

Gemini Valve B.V.

Zijperstraat 29, 1823CX Alkmaar, Netherlands
Tel.: +31(0) 161-227.909 / Mobile: +316 1358 2578

info@geminivalve.nl
www.geminivalve.nl



1150-1183 BUTTERFLY VALVES + SF SWITCH BOX

FEATURES

1150-1183 butterfly valves + SF are intended for the manual disconnection of very diverse fluid pipes, providing position display and feedback information to the control. The valve body is made of GS cast iron. The different configurations of the butterfly materials and of the liner make it suitable for many applications. Wafer mounting with centring ears between PN10/16 and ANSI 150 flanges. The SF switch box is equipped as standard with 2 dry contacts. Due to its IP67 leak-tightness, it can be installed both indoors and outdoors. Different contacts and detectors are available as options. Lockable handle.



1141 SK

LIMITS OF USE

Fluid pressure: WP	16 bar up to DN 300 10 bar up to DN 400
Fluid temperature: WT°	According to the table below
Ambient temperature	-15°C / +80°C
Index of protection	IP 67



AVAILABLE MODELS

DN 32 -40 to DN 400.

Connection between flanges PN10/16 and ANSI 150 RF.

2 x M20x1.5 electrical connections.

Ref.	Butterfly	Liner	Example of applications	WT° min	WT° max
1141	GS cast iron	NBR	Natural gas – NF-ROB GAZ authorisation 5 bar	-10°C	+60°C
1147	316 SS	NBR carboxyle	Powdery - abrasive	-10°C	+80°C
1149	316 SS	EPDM CH.	Hot water	-10°C	+130°C
1150	GS cast iron	EPDM	Cold water – warm water (110°C at peak) - ACS	-10°C	+110°C
1151	316 SS	NBR	Hydrocarbon, natural gas, compressed air	-10°C	+80°C
1152	GS cast iron	NBR	Hydrocarbon, natural gas, compressed air	-10°C	+80°C
1153	316 SS	EPDM	Demineralised water – alkalis (110°C at peak) - ACS	-10°C	+110°C
1154	316 SS	FPM	Compatible aggressive fluids, petrol	-5°C	+150°C
1156	316 SS	White NBR	Compatible food fluids	-10°C	+80°C
1157	316 SS	SILICONE	Oils and fat	-15°C	+150°C
1158	Copper-alu	NBR	Seawater	-10°C	+80°C
1183	Polished SS	Food SILICONE	Food fluids (FDA authorisation) 	-15°C	+150°C

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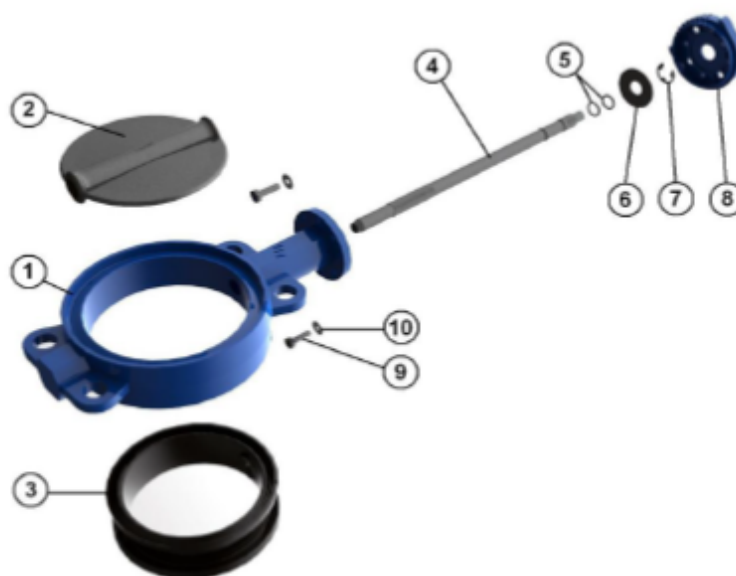
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DIRECTIVES AND MANUFACTURING STANDARDS

OBJECT	Standard	ON	OBJECT	Standard
Pressure Equipment Directive 2014/68/EC	Cat. III modules B+C1	0409	Final test	ISO 5208
ATEX Directive	II 2G/D Tx zones 1,2,21 and 22	0038	Face-to-face dimension	ISO 5752 series 20
Sanitary conformity	ACS		Flange dimension	EN 1092-1



CONSTRUCTION

N°	Name	1147	1149	1141	1150	1152	1151	1153	1154	1156	1157	1183	1158
1	Body	GS EN GJS-500-7 cast iron											
2	Butterfly DN32-100	1.4408 SS											
3	Butterfly DN125-400	GS Cast iron	Stainless steel	GS EN GJS-500-7 cast iron			1.4408 SS					Polished SS	Copper-alu
3	Liner	NBR carboxyle	EPDM CH	NBR Gaz	EPDM	NBR	NBR	EPDM	FPM	White NBR	Silicone	Food silicone	NBR
4	Stem	304 SS	304 SS	304 SS	420 SS	420 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS	304 SS
5	O-ring	NBR	NBR	NBR	EPDM	NBR	NBR	EPDM	FPM	NBR	EPDM	EPDM	NBR
6	Ring	Steel											
7	Circlips	Steel											
8	ISO mounting pad	aluminium											
9	Screw	5.6 steel											
10	Washer	steel											

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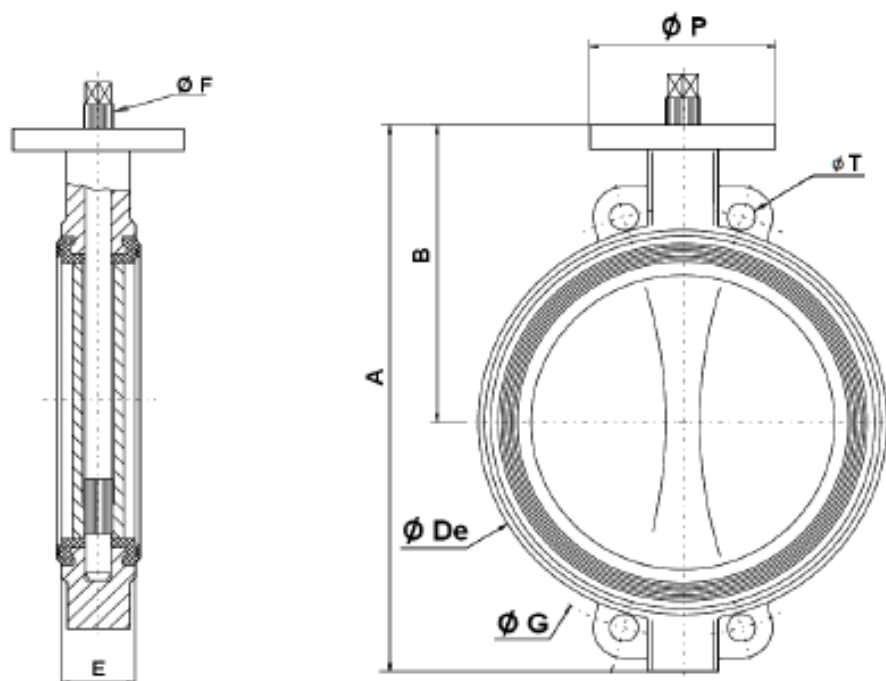
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DIMENSIONS (mm)



DN	32-40	50	65	80	100	125	150	200	250	300	350	400
A	206	228	243	266	294	324	349	438	461	523	582	645
B	140	156	162	170	185	207	216	256	248	280	300	340
Ø De	82	102	119	135	155	185	208	270	328	381	437	486
E	33	43	46	46	52	56	56	60	68	78	78	102
Ø F	10.5	10.5	14.5	16.5	16.5	18.5	18.5	22.5	25.5	30.5	30.5	35.5
Ø G	110	125	145	160	180	210	240	295	350	400	460	515
Ø P	88	88	88	88	88	105	105	105	150	150	170	170
Ø T	18	18	18	18	18	18	23	23	23	23	23	17
Weight (kg)	2.46	3.66	4.40	4.60	6	7.60	9.20	14.7	24.7	33	39	52

FLOW-RATE COEFFICIENT Kv (m³/h)

DN	32-40	50	65	80	100	125	150	200	250	300	350	400
Kv	70	109	200	334	551	901	1427	2383	3825	5659	8177	10659

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1150-1183 BUTTERFLY VALVES + SF SWITCH BOX

114x, 115x AND 116x VALVES + SWITCH BOX

ASSEMBLY AND MAINTAINANCE INSTRUCTIONS

1/ CHECKS AT ACCEPTANCE

1.1 - order number check

The valve code is shown on the SECTORIEL label affixed on the actuator. Check that the code is identical with that shown on the delivery slip and the acknowledgement of receipt of your order.

1.2 - valve diameter check

The valve code is also shown on the SECTORIEL label affixed on the actuator. Check that the diameter matches that of your pipe installation.

1.3 - flange standard check

114x and 115x +AP valves have smooth lugs for mounting between PN10/16 flanges as per the EN 1092-1 standard and ANSI 150 as per the ANSI B16.5 standard. Check that the flanges of the pipe installation correspond to one of these standards.

The 1160-61-62-63-64 valves have internally threaded lugs. They are compatible with PN10/16 flanges up to DN150 and PN10 from DN200 to DN300 as per the EN 1092-1 standard. Check that the pipe installation is as per the standard.

1.4 - fluid and ambient temperature parameter check

The pressure and temperature limits for the valve in service are shown in the table below. Check that, for your service, the pressure and temperature are compatible with the limits.

Fluid pressure: WP	16 bar up to DN 200 10 bar up to DN 400
Fluid temperature: WT	According to the table below
Ambient temperature	-15°C / +80°C
Motor compressed air	minimum 6 bar / maximum 10 bar

SECTORIEL 38290 - FRANCE

SERIAL NUMBER VALVE

CODE DN

ACTIO MO

Read the mounting and servicing instructions carefully

2 / STORAGE INSTRUCTIONS

Follow our "IMESTOCK" instructions for storage.

3 / ASSEMBLY INSTRUCTIONS

3.1 - Place of installation

The 114x, 115x and 116x +AP automatic valves can be installed both indoors and outdoors, while complying with the limit temperatures given in § 1.4.

If the valve is equipped with accessories (switch box, pilot solenoid valve), check their service temperatures and their IP code depending upon the place of installation.

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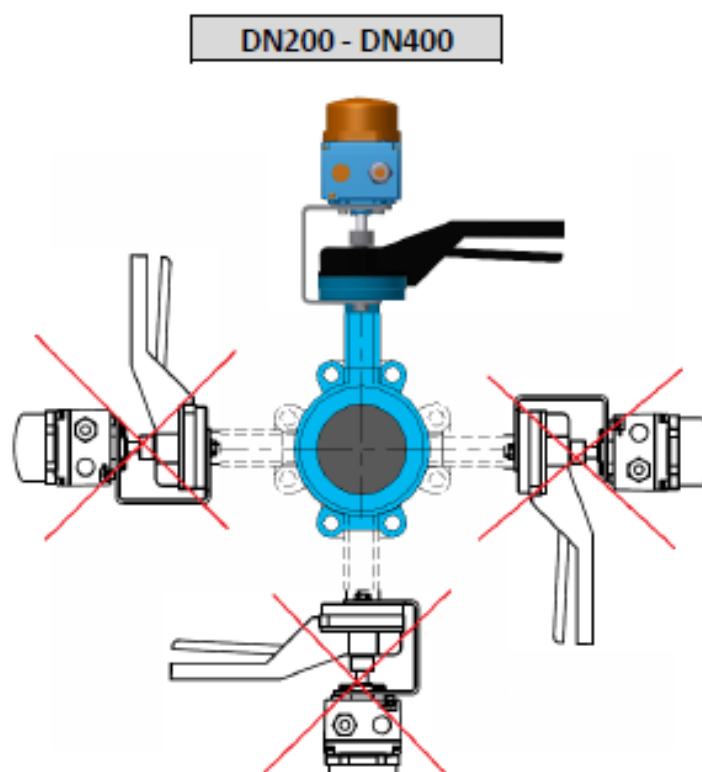
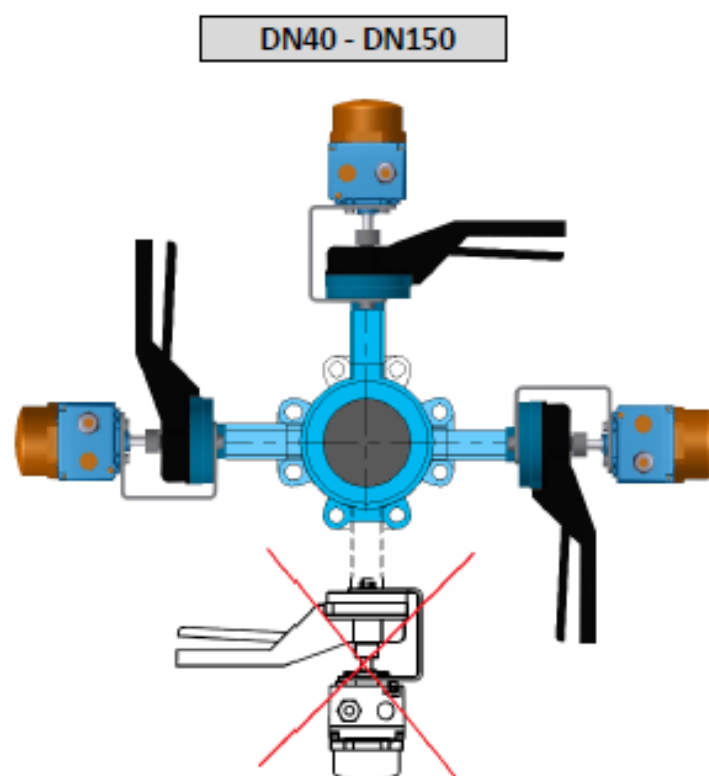


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3.2. - Connection to the pipe installation

3.2.1 - Mounting positions

The automatic valve has to be mounted either vertically or horizontal ly with an actuator, as shown in the diagram below:



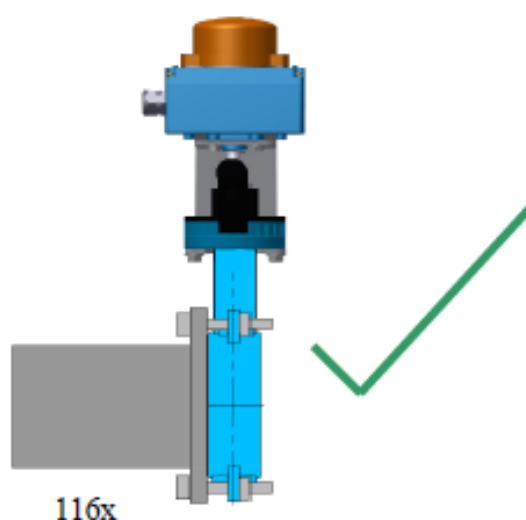
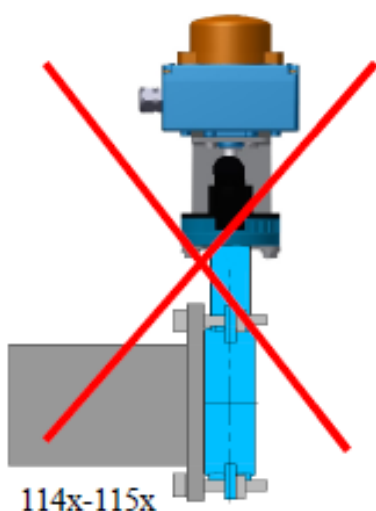
Authorised with
suitable support

Authorised with
suitable support

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3.2.2 - Mounting at the end of a line

114x and 115x butterfly valves must not be installed at the end of a line. Only the 116x valves can be installed at the end of a line.

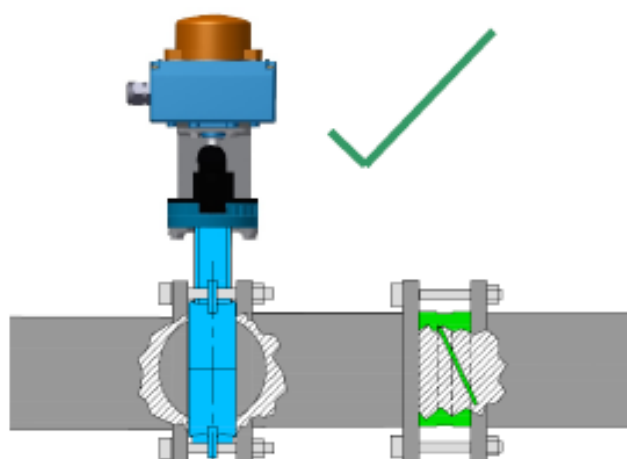
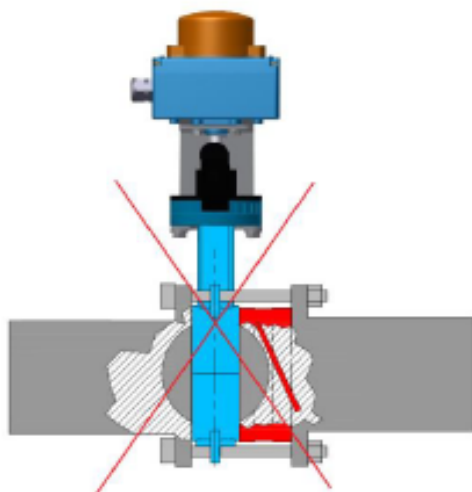


Possible blocking of the butterfly: protruding length.

At valve opening, the butterfly protrudes from the body according to the lengths shown in the table below.

DN	40	50	65	80	100	120	150	200	250	300	350	400
Protrusion (mm)	3,5	3,5	9,5	17	24	33,5	45,5	69	90	110,5	131	148

You must take it into account at mounting and not abut another valve element immediately upstream and downstream which could block the movement of the butterfly (e. g. a swing valve).



3.2.3 - Mounting precautions:

Before any intervention on the valve, please follow the following indications:

Before installing the valve, clean the piping (brazing residues, metal swarf, sealing material, etc.).

Isolate the pipe installation upstream and downstream.

Bleed the pipe installation in order to bring it to ambient temperature and pressure.

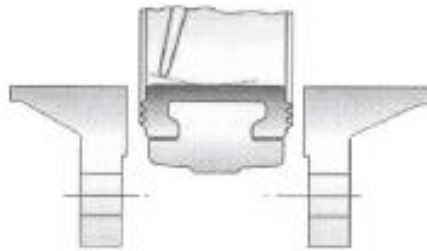
Do not force the piping to align it so as to prevent applying stress on the valve body.

Wear the safety equipment required for this type intervention (gloves and goggles).

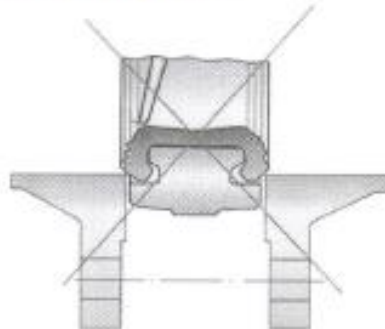
1150-1183 BUTTERFLY VALVES + SF SWITCH BOX

3.2.4 - Valve installation on the piping

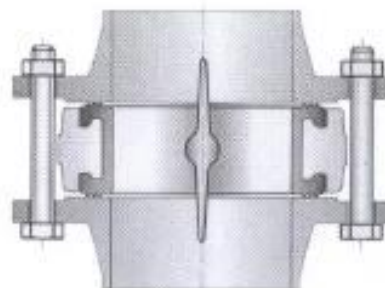
For all asymmetrical devices, check their orientation with regard to the normal direction of flow, and you must mount them in their operating position.



The gap in-between flanges has to be large enough to allow the valve be inserted without the elastic liner getting caught. The butterfly has to be in an almost closed position.



The liner can get damaged if the counter-flanges are not sufficiently spaced.



The butterfly has to be in the fully open position after positioning the valve in-between the counter-flanges and before tightening the bolts, otherwise the elastic liner might be deformed or deteriorated during the tightening of the first manoeuvre.

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3.2.5 - connection to the pipe installation

Nuts and bolts for PN10/16 114x and smooth lug 115x

DN	ØD		ØK		Hole number		Nuts and bolts	
	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16
40	150		110		4		M16x90	
50	165		125		4		M16x100	
65	185		145		4		M16x110	
80	200		160		8		M16x110	
100	220		180		8		M16x120	
125	250		210		8		M16x130	
150	285		240		8		M20x140	
200	340		295		8	12	M20x140	
250	395	405	350	355	12	12	M20x160	M24x
300	445	460	400	410	12	12	M20x160	M24x
350	505	520	460	470	16	16	M20x170	\
400	565	580	515	525	16	16	M24x200	\

Nuts and bolts for PN10/16 116x and threaded lug 118x

DN	ØD		ØK		Hole number		Nuts and bolts	
	PN10	PN16	PN10	PN16	PN10	PN16	PN10	PN16
40	150		110		4		Zinc-plated M16x30 steel screw	
50	165		125		4		VAZ M16x35	
65	185		145		4		VAZ M16x35	
80	200		160		8		VAZ M16x40	
100	220		180		8		VAZ M16x40	
125	250		210		8		VAZ M16x45	
150	285		240		8		VAZ M20x45	
200	340		295		8	12	VAZ M20x45	
250	395	405	350	355	12	12	VAZ 20x45	VAZ 24x
300	445	460	400	410	12	12	VAZ 20x60	VAZ 24x
350	505	520	460	470	16	16	VAZ 20x	\
400	565	580	515	525	16	16	VAZ 24x	\

3.3 - switch box connection to the electrical control network

The electrical connection shall be performed by qualified personnel, as per the standards in vigour.

Depending on the supply voltage, the components



3.4 - operating test

Perform an operating test as follows after having made the pneumatic and electrical connections:

A / opening test

- power the coil of the pilot solenoid valve,
- visually check that the valve is open: the switch box indicator must show the OPEN position,

b / closing test

- turn off the power supply to the coil of the pilot solenoid valve,
- visually check that the valve closes instantaneously: the switch box indicator must show the CLOSED position.

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4 / MAINTENANCE INSTRUCTIONS

4.1 - Before any intervention

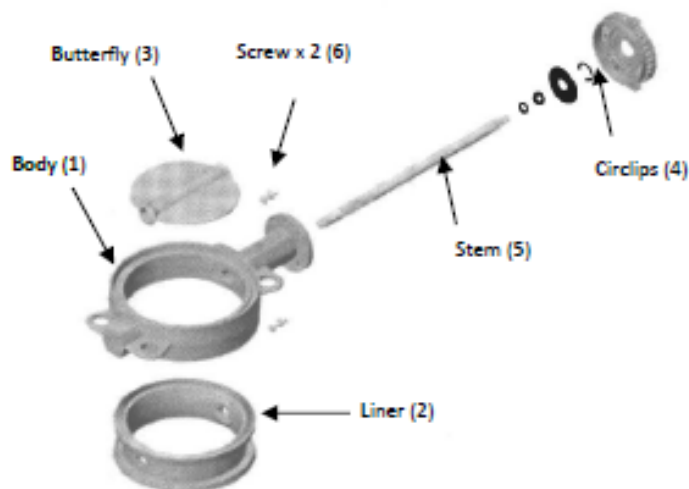
- 4.1.1 - Depressurize, drain and bring to ambient temperature, the pipe installation on which the valve is mounted.
- 4.1.2 - Wear suitable protective equipment.
- 4.1.3 - Provide means of lifting and support appropriate for the maintenance operation.

Maintenance:

The absence of leak at the liner and at the valve stem should be regularly checked. If a leak occurs at the stem, replace the o-ring, if it occurs at the liner, the liner has to be replaced.

Important: All maintenance and servicing operations must be performed under the best safety conditions. Before any intervention, the valve has to be removed taking the above-mentioned precautions which apply both to mounting and removal.

Worn part replacement:



Remove the motor actuator. Unscrew the screws (6), remove the circlips (4). This frees the shaft (5), thus enabling the liner (2) and the butterfly (3) to be taken out of the body (1). Replace the worn parts: To obtain the list of spare parts for every valve, please contact our technical department at: +33 (0)474 94 90 70

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4.2 - Valve maintenance

In the event of a leak on the line, check the state of the butterfly (1) and of the liner (4). If need be, replace them.

Codes of spare parts:

DN	Liner					Butterfly		Stem
	EPDM	EPDM C	NBR	SILICONE	FKM	cast iron	Stainless steel	
40	985946	985966	985986		986026	9865030	9865020	9865040
50	985947	985967	985987	986007	986027	9865031	9865021	9865041
65	985948	985968	985988	986008	986028	9865032	9865022	9865042
80	985949	985969	985989	986009	986029	9865033	9865023	9865043
100	985950	985970	985990	986010	986030	9865034	9865024	9865044
125	985951	985971	985991	986011	986031	9865035	9865025	9865045
150	985952	985972	985992	986012	986032	9865036	9865026	9865046
200	985953	985973	985993	986013	986033	9865037	9865027	9865047
250	985954	985974	985994	986014	986034	9865038	9865028	9865048
300	985955					9865039	9865029	9865049

In the event of a leak at the stem, check the state of the o-rings of the stem.

4.3 – Switch box maintenance

Refer to the switch box's IME.

5 / INSTRUCTION ON OUR PRODUCT DISPOSAL AND RECYCLING

Our valve does not contain any hazardous substance. At the valve end of life, after removing the equipment, the user's obligation is to call a scrap metal collector who will sort and recycle the different parts of the equipment. For your information, the following families of metal are present in our product: steel, stainless steel and aluminium.

With regard to the electrical parts of the equipment, they have to be separated from the rest of the valve and given to a company specialised in recycling waste from electrical and electronic equipment, as per the directive 2002/96/EC.

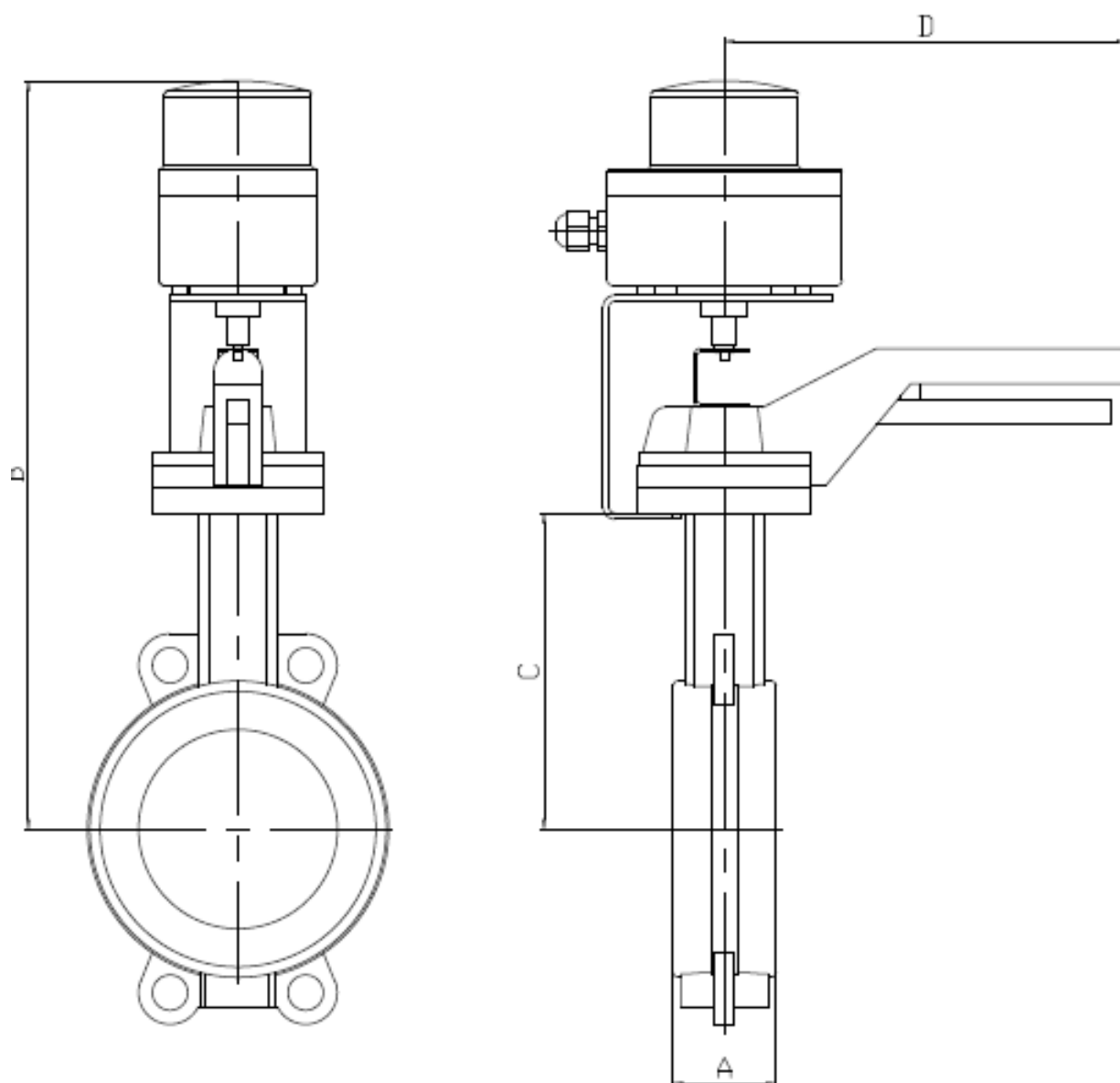


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DN	32/40	50	65	80	100	125	150	200
A	33	43	46	46	52	56	56	60
B	331,5	347,5	353,5	361,5	376,5	398,5	407,5	447,5
C	116	132	138	146	161	183	192	232
D	205	205	205	205	205	330	330	330
KG	3.39	4.32	4.99	5.47	6.87	8.67	11.37	14.27

Informations données à titre indicatif et sous réserve de modifications éventuelles
data subject to alteration

				Maj titre	18/04/2016	B
				Maj cote B	19/12/2014	A
Echv/	Date 14/03/2012	Dessiné par : E.D	Tolérances générales : +/- 0,2	Modifications	Date	REV.
ROBINET A PAPILLON 1141-1183 + BFC/BUTTERFLY VALVE 1141-1183 + LIMIT SWITCH BOX				Matière :		
				Poids (Kg) :		

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SF-TYPE SOLDI SWITCH BOXES

FEATURES

The SF-type switch box is intended for equipping quarter-turn pneumatic actuators and manual valves. It makes it possible to have an easy, direct view of the valve position and of the feedback information to control. Of robust construction, it can be installed outdoors. The position indicator provides a very good visual reading of the valve position. The SF switch box can be equipped with many switches and detectors (see below). The notched cams can be manually adjusted with great accuracy, and are insensitive to vibrations.

AVAILABLE MODELS

SF: IP67 model



LIMITS OF USE

Ambiant temperature	-20°C / +80°C
IP Code	IP 67
SF	Outside ATEX zone

MECHANICAL CONNECTION

Axis dimension	According to VDI/VDE 3845
Attachment	ISO 5211 F05
Stainless steel arches for attachment on to the actuator	<u>NAMUR 0</u> : 50x25x20 mm <u>NAMUR 1</u> : 80x30x20 mm <u>NAMUR 2</u> : 80x30x30 mm <u>NAMUR 3</u> : 130x30x30 mm <u>NAMUR 4</u> : 130x30x50 mm

ELECTRICAL CONNECTION

Standard cable inputs	2 x M20x1.5
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CONSTRUCTION

Casing and lid	Aluminium
Coating	Polyester paint
Stem	Stainless steel
Dome	Polycarbonate



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SF-TYPE SOLDO SWITCH BOXES

SWITCH DETAILS SF model

Ref.	Switch	Features
01	SPDT el.mech. switch silver plated contacts	Max 5A-250Vac / min 50mA-250Vac Max 5A-125Vac / min 50mA-125Vac Max 3A-24Vdc / min 50mA-24Vdc
03	SPDT el.mech. switch gold plated contacts (for Exia cert)	Max 1,8A/3A-250Vac / min 5mA-250Vac Max 2A/3A-125Vac / min 5mA-125Vac Max 1,2A/1,5A-24Vdc / min 1mA-24Vdc
1F	DPDT el.mech. switch silver plated contacts	
C4	SPDT magnetic hermetically sealed reed switch.	Max 0,1A-120Vac / 1A-24Vdc
C8	DPDT magnetic hermetically sealed reed switch.	Max 0,1A-120Vac / 1A-24Vdc
N1	SPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
N3	SPDT magnetic hermetically sealed gold plated snap acting contacts	Max 1A-250Vac / 1A-30Vdc
N4	DPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
60	Inductive proximity NAMUR sensor SJ3,5-N	2 wire NC logic (for Exia cert)
62	Inductive proximity NAMUR sensor SJ3,5-SN	2 wire NC logic (for Exia cert, safety funct. low temp)
63	Inductive proximity NAMUR sensor - SJ3,5-S1N	2 wire NO logic (for Exia cert, safety funct)
70	Inductive proximity NAMUR - NJ2-V3-N	2 wire (for Exia cert)
73	Inductive proximity sensor (+70°C max.) - NBB2-V3-E2	P+F - 3 wire PNP NO amplified 10-30 Vdc, 100 mA
75	Inductive proximity sensor - IS 5026	IFM - 2 wire NO/NC amplified 5-36 Vdc, 200 mA
83	Inductive proximity sensor - NBB3-V3-Z4	P+F - 2 wire NO amplified 5-60 Vdc, 100 mA
TO	4-20 mA position transmitter	12-30 Vdc
HO	4-20 mA HART position transmitter	Atex Ex ia IIC T6 / T4 – certified 8-30Vdc

OPTIONS

There are many options for which you are invited to contact our sales service:

	SS : stainless steel box
	3-Channel L or T indicators
L	<u>LT</u> : version -40°C (according to the type of switch)
P	<u>LT 1</u> : version -55°C (according to the type of switch)
1	Cable inputs 1/2" NPT
	Pilot-solenoid valve wiring
G	EAC Certificate
U	UL Certificate

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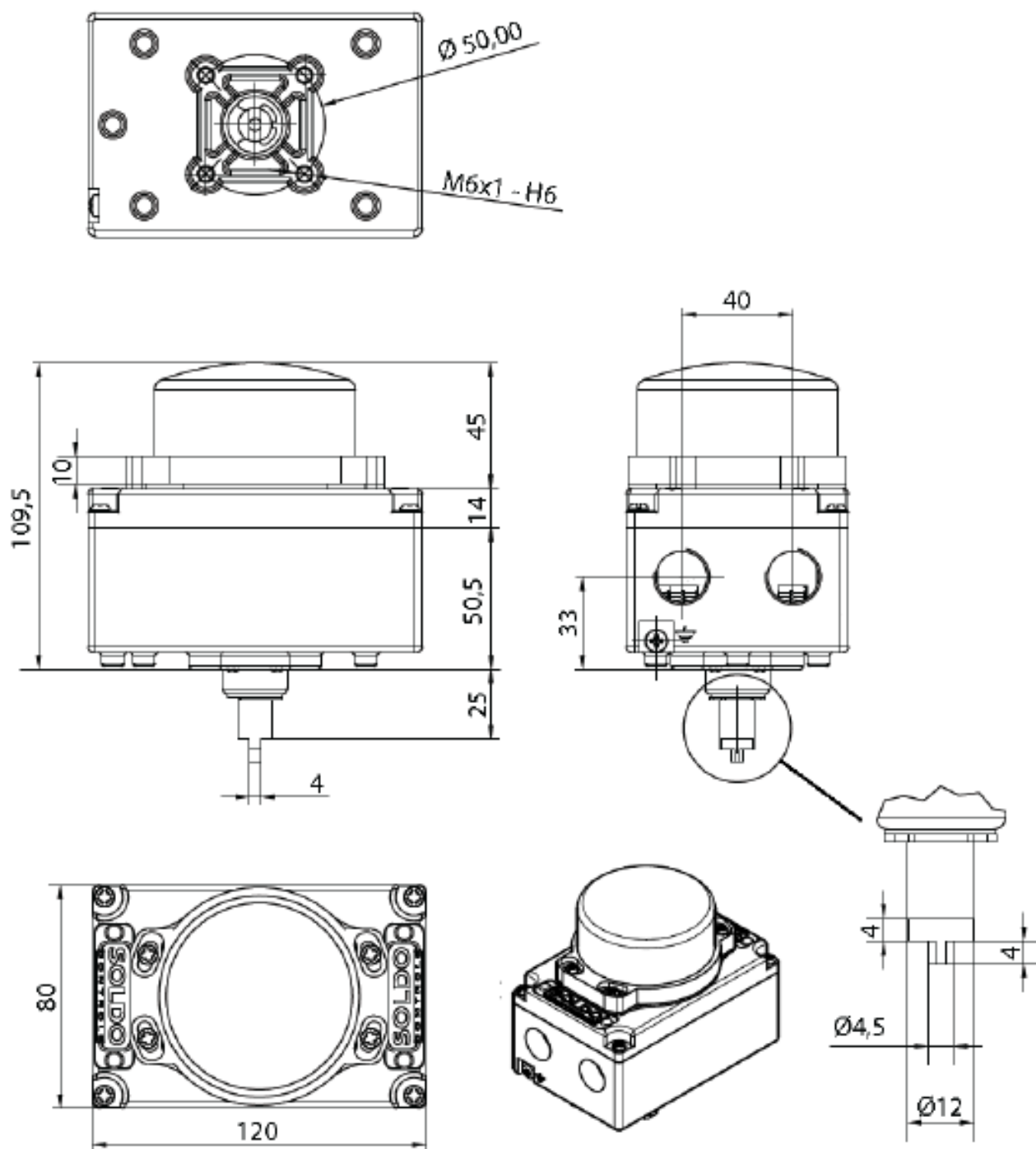
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SF-TYPE SOLDI SWITCH BOXES

DIMENSIONS (mm)



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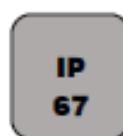
ATEX SK-TYPE SOLDO SWITCH BOXES

FEATURES

The explosion-proof SK-type switch box is intended for equipping quarter-turn pneumatic actuators and manual valves in hazardous area. It makes it possible to have an easy, direct view of the valve position and of the feedback information to control. Of robust construction, it can be installed outdoors. The position indicator provides a very good visual reading of the valve position. The ATEX certified SK (Explosion proof) fits for a valve in a hazardous area. The ATEX SK switch box can be equipped with many switches and detectors (see below). The notched cams can be manually adjusted with great accuracy, and are insensitive to vibrations.

ATEX and IEC CLASSIFICATION

Ex II 2 GD Ex d IIC T6/T5/T4 Gb
Ex tb IIIC T85/100/135 Db IP67



DIRECTIVES AND MANUFACTURING STANDARDS

OBJET	Standard	ON
CEM Directive 2004/108	EN 61326-1	
BT Directive 2006/95	EN 60529 EN 60730	
ATEX Directive 2014/34	EN 60079-0 EN 60079-11 EN 60079-31	SIRA 0359



LIMITS OF USE

Ambiant temperature	-20°C / +80°C
Ambiant temperature	-20°C / +70°C
IP Code	IP 67
Hazardous area	area 1, 2, 21, 22

MECHANICAL CONNECTION

Axis dimension	According to VDI/VDE 3845
Attachment	ISO 5211 F05
Stainless steel arches for attachment on to the actuator	<u>NAMUR 1</u> : 80x30 mm <u>NAMUR 2</u> : 80x30 mm <u>NAMUR 3</u> : 130x30 mm <u>NAMUR 4</u> : 130x30 mm <u>Height of axis</u> : 20, 30, 40, 50

Gemini Valve B.V.

Zijperstraat 29, 1823CX Alkmaar, Netherlands
Tel.: +31(0) 161-227.909 / Mobile: +316 1358 2578

info@geminivalve.nl
www.geminivalve.nl



ATEX SK-TYPE SOLDI SWITCH BOXES

ELECTRICAL CONNECTION

Standard cable inputs	2 x 1/2" NPT
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CONSTRUCTION

Casing and lid	Aluminium
Coating	Polyester paint
Stem	Stainless steel
Dome	Polycarbonate

SWITCH DETAILS SF model

	Réf.	Switch	Features
ATEX et IEC Ex II 2GD Ex d IIC T6 T5 T4 Ex tb IIIC	01	SPDT el.mech. switch silver plated contacts	Max 5A-250Vac / min 50mA-250Vac Max 5A-125Vac / min 50mA-125Vac Max 3A-24Vdc / min 50mA-24Vdc
	03	SPDT el.mech. switch gold plated contacts (for Exia cert)	Max 1,8A/3A-250Vac / min 5mA-250Vac Max 2A/3A-125ac / min 5mA-125Vac Max 1,2A/1,5A-24Vdc / min 1mA-24Vdc
	1F	DPDT el.mech. switch silver plated contacts	
	C4	SPDT magnetic hermetically sealed reed switch.	Max 0,1A-120Vac / 1A-24Vdc
	N1	SPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
	N3	SPDT magnetic hermetically sealed gold plated snap acting contacts	Max 1A-250Vac / 1A-30Vdc
	N4	DPDT magnetic hermetically sealed silver plated snap acting contacts	Max 5A-250Vac / 5A-28Vdc
	70	Inductive proximity NAMUR - NJ2-V3-N	2 wire (for Exia cert)
	73	Inductive proximity sensor (+70°C max) - NBB2-V3-E2	P+F - 3 wire PNP NO amplified 10-30 Vdc, 100 mA
	83	Inductive proximity sensor - NBB3-V3-Z4	P+F 2 wire amplified 5-60 Vdc, 100 mA

OPTIONS

There are many options for which you are invited to contact our sales service:

	SQ : stainless steel box
	3-Channel L or T indicators
L	LT : version -40°C (according to the type of switch)
P	LT 1 : version -55°C (according to the type of switch)
1	Cable inputs M20 x 1,5
G	EAC Certificate
U	UL Certificate

Information given as an indication only, and subject to possible modifications.

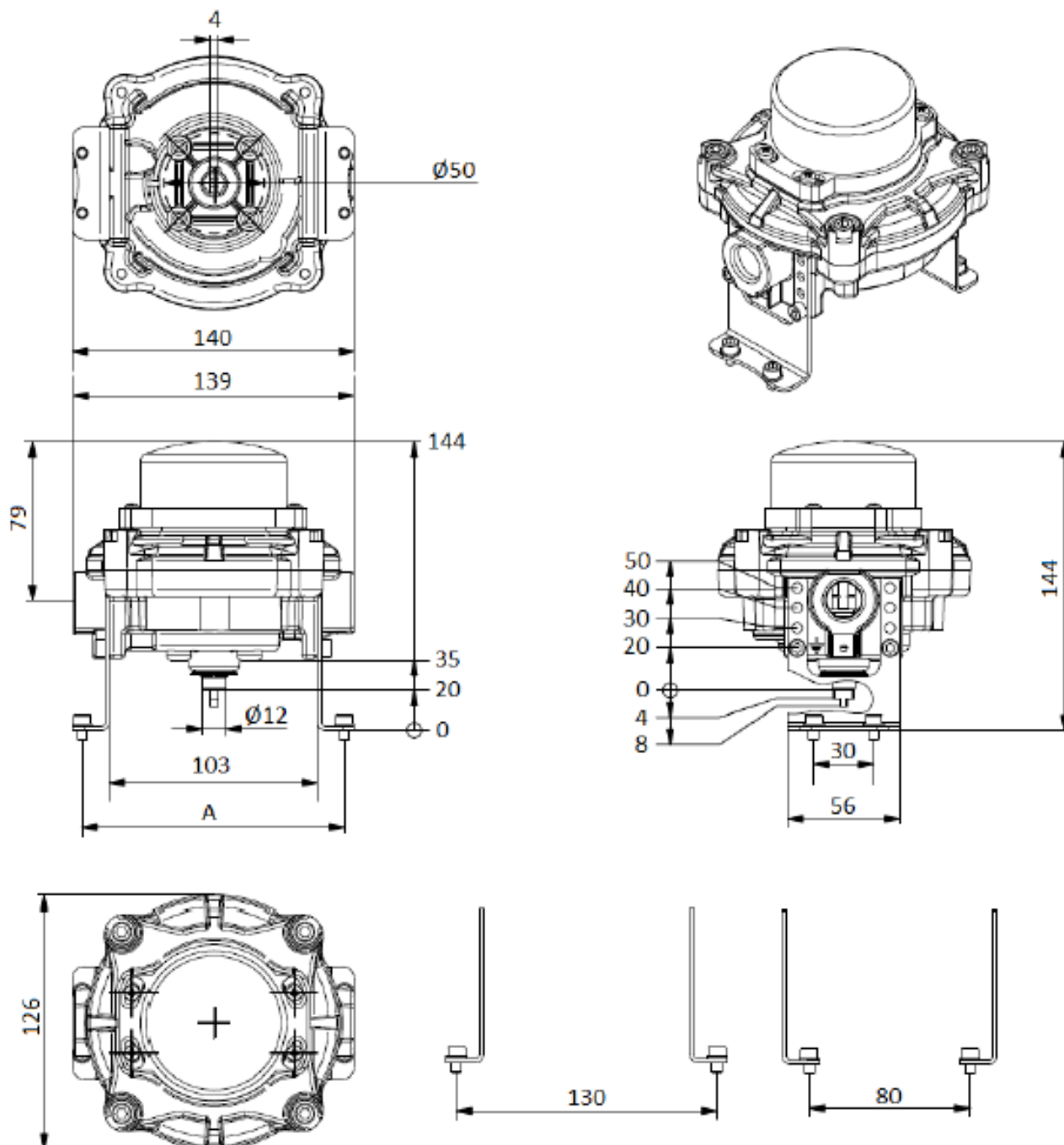
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DIMENSIONS (mm)



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