

Applications

- Heating and air-conditioning water
- Drinking water

Working conditions

- Temperature range:
 - from -10 °C up to +130 °C: E.P.D.M. XU code
 - from -10 °C up to +90 °C: Nitrile K code
- Allowable pressure: max. 16 bar
- Differential pressure Δp :
 - DN 20 to 200: 16 bar maxi at room temperature,
 - DN 250 to 600: 10 bar maxi at room temperature.
- Vacuum service down to 0,2 absolute bar.
- Maximum fluid velocity under PS: 4m/s for water

Materials

- Refer to page 2

Standard design

- Semi-lug type body (Type 2).
- Possible downstream pipe dismantling and dead-end service
- Extended neck allowing insulation.
- Thermally insulating device for easier fixation of thermal insulating jacket onto base skirt.
- Elastomer liner: an extra volume of rubber, located at the shaft passage, provides, by compression between the valve body and the disc edge, a perfect leak-tightness at the shaft passages.
- Spherical machined disc ensures perfect upstream/downstream sealing: zero leakage visible to the naked eye

- Tightness towards the exterior, downstream/upstream tightness and hydraulic testing in accordance with: EN 12266-1 leak level A, ISO 5208 category A.
- Face to face dimensions in accordance with: ISO 5752 - 20, EN 558-1-20
- Mounting plate meeting the following standards: ISO 5211.
- Flange connection standard PN 6/10/16
- This valve cannot be dismantled.
- Marking in accordance EN 19
- Contains no asbestos, CFC, superchlorinated biphenylene, substances impairing paint wetting.
- Polyurethane paint, 80 μ thickness, colour orange ref. RAL 2002
- The valves meet the safety requirements of the pressure Equipments Directive 97/23/EC (PED) appendix 1 for liquids of the group 1 and fluids of the group 2.

Standard variant

- BOAXMAT-S valves with electrical actuators ACTELEC.
- Washed and packed valves without substances impairing paint wetting.
- Pneumatic actuator ACTAIR / DYNACTAIR
- Electric actuator ACTELEC
- Position detection AMTROBOX
- Pneumatic distribution for On-Off function AMTRONIC
- Positioner and control unit SMARTRONIC

Remark

- Operating instructions 8417.8/.-90

Data to be supplied when ordering

- BOAX-S series valves in accordance with type series booklet 8417.1/18-EN
- Size,
- Working conditions: nature of fluid, pressure, temperature.
- Actuation.



Materials

Body	KSB code
Type 2: Spheroidal graphite cast iron JS 1030	3g
Driving shaft / Shaft	KSB code
Stainless steel 1.4029 (13 % Cr)	6k
Disc	KSB code
Stainless steel 1.4301 / 1.4308 (18-10 type)	6g
AMRING® liner	KSB code
E.P.D.M	XU
High content nitrile	K

Construction

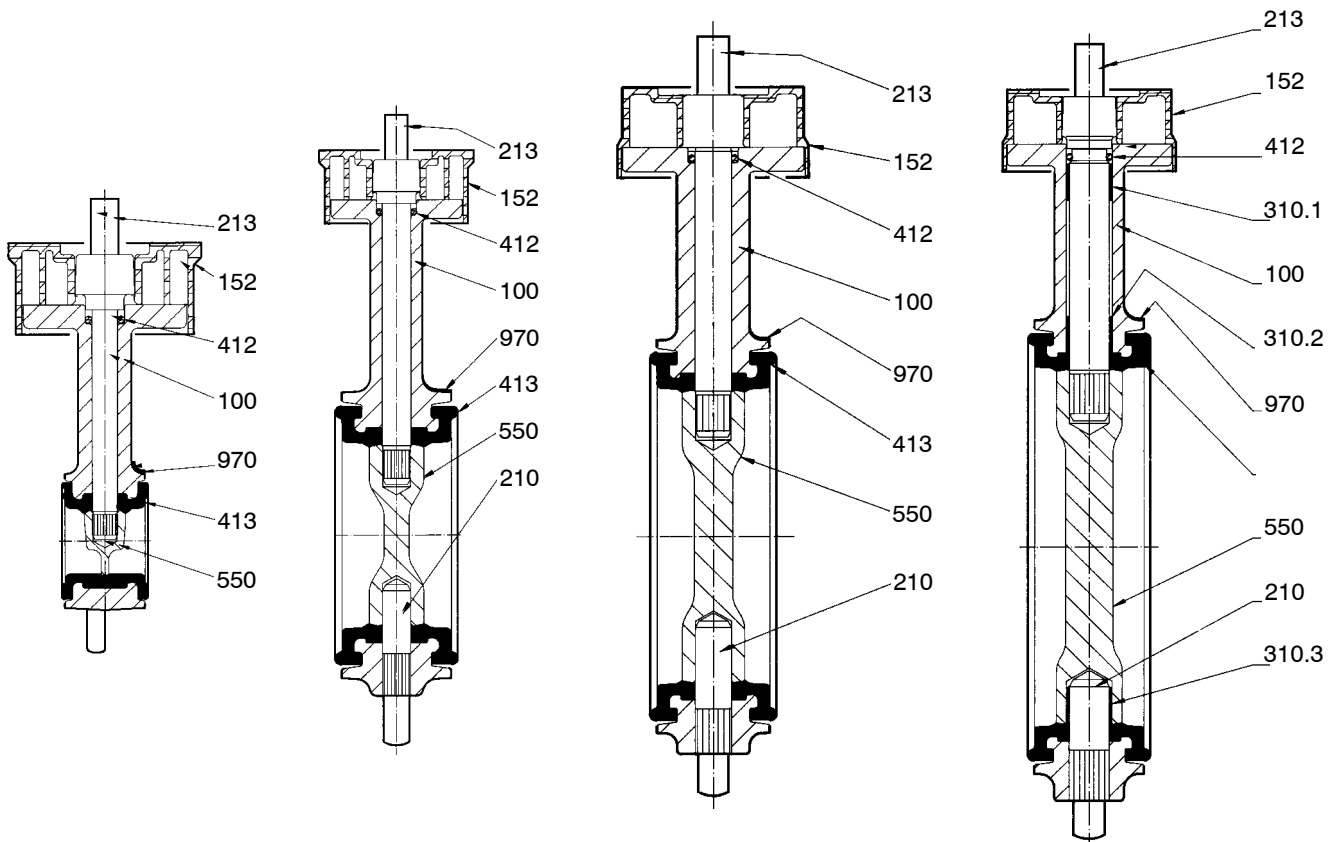
DN 20 to 200

DN 20 and 25

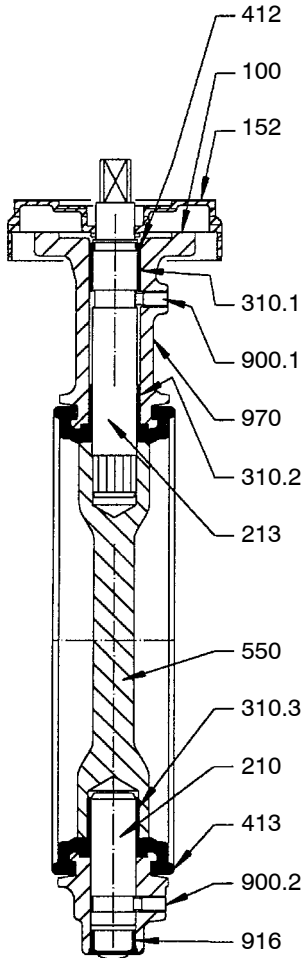
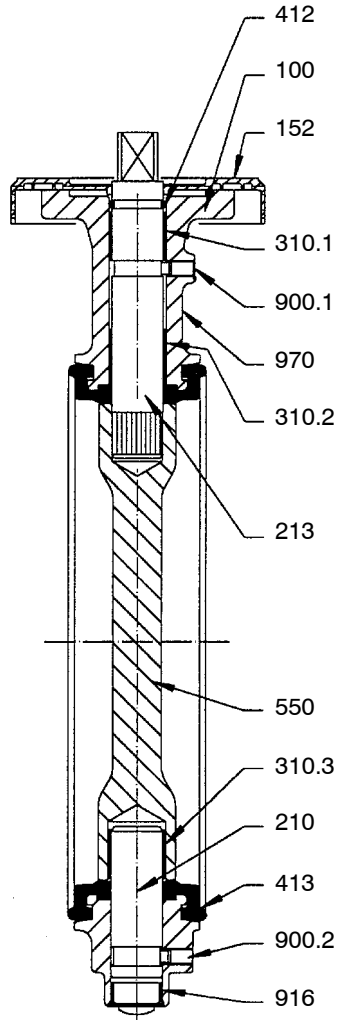
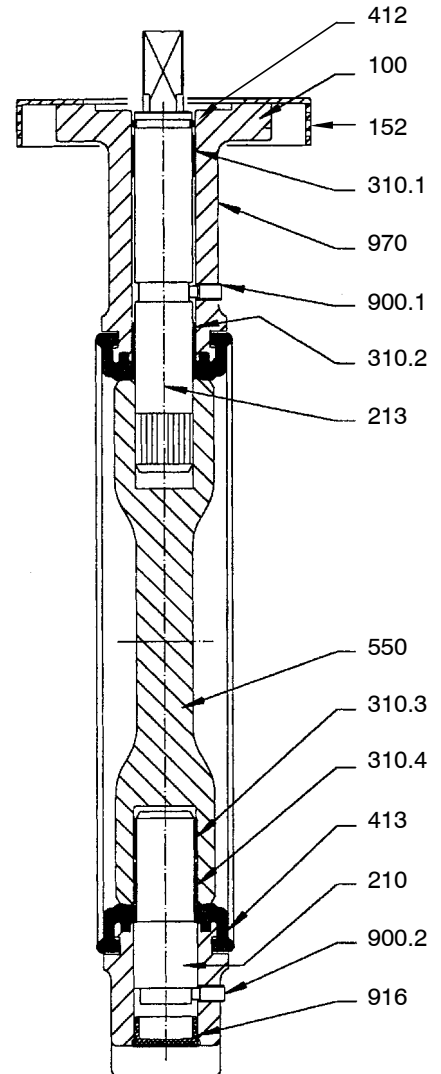
DN 32 to 80

DN 100 to 150

DN 200



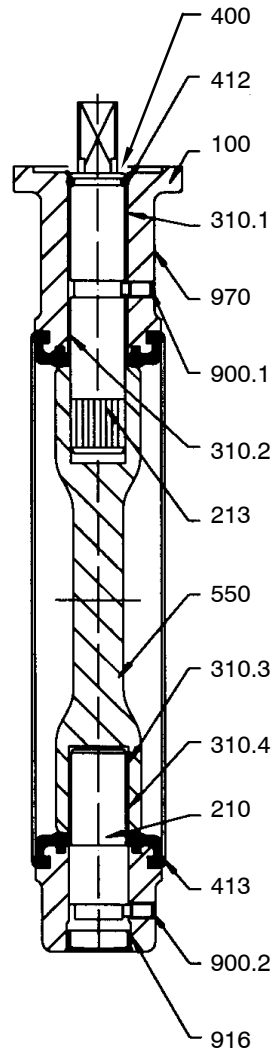
Item	Designation	DN	Materials
100	Body	20 to 200	Spheroidal graphite cast iron JS 1030
152	Thermal isolating device	20 to 200	Polyamid fiber glass filled
210	Shaft	32 to 200	13% Chromium stainless steel (1.4029)
213	Driving shaft	20 to 200	13% Chromium stainless steel (1.4029)
310.1	Plain bearing	200	PTFE filled on steel casing
310.2	Plain bearing	200	PTFE filled on steel casing
310.3	Plain bearing	200	PTFE filled on steel casing
412	O-Ring	20 to 200	E.P.D.M.
413	Liner	20 to 200	E.P.D.M. XU code or nitrile K code
550	Disc	20 to 200	Stainless steel 1.4301 / 1.4308 (18-10 type)
970	Identity plate	20 to 200	Adhesive polyester coated

Construction
DN 250 to 450
DN 250

DN 300

DN 350 to 450


Item	Designation	DN	Materials
100	Body	250 to 450	Spheroidal graphite cast iron JS 1030
152	Thermal isolating device	250 to 450	polyamid fiber glass steel
210	Shaft	250 to 450	13% chromium stainless steel (1.4029)
213	Driving shaft	250 to 450	13% chromium stainless steel (1.4029)
310.1	Plain bearing	250 to 450	PTFE filled on steel casing
310.2	Plain bearing	250 to 450	PTFE filled on steel casing
310.3	Plain bearing	250 to 450	PTFE filled on steel casing
310.4	Plain bearing	350 to 450	PTFE filled on steel casing
412	O-Ring	250 to 450	E.P.D.M.
413	Liner	250 to 450	E.P.D.M. XU code or nitrile K code
550	Disc	250 to 450	Stainless steel 1.4301 / 1.4308 (18-10 type)
900.1	Screw	250 to 450	Stainless steel
900.2	Screw	250 to 450	Stainless steel
916	Plug	250 to 450	Polyethylene
970	Identity plate	250 to 450	Adhesive polyester coated

Construction

DN 500 and 600

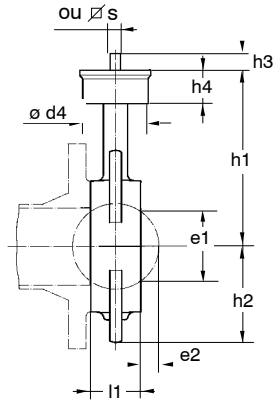


Item	Designation	DN	Materials
100	Body	500 and 600	Spheroidal graphite cast iron JS 1030
210	Shaft	500 and 600	13% chromium stainless steel (1.4029)
213	Driving shaft	500 and 600	13% chromium stainless steel (1.4029)
310.1	Plain bearing	500 and 600	PTFE filled on steel casing
310.2	Plain bearing	500 and 600	PTFE filled on steel casing
310.3	Plain bearing	500 and 600	PTFE filled on steel casing
310.4	Plain bearing	500 and 600	PTFE filled on steel casing
400	Flat gasket	500 and 600	Polypropylene
412	O-Ring	500 and 600	E.P.D.M.
413	Liner	500 and 600	E.P.D.M. XU code or nitrile K code
550	Disc	500 and 600	Stainless steel 1.4301 / 1.4308 (18-10 type)
900.1	Screw	500 and 600	Stainless steel
900.2	Screw	500 and 600	Stainless steel
916	Plug	500 and 600	Polyethylene
970	Identification plate	500 and 600	Adhesive polyester coated

Valve without actuator

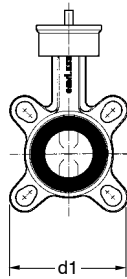
Overall dimensions (mm) and weights (kg)

Flat ends machined in $\varnothing z$



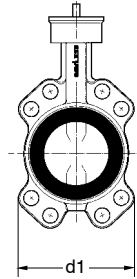
DN 200

DN 20 to 65



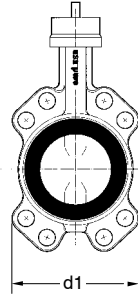
DN 250

DN 80

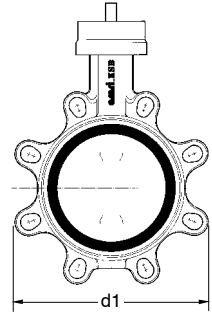


DN 300

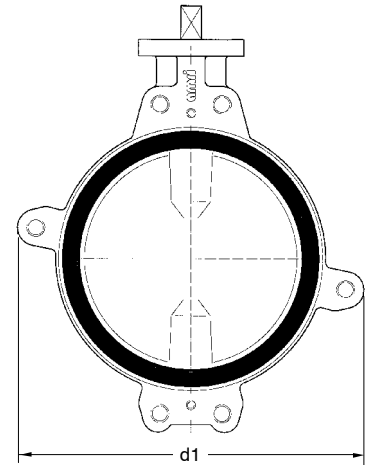
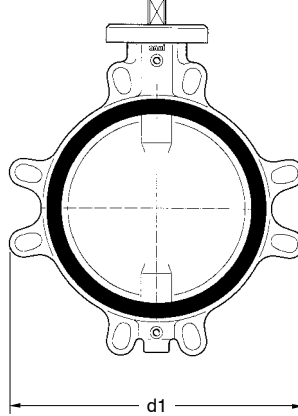
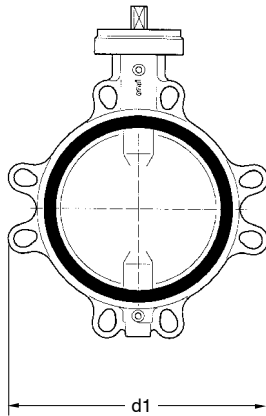
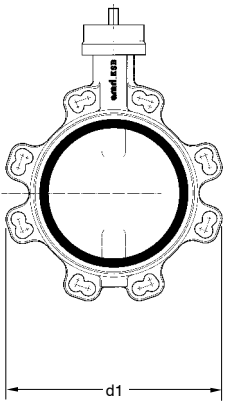
DN 100



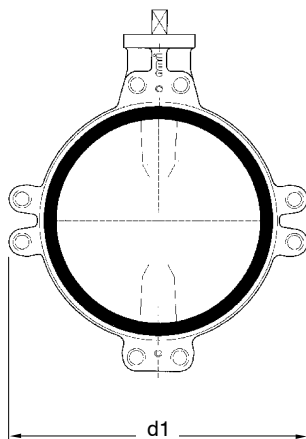
DN 125 and 150



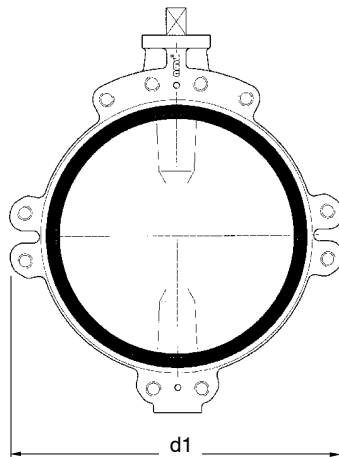
DN 350 to 450



DN 500



DN 600



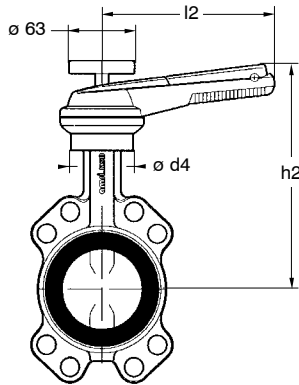
Valve without actuator
Overall dimensions (mm) and weights (kg)

DN	Face to face l1					Mounting plate ISO 5211		Flat shaft end			Square shaft end		Disc clearance		Weight kg
						N°	h4	s	øz	h3	∇ s	h3	e1	e2	
20	27	76		101	38			9	12	14			-	-	0,5
25	27	84		104	42			9	12	14			15	2	0,6
32	27	101		108	51			9	12	14			31	5	0,9
40	33	108	60	126	54	F04	29	9	12	18			32	4	1,2
50	43	118		131	60			9	12	18			33	4	1,5
65	46	132		157	67			9	12	24			55	11	2,2
80	46	138		163	89			9	12	24			71	17	2,8
100	52	150		191	99			11	14	24			90	23	4,4
125	56	234	70	205	112	F05	38	11	14	24			119	35	5,6
150	56	260		224	130			17	22	25			144	46	7,8
200	60	322	95	252	161	F07	42	17	22	25			196	69	11,9
250	68	394	133	275	197	F10	38				19	25	249	92	17,8
300	78	462	158	290	231	F12	28,5				22	29	297	111	32,0
350	78	538	183	338	269	F12	29				25	40	326	127	60,0
400	102	604	183	383	302	F14	29				36	50	370	140	80,0
450	114	656	183	413	329	F14	29				36	55	422	160	110,0
500	127	716	-	440	359	F14	29				36	55	478	178	145,0
600	154	836	-	495	439	F16	29				50	65	566	215	220,0

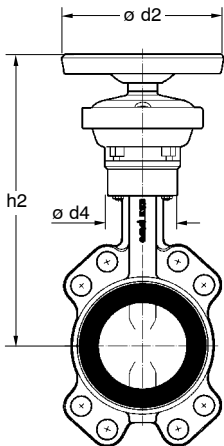
Valve with manual actuation

Overall dimensions (mm) and weight (kg)

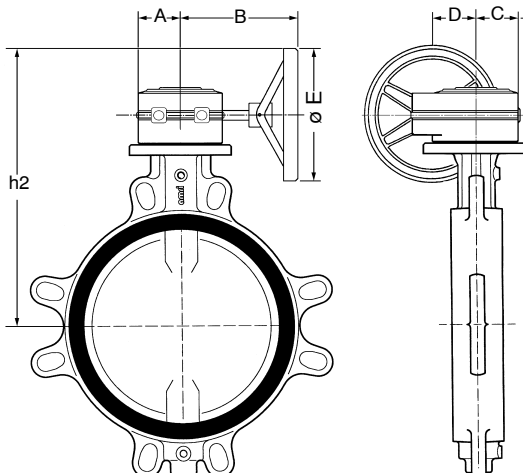
LP 1/4 turn handle operation - DN 20 to 250



Manual actuator operation MA - DN 20 to 250



Manual actuator operation MN and MR - DN 300 to 600



BOAX-S THERMAX:

Variant with thermometer

The thermometer mounted on the BOAX®-S valve with handle can measure the values between 0 °C and +120 °C for an heating installation and between -20 °C and +60 °C for a cooling installation.

For DN 20 to 250, precision class = 1.

DN	l2	LP 1/4 turn handle operation		
		h2	d4	Weight*
20	165	153	60	1,0
25		156		1,1
32		160		1,4
40		178		1,7
50		183		2,0
65		209		2,7
80		215		3,3
100	230	253	70	5,1
125		266		6,1
150	330	298	95	8,8
200		326		12,9
250		374		20,0

* The indicated weights are those of the valve + the handle

DN	Manual actuator operation				
	Type	d2	h2	d4	Weight*
20	MA 12	140	195	60	2,0
25			198	60	2,1
32			202	60	2,4
40			220	60	2,7
50			225	60	3,0
65			251	60	3,7
80			257	60	4,3
100			285	70	5,9
125			299	70	7,1
150			MA 25	225	355
200	383	95			14,9
250	406	133			20,8

* The indicated weights are those of the valve + the actuator

DN	Manual actuator operation							
	Type	A	B	C	D	ØE	h2	Weight*
300	MN 40	70	230	60	60	200	434	35,4
350	MN 80	90	230	70	75	250	490	64,6
400	MR100	86	233	88	88	350	595	93,6
450							625	123,6
500							677	164,0
600	MR200	120	270	108	117	350	743	248,0

* The indicated weights are those of the valve + the actuator

BOAXMAT®-S - Valve with electric actuation
Actuator selection in lubricated medium

DN	Single phase A. C. 230 V, 50 Hz			
	ACTELEC type	Standard operating time	ACTELEC type	Standard operating time
20	LEA-2	20 s	OA 3	11 s
25				
32				
40				
50	LEA-3	20 s	OA 6	6 s
65	LEB-4	6 s		
80	LEB-10	35 s 6 s *	OA 6	6 s
100			OA 8	6 s *
125			OA 15	15 s *
150			ASP	10 s *
200				
250				
300				
350			AS 50	30 s *
400	BS 100	60 s *		
450				
500				

*For other operating time, please consult us.

3-phase A. C. 400 V, 50 Hz		
DN	ACTELEC	Standard operating time
20	OA 6	6 s
25		
32		
40		
50		
65		
80		
100		
125	OA 8	6 s *
150	OA 15	15 s *
200	ASP	10 s *
250		
300	AS 50	30 s *
350		
400		
450	BS 100	60 s *
500		

*For other operating time, please consult us.

BOAXMAT®-S - Valve with electric actuation

Main electrical equipments

ACTELEC	LEA-2	LEA-3	LEB-4	LEB-10	OA 3	OA 6	OA 8	OA 15	ASP	AS 50	BS 100
Opening and closing limit switches	Standard										
Adjustable extreme position mechanical stops	Standard										
Opening and closing torque limit switches	Standard								Standard		
Protection by thermic switch			Standard								
Manual override	Standard										
Visual position indicator	Standard										
Heating resistance	Integrated		To be cable								

Electrical characteristics (for standard operating time)

ACTELEC type	Single phase A. C. 230 V, 50 Hz										
	LEA-2	LEA-3	LEB-4	LEB-10	OA 3	OA 6	OA 8	OA 15	ASP	AS 50	BS 100
Nominal intensity (A)	0,1	0,14	0,8	0,5	0,7	0,6	1,2	0,6	1,8	1,2	1,2
Starting intensity (A)	0,24	0,3	0,9	0,6	0,9	0,9	1,7	0,9	2,5	1,7	1,7
Power (W)	35,0	45,0	30,0	15,0	27,0	30,0	60,0	30,0	100,0	60,0	60,0

ACTELEC type	3-phase A. C. 400 V, 50 Hz					
	OA 6	OA 8	OA 15	ASP	AS 50	BS 100
Nominal intensity (A)	0,3	0,6	0,3	0,8	0,3	0,6
Starting intensity (A)	0,5	1,1	0,5	1,6	0,8	1,1
Power (W)	30	100	30	150	60	100

Electric actuators OA, AS and BS: all markets (Type Series Booklet 8521.12/-10)

- Rated current:
 - single phase 230 V, 50 Hz : all types
 - 3-phase 230 V or 400 V, 50 Hz: all types except OA 3
- Intermittent duty: S4-30 %
- Protection degree: IP 67
- Working temperature: from - 20 °C to + 70 °C
- On request: (Please consult us):
 - Explosion-proof protection,
 - Contacts supplémentaires réglables
 - Electrical motor with built-in thermal protection and epoxy paint finish,
 - Regulation function for OA8, ASP and AS 50,
 - Feed-back position,
 - Potentiometer
 - Control boxes,
 - Other voltages.

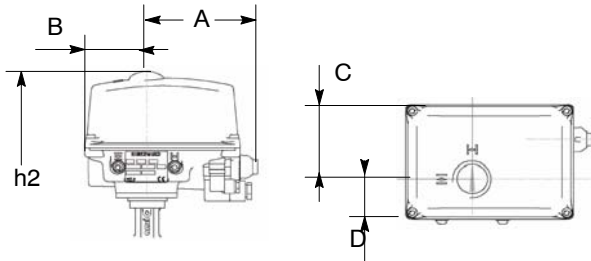
Electric actuators LEA and LEB: Only building market (Type Series Booklet 8521.16/-10)

- Rated current:
 - single phase 230 V, 50 Hz-60 Hz : all types
- Intermittent duty: S4-30 %
- Protection degree: IP 65

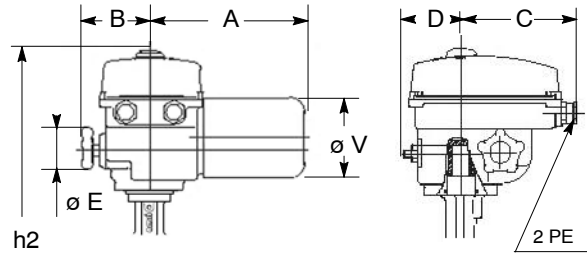
BOAXMAT®-S - Valve with electric actuation

Overall dimensions (mm) weight (kg)

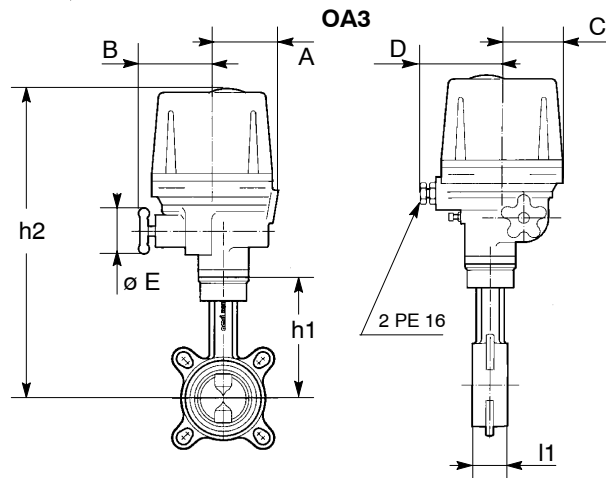
LEA-2 and LEA-3



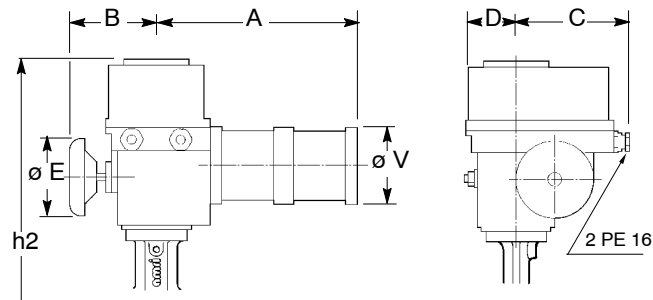
LEB-4 and LEB-10



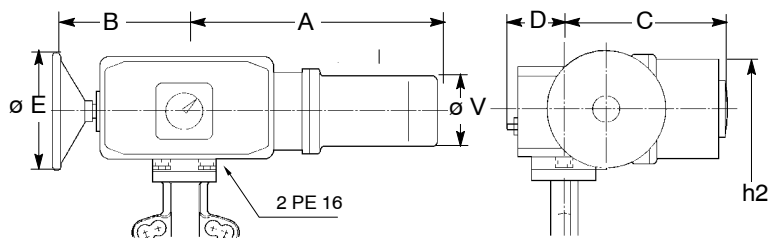
OA3



OA6, OA8 and OA15



ASP, AS50 and BS100



BOAXMAT®-S - Valve with electric actuation
Overall dimensions (mm) and weight (kg)

DN	ACTELEC	l1	h1	h2	b1	b2	d2	d3	l2	l3	Weight* kg
20	LEA-2	27	101	236	118	65	77	41	-	-	2,1
25		27	104	239							2,2
32		27	108	243							2,5
40		33	126	261							2,8
50	LEA-3	43	131	266	118	65	77	41	-	-	3,1
65	LEB-4	46	157	341	148	90	140	65	60	106	7,2
80	LEB-10	46	163	347	191	90	140	65	60	106	8,3
100		52	191	375							9,9
125		56	205	389							11,1
20	OA 3	27	101	346	59	134	-	60	90	93	5,5
25		27	104	349							5,6
32		27	108	353							5,9
40		33	126	371							6,2
50		43	131	376							6,5
65		46	157	402							7,7
20	OA 6	27	101	317	200	90	106	60	145	65	6,2
25		27	104	320							6,3
32		27	108	324							6,6
40		33	126	342							6,9
50		43	131	347							7,2
65		46	157	373							7,9
80		46	163	379							8,5
100		52	191	389							10,1
125	OA 8	56	205	420	200	90	106	60	145	65	12,4
150	OA 15	56	224	439	260	112	106	100	145	65	15,3
200	ASP	60	252	429	312	187	139	165	226	89	29,9
250		68	275	452							35,8
300	AS 50	78	289,5	467	340	187	139	250	226	89	50,0
350		78	338	515							78,0
400	BS 100	102	383	547	392	187	139	250	284	134	100,0
450		114	410	577							136,0
500		127	440	607							175,0

* The indicated weights are those of the valve + the actuator

Installation instructions:

The BOAXMAT®-S are factory preset and tested, do not modify them.

Prior to any actuation, position the valve at mid course, check its rotation direction and check the stroke limiting stops for correct operation.

The BERNARD service leaflets as well as the electrical wiring diagrams are supplied.

Integral protection of the motor is ensured when the thermal switch included in the winding is properly connected.

The actuators are disabled by the stroke limiting stops. The torques limiters on versions AS and BS are safety contacts.

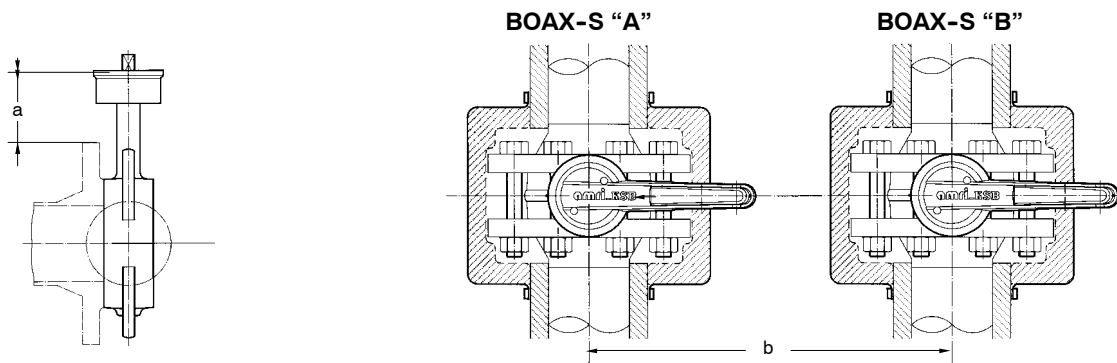
In case of disturbance, they stop the motor via the control box and the same time display the problem.

The torques limiters are contacts with a limited usable life.

Thermal insulator dimensions a and sizes of flange coupling screws

DN	EN 1092 (PN 6)		Flanges according to EN 1092 (PN 10) Type 11		EN 1092 (PN 16) Type 11	
	a	Screw size	a	Screw size	a	Screw size
Screw / Nut						
20	56,0	4 x M 10 x 75	48,5	4 x M 12 x 80	48,5	4 x M 12 x 80
25	54,0	4 x M 10 x 75	46,5	4 x M 12 x 80	46,5	4 x M 12 x 80
32	48,0	4 x M 12 x 80	38,0	4 x M 16 x 85	38,0	4 x M 16 x 85
40	61,0	4 x M 12 x 80	51,0	4 x M 16 x 85	51,0	4 x M 16 x 85
50	60,5	4 x M 12 x 90	48,0	4 x M 16 x 100	48,0	4 x M 16 x 100
65	77,0	4 x M 12 x 90	64,5	4 x M 16 x 100	64,5	4 x M 16 x 100
80	68,0	4 x M 16 x 100	63,0	8 x M 16 x 110	63,0	8 x M 16 x 110
100	86,0	4 x M 16 x 110	81,0	4 x M 16 x 110	81,0	8 x M 16 x 110
125	84,5	8 x M 16 x 115	79,5	4 x M 16 x 120	79,5	8 x M 16 x 120
150	91,5	8 x M 16 x 115	81,5	8 x M 20 x 130	81,5	8 x M 20 x 120
200	92,0	8 x M 16 x 125	82,0	8 x M 20 x 130	82,0	12 x M 20 x 130
250	87,5	12 x M 16 x 135	77,5	12 x M 20 x 150	72,5	12 x M 24 x 150
300	69,5	12 x M 20 x 150	67,0	12 x M 20 x 160	59,5	12 x M 24 x 160
Tie-rods						
350			90,0	(10xM20x180)+(12xM20x50)	82,5	(10xM24x195)+(12xM24x55)
400			100,5	(10xM24x210)+(12xM24x50)	93,0	(10xM27x230)+(12xM27x60)
450			105,5	(12xM24x230)+(16xM24x55)	93,0	(12xM27x260)+(16xM27x70)
500			108,0	(12xM24x240)+(16xM24x55)	85,5	(12xM30x285)+(16xM30x75)
600			107,0	(10xM27x290)+(20xM27x60)	77,0	(10xM33x340)+(20xM33x90)

If threaded rods or studs are used, add at least one nut length to the above-mentioned screw lengths.

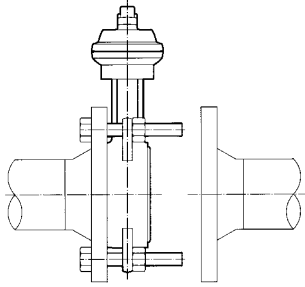

Minimum deviations on distributor

The minimum deviations between the distribution loops are defined by the requirements applicable to heating installations, regardless of the control handles or reduction gears used.

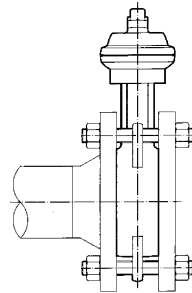
		Minimum deviations b (mm)																	
		BOAX-S "A"																	
DN	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600	
BOAX-S "B"	20	240	240	245	265	270	295	300	310	325	340	370	405	430	484	530	570	610	670
	25		245	250	265	270	295	305	310	325	340	370	410	430	487	532	572	612	672
	32			255	270	275	300	305	315	330	345	370	415	435	491	536	576	618	678
	40				290	295	320	325	335	345	365	390	430	455	510	554	594	635	695
	50					300	325	330	340	350	370	400	435	460	514	560	600	640	700
	65						350	355	365	380	395	425	460	485	540	585	625	665	725
	80							365	370	385	400	430	470	490	546	591	631	673	733
	100								380	395	410	440	475	500	554	600	640	680	740
	125									410	425	450	490	515	570	614	654	695	755
	150										440	470	510	530	585	630	670	710	770
	200											500	540	560	619	658	700	740	800
	250												575	600	651	696	736	778	838
	300													620	675	720	760	800	860
	350														730	775	815	855	915
	400															820	860	900	960
	450																900	940	1000
500																	980	1040	
600																		1100	

End of line and downstream dismantling

Downstream dismantling

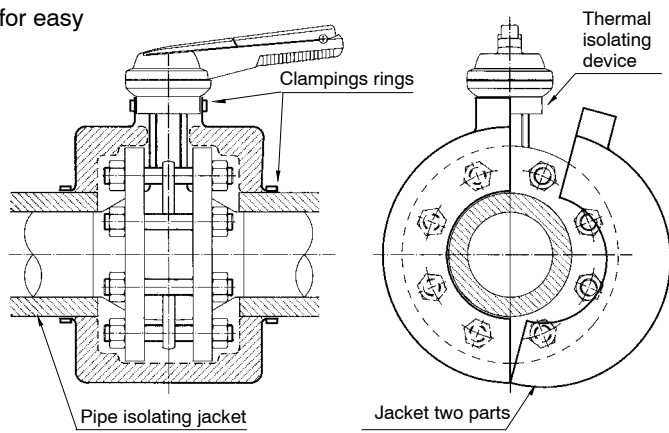


End of line mounting



Heat insulation

The extended neck and the thermal isolating device allow for easy clamping of an insulating jacket..



Product features - to our customers' benefit

Option: Thermometer (accuracy class: 1)

- Low-cost installation
- No tightness problem,
- No disruption of heat insulating jacket..

Padlockable and/or lead sealable control handle (DN 20-250)

- Safety against unauthorized operation

Thermal isolating device

- Quick and easy installation of thermal insulating jacket.
- No thermal loss.
- No condensation water.

Reducer

- Possibility of mounting in the open air owing to its protection class IP 67.
- Small size, hence reduced overall dimensions.

BOAX®-S THERMAX :
DN 80

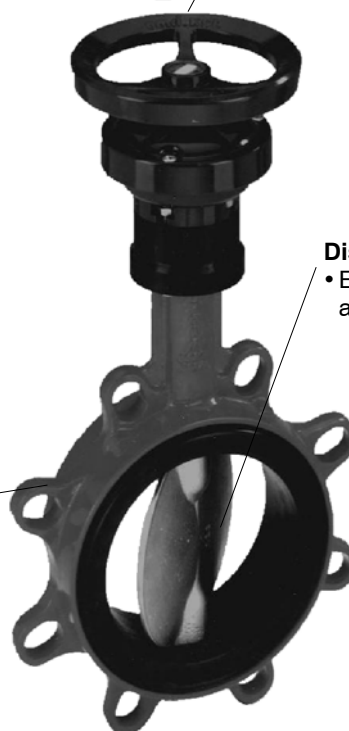


Disc with spherical machining

- Ensures permanent tightness at shaft passage way.

Wafer type body with tapped lugs

- Possibility of end of line and downstream dismantling..
- Small overall dimensions.
- Possibility of mounting between flanges PN 6/10/16.
- Possibility of thermal insulation in accordance with the requirements applicable to heating installations.



BOAX®-S
DN 125