	6430
$\varnothing DA$	225	280	350	460
C	153	161	211	260
H	410	460	675	837
A	95	105	160	233
E	21	32	50	82.5

OVERALL DIMENSIONS

ACTUATORS WITH HANDWHEEL ACTUATION OVERALL DIMENSIONS



Handwheel actuation type standard

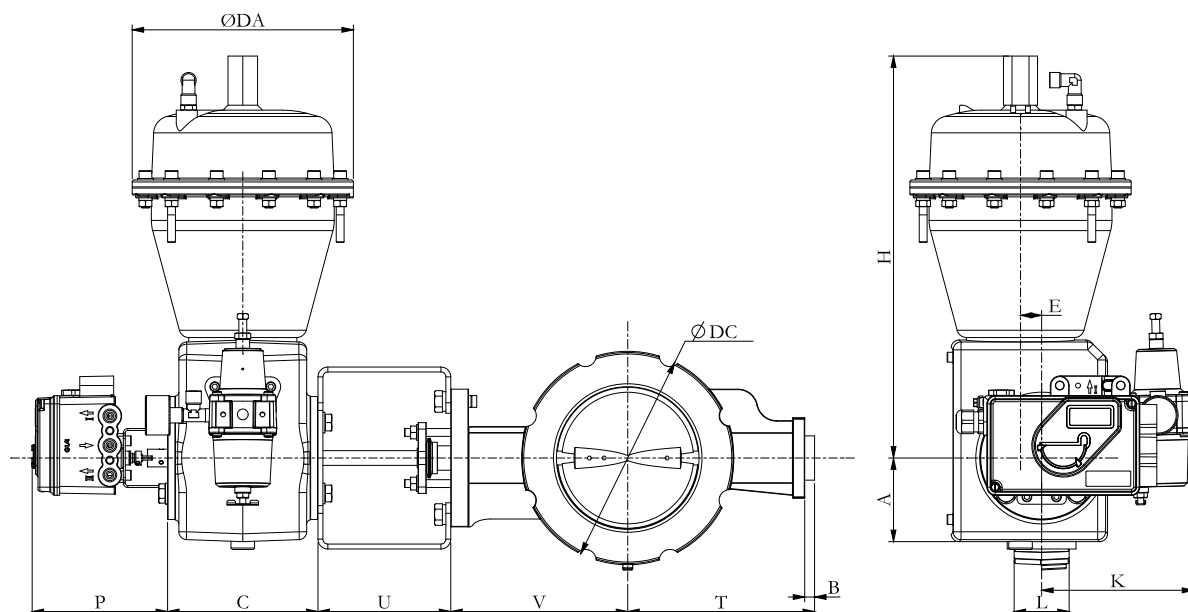


Handwheel actuation type "S"

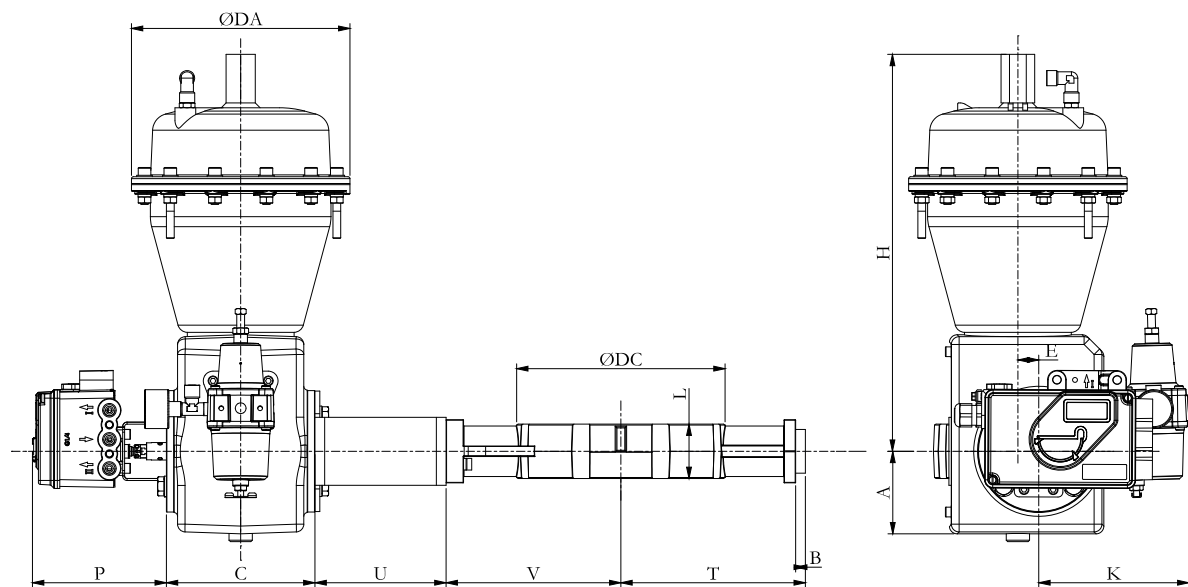
DN	6225	6280	6350	6430
H standard	542	666	937	1150
H type S	480	556	764	
A	95	105	160	233
ØV	180	350	500	500

OVERALL DIMENSIONS

OVERALL DIMENSIONS OF A CONTROL VALVE INSTALLED ON HORIZONTAL PIPE

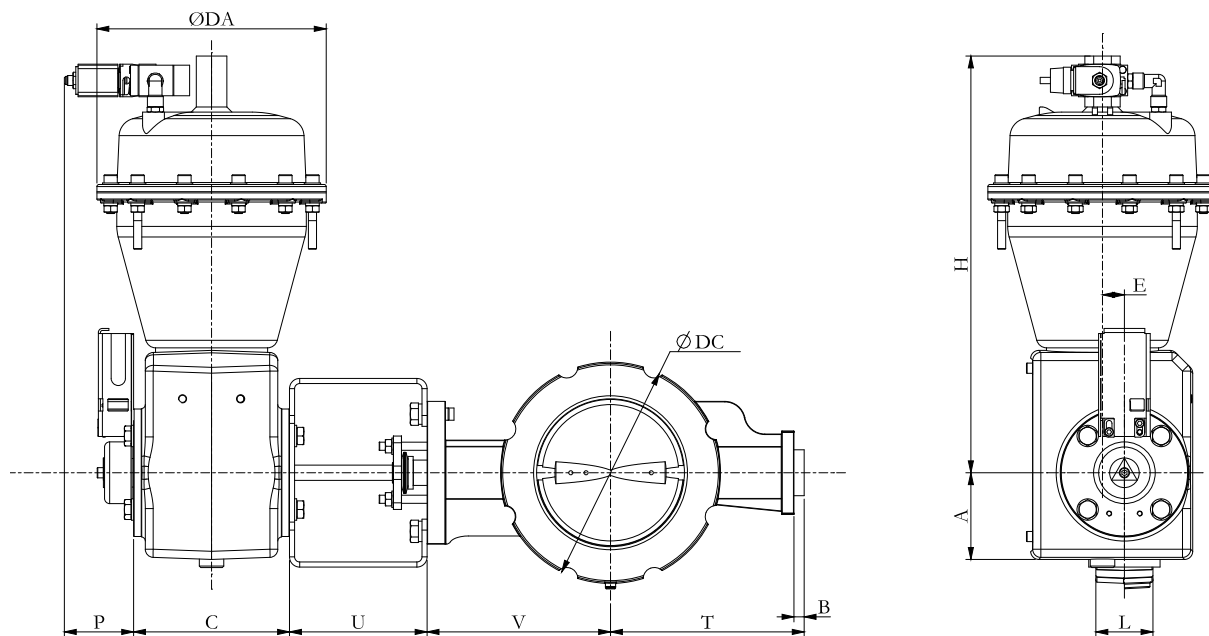


OVERALL DIMENSIONS OF A CONTROL VALVE INSTALLED ON VERTICAL PIPE



OVERALL DIMENSIONS

OVERALL DIMENSIONS OF A SHUT-OFF VALVE INSTALLED ON HORIZONTAL PIPE



OVERALL DIMENSIONS OF A SHUT-OFF VALVE INSTALLED ON VERTICAL PIPE

