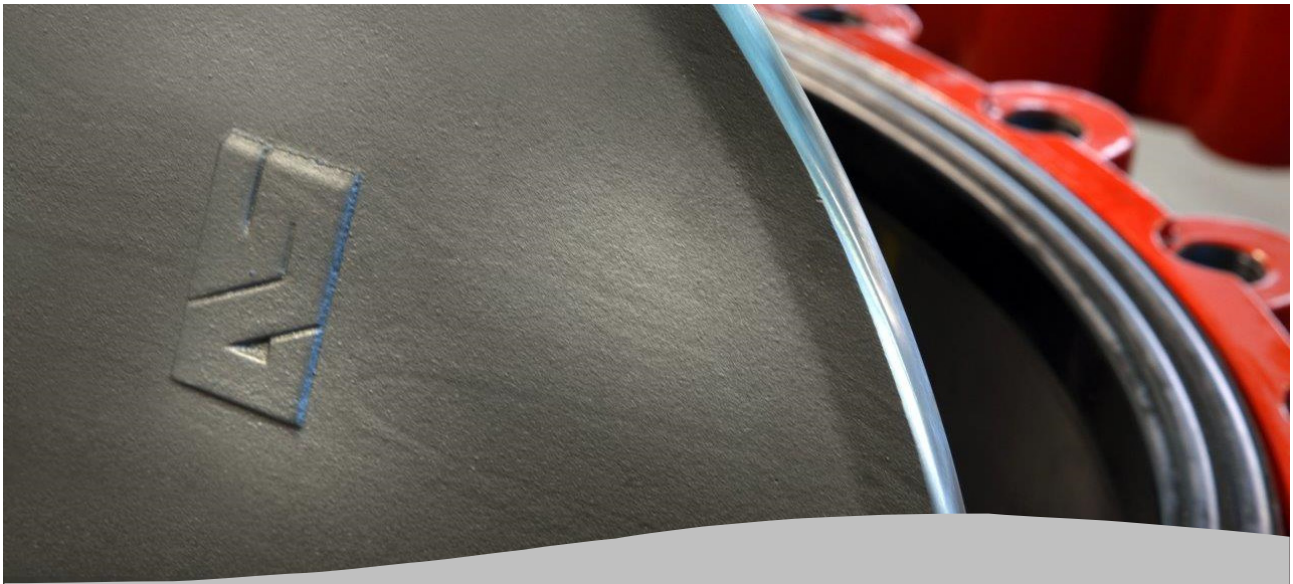
Catalogo Técnico
Technical Brochure

SIGEVAL

ABSPERRKLAPPEN
VANNES PAPILLON
BUTTERFLY VALVES
VALVULAS DE MARIPOSA

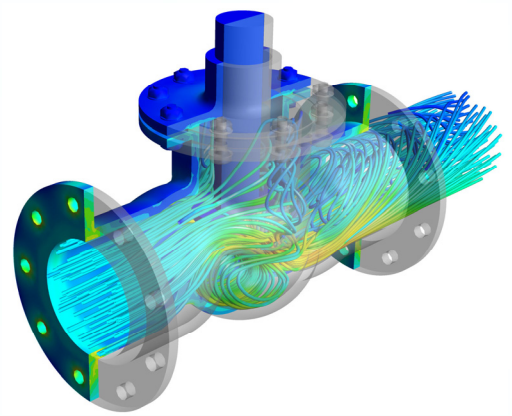


GUARANTEE - SERVICE - EXPERIENCE - QUALITY

Ed. 2018 English Version

Introduction

Sigeval it´s a public limited company, established in 1974, is placed after more than 40 years of activity and experience, among the most important manufacturers and exporters of butterfly valves. Steady modernization of the factory, technical office and quality assurance system enable Sigeval to supply products with certified guarantee.



Fields of application for products are particularly diversified. This has given the possibility to develop a wide range of products with high reliability, covering practically all segments of the market where it is necessary to work with liquids, gases, high density and powder products. Our production range is including both standard butterfly valves and other special ones according to design, materials or technical capabilities.

The technical department is disposed to study any demand from our customer in order to offer the most appropriate product for every type of work. Current situation of market has forced Sigeval to give immediate answers to all requirements from our customers. Consequently the most standard types of valves are always available in our stocks. To fulfill delivery time promised is a steady challenge to Sigeval a lot of effort of our personnel is spent in that.

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Quality assurance

Sigeval's main objective of quality is the full satisfaction of its customers. In line with this objective, we have selected quality as a strategic factor applicable throughout our organizational environment, to strengthen its competence, ensure customer satisfaction, improve processes related to product quality and ensure compliance with quality requirements.

Sigeval has implemented a integrated system of quality and environmental management according to the norm ISO 9001 and ISO 14001 certified by Aenor and IQnet. Sigeval butterfly valves have various international certifications for use in drinking water and gas, as well as product certificates for use in the marine industry.

Our products comply with the requirements of the European directive of pressure equipment PED 2014/68/EU, being the first Spanish manufacturer of butterfly valves to obtain it and the directive of machines 2006/42/CE. Also, we have ATEX-certified valves on request, for use in explosive atmospheres according to the European directive ATEX 2014/34/EU.

Sigeval butterfly valves are manufactured by controlling critical process parameters and are tested according to the European standard EN 12266-1. They have also been subjected to fatigue tests in which opening and closing cycles are performed at different pressure/temperature conditions obtaining optimum results.

Quality policy and environment

Sigeval has as main target manufacturing of butterfly valves which satisfy customers and legal requirements. To achieve this, Sigeval relies on the establishment of an integrated system of quality and environmental management and keeping it up to date, committing to the continuous improvement of the system and the improvement of environmental performance. The general principles are:



Satisfy customer´s needs. That means to reach an agreement among three factors:

- Choose the most suitable valve for the customer.
- Supply the cheapest valve.
- Ship the valve in the lowest delivery time.

Improve Sigeval, means:

- Modernize and optimize manufacturing equipment, hardware and software.
- Apply technology innovation.
- Improve process.
- Improve products

Built a quality culture inside the company in order quality and environment to be an important factors. Every person who works in Sigeval is responsible of the quality of his work, support in the continuous education, the collaboration with the rest of equipment to reach common targets and to share knowledge and experience.

Protection of the environment and pollution prevention.



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Certificates and approvals

Following are the main certifications and approvals that Sigeval has available for its butterfly valves. These certifications represent an added value to the quality of the product that is supplied to the customer. On the other hand, the client can request an inspection through the different agencies that are available in the market, in the case of special industrial projects, maritime industry or for homologation as suppliers.



Quality system ISO 9001
Environmental Management system ISO 14001
Pressure equipment directive PED 2014/68/EU
Explosive atmospheres directive ATEX 2014/34/EU
Machines directive 2006/42/EC
Type approval: DNV-GL, BV, LR
Drinking water approval: DVGW, ACS, SVGW, EAC
Gas approval: DVGW, EAC
Others: OTAN homologation

Sigeval also has rubber blends approved for the food industry, such as the European regulation 1935/2004 and the US Food and Drug Administration (FDA) regulations.

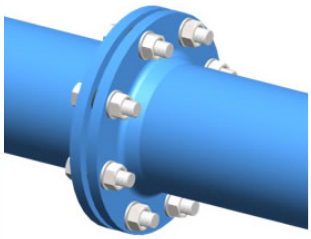
Applicable standards

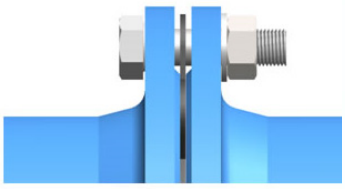
Sigeval butterfly valves are designed and manufactured to European standards. We show the standards that we fulfil complete or partially.

EN 593	Industrial valves. Metallic butterfly valves.
EN 558-1	Industrial valves. Face to Face dimension.
ISO 5752	Metallic valves for use in pipe lines with flanges.
API 609	Butterfly valves. Double flange, lug and wafer.
BS 5155	Butterfly valve.
EN 12266-1	Industrial valves. Valve pressure tests.
ISO 5208	Industrial valves. Valve pressure tests.
ISO 5211	Industrial valves. Part-turn actuator to valve attachment.
EN 19	General Purpose industrial valves. Marking.
EN 10204	Metallic products. Type documents of inspection.

Assembly between flanges

EN 1092-1	PN 6/10/16
EN 1092-2	PN 6/10/16
ISO 7005	PN 6/10/16
DIN 2501	PN 6/10/16
ANSI B16.5	Clase 150 Lbs.
ANSI B16.1	Clase 125 Lbs.
ASME B16.47	Clase 150 Lbs./Serie A
MSS SP 44	Clase 150
AWWA C 207	Clase B/D
JIS B 2210	5K/10K/16K
AS 2129	Tablas D/E
BS 10	Tablas D/E





Note: Ask for each family and valve diameter, in particular, to check their assembly possibilities with different flange standards.

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General Guarantee

Sigeval guarantees their products during 2 years, for all types of manufacturing defects, since the date of delivery note. To make effective the guarantee the valves have to had the sticker with the serial number.

Our guarantee is limited to repairing or replacement of faulty material, all kind of expenses or indemnity should be excluded.

Following cases are excluded from our guarantee:

- Natural ageing of components because of use of them. A inspection of the status of the rubber during maintenance program is required every 2 years and if proceed, change of the rubber is required.
- When valves have been used in an unsuitable application with special fluids, temperatures or pressures, working out of the limits recommended specifically by Sigeval. Having in mind that information about temperatures and working applications shown in our technical catalogue is approximate.
- When butterfly valves are not installed according to assembly instructions given in our technical catalogue.
- In case of wrong working operation of the customer.
- Modifications arrange in the supplied butterfly valves.
- Use of not original spare parts of the Manufacturer.
- Wear away of use the rubber seat.
- Use of anti corrosion additives without consultant Sigeval for approval.
- Not following of recommendations depicted bellowed.
- Not following "Assembling instructions" and "Safety instructions" given with the order.
- Overpass the maximum operation cycles that are 2000 maximum for DN ≥ 400 and 5000 for DN < 400. After that, maintenance of rubber and bushing has to be done.

It will have consequently, the invalidation of the guarantee and the EC marking. In this case, SIGEVAL declines any responsibility over the product.

Additional remarks

After installation and before the starting-up:

- Valves have to be assembled partially open. Written record is required. See more rules in the Assembling instructions and in the Safety instructions.
- Check the possible hit, scrap on the coating surface that can be produced during assembling and repair them by repainting. Written record is required.
- Before the starting-up let fluid to be vehicle inside of pipe and Open/Close the valves 2-3 times. Written record is required.

Season time of not use:

- Open/Close the valves 2-3 times monthly with some fluid inside. Written record is required.
- Check the coating surface. Repair any damaged area found by repainting. Written record is required.

After starting-up:

- Before the beginning of every season of use, it's required a record maintenance, of every valve, to check if they Open/Close softly with fluid inside. If it's required, change of the rubber has to be done.
- Check the coating surface. Repair any damaged area found by repainting. Written record is required.

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General description

The butterfly valve has won its own place in the contemporary world, as it is a basic component in the majority of industrial installations. Its advance and use are due both to the studies and technological improvements in its materials, mainly the seat rubber, and to the characteristics of adaptability within the activities where a simple, efficient solution is required. As can be seen, the valve is basically composed of a body, shafts, a disc and an elastomeric sleeve.

Body Metal made and can be manufactures in several alloys according to its use and the work conditions for which it is required. Never contacts with the pipe flow.

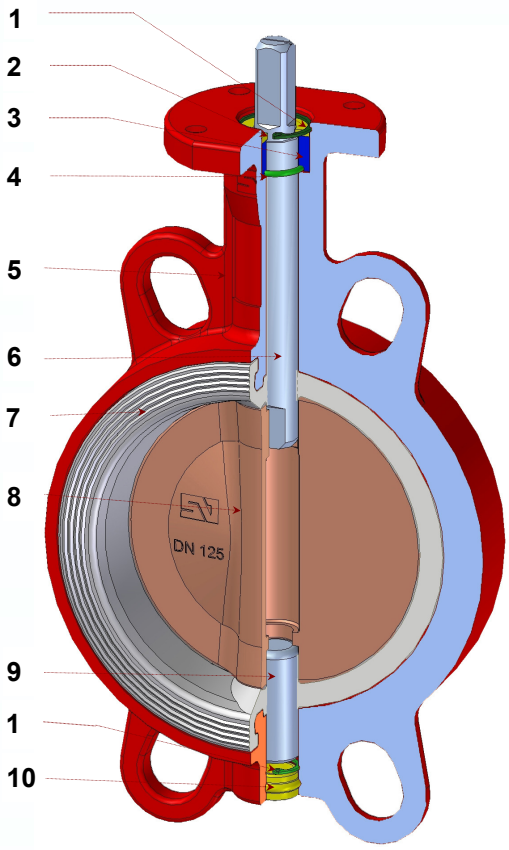
Disc/Shaft These form a unit with an overall movement and are manufactures from suitable materials according to the fluids with which they may make contact and they are selected from a wide range (coated and treated cast iron, stainless steel, special alloys, etc.). The disc is **machined spherically** to achieve a reduction in torque required by the valve and greater duration of the elastomer sleeve.

Seat: The composition of the elastomer sleeve is determined according to the temperature, resistance and service conditions imposed by the circulating media. It insulates the interior of the body and ensures water tightness inside and outside the valve, at the service pressure required.

Assembly: Its assembly in pipe lines is accomplished between flat-faced standard flanges **without requiring any gaskets** since the liner produces a watertight seal both inwards and outwards.

Adventages of Sigeval valves

- *Minimum pressure drop.*
- *Low operation torque.*
- *Full water tightness, internal and externally.*
- *Interchangeable components.*
- *Easy assembly and disassembly.*
- *Hardly any maintenance.*
- *Bi-directional flow.*
- *Assembly lugs in the installation.*



Particular characteristics

Disc Position Indicator
Marking in the upper shaft

Shaft acc. ISO 5211
For all type of actuators

Blow out Proof Spindle (Zegi ring)
Avoid driving shaft can be displaced outwards

Bushing
Guarantees perfect alignement of the shaft, reducing the torque

"O" sealing ring.
Offering an additional safety factor to the shaft avoiding leakages and prevents any external contamination

High precision fit disc and shaft squares.
Easy to dismantle and avoid looseness between shaft-disc

Spherical disc with polished edges
Ensures low torque and extends life of elastomer seat

High warranty coating
Epoxy powder coating, thickness up to 300 microns

Great elastomer thickness
Gives long lasting resilience and prevents external leakage via the shafts

Static lower shaft
Seat not damaged in operation and not leakages

Machined surfaces
Accurate dimensions between faces gives the seat a well balanced tigtness and an identical torque in every valve

1	*Zegi ring*	*5*	*Body*	*9*	*Lower shaft*
2	*Washer*	*6*	*Upper shaft*	*10*	*Plug*
3	*Bushing*	*7*	*Seat*		
4	*oring*	*8*	*Disc*		

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Model	DN	Pressure	Characteristics	Applications	
FL(w) Wafer	025 ÷ 1200 025 ÷ 0300	16 bar 25 bar	EN 558-1 Series 20 Interchangeable seat Vulcanized optionally	• HVAC • Naval industry • Fire fighting • Powdery products • General services	
LUG(w) Lug	025 ÷ 1000 025 ÷ 0300	16 bar 25 bar	EN 558-1 Series 20 Interchangeable seat Vulcanized optionally	• Gas • Heating • End line services • Naval industry • Energy generation	
FG(w) U-Flanged	080 ÷ 1600 080 ÷ 0300	16 bar 25 bar	EN 558-1 Series 20 Interchangeable seat Vulcanized optionally	• Filtration • Naval industry • Water Pipe Lines • Cooling systems	
BBNV(w) Double Flange	040 ÷ 1200	16 bar	EN 558-1 Series 13 Vulcanized seat	• Naval industry • Water plants • Buried service • Water Pipe Lines • Cooling systems	
FFNV(w) Double Flange	400 ÷ 1000	16 bar	EN 558-1 Series 14 Vulcanized seat	• Naval industry • Water plants • Buried service • Water Pipe Lines • Cooling systems	
KL Wafer	050 ÷ 100 125 ÷ 200 250 ÷ 600	10 bar 6 bar 3 bar	EN 558-1 Series 20 Interchangeable seat Aluminium body	• Irrigation • HVAC • Food industry • Pharma industry	
VV Grooved	50 ÷ 200	16 bar	Vulcanized seat	• Industry • Irrigation • Fire fighting • Filtration • Works and building	

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FL(w)	3	DN	MN	E	- XC

	Body		Disc		Operator		Seat	
	Code	Material	Code	Material	Code	Material	Code	Material
WAFER	FL(w)	GG 25	1	CF8	EL	Free shaft	E	EPDM (ACS)
	FLN(w)	GGG 40	2	Aluminium with epoxy	MN	Lever Aluminium	HT	EPDM High Temperature
	KL	Aluminium	3	GGG 40 with epoxy	MN(NOD)	Lever Ductile iron	EF	EPDM FDA
	FA(w)	A216 WCB	4	Bronze Rg-10 Al-Bz CC 333G	MR	Regulation lever Aluminium	EB	EPDM White FDA
	FA(wM)	S 275 JR	5	CF8M	MRI	Regulation lever Stainless steel	EW	EPDM DVGW
	FI(w)	CF8M	6	A216 WCB with epoxy	V	Direct wheel	EK	EPDM KP
	FI(wM)	AISI 316	7	GGG 40 with EPDM	MDV	Gearbox	N	NBR
LUGGED	LUG(w)	GG 25	8	Duplex CD4MCuN	MDVV	Planetary gearbox	NA	NBR FDA
	LUGN(w)	GGG 40	9	CF3M	F	Plumber lever	NB	NBR White FDA
	LUGA(w)	A216 WCB	10	1.4539 (UB6/904L)	MND	Pneumatic actuator Double acting	NC	NBR Carboxylic
	LUGA(wM)	S 275 JR	11	Super Duplex 1.4469	MNS	Pneumatic actuator Spring return	NH	NBR Hydrogenated
	LUGI(w)	CF8M	3R	GGG 40 with Rilsan	MHD	Hydraulic actuator Double acting	NW	NBR DVGW
DOUBLE FLANGE	FG(w)	GG 25	5P	CF8M Mirror Polished	MHS	Hydraulic actuator Spring return	NL	NBR Low Temperature
	FN(w)	GGG 40	3H	GGG 40 with Halar	MSE	Electrical actuator	AP	Flucast AB/P
	FGA(w)	A216 WCB	5H	CF8M with Halar			AE	Flucast AB/E
	FGI(w)	CF8M					AN	Flucast AB/N
	BBNV(w)	GGG 40					AT	Flucast AB/T
	FFNV(w)	GGG 40					S	Silicone
	VV	GGG 40					SA	Food Silicone
							SV	Steam Silicone
							V	Viton
							VB	Viton Bio
							VF	Viton GF
							VA	Viton FDA
							H	Hypalon
							EP	Epichlorhydrin
							NP	Neoprene
							B	Butyl

Notes and remarks:

Standard shaft Material in Stainless steel AISI 420.
XC ATEX code / Specify II 2DG cX (<200 microns) or II 2GD IIB cX (>200 microns).
V Code for vulcanized seat. Example: FLNV(w)/ LUGNV(w)/ FNV(w)
Valves VV/BBNV(w)/FFNV(w) are only possible with vulcanized seat.

Contact our technical department for other materials.

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Body materials C-0001

Material	Designation
Grey cast iron	EN 1561 GJL-250 (GG 25)
Ductile cast iron	EN 1563 GJS-400-15 (GGG 40)
Ductile cast iron	EN 1563 GJS-400-18LT (GGG 40.3)
Cast carbon steel	A 216 Gr. WCB
Cast carbon steel	A 352 Gr. LCB/LCC
Carbon Steel Fabricated	EN 10025 S 275 JR
Cast stainless steel	A 351 Gr. CF8/CF8M
Cast stainless steel	A 351 Gr. CF3/CF3M
Stainless Steel Fabricated	AISI 304/316
Stainless Steel Fabricated	AISI 304L/316L
Cast Tin-Bronze	EN 1982 CuSn10-C (CC480K)
Cast Aluminium-Bronze	EN 1982 CuAl10Fe5Ni5-C (CC333G)
Cast Aluminium	AC-43000/46000/47000



Standard coating epoxy 120 microns, except in stainless Steel and bronze.

Disc Materials M-0001

Material	Designation	Code	Charasteristics	Aplications
Stainless steel	A 351 Gr. CF8	1	Very good chemical resistance and corrosion resistance	Chemical products. Nourishing products
Aluminium	EN-AC-44100	2	Moderate corrosion resistance	Cold water/ Air.
Ductile iron	EN GJS-400-15 (GGG 40)	3	Good mechanical strength similar to carbon steel	Hot water (Max. 90ºC) Air and Gas
Tin-Bronze	CuSn10-C (CC480K) DN≤300	4	Good chemical resistance and corrosion resistance	Sea water
Aluminium-Bronze	CuAl10Fe5Ni5-C (CC333G) DN≥350	4	Good chemical resistance and corrosion resistance	Sea water
Stainless steel	A 351 Gr. CF8M	5	Very good chemical resistance and corrosion resistance	Demineralized water. Chemical products. Nourishing products
Carbon steel	A 216 Gr. WCB	6	Good mechanical resistance	Water and Gas
Ductile iron vulcanized	EN GJS-400-15 (GGG 40) + EPDM	7	Very good abrasion resistance	Powdery products. Pneumatic transport. Sea water
Duplex	A 351 Gr. CD4MCuN	8	Very good abrasion and corrosion resistance	Chemical products.
Stainless steel	A 351 Gr. CF3M	9	High chemical resistance and corrosion resistance	Chemical and Nourishing products. Sea water and Demineralized water
Stainless steel	1.4539 Uranus B6 904L)	10	Very good chemical resistance and corrosion resistance	Chemical products.
Super Duplex	1.4469	11	Very good chemical resistance and corrosion resistance	Sea water and corrosive atmospheres

Standard coating epoxy 150 microns, except in stainless Steel and bronze.



BUTTERFLY 7



BUTTERFLY 1 / 5



BUTTERFLY 3



BUTTERFLY 4

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Rubber seat materials A-0001

Seat Material	Designation ISO 1629	Sigeval Code	Color Codes	Temperature Range	General Applications
Ethylene Propylene	EPDM	E	-	-20ºC +110ºC	Water / Sea water Weak acids and basis
Ethylene Propylene High Temperature	EPDM	HT	Grey	+80ºC +130ºC	Heating without Steam Water
Food EPDM FDA	EPDM	EF	Green / White	-20ºC +110ºC	Nourishing products
Food White EPDM (FDA,1935/2004)	EPDM	EB	-	-20ºC +95ºC	Nourishing products
EPDM DVGW (ACS, WRAS, KTW, W270)	EPDM	EW	Orange	-20ºC +95ºC	Water / Sea water Weak acids and basis
EPDM KP FDA	EPDM	EK	-	-20ºC +130ºC	Water / Sea water Weak acids and basis
Nitrile	NBR	N	Blue	-10ºC +90ºC	Mineral or vegetables Oils and greases
Food NBR FDA	NBR	NA	Blue / Green	-10ºC +90ºC	Nourishing products
Food White NBR (FDA,1935/2004)	NBR	NB	Blue	-10ºC +90ºC	Nourishing products
Nitrile Carboxylic	NBR	NC	Blue / Yellow	-10ºC +90ºC	Mineral or vegetables Oils and greases Abrasives.
Nitrile Hydrogenated	NBR	NH	Blue / Red	-10ºC +90ºC	Mineral or vegetables Oils and greases and gases with SH_2 (Biogas)
Nitrile DVGW	NBR	NW	Blue / Orange	-10ºC +90ºC	Mineral or vegetables Oils and greases and gases with SH_2 (Biogas)
Flucast AB/P	-	AP	Red	-10ºC + 70ºC	Abrasive powdered products
Flucast AB/E	-	AE	Red / Yellow	-20ºC + 95ºC	Oxygenated solvents Ketones Esters with abrasion
Flucast AB/N	-	AN	Brown	-10ºC + 100ºC	Mineral or vegetables Oils and greases Abrasives.
Flucast AB/T	-	AT	Grey / White	-5ºC + 130ºC	Abrasive products with high temperature
Silicone	MVQ	S	-	-60ºC +200ºC	Air and Hot water without steam. High and Low temperatures
Food Silicone (FDA,1935/2004)	MVQ	SA	-	- 60ºC +200ºC	Nourishing and milky products
Steam Silicone	MVQ	SV	Red / White	-60ºC +140ºC	Low pressure steam water
Viton	FPM	V	Yellow	-15ºC +210ºC	Acids / High temperature
Viton Biodiesel	FPM	VB	Yellow / Orange	-5ºC +210ºC	Biodiesel / Acids / Steam water
Viton GF Gasoline	FPM	VF	Yellow / Green	-5ºC +210ºC	Oxygenated Gasoline
Viton FDA	FPM	VF	Grey / Red	-5ºC +210ºC	Nourishing products
Hypalon	CSM	H	Green	-25ºC +125ºC	Water / Diluted bases Diluted non oxidation acids
Epichlorhydrine	ECO	EP	Green / Grey	-40ºC +125ºC	Brine systems, low temperature and resistance to gas, oil and fuel
Neoprene	CR	NP	White	-25ºC + 80ºC	Sea water. Moderate resistance to oils and greases
Butyl	IIR	B	Violet	-10ºC + 95ºC	Low Permeability to inert gases: Nitrogen, Air, Oxygen



EPDM

NITRILE WHITE FDA



SILICONE



FOOD SILICONE





BUTYL

STEAM SILICONE



Nota: Temperatures and fields of application of the seats are approximate. Temperatures and fluid resistance have been supplied from rubber suppliers, for predetermined conditions, contact our Technical Department. SIGEVAL, S.A. Doesn´t accept no liability of damages caused by bad interpretation or use in the information included in this table. Work temperatures are calculated in static conditions and don't involve the correct service of the butterfly valve.

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Seat rubber properties

		Seat Code Sigeval										
		E	**HT**	**N**	**AP**	**S**	**V**	**H**	**NP**	**B**	**AE**	**A**
Static mechanical properties	Tension	B	B	B	MB	M	S	B	MB	S	B	MB
	Tearing	B	B	B	MB	S	S	S	MB	B	MB	B
	Abrasion	B	B	B	E	S	B	B	B	B	E	MB
	Permanent compression deformation	B	B	B	B	B	B	M	B	S	B	B
Dynamic mechanical properties	Resilience	S	S	S	MB	B	D	M	B	S	S	B
	Bending	MB	MB	B	MB	S	B	B	MB	B	MB	B
Age strength due to:	Air. Oxidation.	E	E	S	B	MB	E	E	MB	MB	E	E
	Light. Sun	MB	MB	M	B	E	MB	E	MB	MB	MB	E
	Open air. Ozone	E	E	B	S	D	MB	E	E	MB	E	E
	Heat	MB	E	B	S	E	E	B	S	S	MB	E
Strength against	Cold	N	M	S	MB	MB	M	MB	MB	S	B	D
	Flame penetration	N	N	N	N	S	MB	MB	MB	N	N	MB
	Water absorption	MB	MB	B	MB	E	MB	MB	B	MB	MB	E
Behaviour and strength against different fluids	Mineral Oil, petroleum products	D	D	MB	N	D	E	S	S	D	N	MB
	Aliphatic hydrocarbon solvents	N	N	MB	N	N	E	B	D	N	N	B
	Aromatic hydrocarbon solvents	M	M	S	N	N	E	D	D	N	N	N
	Oxygenated solvents ketones and esters	MB	MB	N	S	D	N	S	B	MB	MB	N
	Chlorinated solvents	N	N	M	N	N	B	N	D	N	N	D
	Water, diluted nonoxidating acids, diluted basis	E	E	B	B	B	E	MB	B	B	E	E
	Gas resistance	D	D	B	M	N	B	S	S	E	D	E
	Strong acids	B	B	M	N	M	MB	B	M	D	B	E
	Oxidating strong acid	M	M	N	N	N	B	S	N	N	M	E

Grades: E = Excelent; MB = Very good; B = Good; S = Enough; M = Mediocre; D = Week; N = Not satisfactory

Shaft and bushing materials E-0001

Shaft material	Designation
Stainless steel	AISI 420 *Standard
Stainless steel	AISI 316
Stainless steel	AISI 316 L
Duplex	1.4462
Super Duplex	1.4410
Nickel-Copper	MONEL K 500/ Monel 400
Aluminium-Bronze	QAL-10 Cu Al10 Fe Ni S-C
Nickel-Chromium-Molybdenum	INCONEL 625

Bushing materials	Range
Acetal Delrin	DN 0032-0200
Steel-Bronze-PTFE	DN 0250-1100
Bronze Rg-07	DN 1200-1600









Contact our technical department for other materials.

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Coatings, Surface treatments and special cleaning

Coating	Thickness	Properties / applications		Notes
Epoxy	120-300 microns	Protection against corrosion	Other colors: RAL 5005/5015/5021/1004/9005	** Standard Body RAL3000 120 microns
Resicoat RT 9000 R4	150-300 microns	Very Good heat resistance (tested at 90ºC with excellent results).	KTW: Water approval (Germany) WRC: Water approval (U.K.) KIWA: Water approval (Holland)	** Standard Disc RAL9005 150 microns
Halar (Fluorine resin)	500-800 microns	Excellent corrosion and tempera-ture (150ºC) resistance.		
Rilsan	150-300 microns	High resistance to organic acids , salt, bases, solvents e hydrocar-bons. High waste resistance, abrasion and impacts.		
Cataphoresis	20 microns			
Ebonite		Protection against sea water		
Special applications	150-300 microns	Protection against aggressive atmospheres	Several lawyers, Polyure-thanes, Primer lawyers, etc	
Surface treatments		**Properties / applications**		
Polished Mirror		Pharmaceutical industry Food Industry		
Chrome		Protection against aggressive atmospheres		
Special cleaning		**Properties / applications**		
Labs Free		Coating installations Automobile industry		
Oil and Grease Free		Oxygen transport		

RESICOAT





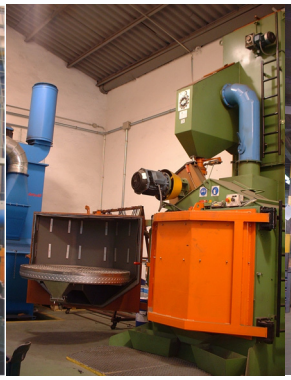
EPOXY

HALAR



INSTALLATIONS FOR SURFACE TREATMENT AND COATING



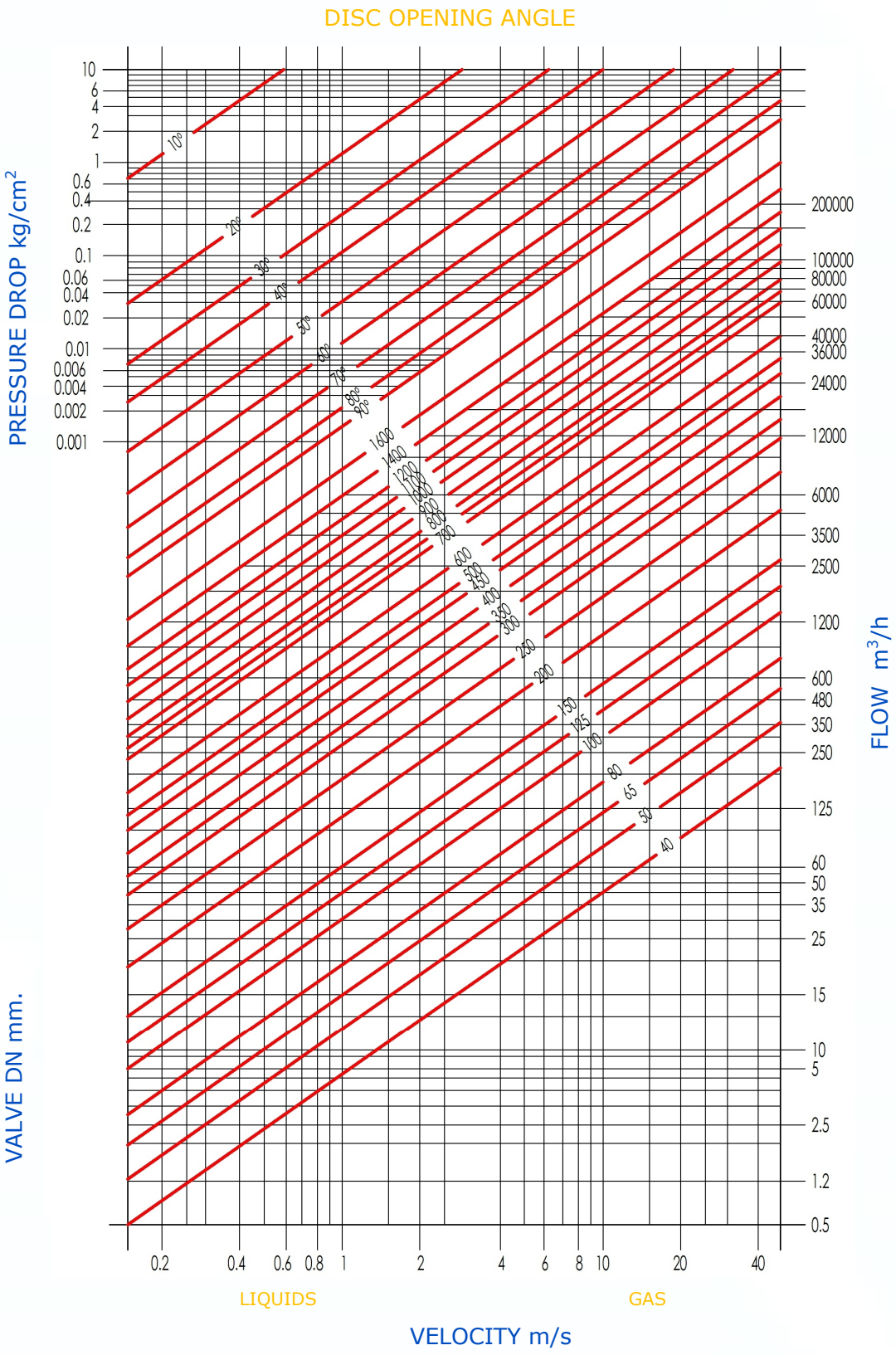




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Pressure drop



Nota: Valido para líquidos densidad = 1 y temperatura a 20ºC

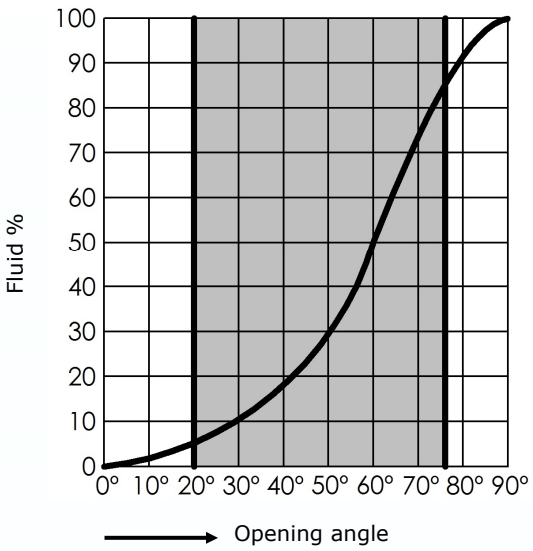
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Flow coefficient Kv in m^3/h depending of angle opening disc

DN	90º	80º	70º	60º	50º	40º	30º	25º
25/32	45	37	29	19	12	6	2	-
40	68	60	38	22	15	9	4.3	2.5
50	112	90	60	45	23	14	7.7	5
65	172	138	90	70	36	22	12.9	8.6
80	258	207	138	110	54	33	19	13
100	474	410	260	200	103	63	36	24
125	970	860	540	420	215	133	76	52
150	1680	1420	890	690	353	215	146	125
200	2800	2350	1510	1120	603	360	215	146
250	4310	3700	3190	1850	990	580	336	224
300	6465	5215	3490	2670	1380	860	475	327
350	8620	6980	4395	3535	1896	1120	645	430
400	10775	9310	5600	4395	2285	1465	775	560
450	15086	12700	7930	6120	3190	1980	1077	775
500	18965	15085	9900	7500	3965	2415	1380	970
600	24137	20700	14225	10130	5260	3275	1895	1293
700	36000	25300	17100	10600	5980	3860	1990	1350
750	40500	27400	18400	11450	7150	4350	2125	1560
800	44000	29000	20000	12500	8200	4500	2200	1600
900	58000	42000	29000	17500	10400	6100	2300	1800
1000	80500	59200	37500	23000	13500	8700	3800	2500
1050	90200	65540	48250	25680	15900	9250	5200	3250
1100	97586	72540	54560	28650	18210	10560	6350	4450
1200	110500	82000	61500	35500	22600	12500	7800	5400
1400	170500	145800	85700	45685	28950	15256	8568	5680
1500	195400	176450	101675	54560	34230	18850	9755	6154
1600	220350	198450	110325	59452	37850	20568	10952	6456

*Coefficient **KV**= means the Flow of water in m^3 /h. at 20ºC that flows though the valve and produce a pressure drop of 1 Kg/cm^2.*

Characteristic curve



The flow data of the isolation valves are normally used for pipe sizing and system pressure losses.

Usually the On/Off isolation valves spend most of the time in the fully open position and therefore these valves must have a high value of Kv to reduce pressure drops, increase the efficiency of the plant and contribute to the reduction of The energy costs.

The maximum speed recommended to avoid problems of cavitation, vibration and noise are:

Liquids: 4 m/s
Gas: 40 m/s

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Operation torque in N·m to close the valves depending of ΔP (bar)

The operating torque of a valve under operating conditions depends on different aspects of the fluid. When ordering, it is important that correct fluid data is sent to avoid valve malfunctions due to improper actuator sizing. When no information is available, Sigeval makes the following assumptions as a basis:

- The fluid is water (no solid particles).
- The fluid does not include chemicals or contamination that can increase friction between the seating surfaces.
- At least one cycle of operation per month.
- Flow rate in the pipe not exceeding 4 m/s.

DN	Inches	3 bar	6 bar	10 bar	16 bar
25/32	1"/1 ¼"	5	6	9	15
40	1 ½"	5	6	9	15
50	2"	5	7	13	17
65	2 ½"	15	16	20	25
80	3"	17	20	23	28
100	4"	22	29	42	50
125	5"	39	46	72	85
150	6"	48	75	90	110
200	8"	90	120	140	215
250	10"	126	210	270	350
300	12"	161	270	390	560
350	14"	245	300	500	950
400	16"	520	600	700	1000
450	18"	590	1120	1450	1950
500	20"	840	1390	1800	2500
600	24"	1000	2200	3450	3800
700	28"	1650	3300	5000	5860
750	30"	1800	3500	5500	6000
800	32"	2300	4600	6500	9500
900	36"	4700	6800	8500	11500
1000	40"	6500	8500	11500	15000
1050	42"	6800	8750	11800	15800
1100	44"	7000	9000	12000	16000
1200	48"	8500	12000	15500	22000
1400	56"	14000	17000	19500	
1500	60"	20000	24000	28000	
1600	64"	22000	26000	30000	

The standard torque of the butterfly valves are DN 25-150 ΔP 16 bar and DN 200-1600 ΔP 10 bar.
ΔP= *Shows the pressure difference between upstream and downstream of the valves.*

Note: These torques are for valves mounted with butterfly and EPDM standard seat (water 20ºC and optimum assembling conditions). For others seats, please contact with our technical department, because torques could be so different.

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Procedures hydraulic tests

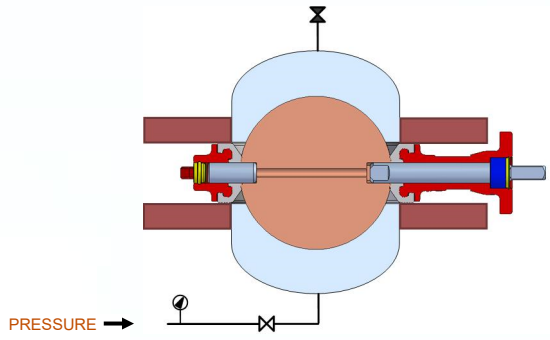
Valves are tested in the factory as per as nominal pressure, following the internal procedure based on standard EN 12266-1, guarantee its total tightness. This test is done with water at room temperature. For the hydrostatic test the valve is placed between duly tightened flanges.



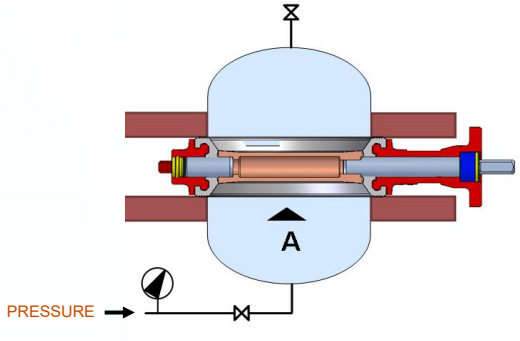
Shell test, the test valve will be clamped between flanges and the disc is placed in a slightly open position so that a test pressure of 1.5 times the nominal pressure of the valve can be applied to both sides of the disc at the same time. This is in order to be able to detect any possible external leakage via the shafts or body. The test chamber between flanges is filled with water and the air is expeller. Via the hydraulic pump the test chamber will be pressurised to the required test pressure. For a test period of 15 to 180 seconds (as defined) the chamber is kept under pressure monitoring the test gauge. The test valve will be accepted when the pressure as shown on the test gauge remains constant and no leakage occurs via the shaft or body.

Tightness tests, For the tightness test the valve is closed. In order to check possible leakage between the closed disc and the rubber seat. Via the lower end of the test system a test pressure of 1.1 times the nominal pressure of the valve is applied to one side of the disc. Using water from a hydraulic pump does this. For a test period of 15 to 60 seconds (as defined) the valve is kept under pressure while monitoring the test gauge. The test valve will be accepted when the pressure as shown on the test gauge remains constant without leakage occurring. When the valve and/or its controls have been dismantled test procedure as above should be repeated.

Shell Test



Tightness test



Operational tests

Every valve complete with its controls is dry-tested for several operations from fully open to fully closed position and vice versa. The test procedures include full operational checks of all components of the valve and its controls (position indicator, limit switches, regulation system, etc). These test can be in accordance with the technical specifications of Sigeval or, when accepted by the manufacturer beforehand, in accordance with customer's requirements.

Additional tests

If required by the client, additional tests may be performed on foundries and materials, the most common would be non-destructive tests such as magnetic particles, liquid penetrants, X-ray, ultrasonic, PMI (Positive material identification), etc.
Could be performed in the coating the following tests: Dielectrics, pull-off, thickness measurement, etc.

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Válvulas ATEX de acuerdo 2014/34/UE

The butterfly valves model Sigeval XC (special version) fulfill the Directive for Equipment and protection systems, to use in explosive atmospheres 2014/34/EU. This directive is only applicable in the following atmospheric conditions: -20°C<T<+60°C and 0,8 bar <P <1,2 bar

The fluid being carried is not taken into account in the risk analysis of the valve made in this directive, even if the fluid brings about deliberate internal explosive atmospheres. It is the user's responsibility to take into account the risks generated by the fluid for example.

- Heating of the valve surface, the temperature of the valve surface should be considered as equivalent to the temperature of the fluid which passes through the pipe (in an environment normally ventilated). Considering the temperature of the fluid which passes through the pipe.
- Generation of electrostatic charges due to fluid displacement.
- Internal shocks generated by granular substances, shock waves present in the installation (water hammer) or risks from foreign objects which may be present in the installation.

In the label given by Sigeval , includes the most important parameters in the valves: Logo of the Manufacturer, Works reference, Model, maximum working pressure, Diameter, name of the technical file deposited in a certified company, CE marking and ATEX Category.



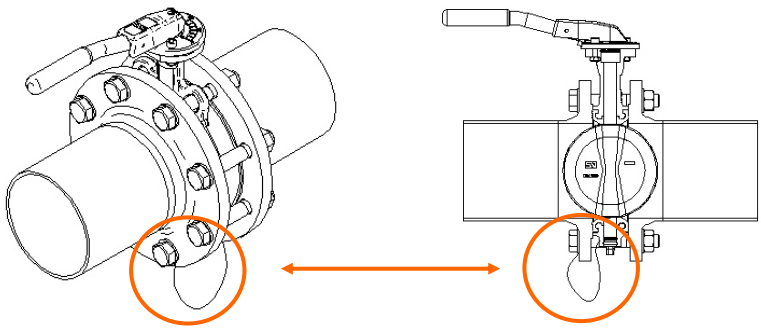
Clasification:

II : Group
2 : Category
G : Explosive atmospheres due to the presence of gas, vapours or mists.
D : Explosive atmospheres due to the presence of dust.

Note: "c" meanings Protection by safety design.
Note: "X" meaning that external surface heating of the valve, only depends of room temperature and internal fluid temperature. For this case, any temperature class is indicated at the label.

Our products are designed to be used in external explosive atmospheres, zone 1 & 2 Gas y 21 & 22 Dust, and gas / vapor atmospheres groups IIA, IIB y IIC, with a coating thickness maximum of 0,2 mm.
Our valves will be marked: **II 2 GD c X**.
In case that coatings will be a thickness between: 0.2 and 2 mm marking will be *:* **II 2 GD IIB c X**

In the ATEX butterfly valves, it´s included the earth link that will be connected conveniently to the screw flange (in the instruction ATEX manual it´s give more information about it).



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Manual actuators

The valves can be operated manually with the following elements and depending on the need and space required:

Options:
Limit switches Electromechanicals/Inductives
Locking by padlock



Lever MN
7 positions



Plumber
lever MF



Regulation
Lever MR



Direct
wheel V



Gearbox with
Wheel MDV

Pneumatic actuators

Usual types:

Double acting/Spring return

Options:
Limit switches
Electromechanicals/Inductives
Solenoid valves
Positioners
Declutchable gearbox
Air valve purgues
Air silencers
Velocity regulators
Air Filters











Electrical actuators

Usual types:

ON-OFF / Regulation.
Monophasic / Triphasic.
Altern current/ Direct current
Voltage: 230v/ 380v / 24v.
Frequency: 50/60 Hz.
Includes usually: limit switches





Options: Potentiometer, feedback 4-20 mA ó 0-10v, etc

Hydraulic actuators

Usual types:

Double acting/Spring return

Options:
Limit switches Electromechanicals/Inductives
Positioners, manual pumps, etc.





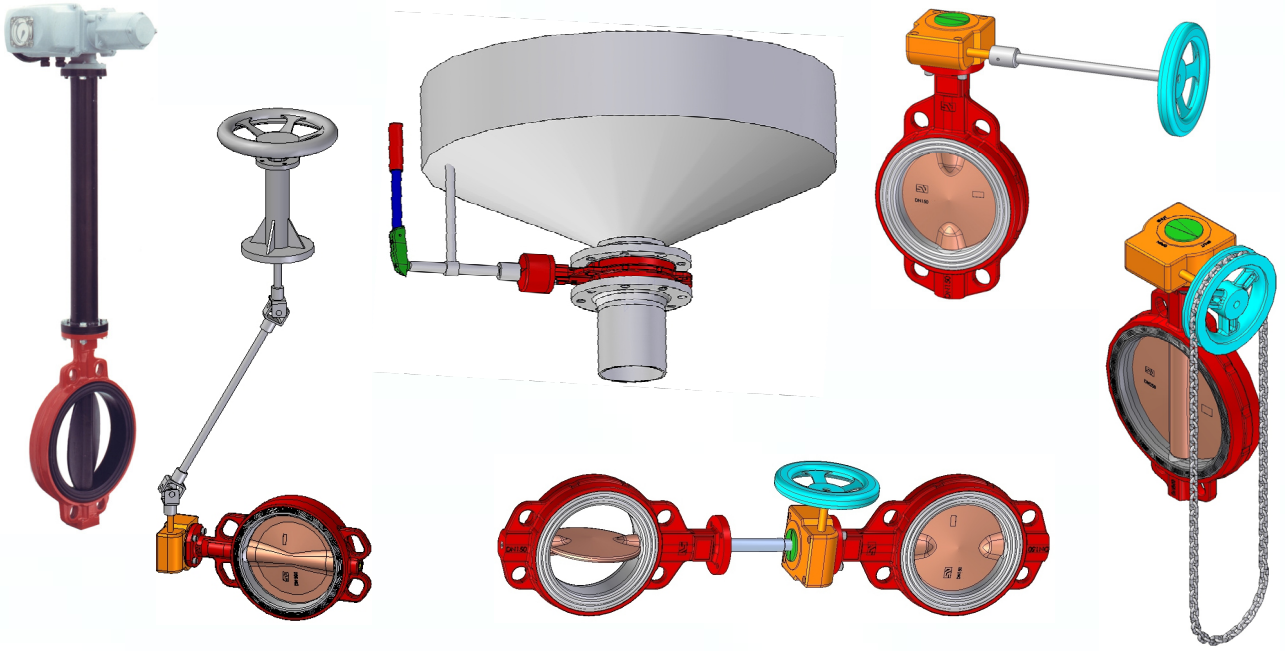
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Valves with actuators

We can supply butterfly valves with any type or brand of actuator that will be in the market.



Special assemblings



Development of special projects

Sigeval has developed projects with special valves for their typology, materials or application, according to the specifications agreed with our client.



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Reccomendations for storage and conservation

During storage of valves is recommended following these rules:



- Stock valves partially open and packing in the same way that are supplied by Sigeval. Be careful that disc is not too much open in order to avoid damaging edges of disc.
- Try to use first older valves. Seat is getting hardener when the time goes on, decreasing the elasticity. Year of manufacturing is indicating on the seat being: "0" year 2010, "1" year 2011, "2" year 2012, etc.
- If you notice that is difficult open a valve that has been stocked during a long period, clean it carefully with a cloth, lubricate the contact surface between the seat and disc with silicone spray (Not lubricate the valves with ordinary grease and oils, use only silicone spray or special grease type Klubersynth), try to open and close up till movement be soft. The valve is ready to use.
- Check the status of the coating annually. Any blow, scratch or damaged area has to be repaired.
- Contact with chemical products: Avoid contact with solvents, fats, oils, acids, etc.
- Contact with powdery products: Avoid powder deposit.
- Temperature: should be done lower than 25 ºC.
- Humidity: should be avoid, also possible condensations.
- Light: should be avoid from sun light directly and ultra violet.
- Oxygen y Ozone: should be avoid protected from air flow.
- Should be avoid any deformation.

Environmental information on packaging and use of the product after its useful life

- Packing disposal: Our packing is made from pallet, wood and cardboard. Please be free to use them another time. This way you will make longer the life time of the earth sources. If you consider you are not been able to use them again in a short time, contact to the am official "Non-hazardous waste gestor company" to treat them properly.
- What to do with the valve after the life time use: Sigeval valves are made from metal and rubber components. All of them could be used again.
- Metal parts: they can be used at foundry for a second life. Please contact to Non-hazardous waste gestor company to treat them.
- Rubber: it could be used for children park and roads. Please contact to a Hazardous waste gestor Company to treat them.

Inspection before installation

Before installation the following points have to be checked:

- Visual inspection of the valve for damage or contamination during transportation, handling and storage, which may adversely affect the performance of the valve.
- Unpack the valve carefully and check the valve identification labels.
- Inspect the inside and the lining of the valve. You should clean these and free of any foreign particles or any damage.
- If it´s possible, operate the valve through the closure / opening and cycle Open / Closed to check the correct function. Warning: Avoid contact with the valve disc.
- Immediately before installation, check the flanges that are to be mounted to the valve. The flanges should be raised flange or flat face. The sealing area should be flat, free of burrs, grooves, welding debris, sharp edges and oil free.
- The inside diameter of the flange should be large enough to avoid disc interference when the valve is open. Check that the inside diameter of the flange is not too large, as it will reduce sealing between valve faces. Check the raise flange diameter, so that it is sufficient for proper support with the metal surface of the valve.

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Assembly between flanges

The SIGEVAL butterfly valve has been designed in accordance with the following specifications:

- **Mounting between flat or welding neck flanges** to DIN or ANSI standards.
- **Flange gaskets are not required**. When fitted between the counter flanges the lips on the elastomer liner ensure watertight shut-off between the valve body and flanges.
- **No supports required**. When clamped between the flanges and corresponding piping no further support is necessary, nor for the valve or for its controls.

DIMENSIONS OF THE COUPLING PIPES AND FLANGES

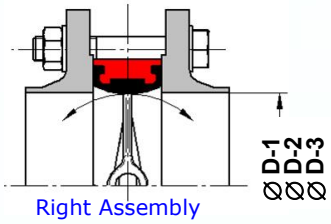
Both the flanges and the piping must he in correct alignment with the valve, to obtain the following:

- Perfect water tightness.
- Normal functioning of the valve and in particular, free movement of the butterfly.
- It is extremely important to ensure that the internal diameters of the flanges are suitable for correct functioning of the valve.

An excessively small diameter (see Figure 3) can lead to blocking the disc and cause serious damage. An excessively large diameter (see Figure 2) can prevent a good internal seal between the liner and the disc as well as a good external seal between the liner and the counter flanges.

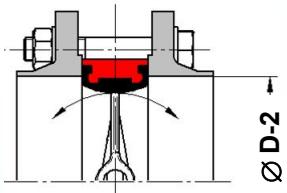
It is convenient to adapt to the optimal D-1 dimension, according to the attached table.

Figure 1



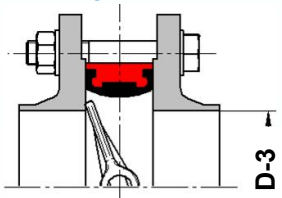
Right Assembly

Figure 2



Wrong Assembly

Figure 3



Wrong Assembly

DN		D-1	D-2	D-3	D-4
mm	inches				
25	1″	25	42	20	14
32	1 ¼″	32	42	20	14
40	1 ½″	40	50	30	26
50	2″	50	61	40	29
65	1 ½″	65	75	55	46
80	3″	80	90	70	65
100	4″	105	115	95	90
125	5″	125	140	120	112
150	6″	150	170	145	139
200	8″	200	220	200	191
250	10″	250	270	245	241
300	12″	300	325	295	290
350	14″	350	370	345	338
400	16″	400	420	395	387
450	18″	450	475	442	434
500	20″	500	525	490	478
600	24″	600	624	587	570
700	28″	700	715	693	660
750	30″	750	765	742	705
800	32″	800	818	795	763
900	36″	900	922	880	866
1000	40″	1000	1023	980	966
1050	42″	1050	1079	1042	1010
1100	44″	1100	1123	1086	1054
1200	48″	1200	1225	1190	1153
1400	56″	1400	1424	1380	1342
1500	60″	1500	1535	1490	1447
1600	64″	1600	1624	1575	1533

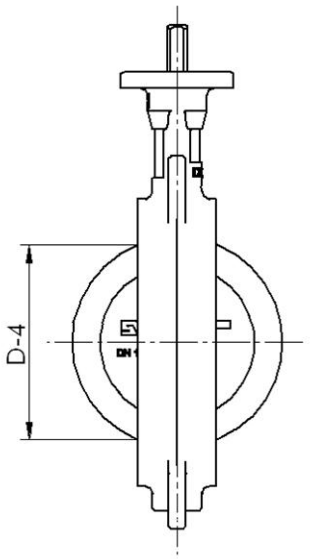


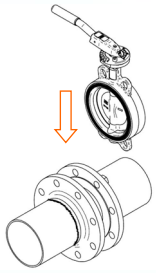
Figure 4

D-1 = Optimum diameter
D-2 = Maximum diameter
D-3 = Minimum diameter
D-4 = Disc clearance

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Instructions for assembly between flanges

1 Move the two counter flanges apart just enough to allow the valve to slide between the flanges without damaging the lips of the rubber liner. Put the disc in half-open position but not projecting outside the valve width (figure 1). It advised that valves from DN 450 and larger, should be mounted with the shaft in horizontal position.



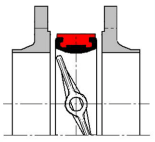
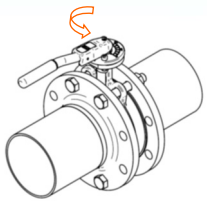


Figure 1

2 Centre the valve and anchor the bolts and nuts, but do not yet tighten them. Place the disc in a perfectly centred and fully open position whilst taking care not to cause any damage (figure 2).



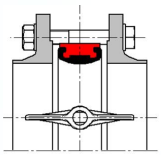
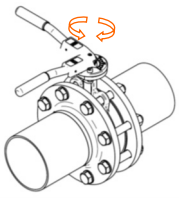


Figure 2

3 Tighten the bolts in diagonally opposite sequence till metal/metal contact is reached between the valve body and flanges. Do not over tighten. Gently open and close the disc. If the optimum dimensions have been respected and the assembly instructions carefully followed, the disc should rotate freely (figure 3).



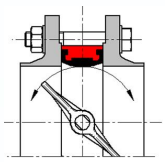


Figure 3

Recommendations and advises

Weld the pipe and the flanges well away from the valve to avoid any heat damage to the rubber liner and the coating (figure 4). The flanges must be flat and should be inspected to see that the welding has not deformed them. No welding residue should appear on the flat faces of the flanges in contact with the valve. Sharp edges should be avoided as these might damage the rubber liner and coating on the disc during assembly. The flanges must be parallel to obtain proper alignment and operation of the valve. A parallelism mistake could damage gravely the water tightness of the valve, because the press of the elastomer it´s different in each face. Likewise, could broken the lugs and body valves (figure 5).

Check that exists a perfect parallelism between flanges

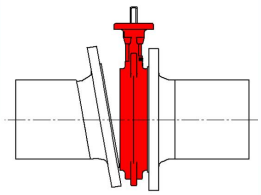


Figure 5

Avoid weldings



Figure 4

Assembly LUG at the end line

The lugged valve is more suitable for end of line mounting. The "DOWN-STREAM" flange/pipe can he disassembled, maintaining "UPSTREAM" pressure. In order to carry out disassembly of the "DOWNSTREAM" pipe the following measures should be taken:

1) Isolate the circuit to prevent overpressure or ram blows during the disassembly.
2) Ensure that the "UPSTREAM" pressure does not exceed the limits stated below:

For DN 025 ÷ 150 mm (PN 16 x 0.4)= 6.4 Kg/cm^2
For DN 200 ÷ 600 mm. (PN 10 x 0.4)= 4.0 Kg/cm^2

Diagrams below show procedures to follow, starting from initial assembly (Figure 1). Step by step loosen all bolts on the "DOWNSTREAM" side in a diagonally sequence to remove flange and pipe work (Figure 2 and Figure 3).

Initial assembly

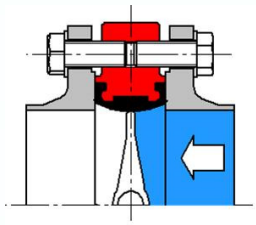


Figure 1

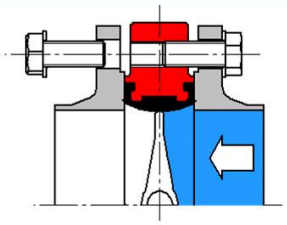


Figure 2

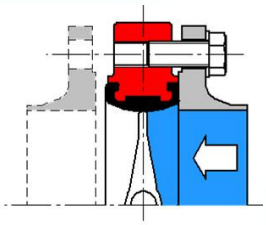
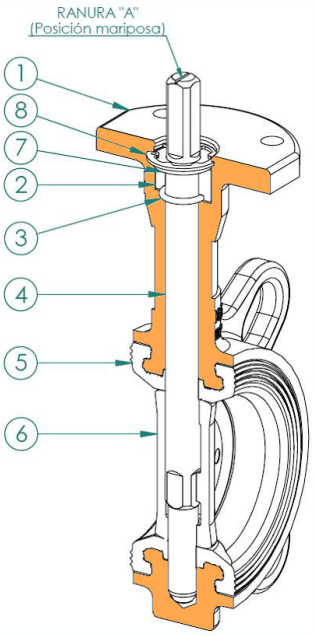


Figure 3

Final assembly

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Valves DN 25/100



Pos.	Designation	Units
1	Body	1
*2	Bushing	1
3	Oring	1
4	Shaft	1
5	Seat	1
6	Disc	1
7	Washer	1
8	Zegi ring	1

I - Procedure for dismantling liner.

a) Pull out zegi ring (8).
b) Put the disc (6) in open position.
c) Pull out the combination of:
Driving shaft (4).
"O" ring sealing (3).
Bushing (2).
Washer (7).
e) Move away the disc (6).
f) On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat making in a heart shape in order to remove it laterally from the valve body.

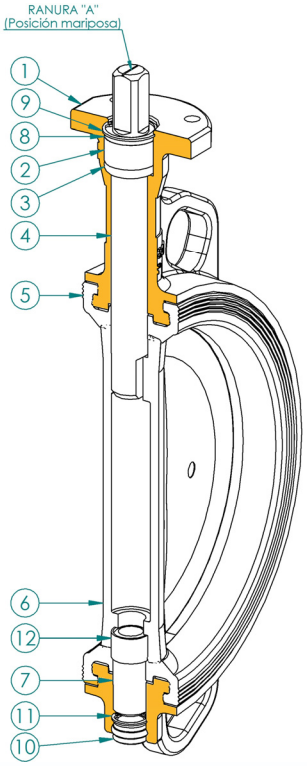
II - Procedure for assembling the liner.

Operations describes for disassembling the liner must be in reverse order.

a) Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easiers.
b) Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
c) Put in disc (6) in open position in order to make easier guiding.
d) Replace the driving shaft (4) showing the disc in open position (Groove "A" indicates the position of the disc).
e) Replace the "O" ring (3) and the bushing (2).
f) Push the shaft (4) to the end position.
g) Put in the washer (7) and the zegi ring (8).
h) Use wrench to open and close the valve to check proper assembly and operation.

** In DN 25/32 don´t exist item 2.*

Valves DN 125/200



Pos.	Designation	Units
1	Body	1
2	Bushing	1
3	Oring	1
4	Upper Shaft	1
5	Seat	1
6	Disc	1
7	Lower Shaft	1
8	Washer	1
9	Zegi ring	1
10	Plug	1
11	Zegi ring	1
*12	Bushing	1

I - Procedure for dismantling liner.

a) Pull out zegi ring (8).
b) Put the disc (6) in open position.
c) Pull out the combination of:
Driving upper shaft (4).
Bushing (2).
"O" ring sealing (3).
Washer (9).
e) Remove the plug (10) and the lower zegi ring (11).
f) Put a metal stick in the upper shaft lodging, then push down the lower shaft (7).
g) Move away the disc (6).
f) On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat making in a heart shape in order to remove it laterally from the valve body.

II - Procedure for assembling the liner.

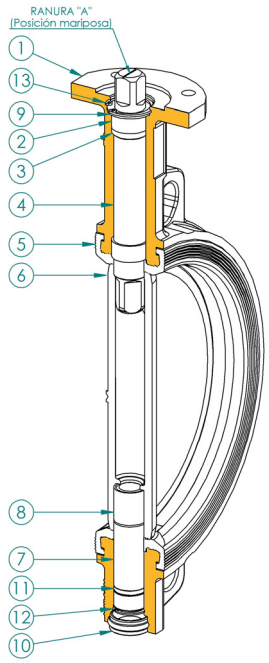
Operations describes for disassembling the liner must be in reverse order. Attention must be paid to these remarks:

a) Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easiers.
b) Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
c) Put in disc (6) in open position in order to make easier guiding, bushing (12) included.
d) Push the lower shaft (7) smoothly until it stop with the inner of the disc, then install the zegi ring (11) and the plug (10).
e) Put in the upper driving shaft (4). Direction of assembling must be respected (Groove "A" indicates the position of the disc).
f) Put in the bushing (2), "O" ring sealing (3) and the washer (9).
g) Install the upper zegi ring (8).
h) Use wrench to open and close the valve to check proper assembly and operation.

** In DN 125/150 don´t exist item 12.*

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Valves DN 250/500



I - Procedure for dismantling liner.

a) Pull out zegi ring (13).
b) Put the disc (6) in open position.
c) Pull out the combination of: upper shaft (4) together with the "O" ring sealing (3), the upper bushing (2) and the washer (9).
d) Remove the plug (10) and the lower zegi ring (12).
e) Put a metal stick in the upper shaft lodging, then push down the lower shaft (7).
a) Move away the disc (6).
f) On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat making in a heart shape in order to remove it laterally from the valve body.

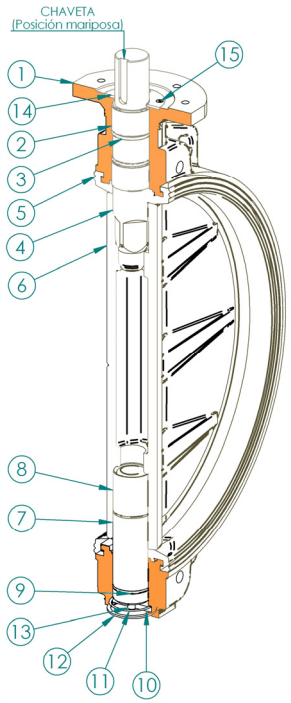
Pos.	Designation	Units
1	Body	1
2	Bushing	2
3	Oring	1
4	Upper Shaft	1
5	Seat	1
6	Disc	1
7	Lower Shaft	1
8	Bushing	1
9	Washer	1
10	Plug	1
11	Oring	1
12	Zegi ring	1
13	Zegi ring	1

II - Procedure for assembling the liner.

Operations describes for disassembling the liner must be in reverse order. Attention must be paid to these remarks:

a) Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easiers.
b) Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
c) Put in disc (6) in open position in order to make easier guiding. The disc includes bushing (8).
d) Push the lower shaft (7) smoothly, together with the "O" ring sealing, until it stop with the inner of the disc, then install the zegi ring (12) and the plug (10).
e) Verify that bushings (2) are correctly placed in upper and lower holes in the body of the valve.
f) Put in the upper shaft (4) with the "O" ring sealing (3) until it stop with the inner of the disc. Direction of assembling must be respected (Groove "A" defines position of the disc).
g) Put in the bushing (2) and the washer (9).
h) Install the upper zegi ring (13).
i) Open and close the valve to check proper assembly and operation.

Valves DN 600/1100



I - Procedure for dismantling liner.

a) Loose and extract the upper screws (15).
b) Put the disc (6) in open position.
c) Pull out the combination of: upper shaft (4) together with the "O" ring sealing (3), the upper bushing (2) and the upper cover (14).
d) Remove the zegi ring (12) and the lower cover (10), together o`ring (11).
e) Put a metal stick in the upper shaft lodging, then push down the lower shaft (7), together the o´ring (9).
a) Move away the disc (6).
f) On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat making in a heart shape in order to remove it laterally from the valve body.

Pos.	Designation	Units
1	Body	1
2	Bushing	2
3	Oring	2
4	Upper Shaft	1
5	Seat	1
6	Disc	1
7	Lower Shaft	1
8	Bushing	1
9	Oring	1
10	Lower cover	1
11	Oring cover	1
12	Zegi ring	1
13	Adjusting bolt	1
14	Upper cover	1
15	Screws	4/6

II - Procedure for assembling the liner.

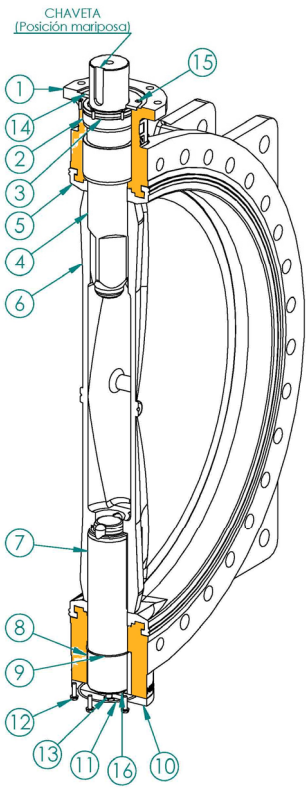
Operations describes for disassembling the liner must be in reverse order. Attention must be paid to these remarks:

a) Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easiers.
b) Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
c) Put in disc (6) in open position in order to make easier guiding. The disc includes bushing (8).
d) Push the lower shaft (7) smoothly, together with the "O" ring sealing (9), until it stop with the inner of the disc, then install the coger cover (10), o´ring (11) and the zegi ring (12). Adjust the lower shaft position with the srew (13)
e) Verify that bushings (2) are correctly placed in upper and lower holes in the body of the valve.
f) Put in the upper shaft (4) with the "O" ring sealing (3) until it stop with the inner of the disc. Direction of assembling must be respected (Groove "A" defines position of the disc).
g) Put in the bushing (2), the upper cover (14), and tight the screws of the cover (15).
h) Open and close the valve to check proper assembly and operation.

** In DN 600/700 don´t exist item 13.*

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Valves DN 1200/1600



I - Procedure for dismantling liner.

a) Loose and extract the upper screws (15).
b) Put the disc (6) in open position.
c) Pull out the combination of: upper shaft (4) together with the "O" ring sealing (3), the upper bushing (2) and the upper cover (14).
e) Loose and extract the screws of the lower cover (12) and then the cover (10), push support (16). Then, extract the lower bushing (8).
f) Put a metal stick in the upper shaft lodging, then push down the lower shaft (7), together the o´ring (9).
g) Move away the disc (6).
h) On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat making in a heart shape in order to remove it laterally from the valve body.

Pos.	*Designation*	*Units*
1	Body	1
2	Bushing	2
3	Oring	1
4	Upper Shaft	1
5	Seat	1
6	Disc	1
7	Lower Shaft	1
8	Bushing	1
9	Oring	1
10	Lower cover	1
11	Oring cover	1
12	Screws	4/6
13	Adjusting bolt	1
14	Upper cover	1
15	Screws	6
16	Push support	1

II - Procedure for assembling the liner.

Operations describes for disassembling the liner must be in reverse order. Attention must be paid to these remarks:

a) Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easiers.
b) Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
c) Put in disc (6) in open position in order to make easier guiding
d) Introduce the lower bushing (8) included oring (9). Push the lower shaft (7) smoothly, up to internal part of the disc. Install the lower cover (10), push support (16), cover oring (11) and the cover screws. Adjust the lower shaft position with the screw (13)
e) Verify that bushings (2) are correctly placed in upper and lower holes in the body of the valve.
f) Introduce the upper shaft (4), up to the internal part of the disc. Direction of assembling must be respected (Groove "A" defines position of the disc).
g) Put the upper bushing (2), o´ring (3) and the upper cover (14), tight the screws (15).
h) Open and close the valve to check proper assembly and operation.

Repair kit

In case of seat rubber change, it is recommended to change also other elements, following it´s the items by DN:

DN 25/32	Item 3, 7, 8
DN 040-100	Item 2, 3, 7, 8
DN 125-150	Item 2, 3, 8, 9, 10, 11
DN 200	Item 2, 3, 8, 9, 10, 11, 12
DN 250-500	Item 2, 3, 8, 9, 10, 11, 12, 13
DN 600-1100	Item 2, 3, 8, 9, 11
DN 1200-1600	Item 2, 3, 8, 9, 11

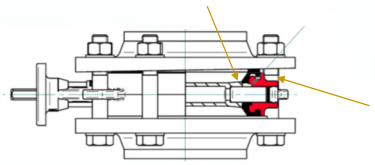
NOTE: Para válvulas con el asiento vulcanizado al cuerpo, como son los modelos siguientes: FLN(w)/LUGN(w)/FN(w)/VV/BBN(w)/FFNV(w) el Mantenimiento se realizaría igual a excepción del cambio del asiento que no se podría realizar al estar vulcanizado al cuerpo.

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The most common defects in assembly

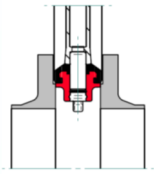
Lack of parallelism of the counter flanges.

If there are not a uniform pressure of the seat in both faces, could cause leakages between body and flange, as well as, between seat and shaft.



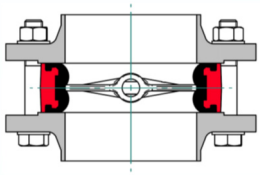
Counter flanges too close together.

If the flanges are not sufficiently separated when assembling the valve, a deformation or tear will be produced in the seat liner.



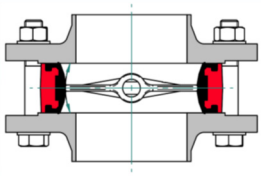
Deformation of the liner caused by assembling the valve in close position.

If the rules of assembly are not followed exactly and the flange bolts tightened with the valve in the closed position, an incorrect deformation is produced in the liner. This deformation prevents normal opening and closing of the valve, a permanent deformation of the disc seating area and increasing of the operation torque.



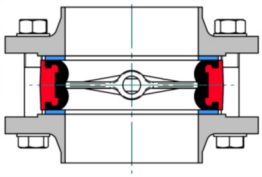
Use of incorrect flanges (too small internal diameter):

Could be cause a interference between the disc and the internal edge of the flange, prevents the correctly opening of the disc and a seriously damage of the coating



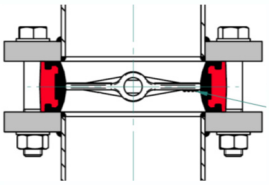
Use of joints between the liner and the flange.

The joints push the elastomer inwards increasing the operation torque highly, preventing the valve opening and closing.
Use of gaskets it´s forbidden.



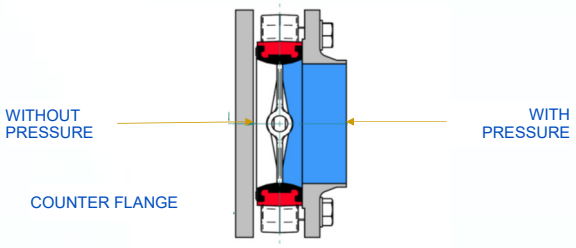
Welding near the valve.

In order to facilitate the assembly and alignment of the valve with its flanges, the pipe is sometimes welded with the valve between the flanges. This causes irreparable damage both to the liner (trough excessive heat) and to the disc.



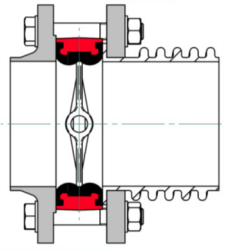
The liner tends to come out the valve at the end of the assembly line end and leakage occurs:

When a valve is located at the end of a line, a blind counter flange must be fitted to prevent the pressure from the fluid dragging the elastomer liner out of its seating and causing leaks.



Assembly with an elastic muff:

The elastic muff push directly over the liner of the valve, increasing the operation torque. Could be cause leakages through the shaft and it´s practically impossible the right operation. This assembly is specifically forbidden.



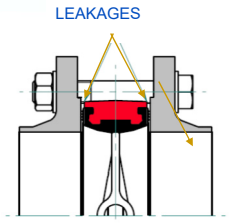
Nota: See Disc clearance dimension table in the assembling between flanges, page 20.

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Possible causes of leaks or wrong operation

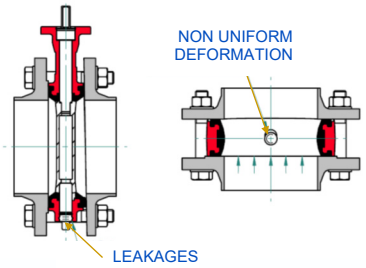
Leak between flanges.

- Flanges not parallel.
- The assembly screws for the valve are not tightened sufficiently; the flanges must have a metal-metal contact with the valve body.
- Flanges have scraps of welding, and /or are not completely flat.
- Elastomer liner has lost its resilience (this can happen i.e. in heating systems where the recommended maximum working temperature has been exceeded).



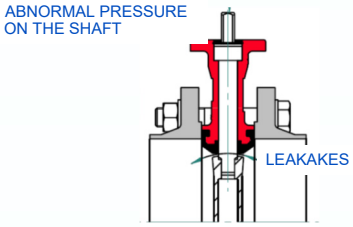
Leaks via the shafts.

The flanges are not parallel, causing uneven pressure on the seat, so that the shafts entries are being deformed.



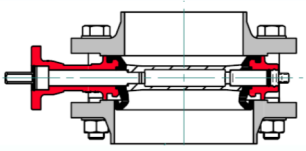
Internal Leak:

- If there is leakage via top of the disc, this can be caused by excessive pressure from the shaft on the disc, pushing down the disc.
- If there is leakage via other parts of the disc the maximum working pressure has been exceeded.



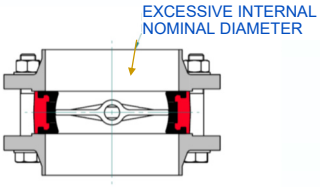
The liner has come out of its housing:

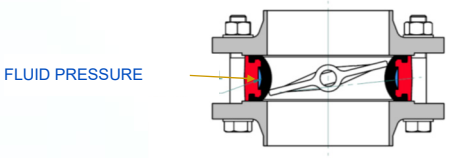
- When the fluid passes trough the valve at high speed, a Venturi effect I produced which causes the liner to be dragged, out of the body's housing. The only solution is to glue the liner or use valves with vulcanize bodies.
- The counter flanges have an excessive internal diameter.
- The butterfly valve has remain closed during a long time, so, the rings has been dried up. When the butterfly opens, the seat ring can drag of its position. It is necessary to maneuver the valve periodically to maintain it in good use.



After a period of functioning, the butterfly valve cannot open or close.

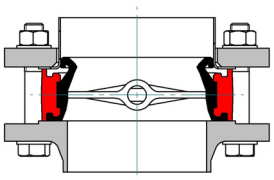
- When the internal diameter of the flange exceeds the correct measurement, the liner is not held firmly in place. The constant movement of the disc opening and closing displaces the liner inwards into the valve making it impossible for the valve to open or close.
- If, as a result of bad assembly, there is leakage via the shaft, the fluid pressure is transmitted inside the liner, causing their swelling. This results in excessive tightening between the disc and the liner, which prevents the valve from functioning.
- If the liner is not suitable to the piping flow, it´s possible to cause problems in the open and close operation because the seat blows up.





Loose back flange.

If loose back flanges are used in a system, could be have problems about leakage and bad performance of the butterfly valves. The seat rubber don´t fix properly between loose back flanges, put out from initial position producing leakages and not working valve.



Nota: See Disc clearance dimension table in the assembling between flanges, page 20.

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Technical characteristics



Body type	WAFER / Replaceable seat rubber
Characteristics	Concentric and bidirectional
Production range	DN 25-1200
Design standard	EN 593
Face to Face	EN 558-1 Series 20 ISO 5752 Series 20 DIN 3202 T3 K1 API 609 Category A BS 5155 series 4-5 except DN350
Top flange	ISO 5211
Assembly flanges	PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	16 bar DN 025-150 10 bar DN 200-1200 (16 bar optionally) 25 bar DN 025-0300 special series
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU Vulcanized seat

General description

FL(w) butterfly valve is the answer to the market request, in accordance with ISO PN 10/16 standard. Supported by modern technology and design facilities, we offer a high quality valve at a very competitive price level. The FL(w) type butterfly valve is specially designed for fire-safe services, shipbuilding industry, water supplies, water treatment, general services, etc. The body is clearly different due to its extended neck that allow pipe isolation and free access to the actuator.

Applications

- Water treatment and distribution
- HVAC systems.
- Fire fighting systems.
- General services.
- Irrigation.
- Naval industry.
- Powdery products



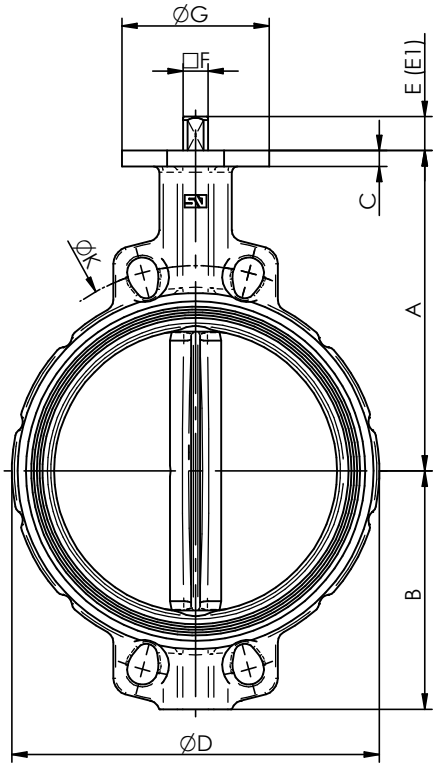
Technical sheets and dimensional drawings

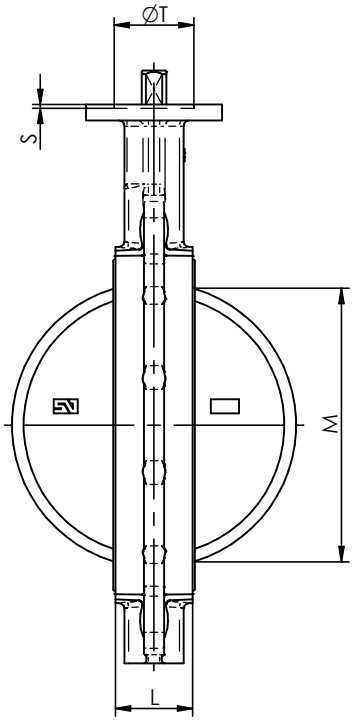
FL(w)-001-DT	General dimensions
FL(w)-002-DT	Dimensions manual actuator
FL(w)-003-DT	Dimensions pneumatic actuator
FL(w)-004-DT	Dimensions electrical actuator Bernard
FL(w)-005-DT	Dimensions electrical actuator AUMA
FL(w)-006-DT	Assembly flanges
FL(w)-007-DT	Assembling screws
FL(w)-0010-DT	Materials detail DN 025-200
FL(w)-0011-DT	Materials detail DN 250-500
FL(w)-0012-DT	Materials detail DN 600-1100
FL(w)-0013-DT	Materials detail DN 1200



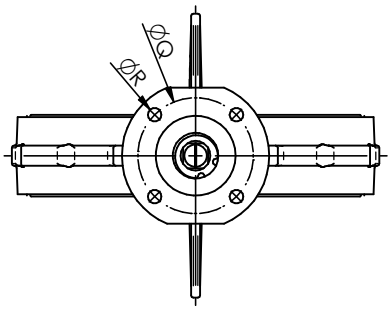
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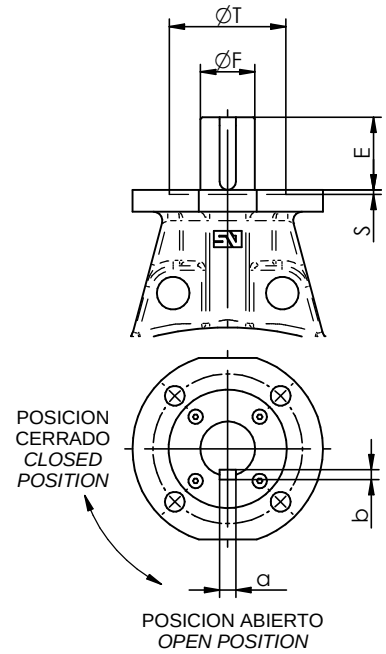
VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*





DN 25/500



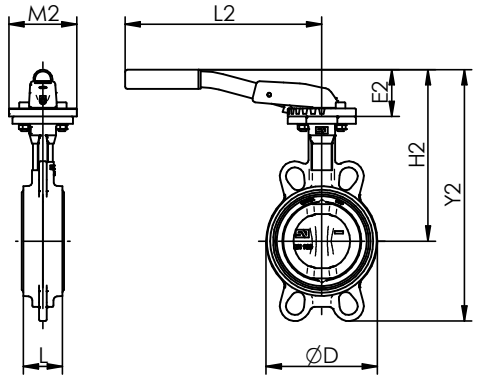


DN 600/1200

E1 - EJE CORTO OPCIONAL BAJO PEDIDO
E1 - SHORT SHAFT ON REQUEST

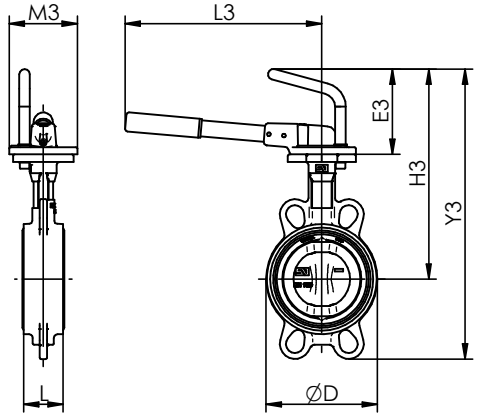
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*																**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**E1**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
										PN10	**PN16**	**Cl.150**									
25	**1”**	103	60	8	68	30	16	11	90	85	85	79.4	33	14	1.5	F-07	70	4x9			
32	**1¼”**	103	60	8	68	30	16	11	90	100	100	88.9	33	14	1.5	F-07	70	4x9			
40	**1½”**	110	56	10	76	30	16	11	90	110	110	98.4	33	26	1.6	F-07	70	4x9			
50	**2”**	120	61	10	100	30	16	11	90	125	125	120.6	43	29	2.4	F-07	70	4x9			
65	**2½”**	135	69	10	108	30	16	11	90	145	145	139.7	46	46	2.7	F-07	70	4x9			
80	**3”**	141	94	10	124	30	16	11	90	160	160	152.4	46	65	3.2	F-07	70	4x9			
100	**4”**	165	106	10	147	30	16	11	90	180	180	190.5	52	90	4.0	F-07	70	4x9			
125	**5”**	180	126	12	180	33	18	14	90	210	210	215.9	56	112	6.2	F-07	70	4x9			
150	**6”**	193	133	12	206	33	18	14	90	240	240	241.3	56	139	7.3	F-07	70	4x9			
200	**8”**	225	170	12	257	33	18	17	90	295	295	298.5	60	191	11	F-07	70	4x9			
250	**10”**	283	210	14	324	30	23	22	130	350	355	361.9	68	241	20	F-10	102	4x12	3	70	
300	**12”**	308	240	14	376	30	23	22	130	400	410	431.8	78	290	30	F-10	102	4x12	3	70	
350	**14”**	339	263	16	422	31		22	160	460	470	476.2	78	338	35	F-10	102	4x12	3	70	
400	**16”**	380	308	18	480	31		27	160	515	525	539.7	102	387	56	F-12	125	4x14	4	85	
450	**18”**	381	340	20	536	38		36	190	565	585	577.8	114	434	80	F-14	140	4x18	4	100	
500	**20”**	433	380	20	593	38		36	210	620	650	635.0	127	478	114	F-14	140	4x18	4	100	
600	**24”**	494	440	24	690	80		60	210	725	770	749.3	154	570	171	F-16	165	4x22	5	130	18x11
700	**28”**	560	485	25	780	106		65	300	840	840	863.5	165	660	228	F-25	254	8x18	5	200	18x11
750	**30”**	590	530	25	836	106		80	300	900	900	914.4	190	705	295	F-25	254	8x18	5	200	22x14
800	**32”**	630	565	27	902	106		80	300	950	950	978	190	763	347	F-25	254	8x18	5	200	22x14
900	**36”**	695	610	32	1010	110		80	350	1050	1050	1086	203	866	459	F-25	254	8x18	5	200	22x14
1000	**40”**	770	675	32	1116	110		80	350	1160	1170	1200	216	966	581	F-25	254	8x18	5	200	22x14
1050	**42”**	770	675	32	1148	110		80	350			1257.3	216	1010	658	F-25	254	8x18	5	200	22x14
1100	**44”**	815	733	32	1215	110		80	350	1270	1270	1314.5	216	1054	716	F-25	254	8x18	5	200	22x14
1200	**48”**	875	818	40	1334	110		100	350	1380	1390	1422	254	1153	963	F-30	298	8x23	5	230	28x16

VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



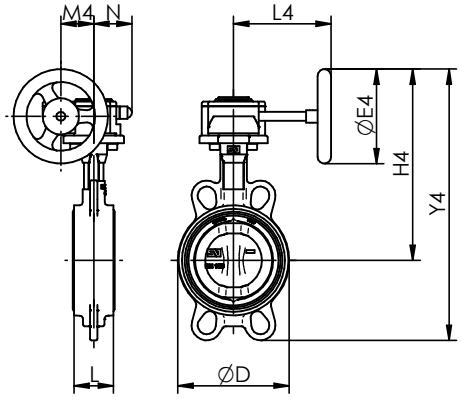
"MN"

DN		D	L	MN					
				E2	H2	Y2	L2	M2	Kg
25	**1"**	68	33	49	151.5	212	220	90	1.9
32	**1¼"**	68	33	49	151.5	212	220	90	1.9
40	**1½"**	76	33	49	159	215	220	90	2.1
50	**2"**	100	43	49	169	231	220	90	2.9
65	**2½"**	108	46	49	184	253	220	90	3.1
80	**3"**	124	46	60	201	295	260	90	3.7
100	**4"**	147	52	60	225	331	260	90	4.5
125	**5"**	180	56	75	255	382	315	90	6.8
150	**6"**	206	56	75	268	401	315	90	7.8
200	**8"**	257	60	75	300	470	315	90	11.7



"MR"

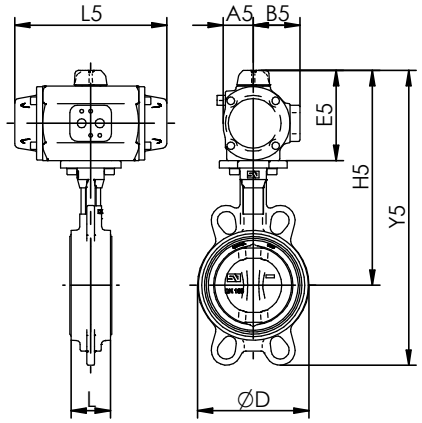
DN		D	L	MR					
				E3	H3	Y3	L3	M3	Kg
25	**1"**	68	33	113	215.5	276	260	90	2.1
32	**1¼"**	68	33	113	215.5	276	260	90	2.1
40	**1½"**	76	33	113	223	279	260	90	2.3
50	**2"**	100	43	113	233	294	260	90	3.1
65	**2½"**	108	46	113	248	317	260	90	3.4
80	**3"**	124	46	113	254	348	260	90	3.9
100	**4"**	147	52	113	278	384	260	90	4.6
125	**5"**	180	56	113	293	419	310	90	6.9
150	**6"**	206	56	113	306	439	310	90	7.9
200	**8"**	257	60	113	338	508	310	90	11.8
250	**10"**	324	68	121	403	613	500	130	22.0
300	**12"**	376	78	121	429	669	500	130	31.2



"MDV"

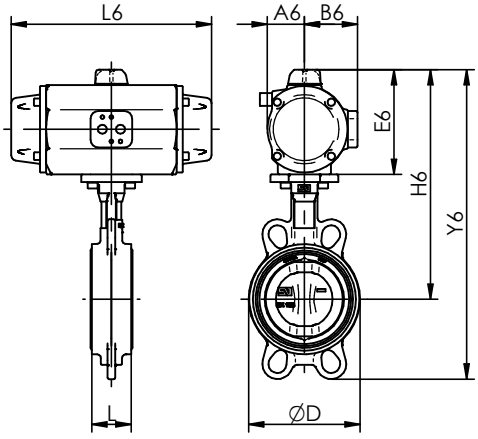
DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
25	**1"**	68	33	10-16	0/X-21	125	190	250	129	43.5	50.5	2.8
32	**1¼"**	68	33	10-16	0/X-21	125	190	250	129	43.5	50.5	2.8
40	**1½"**	76	33	10-16	0/X-21	125	198	254	129	43.5	50.5	2.9
50	**2"**	100	43	10-16	0/X-21	125	208	269	129	43.5	50.5	3.7
65	**2½"**	108	46	10-16	0/X-21	125	223	292	129	43.5	50.5	4.0
80	**3"**	124	46	10-16	0/X-21	125	229	323	129	43.5	50.5	4.4
100	**4"**	147	52	10-16	0/X-21	125	253	359	129	43.5	50.5	5.2
125	**5"**	180	56	10-16	1/X-21	160	286	412	135	43.5	50.5	7.6
150	**6"**	206	56	10-16	1/X-21	160	298	431	135	43.5	50.5	8.7
200	**8"**	257	60	10-16	1A/X-41	200	355	525	152	52.5	59	13.7
250	**10"**	324	68	10-16	2/X-61	250	442	652	222	61.2	70.5	23.7
300	**12"**	376	78	10-16	2/X-61	250	468	708	222	61.2	70.5	33.0
350	**14"**	422	78	10-16	2/X-61	250	498	762	222	61.2	70.5	38.7
400	**16"**	480	102	10-16	2A/Q-800	300	572	880	277	68.8	72.5	64.5
450	**18"**	536	114	10-16	3/Q-2000	400	630	970	321	96.5	91.5	99
500	**20"**	593	127	10-16	3/Q-2000	400	682	1062	321	96.5	91.5	133
600	**24"**	690	154	10-16	4/Q-4000	500	798	1239	408	138	140	206
700	**28"**	780	165	10	4/Q-4000	500	864	1350	408	138	140	265
				16	5/Q-6500	600	914	1400	456	138	140	271
750	**30"**	836	190	10-16	5/Q-6500	600	944	1474	456	138	140	337
800	**32"**	902	190	10	5/Q-6500	600	984	1550	456	138	140	390
				16	6/Q-12000	700	1044	1608	510	180	156	408
900	**36"**	1010	203	10-16	6/Q-12000	700	1108	1718	510	180	156	521
1000	**40"**	1116	216	10-16	7/Q-16000	700	1184	1858	579	180	156	648
1050	**42"**	1148	216	10-16	7/Q-16000	700	1184	1858	579	180	156	611
1100	**44"**	1215	216	10	7/Q-16000	700	1228	1962	579	180	156	784
				16	8/Q-24000	700	1250	1983	593	252	228	913
1200	**48"**	1334	254	10-16	8/Q-24000	700	1310	2128	593	252	228	1161

VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



D.E. - D.A.

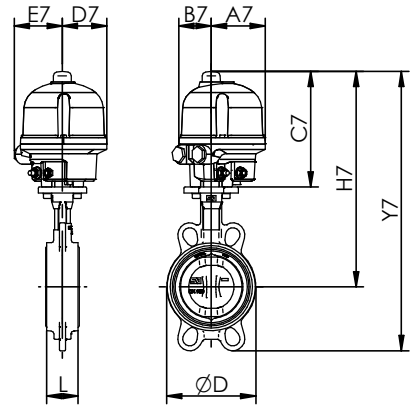
DN		D	L	P.N. Bar	DOBLE EFECTO - *DOUBLE ACTING*							
					REF	A5	B5	E5	H1	Y5	L5	Kg5
25	1"	68	33	10-16	PA00	32	52	121	223	283	153	3.1
32	1¼"	68	33	10-16	PA00	32	52	121	223	283	153	3.1
40	1½"	76	33	10-16	PA00	32	52	121	231	286	153	3.2
50	2"	100	43	10-16	PA00	32	52	121	241	302	153	4.0
65	2½"	108	46	10-16	PA05	40	62	119	254	323	201	5.3
80	3"	124	46	10-16	PA05	40	62	119	260	354	201	5.8
100	4"	147	52	10	PA05	40	62	119	284	390	201	6.6
				16	PA10	41	63	123	288	394	225	7.1
125	5"	180	56	10	PA10	41	63	123	303	429	225	9.3
				16	PA15	49	71	139	319	445	265	10.5
150	6"	206	56	10	PA15	49	71	139	332	465	265	11.4
				16	PA20	52	75	147	340	473	310	12.9
200	8"	257	60	10	PA20	52	75	147	372	542	310	16.8
				16	PA25	64	89	175	400	570	358	20.5
250	10"	324	68	10	PA25	64	89	175	457	667	358	29.7
				16	PA30	72	97	191	474	684	428	32.0
300	12"	376	78	10-16	PA30	72	97	191	499	739	428	41.3
350	14"	422	78	10-16	P40	106	120	272	611	874	444	53.1
400	16"	480	102	10	P40	106	120	272	652	960	444	73.4
				16	PA50	127	142	379	759	1067	694	95.5
450	18"	536	114	10-16	PA50	127	142	309	690	1030	694	115
500	20"	593	127	10	PA50	127	142	309	742	1122	694	150
				16	PA60	159	172	368	801	1181	690	163
600	24"	690	154	10	PA60	159	172	368	862	1302	690	227
				16	PA70	186	216	428	922	1362	743	249
700	28"	780	165	10	PA70	186	216	453	1013	1498	743	320



S.E - S.R.

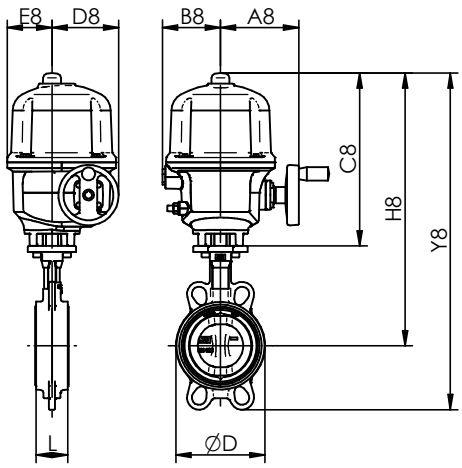
DN		D	L	P.N. Bar	SIMPLE EFECTO – *SPRING RETURN*							
					REF	A6	B6	E6	H6	Y6	L6	Kg6
25	1"	68	33	10	PA00S	32	52	121	223	283	153	3.3
				16	PA05S	40	62	119	222	282	201	4.5
32	1¼"	68	33	10	PA00S	32	52	121	223	283	153	3.3
				16	PA05S	40	62	119	222	282	201	4.5
40	1½"	76	33	10	PA00S	32	52	121	231	286	153	3.4
				16	PA05S	40	62	119	229	285	201	4.7
50	2"	100	43	10	PA00S	32	52	121	241	302	153	4.2
				16	PA05S	40	62	119	239	301	201	5.5
65	2½"	108	46	10	PA05S	40	62	119	254	323	201	5.8
				16	PA10S	41	63	123	258	327	225	6.3
80	3"	124	46	10	PA10S	41	63	123	264	358	225	6.7
				16	PA15S	49	71	139	280	374	265	8.2
100	4"	147	52	10	PA15S	49	71	139	304	410	265	9.0
				16	PA20S	52	75	147	312	417	310	10.6
125	5"	180	56	10	PA20S	52	75	147	327	453	310	12.9
				16	PA25S	64	89	175	355	481	358	17.6
150	6"	206	56	10	PA25S	64	89	175	368	501	358	18.6
				16	PA30S	72	97	191	384	517	428	22.6
200	8"	257	60	10-16	PA30S	72	97	191	416	586	428	26.5
250	10"	324	68	10-16	P40S	106	120	272	555	765	598	56.8
300	12"	376	78	10-16	P40S	106	120	272	580	820	598	66.0
350	14"	422	78	10	P40S	106	120	272	611	874	598	72.0
				16	PA50S	127	142	309	648	911	694	88.5
400	16"	480	102	10	PA50S	127	142	379	759	1067	694	114
				16	PA60S	159	172	458	838	1146	690	144
450	18"	536	114	10	PA60S	159	172	438	819	1159	690	166
				16	PA70S	186	216	498	878	1218	742	211
500	20"	593	127	10	PA70S	186	216	498	930	1311	742	236

VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
ACTUADOR ELECTRICO BERNARD / *ELECTRIC ACTUATOR*



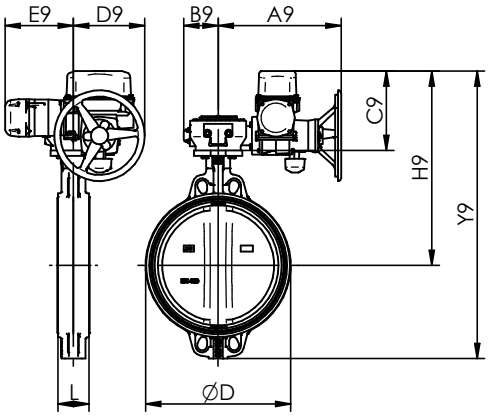
AQ L

DN		D	L	P.N. Bar	REF	MOTOR AQ L							
						A7	B7	C7	D7	E7	H7	Y7	Kg7
25	**1"**	68	33	10-16	AQ3L	60	83	191	67	85	294	354	4.2
32	**1¼"**	68	33	10-16	AQ3L	60	83	191	67	85	294	354	4.2
40	**1½"**	76	33	10-16	AQ3L	60	83	191	67	85	301	357	4.3
50	**2"**	100	43	10-16	AQ3L	60	83	191	67	85	311	372	5.1
65	**2½"**	108	46	10-16	AQ7L	89	54	191	73	80	326	395	6.3
80	**3"**	124	46	10-16	AQ7L	89	54	191	73	80	332	426	6.8
100	**4"**	147	52	10-16	AQ7L	89	54	191	73	80	356	462	7.5



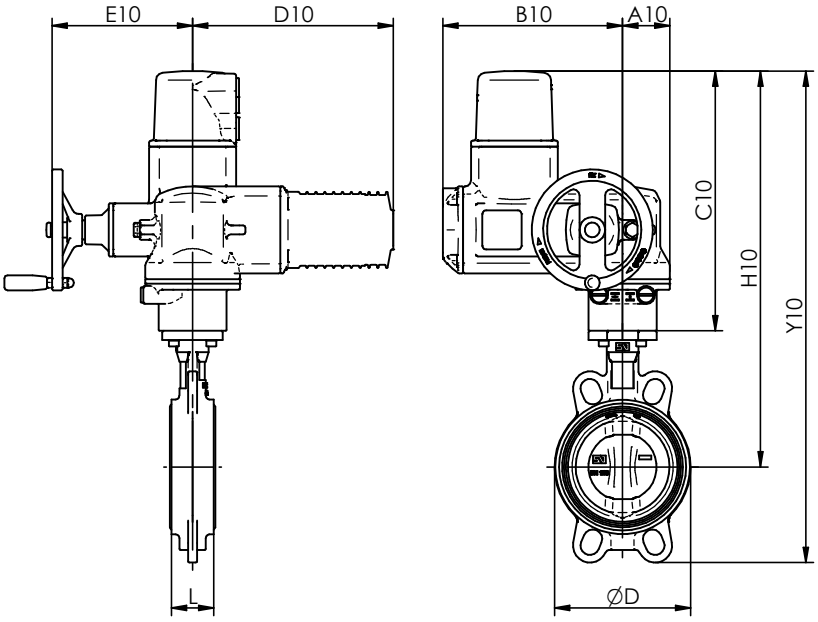
AQ

DN		D	L	P.N. Bar	REF	MOTOR AQ							
						A8	B8	C8	D8	E8	H8	Y8	Kg8
25	**1"**	68	33	10-16	AQ5	129	96	286	110	74	388	449	11.6
32	**1¼"**	68	33	10-16	AQ5	129	96	286	110	74	388	449	11.6
40	**1½"**	76	33	10-16	AQ5	129	96	286	110	74	396	452	11.7
50	**2"**	100	43	10-16	AQ5	129	96	286	110	74	406	467	12.5
65	**2½"**	108	46	10-16	AQ5	129	96	286	110	74	421	490	12.8
80	**3"**	124	46	10-16	AQ5	129	96	286	110	74	427	521	13.2
100	**4"**	147	52	10-16	AQ5	129	96	286	110	74	451	556	14.0
125	**5"**	180	56	10	AQ10	129	96	286	110	74	466	592	16.2
				16	AQ15	129	96	286	110	74	466	592	16.2
150	**6"**	206	56	10-16	AQ15	129	96	286	110	74	479	612	17.3
200	**8"**	257	60	10	AQ15	129	96	286	110	74	511	681	21.2
				16	AQ25	199	117	318	138	86	543	713	24.2
250	**10"**	324	68	10-16	AQ50	230	117	328	174	86	610	820	35.4
300	**12"**	376	78	10-16	AQ50	230	117	328	174	86	636	876	44.6
350	**14"**	422	78	10	AQ50	230	117	328	174	86	667	930	50.4



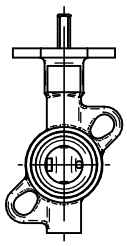
EZ

DN		D	L	P.N. Bar	REF	MOTOR EZ							
						A9	B9	C9	D9	E9	H9	Y9	Kg9
350	**14"**	422	78	16	EZ100	407	114	332	236	226	670	934	85
400	**16"**	480	102	10-16	EZ100	407	114	262	236	226	642	950	103
450	**18"**	536	114	10-16	EZ250	476	188	284	333	129	664	1004	145
500	**20"**	593	127	10-16	EZ250	476	188	284	333	129	716	1096	179
600	**24"**	690	154	10-16	EZ400	510	154	284	288	174	778	1218	239
700	**28"**	780	165	10-16	EZ1000	596	184	303	332	152	863	1349	322
750	**30"**	836	190	10-16	EZ1000	596	184	303	332	152	893	1423	388
800	**32"**	902	190	10-16	EZ1000	596	184	303	332	152	933	1498	440
900	**36"**	1010	190	10	EZ1000	596	184	303	332	152	998	1608	553

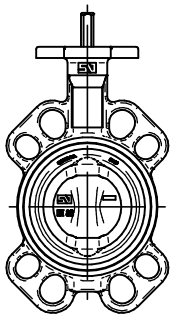


DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
25	**1”**	68	33	10-16	SQ 05.2	62	238	344	266	186	446	506	22.5
32	**1¼”**	68	33	10-16	SQ 05.2	62	238	344	266	186	446	506	22.5
40	**1½”**	76	33	10-16	SQ 05.2	62	238	344	266	186	454	510	22.7
50	**2”**	100	43	10-16	SQ 05.2	62	238	344	266	186	464	525	23.5
65	**2½”**	108	46	10-16	SQ 05.2	62	238	344	266	186	478	547	23.8
80	**3”**	124	46	10-16	SQ 05.2	62	238	344	266	186	484	578	24.2
100	**4”**	147	52	10-16	SQ 05.2	62	238	344	266	186	509	614	25.0
125	**5”**	180	56	10-16	SQ 05.2	62	238	344	266	186	524	650	27.3
150	**6”**	206	56	10-16	SQ 05.2	62	238	344	266	186	536	670	28.3
200	**8”**	257	60	10-16	SQ 07.2	62	238	344	266	186	568	738	32.2
250	**10”**	324	68	10-16	SQ 10.2	80	248	361	266	191	644	854	46.4
300	**12”**	376	78	10-16	SQ 10.2	80	248	361	266	191	669	909	55.6
350	**14”**	422	78	10	SQ 10.2	80	248	361	266	191	700	963	61.4
				16	SQ 12.2	105	248	385	266	191	724	987	70.4
400	**16”**	480	102	10-16	SQ 12.2	105	248	385	266	191	765	1073	90.7
450	**18”**	536	114	10-16	SQ 14.2	112	255	447	265	216	828	1168	124
500	**20”**	593	127	10-16	SQ 14.2	112	255	447	265	216	880	1260	158
600	**24”**	690	154	10-16	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	232
700	**28”**	780	165	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	883	1368	300
750	**30”**	836	190	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	913	1443	366
800	**32”**	902	190	10	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	953	1518	418
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	953	1518	466
900	**36”**	1010	203	10	GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	1008	1618	574
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1018	1628	578
1000	**40”**	1116	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	700
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	768
1050	**42”**	1148	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	777
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1108	1783	846
1100	**44”**	1215	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1138	1871	835
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1153	1886	903
1200	**48”**	1334	254	10	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1213	2031	1151
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1213	2031	1151

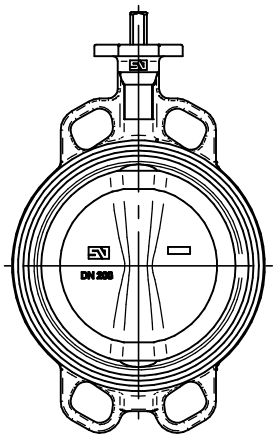
VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*



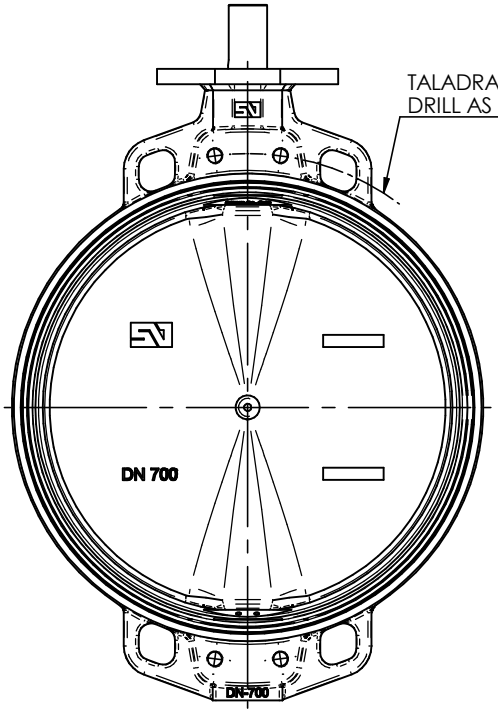
DN.25/32



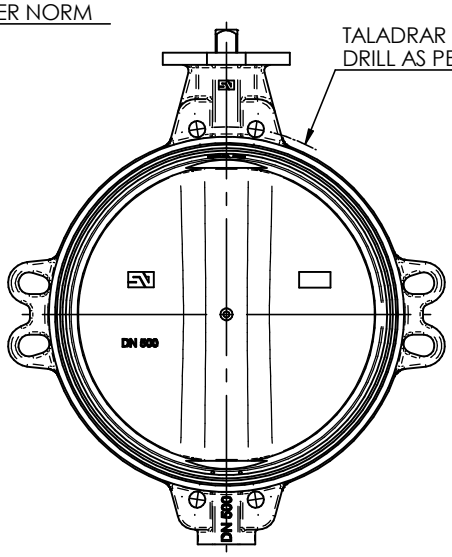
DN.80



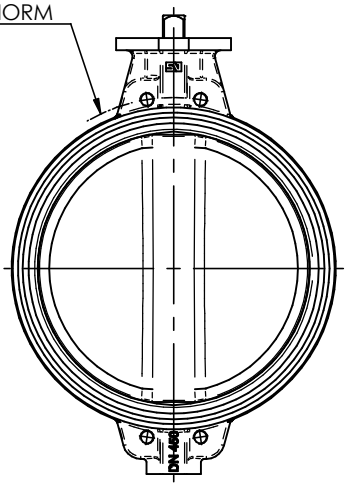
DN.40/400



DN.700/1200



DN.500/600



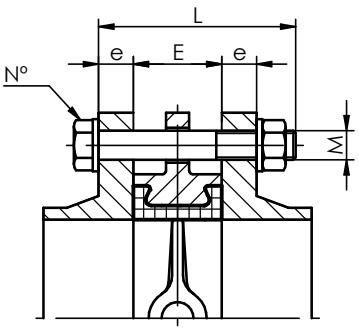
DN.450

X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

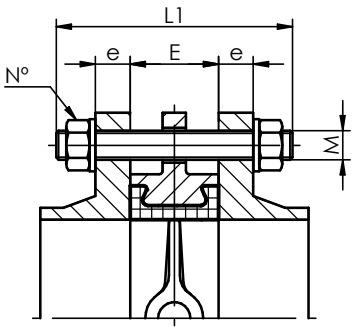
POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
25	1"	O	X	X	O	O						O	O	O	O	O	O
32	1¼"	X	X	X	X	X						X	X	X	X	X	X
40	1½"	X	X	X	X	X						X	X	X	X	X	X
50	2"	O	X	X	X	X						O	O	--	X	O	O
65	2½"	X	X	X	X	X						X	X	X	X	O	X
80	3"	X	X	X	X	X						X	X	X	X	X	X
100	4"	X	X	X	X	X	X					X	X	X	X	X	X
125	5"	X	X	X	X	X	X					X	X	X	X	X	X
150	6"	X	X	X	X	X	X					X	X	X	X	O	X
200	8"	X	X	X	X	X	X					X	X	X	X	X	X
250	10"	X	X	X	X	X	X					O	X	X	X	O	X
300	12"	X	X	X	X	X	X					X	X	X	O	O	X
350	14"	X	X	X	X	X	X					X	X	O	X	O	X
400	16"	O	X	X	X	X	X					O	O	O	X	X	O
450	18"	O	X	X	X	X	X					X	X	O	X	X	X
500	20"	O	X	X	X	X	X					O	O	O	X	X	O
600	24"	O	X	X	X	X	X					O	O	O	X	X	O
700	28"	--	X	X		O	O	O	--	--	O			O	X	--	O
750	30"	X	X	X		X	X	X	--	O	O	O	O	X	X	X	O
800	32"	O	X	X		X	X	X	--	O	O			O	O	X	O
900	36"	O	X	X		X	X	X	--	O	X	O	O	O	X	X	O
1000	40"	O	X	X		O	O	O	O	O	O			O	X	X	O
1100	44"	O	X	X		O	O	O	X	O	O			O	X	X	
1200	48"	O	X	X		O	O	O	X	O	O	X	X	O	X	X	X

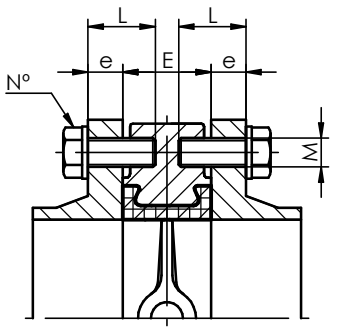
VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*



"A-A"
TORNILLO / *SCREW*

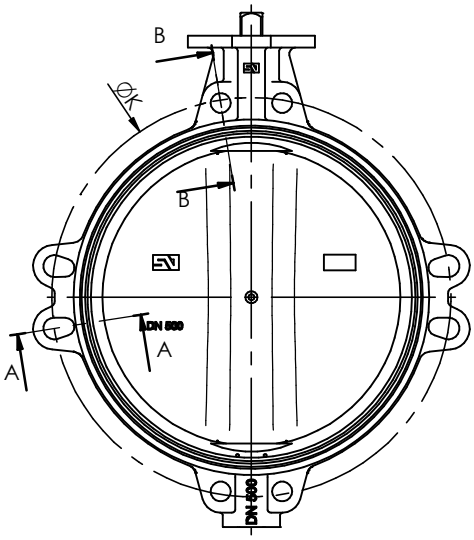


"A-A"
TIRANTE / *LINK*



"B-B"
TORNILLO SOLO/
SCREW ONLY

DN.450	PN.10-PN.16
DN.500	ANSI 150
DN.700/1200	PN.10-PN.16-ANSI 150



LOS TALADROS ROSCADOS PARA EL MONTAJE ENTRE BRIDAS SERÁN:
- ROSCA METRICA PARA NORMAS PN.
- ROSCA UNC PARA NORMAS ANSI 150.

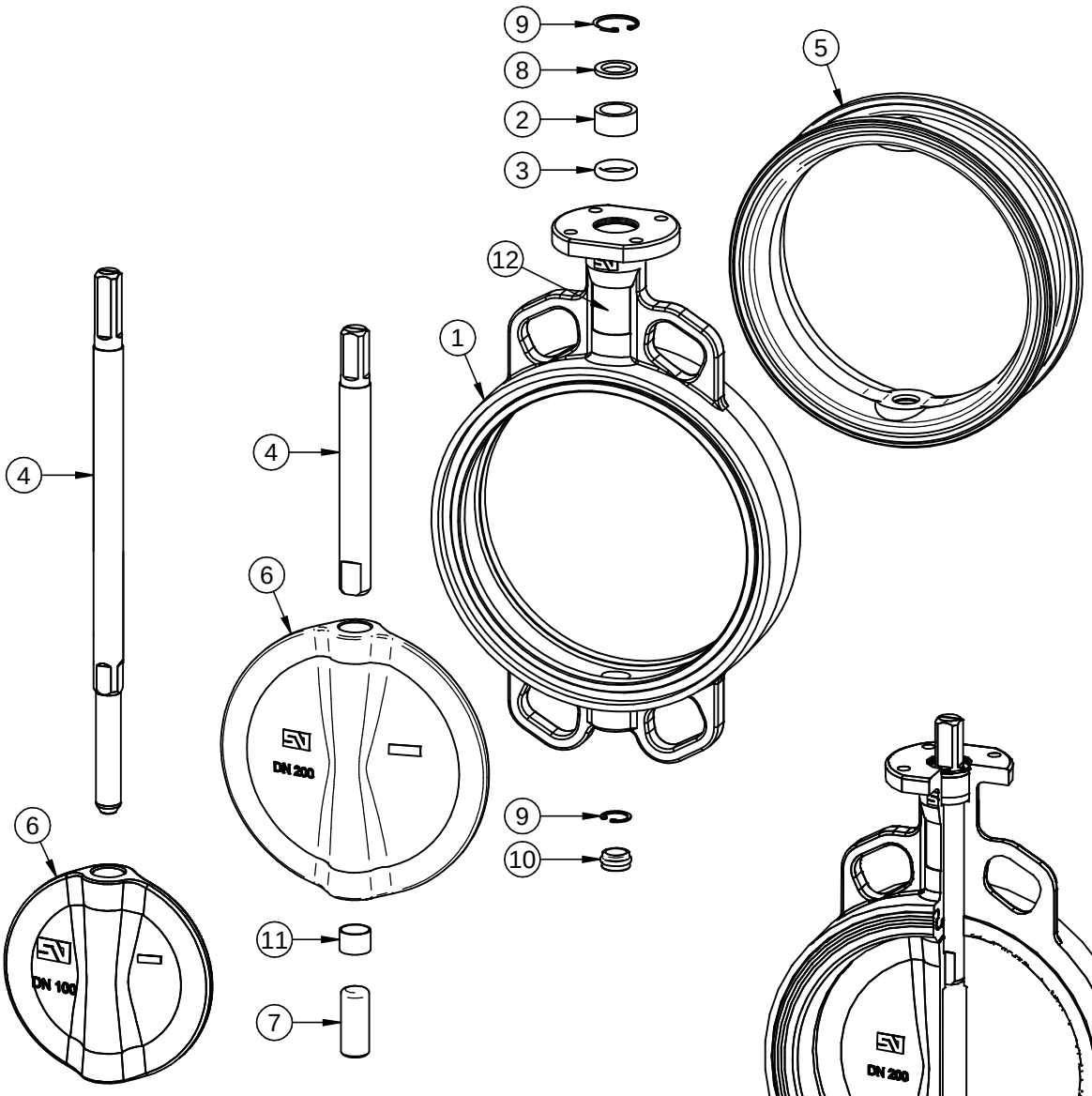
OTRO TIPO DE ROSCAS BAJO DEMANDA.

THREADED HOLES FOR THE ASSEMBLY BETWEEN FLANGES WILL BE:
- *METRIC THREAD STANDARDS FOR PN. NORMS.*
- *UNC THREAD STANDARDS FOR ANSI 150 NORMS.*

OTHER THREAD ON REQUEST.

DN		E	PN.10						PN.16						ANSI 150 Lbs / PN.20						
			K	e	M	L	L1	Nº	K	e	M	L	L1	Nº	K	e	M		L	L1	Nº
25	**1"**	33	85	16	M12	90	110	4	85	16	M12	90	110	4	79.4	14.3	1/2"	M14	85	105	4
32	**1¼"**	33	100	16	M16	90	110	4	100	16	M16	90	110	4	88.9	17.5	1/2"	M14	90	110	4
40	**1½"**	33	110	16	M16	90	110	4	110	16	M16	90	110	4	98.4	17.5	1/2"	M14	90	110	4
50	**2"**	43	125	18	M16	100	120	4	125	18	M16	100	120	4	120.6	19	5/8"	M16	100	120	4
65	**2½"**	46	145	18	M16	100	120	4	145	18	M16	100	120	4	139.7	22.2	5/8"	M16	110	130	4
80	**3"**	46	160	20	M16	110	130	8	160	20	M16	110	130	8	152.4	23.8	5/8"	M16	110	130	4
100	**4"**	52	180	20	M16	110	130	8	180	20	M16	110	130	8	190.5	23.8	5/8"	M16	120	140	8
125	**5"**	56	210	22	M16	120	140	8	210	22	M16	120	140	8	215.9	23.8	3/4"	M20	130	150	8
150	**6"**	56	240	22	M20	130	150	8	240	22	M20	130	150	8	241.3	25.4	3/4"	M20	130	150	8
200	**8"**	60	295	24	M20	130	160	8	295	24	M20	130	160	12	298.5	28.6	3/4"	M20	140	160	8
250	**10"**	68	350	26	M20	150	170	12	355	26	M24	150	170	12	361.9	30.2	7/8"	M24	160	180	12
300	**12"**	78	400	26	M20	160	180	12	410	28	M24	160	180	12	431.8	31.7	7/8"	M24	170	190	12
350	**14"**	78	460	26	M20	170	180	16	470	30	M24	170	190	16	476.2	34.9	1"	M27	180	200	12
400	**16"**	102	515	26	M24	180	210	16	525	32	M27	200	220	16	539.7	36.5	1"	M27	210	230	16
450	**18"**	114	565	26	M24	190	220	16	585	32	M27	210	240	16	577.8	39.7	1.1/8"	M30	230	250	16
					M24	60		8			M27	60		8							
500	**20"**	127	620	28	M24	210	230	20	650	34	M30	230	260	20	635.0	46	1.1/8"	M30	250	280	16
																	1.1/8"	M30	105		8
600	**24"**	154	725	28	M27	240	270	20	770	36	M33	260	290	20	749.3	47.6	1.1/4"	M33	280	310	20
700	**28"**	165	840	30	M27	260	280	20	840	36	M33	270	300	20	863.5	52.5	1.1/4"	M33	310	340	24
					M27	80		8			M33	85		8			1.1/4"	M33	110		8
750	**30"**	190	900	32	M30	290	320	20	900	38	M33	300	340	20	914.4	54	1.1/4"	M33	335	375	24
					M30	95		8			M33	100		8			1.1/4"	M33	110		8
800	**32"**	190	950	32	M30	290	320	20	950	38	M36	310	345	20	978	57	1.1/2"	M39	340	380	24
					M30	110		8			M36	80		8			1.1/2"	M39	95		8
900	36"	203	1050	34	M30	310	350	24	1050	40	M36	330	375	24	1086	60	1.1/2"	M39	370	415	28
					M30	100		8			M36	100		8			1.1/2"	M39	110		8
1000	40"	216	1160	34	M33	325	360	24	1170	42	M39	345	390	24	1200	63.5	1.1/2"	M39	390	430	32
					M33	95		8			M39	100		8			1.1/2"	M39	120		8
1100	44"	216	1270	38	M33	330	370	28	1270	48	M39	360	400	28	1314.5	101	1.1/2"	M39	465	410	36
					M33	100		8			M39	110		8			1.1/2"	M39	150		8
1200	48"	254	1380	38	M36	375	420	28	1390	48	M45	395	445	28	1422	108	1.1/2"	M39	475	520	40
					M36	110		8			M45	115		8			1.1/2"	M39	165		8

VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
DESPIECE DE MATERIALES "DN.25/200" / *MATERIALS DETAIL*



DN.25/100

DN.125/200

POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
12	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
11	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.200	1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.	DN.125/200	1
9	ANILLO ELASTICO DIN 472 *ZEGI RING BODY DIN 472*	ACERO CINCADO *ZINC PLATED STEEL*	DN.32/100 DN.125/200	1 2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.125/200	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN	DN.40/200	1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*

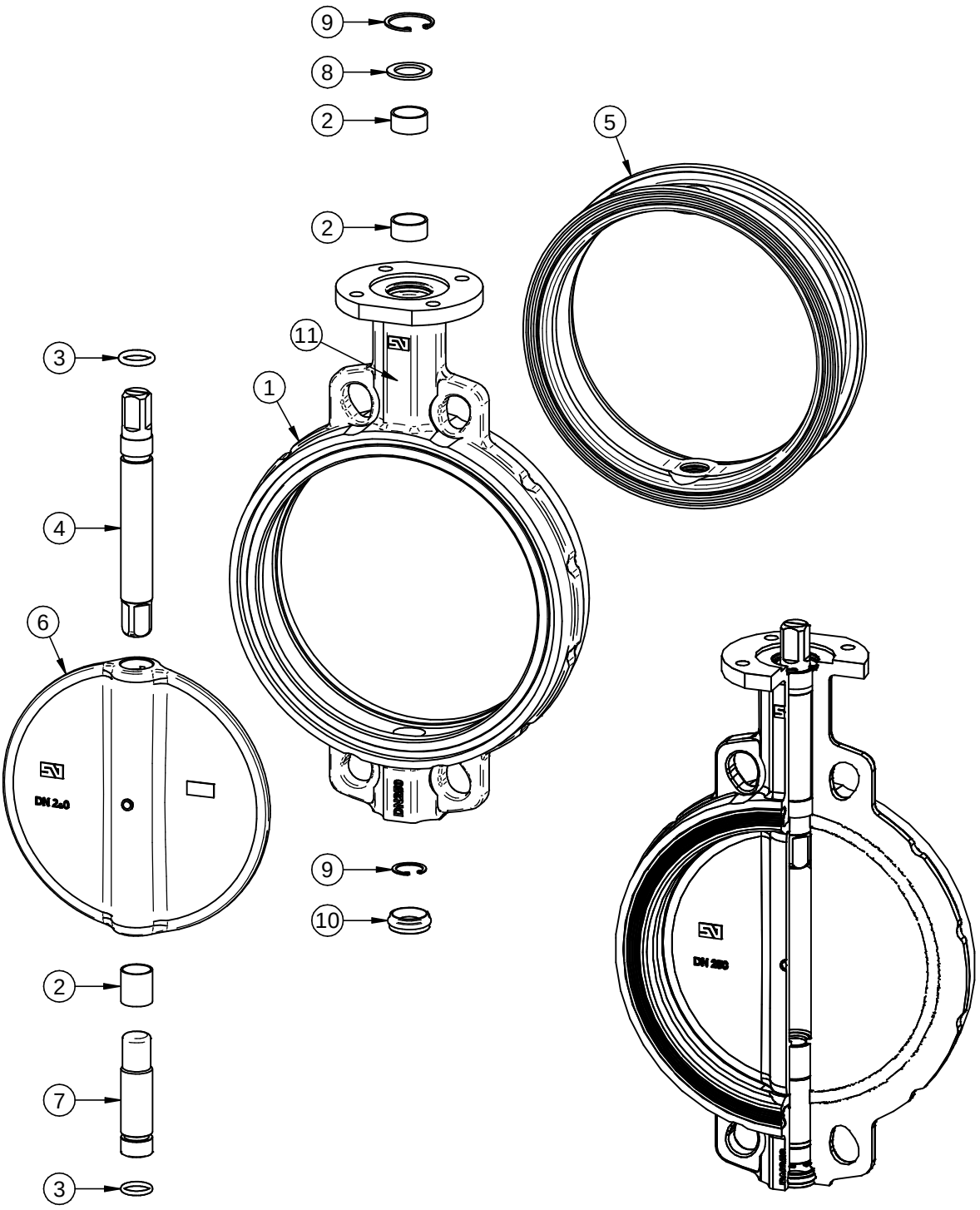
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.25/150 - 16 Bar
- DN.200 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:

CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
- 16 Bar - 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²
- 16 Bar - 17.6 Kg/cm²

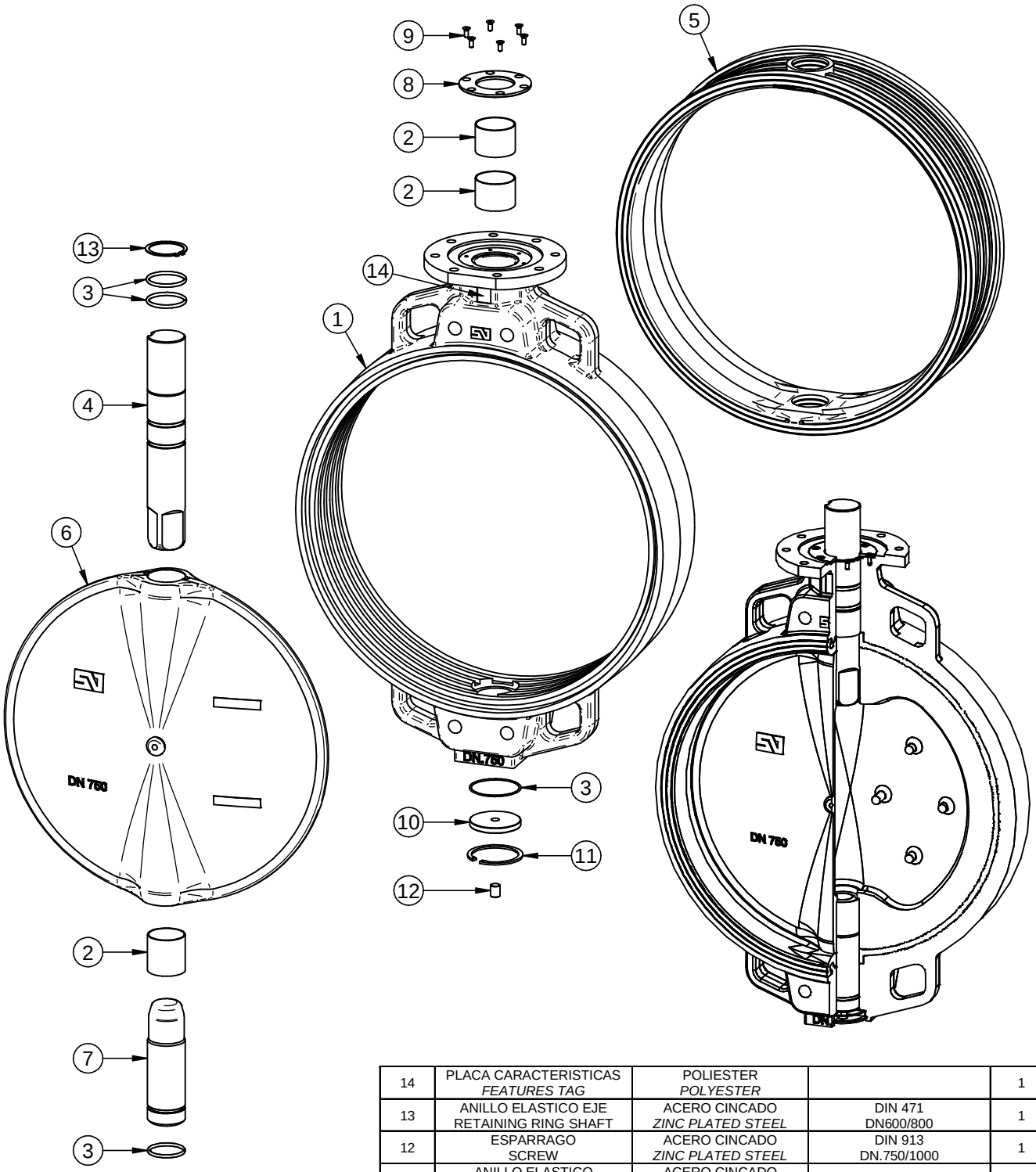
VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
DESPIECE DE MATERIALES "DN.250/500" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

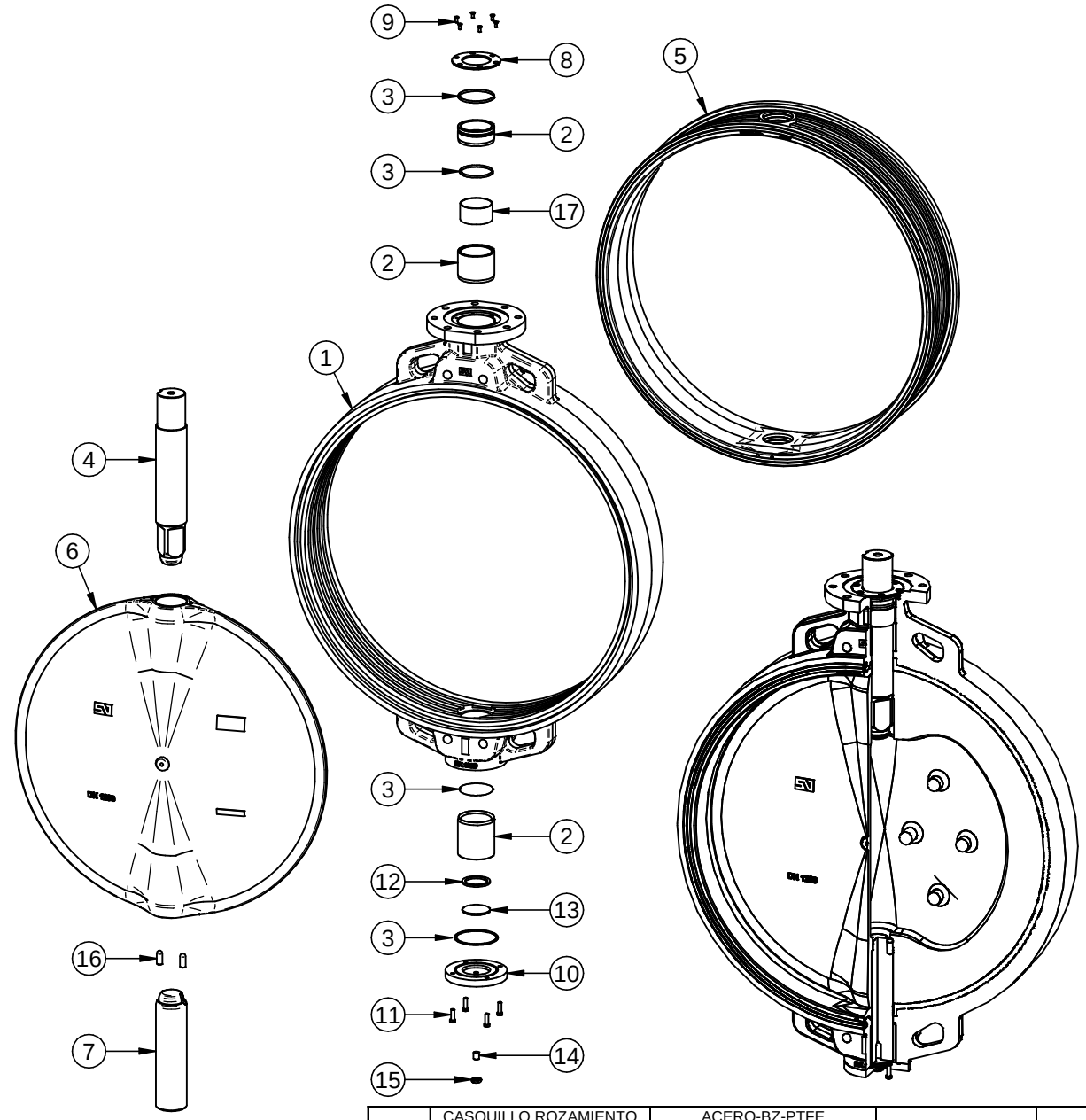
VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
DESPIECE DE MATERIALES "DN.600/1100" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*		CANT *QUAN*
14	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*			1
13	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471 DN600/800		1
12	ESPARRAGO SCREW	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913 DN.750/1000		1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472		1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*		1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991	DN.600	4
				DN.700/1100	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*			1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*			1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*			1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*			1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*			4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*			3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*		1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

VALVULA DE MARIPOSA "FL(W)" / *BUTTERFLY VALVE "FL(W)"*
DESPIECE DE MATERIALES "DN.1200" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
17	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		1
16	CHAVETA CILINDRICA *KEYWAY*	ACERO INOX. AISI 420 STAINLESS STEEL AISI 420		2
15	TUERCA *NUT*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 934	1
14	ESPARRAGO *SCREW*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913	1
13	DISCO ROZAMIENTO FRICTION DISC	*ACERO CINCADO ZINC PLATED STEEL*		1
12	ARANDELA INFERIOR LOWER RING	BRONCE / LATON BRONZE / BRASS		1
11	TORNILLO TAPA INF *BOLT LOWER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 931	4
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 7991	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	BRONCE / LATON BRONZE / BRASS		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

Technical characteristics



Body type	LUG / Replaceable seat rubber
Characteristics	Concentric and bidirectional
Production range	DN 25-1000
Design standard	EN 593
Face to Face	EN 558-1 Series 20 ISO 5752 Series 20 DIN 3202 T3 K1 API 609 Category A BS 5155 series 4-5 except DN350
Top flange	ISO 5211
Assembly flanges	PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	16 bar DN 025-150 10 bar DN 200-1000 (16 bar optionally) 25 bar DN 025-0300 special series
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU Vulcanized seat

General description

The LUG(w) type valve, is designed for industrial applications, and replaces double flanged valves, especially in small diameters. It offers considerable advantages where dead-end services are needed, such as pump outlets, tanks and ship sides among many. It gives an effective solution to several needs in shipbuilding, water treatment plants, heating, cooling, vacuum systems, gas and many others.

Applications

- Water treatment and distribution
- Cooling systems
- Fire fighting systems.
- Heating
- Naval industry.
- Gas distribution.



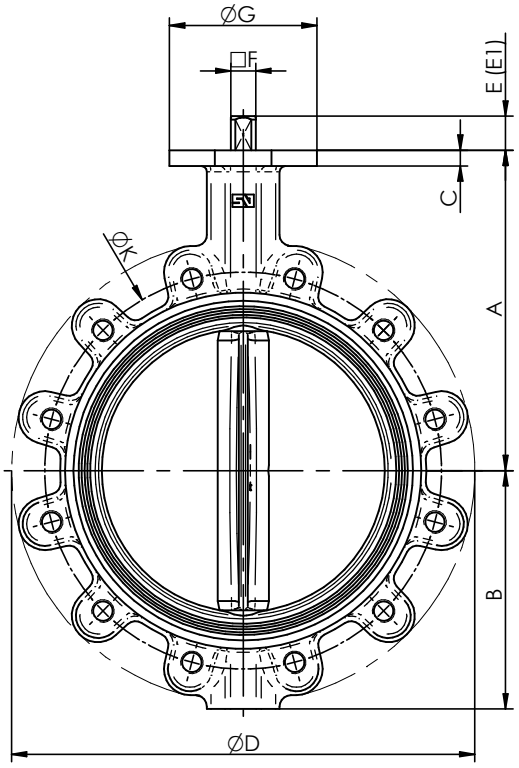
Technical sheets and dimensional drawings

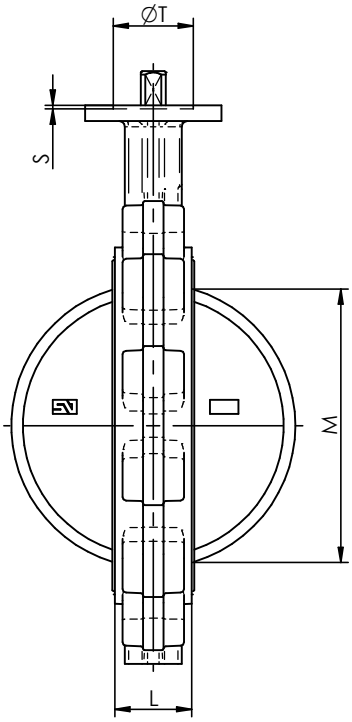
LUG(w)-001-DT	General dimensions
LUG(w)-002-DT	Dimensions manual actuator
LUG(w)-003-DT	Dimensions pneumatic actuator
LUG(w)-004-DT	Dimensions electrical actuator Bernard
LUG(w)-005-DT	Dimensions electrical actuator AUMA
LUG(w)-006-DT	Assembly flanges
LUG(w)-007-DT	Assembling screws
LUG(w)-0010-DT	Materials detail DN 025-200
LUG(w)-0011-DT	Materials detail DN 250-500
LUG(w)-0012-DT	Materials detail DN 600-1000



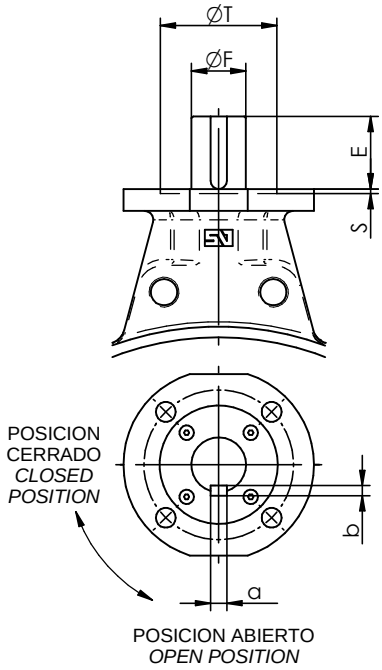
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VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*

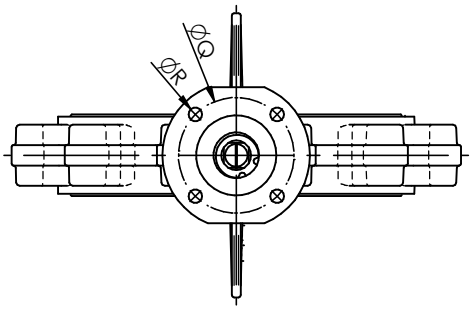




DN 25/500



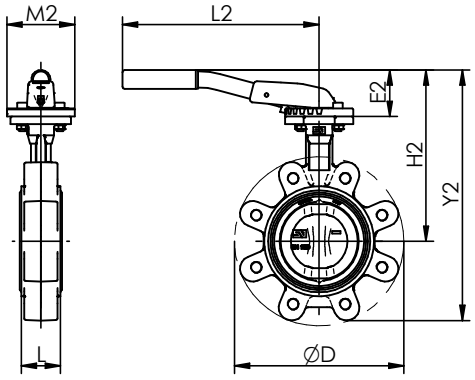
DN 600/1000



E1 - EJE CORTO OPCIONAL BAJO PEDIDO
E1 - SHORT SHAFT ON REQUEST

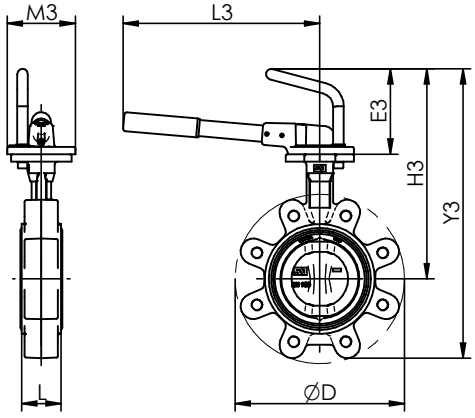
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*																**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**E1**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
										PN10	**PN16**	**Cl.150**									
25	**1”**	103	50	8	130	30	16	11	90	85	85	79.4	33	14	1.9	F-07	70	4x9			
32	**1¼”**	103	50	8	130	30	16	11	90	100	100	88.9	33	14	1.9	F-07	70	4x9			
40	**1½”**	110	54	10	140	30	16	11	90	110	110	98.4	33	26	2.0	F-07	70	4x9			
50	**2”**	120	59	10	156	30	16	11	90	125	125	120.6	43	29	2.9	F-07	70	4x9			
65	**2½”**	135	66	10	175	30	16	11	90	145	145	139.7	46	46	3.3	F-07	70	4x9			
80	**3”**	141	91	10	194	30	16	11	90	160	160		46	65	4.8	F-07	70	4x9			
					185							152.4			3.5						
100	**4”**	165	105	10	224	30	16	11	90	180	180	190.5	52	90	6.3	F-07	70	4x9			
125	**5”**	180	125	12	267	33	18	14	90	210	210	215.9	56	112	9.8	F-07	70	4x9			
150	**6”**	193	136	12	292	33	18	14	90	240	240	241.3	56	139	10.6	F-07	70	4x9			
200	**8”**	225	156	12	334	33	18	17	90	295		298.5	60	191	13.4	F-07	70	4x9			
			171		352						295				17.5						
250	**10”**	283	210	14	409	30	23	22	130	350	355	361.9	68	241	26.4	F-10	102	4x12	3	70	
300	**12”**	308	240	14	480	30	23	22	130	400	410	431.8	78	290	39.6	F-10	102	4x12	3	70	
350	**14”**	339	263	18	522	31		22	160	460	470		78	338	56.1	F-10	102	4x12	3	70	
					522							476.2			56.0						
400	**16”**	380	308	18	595	31		27	160	515	525	539.7	102	387	74.9	F-12	125	4x14	4	85	
450	**18”**	381	340	20	633	38		36	190	565	585		114	434	103	F-14	140	4x18	4	100	
					638							577.8			94.6						
500	**20”**	433	380	20	717	38		36	210	620	650	635.0	127	478	158	F-14	140	4x18	4	100	
600	**24”**	494	440	24	833	80		60	210	725	770	749.3	154	570	220	F-16	165	4x22	5	130	18x11
700	**28”**	560	485	25	904	106		65	300	840	840		165	660	293	F-25	254	8x18	5	200	18x11
					924							863.5			312						
750	**30”**	590	530	25	964	106		80	300	900	900		190	705	373	F-25	254	8x18	5	200	22x14
					979							914.4			392						
800	**32”**	630	565	27	1020	106		80	300	950	950		190	763	432	F-25	254	8x18	5	200	22x14
900	**36”**	695	610	32	1120	110		80	350	1050	1050		203	866	539	F-25	254	8x18	5	200	22x14
1000	**40”**	770	675	32	1246	110		80	350	1160	1170		216	966	690	F-25	254	8x18	5	200	22x14

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



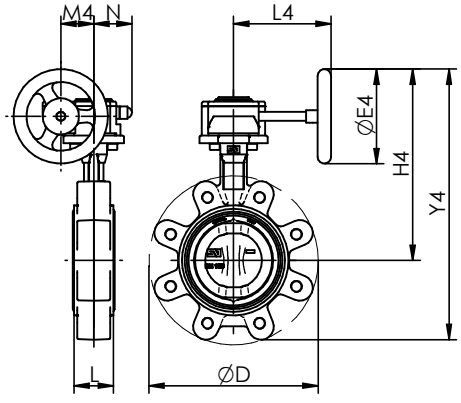
"MN"

DN		D	L	P.N. Bar	MN					
					E2	H2	Y2	L2	M2	Kg
25	**1"**	130	33	10-16	49	151.5	202	220	90	2.3
32	**1¼"**	130	33	10-16	49	151.5	202	220	90	2.3
40	**1½"**	140	33	10-16	49	159	213	220	90	2.5
50	**2"**	156	43	10-16	49	169	230	220	90	3.3
65	**2½"**	175	46	10-16	49	184	252	220	90	3.7
80	**3"**	194	46	10-16	60	201	294	260	90	5.3
100	**4"**	224	52	10-16	60	225	330	260	90	6.8
125	**5"**	267	56	10-16	75	255	381	315	90	10.4
150	**6"**	292	56	10-16	75	268	405	315	90	11.2
200	**8"**	334	60	10	75	300	476	315	90	14.0
		352		16			471			18.1



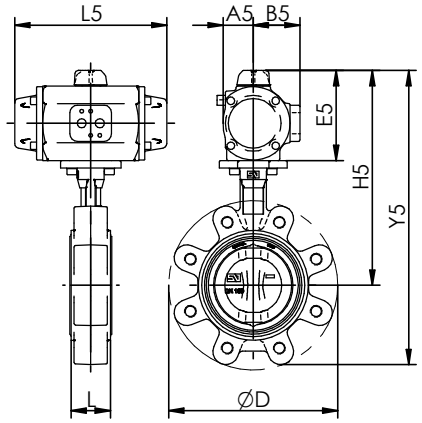
"MR"

DN		D	L	P.N. Bar	MR					
					E3	H3	Y3	L3	M3	Kg
25	**1"**	130	33	10-16	113	215.5	266	260	90	2.5
32	**1¼"**	130	33	10-16	113	215.5	266	260	90	2.5
40	**1½"**	140	33	10-16	113	223	277	260	90	2.7
50	**2"**	156	43	10-16	113	233	292	260	90	3.5
65	**2½"**	175	46	10-16	113	248	314	260	90	3.9
80	**3"**	194	46	10-16	113	254	345	260	90	5.4
100	**4"**	224	52	10-16	113	278	383	260	90	7.0
125	**5"**	267	56	10-16	113	293	416	310	90	10.5
150	**6"**	292	56	10-16	113	306	422	310	90	11.3
200	**8"**	334	60	10	113	338	493	310	90	14.1
		352		16			508			18.2
250	**10"**	408	68	10-16	121	403	613	500	130	28.1
300	**12"**	480	78	10-16	121	429	669	500	130	41.4



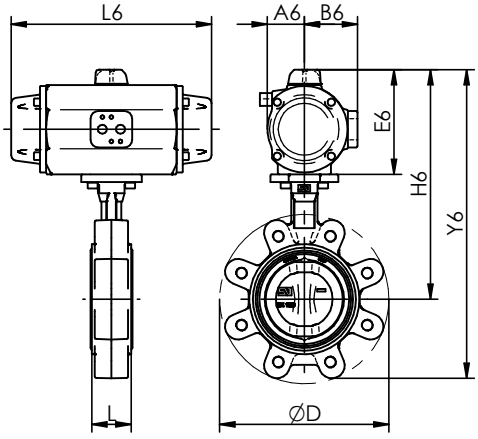
"MDV"

DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
25	**1"**	130	33	10-16	0/X-21	125	190	241	129	43.5	50.5	3.1
32	**1¼"**	130	33	10-16	0/X-21	125	190	241	129	43.5	50.5	3.1
40	**1½"**	140	33	10-16	0/X-21	125	198	252	129	43.5	50.5	3.3
50	**2"**	156	43	10-16	0/X-21	125	208	267	129	43.5	50.5	4.2
65	**2½"**	175	46	10-16	0/X-21	125	223	289	129	43.5	50.5	4.6
80	**3"**	194	46	10-16	0/X-21	125	229	320	129	43.5	50.5	6.0
100	**4"**	224	52	10-16	0/X-21	125	253	358	129	43.5	50.5	7.6
125	**5"**	267	56	10-16	1/X-21	160	286	410	135	43.5	50.5	11.3
150	**6"**	292	56	10-16	1/X-21	160	298	435	135	43.5	50.5	12.0
200	**8"**	334	60	10	1A/X-41	200	355	511	152	52.5	59	16.0
		352		16				526				20.1
250	**10"**	408	68	10-16	2/X-61	250	442	652	222	61.2	70.5	29.8
300	**12"**	480	78	10-16	2/X-61	250	468	708	222	61.2	70.5	43.1
350	**14"**	522	78	10-16	2/X-61	250	498	762	222	61.2	70.5	59.5
400	**16"**	595	102	10-16	2A/Q-800	300	572	880	277	68.8	72.5	84.0
450	**18"**	633	114	10-16	3/Q-2000	400	630	970	321	96.5	91.5	122
500	**20"**	717	127	10-16	3/Q-2000	400	682	1062	321	96.5	91.5	177
600	**24"**	833	154	10-16	4/Q-4000	500	798	1239	408	138	140	255
700	**28"**	904	165	10	4/Q-4000	500	864	1350	408	138	140	329
				16	5/Q-6500	600	914	1400	456	138	140	333
750	**30"**	964	190	10-16	5/Q-6500	600	944	1474	456	138	140	415
800	**32"**	1020	190	10	5/Q-6500	600	984	1550	456	138	140	474
				16	6/Q-12000	700	1044	1608	510	180	156	487
900	**36"**	1120	203	10-16	6/Q-12000	700	1108	1718	510	180	156	601
1000	**40"**	1246	216	10-16	7/Q-16000	700	1184	1858	579	180	156	758



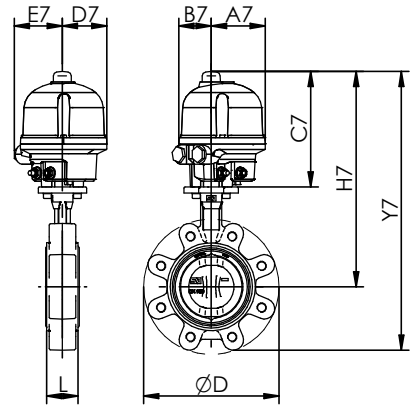
D.E. - D.A.

DN		D	L	P.N. Bar	DOBLE EFECTO - *DOUBLE ACTING*							
					REF	A5	B5	E5	H1	Y5	L5	Kg5
25	1"	130	33	10-16	PA00	32	52	121	223	273	153	3.4
32	1¼"	130	33	10-16	PA00	32	52	121	223	273	153	3.4
40	1½"	140	33	10-16	PA00	32	52	121	231	284	153	3.6
50	2"	155	43	10-16	PA00	32	52	121	241	300	153	4.5
65	2½"	175	46	10-16	PA05	40	62	119	254	320	201	5.9
80	3"	194	46	10-16	PA05	40	62	119	260	351	201	7.4
100	4"	224	52	10	PA05	40	62	119	284	389	201	9.0
				16	PA10	41	63	123	288	393	225	9.5
125	5"	267	56	10	PA10	41	63	123	303	428	225	12.9
				16	PA15	49	71	139	319	443	265	14.0
150	6"	292	56	10	PA15	49	71	139	332	468	265	14.8
				16	PA20	52	75	147	340	476	310	16.2
200	8"	334	60	10	PA20	52	75	147	372	527	310	19.1
		352		16	PA25	64	89	175	400	570	358	26.9
250	10"	408	68	10	PA25	64	89	175	457	667	358	35.8
				16	PA30	72	97	191	474	684	428	37.6
300	12"	480	78	10-16	PA30	72	97	191	499	739	428	51.4
350	14"	522	78	10-16	P40	106	120	272	611	874	444	74
400	16"	595	102	10	P40	106	120	272	652	960	444	93
				16	PA50	127	142	379	759	1067	694	114
450	18"	633	114	10-16	PA50	127	142	309	690	1030	694	139
500	20"	717	127	10	PA50	127	142	309	742	1122	694	193
				16	PA60	159	172	368	801	1181	690	206
600	24"	833	154	10	PA60	159	172	368	862	1302	690	276
				16	PA70	186	216	428	922	1362	743	295
700	28"	904	165	10	PA70	186	216	453	1013	1498	743	384



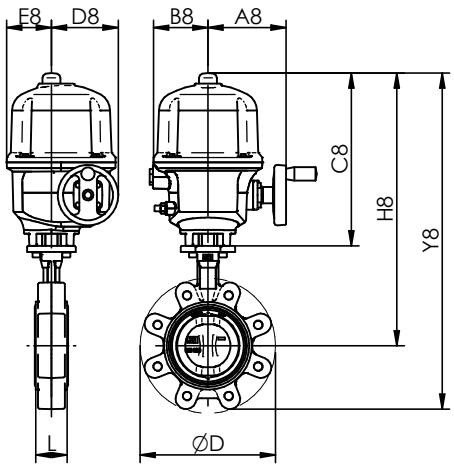
S.E - S.R.

DN		D	L	P.N. Bar	SIMPLE EFECTO – *SPRING RETURN*							
					REF	A6	B6	E6	H6	Y6	L6	Kg6
25	1"	130	33	10	PA00S	32	52	121	223	273	153	3.6
				16	PA05S	40	62	119	222	272	201	4.9
32	1¼"	130	33	10	PA00S	32	52	121	223	273	153	3.6
				16	PA05S	40	62	119	222	272	201	4.9
40	1½"	140	33	10	PA00S	32	52	121	231	284	153	3.8
				16	PA05S	40	62	119	229	283	201	5.1
50	2"	155	43	10	PA00S	32	52	121	241	300	153	4.7
				16	PA05S	40	62	119	239	298	201	5.9
65	2½"	175	46	10	PA05S	40	62	119	254	320	201	6.3
				16	PA10S	41	63	123	258	324	225	6.8
80	3"	194	46	10	PA10S	41	63	123	264	355	225	8.3
				16	PA15S	49	71	139	280	370	265	9.8
100	4"	224	52	10	PA15S	49	71	139	304	408	265	11.5
				16	PA20S	52	75	147	312	417	310	13.0
125	5"	267	56	10	PA20S	52	75	147	327	452	310	16.5
				16	PA25S	64	89	175	355	480	358	21.2
150	6"	292	56	10	PA25S	64	89	175	368	504	358	22.0
				16	PA30S	72	97	191	384	521	428	26.0
200	8"	334	60	10	PA30S	72	97	191	416	572	428	28.8
		352		16						587		32.8
250	10"	408	68	10-16	P40S	106	120	272	555	765	598	63.0
300	12"	480	78	10-16	P40S	106	120	272	580	820	598	76.2
350	14"	522	78	10	P40S	106	120	272	611	874	598	92.7
				16	PA50S	127	142	309	648	911	694	108
400	16"	595	102	10	PA50S	127	142	379	759	1067	694	132
				16	PA60S	159	172	458	838	1146	690	162
450	18"	633	114	10	PA60S	159	172	438	819	1159	690	190
				16	PA70S	186	216	498	878	1218	742	264
500	20"	717	127	10	PA70S	186	216	498	930	1311	742	279



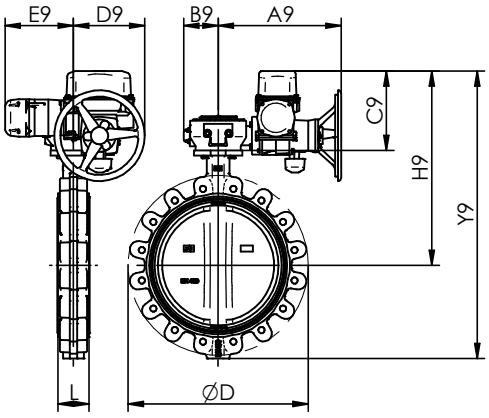
AQ L

DN		D	L	P.N. Bar	MOTOR AQ L								
					REF	A7	B7	C7	D7	E7	H7	Y7	Kg7
25	**1"**	130	33	10-16	AQ3L	60	83	191	67	85	294	344	4.5
32	**1¼"**	130	33	10-16	AQ3L	60	83	191	67	85	294	344	4.5
40	**1½"**	140	33	10-16	AQ3L	60	83	191	67	85	301	355	4.7
50	**2"**	156	43	10-16	AQ3L	60	83	191	67	85	311	370	5.5
65	**2½"**	175	46	10-16	AQ7L	89	54	191	73	80	326	393	6.9
80	**3"**	194	46	10-16	AQ7L	89	54	191	73	80	332	432	8.3
100	**4"**	224	52	10-16	AQ7L	89	54	191	73	80	356	461	9.9



AQ

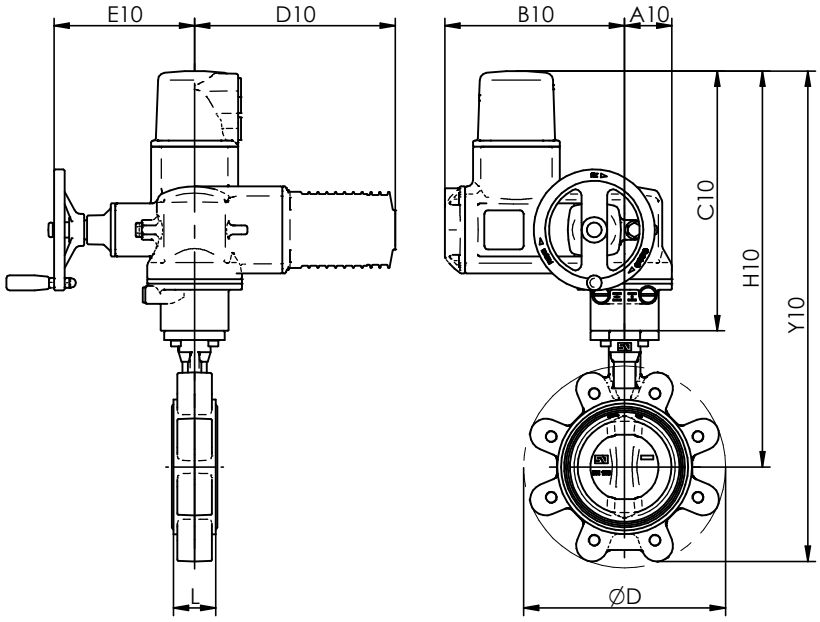
DN		D	L	P.N. Bar	MOTOR AQ								
					REF	A8	B8	C8	D8	E8	H8	Y8	Kg8
25	**1"**	130	33	10-16	AQ5	129	96	286	110	74	388	439	11.9
32	**1¼"**	130	33	10-16	AQ5	129	96	286	110	74	388	439	11.9
40	**1½"**	140	33	10-16	AQ5	129	96	286	110	74	396	450	12.1
50	**2"**	156	43	10-16	AQ5	129	96	286	110	74	406	465	13.0
65	**2½"**	175	46	10-16	AQ5	129	96	286	110	74	421	487	13.4
80	**3"**	194	46	10-16	AQ5	129	96	286	110	74	427	518	14.8
100	**4"**	224	52	10-16	AQ5	129	96	286	110	74	451	556	16.4
125	**5"**	267	56	10	AQ10	129	96	286	110	74	466	591	19.8
				16	AQ15	129	96	286	110	74	466	591	19.8
150	**6"**	292	56	10-16	AQ15	129	96	286	110	74	479	615	20.6
200	**8"**	334	60	10	AQ15	129	96	286	110	74	511	666	23.5
		352		16	AQ25	199	117	318	138	86	543	714	30.6
250	**10"**	408	68	10-16	AQ50	230	117	328	174	86	610	820	41.5
300	**12"**	480	78	10-16	AQ50	230	117	328	174	86	636	876	54.8
350	**14"**	522	78	10	AQ50	230	117	328	174	86	667	930	71.3



EZ

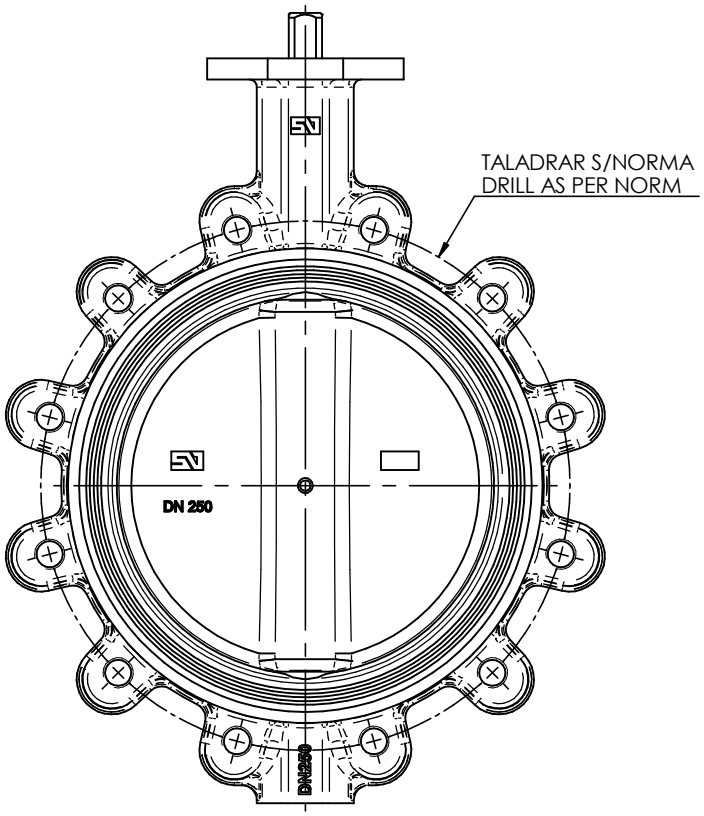
DN		D	L	P.N. Bar	MOTOR EZ								
					REF	A9	B9	C9	D9	E9	H9	Y9	Kg9
350	**14"**	522	78	16	EZ100	407	114	332	236	226	670	934	105
400	**16"**	595	102	10-16	EZ100	407	114	262	236	226	642	950	122
450	**18"**	633	114	10-16	EZ250	476	188	284	333	129	664	1004	166
500	**20"**	717	127	10-16	EZ250	476	188	284	333	129	716	1096	222
600	**24"**	833	154	10-16	EZ400	510	154	284	288	174	778	1218	284
700	**28"**	904	165	10-16	EZ1000	596	184	303	332	152	863	1349	386
750	**30"**	964	190	10-16	EZ1000	596	184	303	332	152	893	1423	466
800	**32"**	1020	190	10-16	EZ1000	596	184	303	332	152	933	1498	518
900	**36"**	1120	190	10	EZ1000	596	184	303	332	152	998	1608	632

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
ACTUADOR ELECTRICO AUMA / *ELECTRIC ACTUATOR AUMA*



DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
25	**1”**	130	33	10-16	SQ 05.2	62	238	344	266	186	446	496	22.9
32	**1¼”**	130	33	10-16	SQ 05.2	62	238	344	266	186	446	496	22.9
40	**1½”**	140	33	10-16	SQ 05.2	62	238	344	266	186	454	507	23.1
50	**2”**	156	43	10-16	SQ 05.2	62	238	344	266	186	464	523	24.0
65	**2½”**	175	46	10-16	SQ 05.2	62	238	344	266	186	478	545	24.4
80	**3”**	194	46	10-16	SQ 05.2	62	238	344	266	186	484	575	25.8
100	**4”**	224	52	10-16	SQ 05.2	62	238	344	266	186	509	613	27.4
125	**5”**	267	56	10-16	SQ 05.2	62	238	344	266	186	524	648	30.8
150	**6”**	292	56	10-16	SQ 05.2	62	238	344	266	186	536	673	31.6
200	**8”**	334	60	10	SQ 07.2	62	238	344	266	186	568	724	34.5
		352		16	SQ 07.2	62	238	344	266	186	568	739	38.6
250	**10”**	408	68	10-16	SQ 10.2	80	248	361	266	191	644	854	52.5
300	**12”**	480	78	10-16	SQ 10.2	80	248	361	266	191	669	909	65.8
350	**14”**	522	78	10	SQ 10.2	80	248	361	266	191	700	962	82.3
				16	SQ 12.2	105	248	385	266	191	724	986	90.4
400	**16”**	595	102	10-16	SQ 12.2	105	248	385	266	191	765	1073	110
450	**18”**	633	114	10-16	SQ 14.2	112	255	447	265	216	828	1168	145
500	**20”**	717	127	10-16	SQ 14.2	112	255	447	265	216	880	1260	201
600	**24”**	833	154	10-16	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	281
700	**28”**	904	165	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	883	1368	364
750	**30”**	964	190	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	913	1443	444
800	**32”**	1020	190	10	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	953	1518	503
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	953	1518	544
900	**36”**	1120	203	10	GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	1008	1618	653
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1018	1628	649
1000	**40”**	1246	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	809
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	868

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*

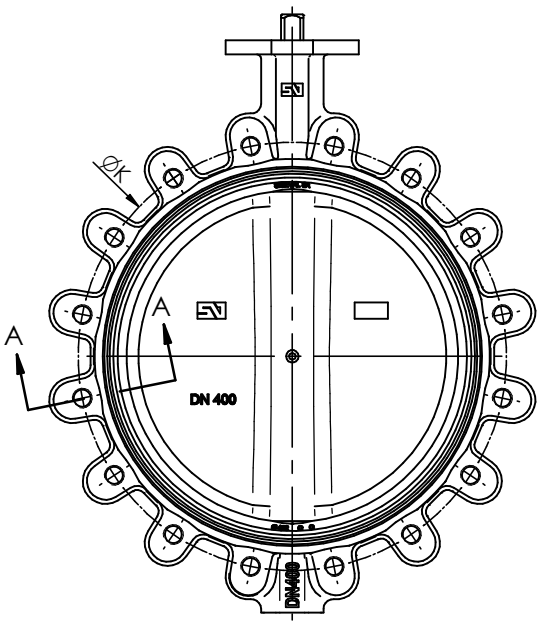


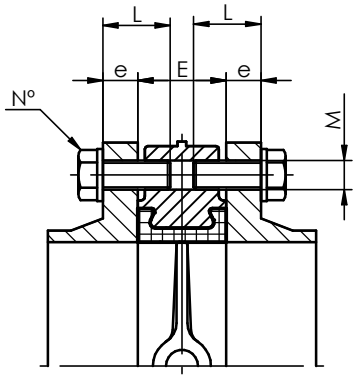
X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
25	1"	X	X	X	X	X						X	X	X	X	X	X
32	1¼"	X	X	X	X	X						X	X	X	X	X	X
40	1½"	X	X	X	X	X						X	X	X	X	X	X
50	2"	X	X	X	X	X						X	X	--	X	O	X
65	2½"	X	X	X	X	X						X	X	X	X	O	X
80	3"	X	X	X	X	X						X	X	X	X	X	X
100	4"	O	X	X	X	X	X					O	X	X	X	X	X
125	5"	X	X	X	X	X	X					X	X	X	X	X	X
150	6"	X	X	X	X	X	X					X	X	X	X	O	X
200	8"	X	X	X	X	X	X					X	X	X	X	X	X
250	10"	X	X	X	X	X	X					O	X	X	X	O	X
300	12"	X	X	X	X	X	X					X	X	X	O	O	X
350	14"	X	X	X	X	X	X					X	X	O	X	X	X
400	16"	X	X	X	X	X	X					O	O	X	X	X	O
450	18"	X	X	X	X	X	X					O	X	X	X	O	X
500	20"	O	X	X	X	X	X					O	O	X	X	X	O
600	24"	O	X	X	X	X	X					O	O	X	O	O	O
700	28"	--	X	X		--	--	--	--	--	--			X	X	--	--
750	30"	X	X	X		X	X	X	--	--	--	--	--	X	X	--	--
800	32"	O	X	X		--	--	--	--	--	--			O	--	--	--
900	36"	--	X	X		--	--	--	--	--	--	--	--	--	X	--	--
1000	40"	O	X	X		--	--	--	--	--	--			O	X	--	--

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*





"A-A"
TORNILLO / *SCREW*

LOS TALADROS ROSCADOS PARA EL MONTAJE ENTRE BRIDAS SERÁN:
- ROSCA METRICA PARA NORMAS PN.
- ROSCA UNC PARA NORMAS ANSI 150.

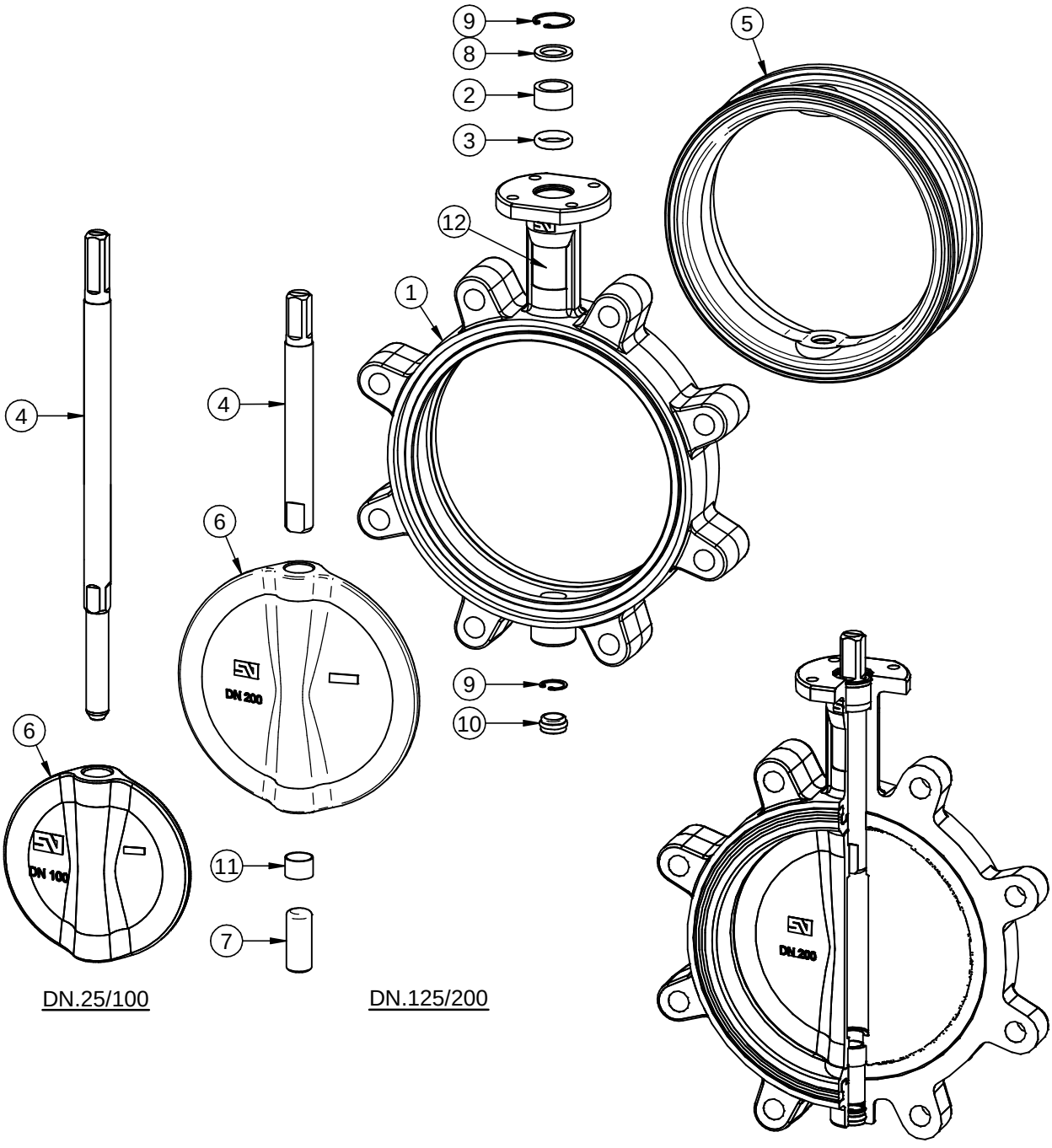
OTRO TIPO DE ROSCAS BAJO DEMANDA.

THREADED HOLES FOR THE ASSEMBLY BETWEEN FLANGES WILL BE:
- *METRIC THREAD STANDARDS FOR PN. NORMS.*
- *UNC THREAD STANDARDS FOR ANSI 150 NORMS.*

OTHER THREAD ON REQUEST.

DN		E	PN.10					PN.16					ANSI 150 Lbs / PN.20					
			K	e	M	L	Nº	K	e	M	L	Nº	K	e	M		L	Nº
25	**1”**	33	85	16	M12	30	8	85	16	M12	30	8	79.4	14.3	1/2”	M14	30	8
32	**1¼”**	33	100	16	M16	30	8	100	16	M16	30	8	88.9	17.5	1/2"	M14	30	8
40	**1½”**	33	110	16	M16	30	8	110	16	M16	30	8	98.4	17.5	1/2"	M14	30	8
50	**2”**	43	125	18	M16	35	8	125	18	M16	35	8	120.6	19	5/8"	M16	35	8
65	**2½”**	46	145	18	M16	40	8	145	18	M16	40	8	139.7	22.2	5/8"	M16	45	8
80	**3”**	46	160	20	M16	40	16	160	20	M16	40	16	152.4	23.8	5/8"	M16	45	8
100	**4”**	52	180	20	M16	45	16	180	20	M16	45	16	190.5	23.8	5/8"	M16	45	16
125	**5”**	56	210	22	M16	50	16	210	22	M16	50	16	215.9	23.8	3/4"	M20	50	16
150	**6”**	56	240	22	M20	50	16	240	22	M20	50	16	241.3	25.4	3/4"	M20	50	16
200	**8”**	60	295	24	M20	50	16	295	24	M20	50	24	298.5	28.6	3/4"	M20	55	16
250	**10”**	68	350	26	M20	60	24	355	26	M24	60	24	361.9	30.2	7/8"	M24	60	24
300	**12”**	78	400	26	M20	65	24	410	28	M24	65	24	431.8	31.7	7/8"	M24	70	24
350	**14”**	78	460	26	M20	65	32	470	30	M24	65	32	476.2	34.9	1"	M27	70	24
400	**16”**	102	515	26	M24	75	32	525	32	M27	80	32	539.7	36.5	1"	M27	85	32
450	**18”**	114	565	26	M24	75	32	585	32	M27	80	32	577.8	39.5	1.1/8"	M30	85	32
					M24	60	8			M27	60	8						
500	**20”**	127	620	28	M24	90	40	650	34	M30	65	40	635.0	46	1.1/8"	M30	105	40
600	**24”**	154	725	28	M27	100	40	770	36	M33	110	40	749.3	47.6	1.1/4"	M33	120	40
700	**28”**	165	840	30	M27	110	40	840	36	M33	120	40	863.6	52.5	1.1/4"	M33	130	48
					M27	80	8			M33	85	8			1.1/4"	M33	100	8
750	**30”**	190	900	32	M30	130	40	900	38	M33	130	40	914.4	54	1.1/4"	M33	150	48
					M30	100	8			M33	100	8			1.1/4"	M33	110	8
800	**32”**	190	950	32	M30	130	40	950	38	M36	130	40						
					M30	110	8			M36	110	8						
900	36”	203	1050	34	M30	130	48	1050	40	M36	140	48						
					M30	95	8			M36	100	8						
1000	40”	216	1160	34	M33	140	48	1170	42	M39	150	48						
					M33	95	8			M39	100	8						

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
DESPIECE DE MATERIALES "DN.25/200" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
12	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
11	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.200	1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.	DN.125/200	1
9	ANILLO ELASTICO DIN 472 *ZEGI RING BODY DIN 472*	ACERO CINCADO *ZINC PLATED STEEL*	DN.32/100	1
			DN.125/200	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.125/200	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN	DN.40/200	1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*

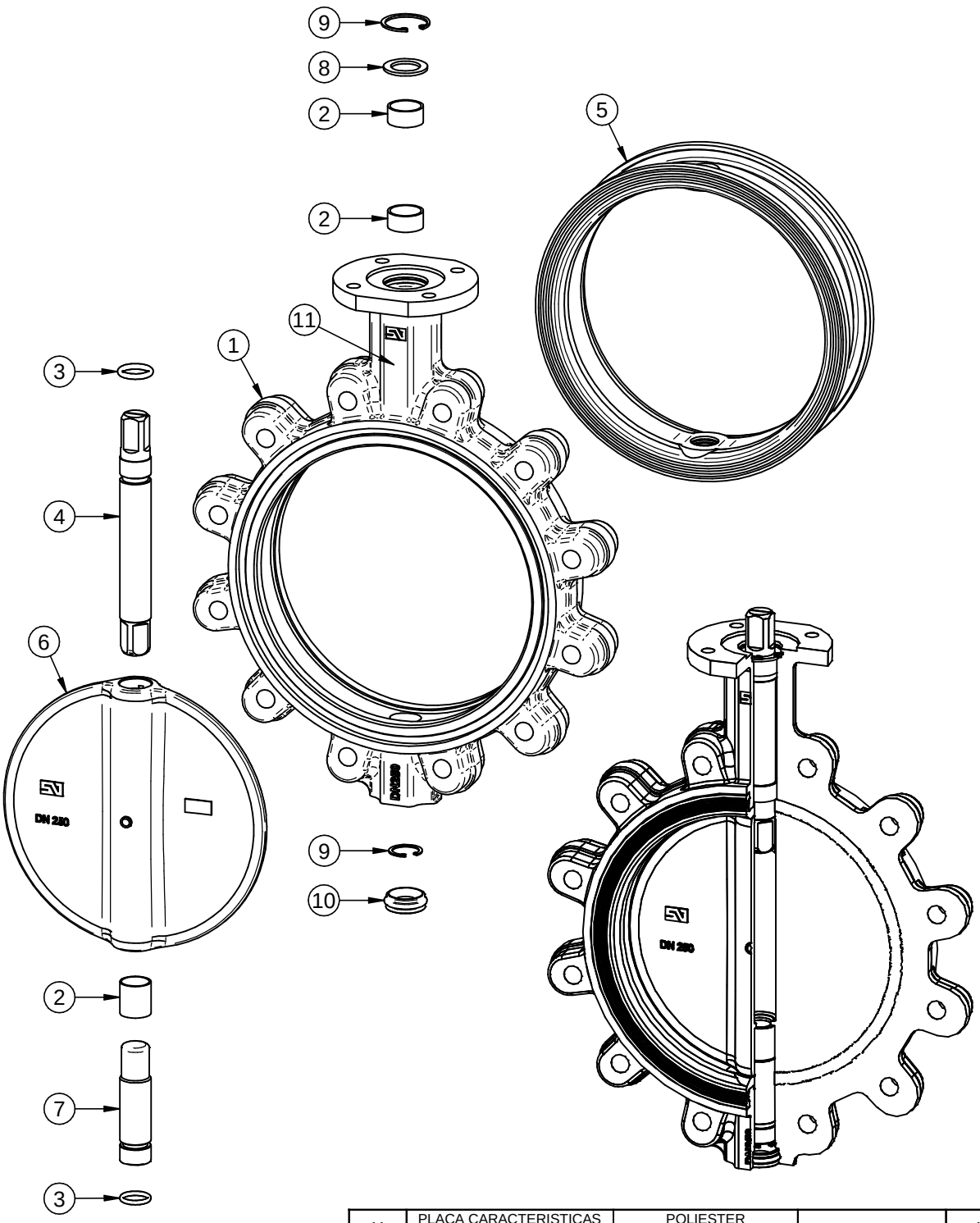
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.25/150 - 16 Bar
- DN.200 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA *HYDROSTATIC AND RESISTANCE TEST:*

CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
- 16 Bar - 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²
- 16 Bar - 17.6 Kg/cm²

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
DESPIECE DE MATERIALES "DN.250/500" / *MATERIALS DETAIL*



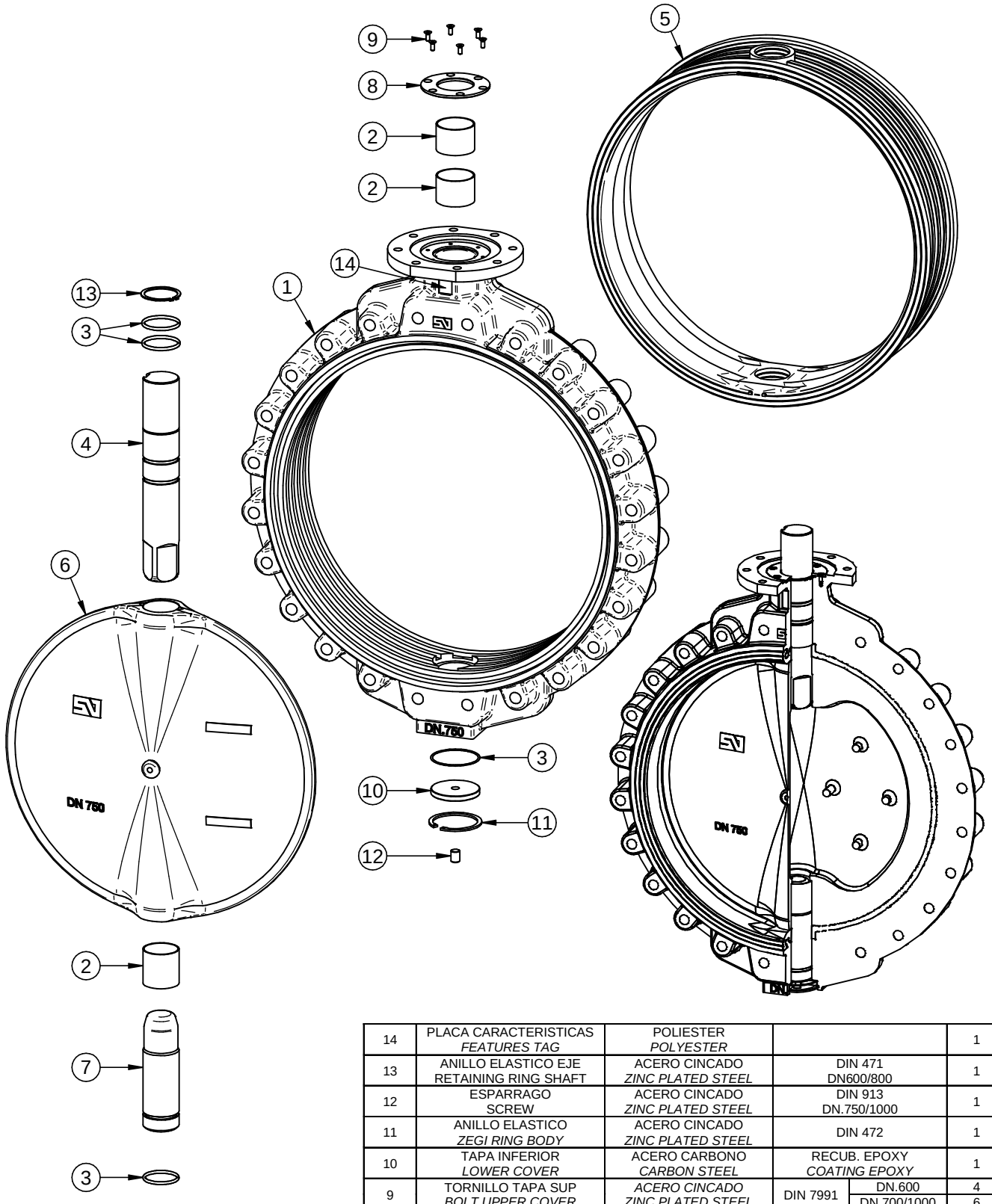
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL** ***MATERIAL***	**OBSERVACIONES** ***REMARKS***	**CANT** ***QUAN***

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

VALVULA DE MARIPOSA "LUG(W)" / *BUTTERFLY VALVE "LUG(W)"*
DESPIECE DE MATERIALES "DN.600/1000" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
14	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
13	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471 DN600/800	1
12	ESPARRAGO SCREW	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913 DN.750/1000	1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991 DN.600	4
			DIN 7991 DN.700/1000	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.600/1000 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

Technical characteristics



Body type	U-FLANGED / Replaceable seat rubber
Characteristics	Concentric and bidirectional
Production range	DN 80-1600
Design standard	EN 593
Face to Face	EN 558-1 Series 20 ISO 5752 Series 20 DIN 3202 T3 K1 API 609 Category A BS 5155 series 4-5 except DN350
Top flange	ISO 5211
Assembly flanges	PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	16 bar DN 080-150 10 bar DN 200-1600 (16 bar optionally) 25 bar DN 080-0300 special series
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU Vulcanized seat

General description

The FG(w) double flanged type valve is a one-piece body design with flanges to suit all standards (DIN,ANSI, BS, etc.). It also provides dead-end services with downstream piping removed. Its robust design makes it suitable for many applications. It is used in water treatment plants, pump stations, filtration systems, shipbuilding industry and more.

Applications

- Filtration systems
- Water treatment
- Pipelines water distribution
- Cooling systems
- Naval industry



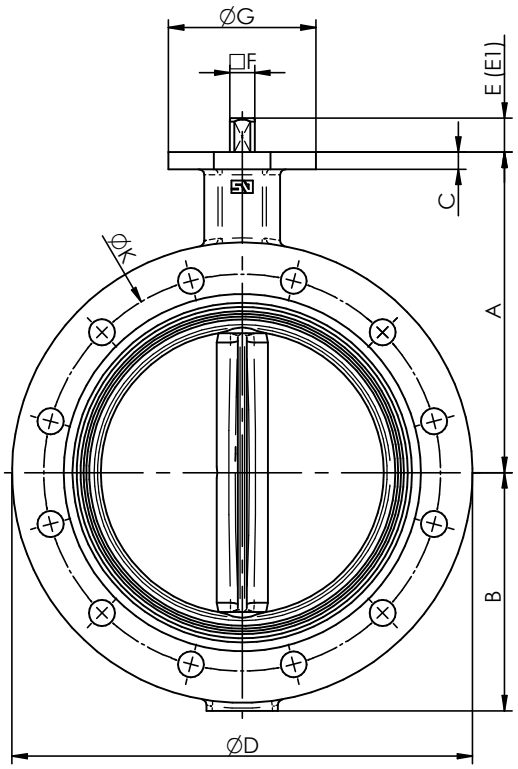
Technical sheets and dimensional drawings

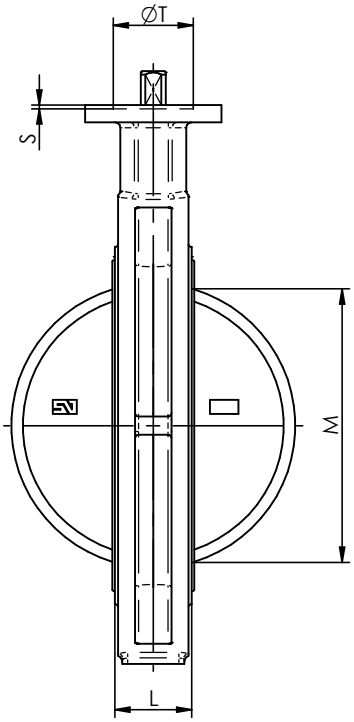
FG(w)-001-DT	General dimensions
FG(w)-002-DT	Dimensions manual actuator
FG(w)-003-DT	Dimensions pneumatic actuator
FG(w)-004-DT	Dimensions electrical actuator Bernard
FG(w)-005-DT	Dimensions electrical actuator AUMA
FG(w)-006-DT	Assembly flanges
FG(w)-007-DT	Assembling screws
FG(w)-0010-DT	Materials detail DN 080-200
FG(w)-0011-DT	Materials detail DN 250-500
FG(w)-0012-DT	Materials detail DN 600-1100
FG(w)-0013-DT	Materials detail DN 1200-1600



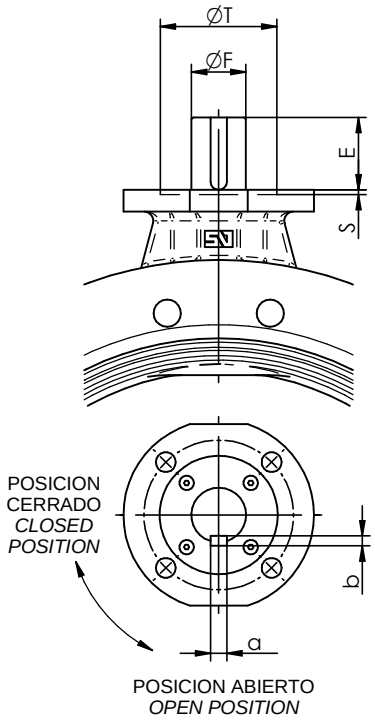
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VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*

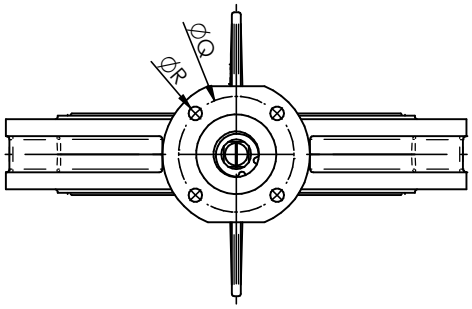




DN 80/500



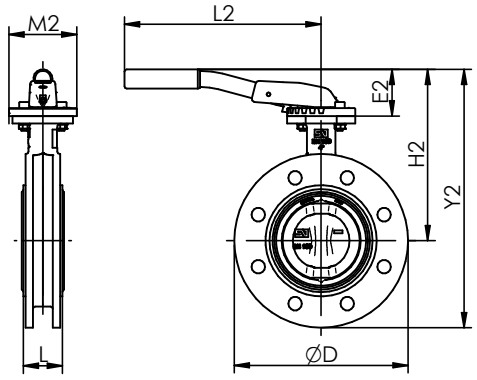
DN 600/1600



E1 - EJE CORTO OPCIONAL BAJO PEDIDO
E1 - SHORT SHAFT ON REQUEST

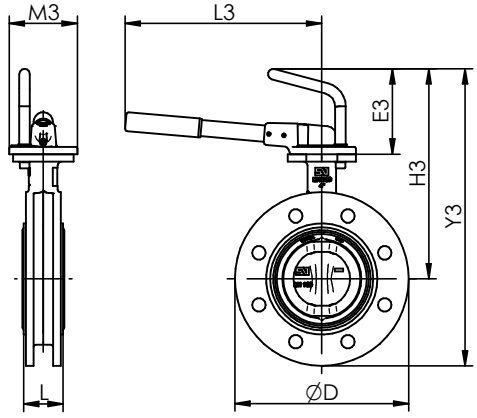
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*																**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**E1**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
										PN10	**PN16**	**Cl.150**									
80	**3”**	141	110	10	200	30	16	11	90	160	160	152.4	46	65	5.3	F-07	70	4x9			
100	**4”**	165	115	10	230	30	16	11	90	180	180	190.5	52	90	7.0	F-07	70	4x9			
125	**5”**	180	127	12	255	33	18	14	90	210	210	215.9	56	112	9.5	F-07	70	4x9			
150	**6”**	193	143	12	285	33	18	14	90	240	240	241.3	56	139	11.0	F-07	70	4x9			
200	**8”**	225	173	12	345	33	18	17	90	295	295	298.5	60	191	18.4	F-07	70	4x9			
250	**10”**	283	210	14	406	30	23	22	130	350	355	361.9	68	241	30.8	F-10	102	4x12	3	70	
300	**12”**	308	240	14	480	30	23	22	130	400	410	431.8	78	290	45.3	F-10	102	4x12	3	70	
350	**14”**	339	271	14	535	31		22	160	460	470	476.2	78	338	55.0	F-10	102	4x12	3	70	
400	**16”**	380	308	18	597	31		27	160	515	525	539.7	102	387	80.0	F-12	125	4x14	4	85	
450	**18”**	381	340	20	640	38		36	190	565	585	577.8	114	434	99.9	F-14	140	4x18	4	100	
500	**20”**	433	380	22	700	38		36	210	620	650	635.0	127	478	137	F-14	140	4x18	4	100	
600	**24”**	494	440	24	834	80		60	210	725	770	749.3	154	570	220	F-16	165	4x22	5	130	18x11
700	**28”**	560	485	25	927	106		65	300	840	840	863.5	165	660	282	F-25	254	8x18	5	200	18x11
750	**30”**	590	530	25	995	106		80	300	900	900	914.4	190	705	350	F-25	254	8x18	5	200	22x14
800	**32”**	630	565	29	1060	106		80	300	950	950	978	190	763	398	F-25	254	8x18	5	200	22x14
900	**36”**	695	610	32	1170	110		80	350	1050	1050	1086	203	866	511	F-25	254	8x18	5	200	22x14
1000	**40”**	770	675	32	1290	110		80	350	1160	1170	1200	216	966	686	F-25	254	8x18	5	200	22x14
1050	**42”**	770	675	32	1346	110		80	350			1257.3	216	1010	776	F-25	254	8x18	5	200	22x14
1100	**44”**	815	733	32	1405	110		80	350	1270	1270	1314.5	216	1054	865	F-25	254	8x18	5	200	22x14
1200	**48”**	875	818	40	1485	110		100	350	1380	1390	1422	254	1153	1072	F-30	298	8x23	5	230	28x16
1400	**56”**	1000	969	35	1735	120		120	415	1590	1590	1651	280	1342	1584	F-30	298	8x23	5	230	28x16
1500	**60”**	1075	1050	40	1855	160		130	475	1700	1710	1759	318	1447	2110	F-40	406	8x39	8	300	32x18
1600	**64”**	1115	1090	40	1930	160		130	475	1820	1820		318	1533	2153	F-40	406	8x39	8	300	32x18

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



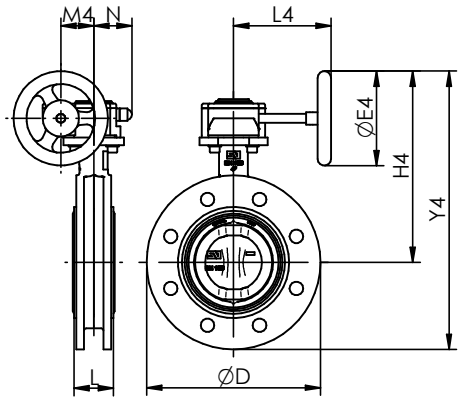
"MN"

DN		D	L	MN					
				E2	H2	Y2	L2	M2	Kg
80	**3"**	200	46	60	201	303	260	90	5.8
100	**4"**	230	52	60	225	340	260	90	7.6
125	**5"**	255	56	75	255	383	315	90	10.1
150	**6"**	285	56	75	268	411	315	90	11.6
200	**8"**	345	60	75	300	473	315	90	19.0



"MR"

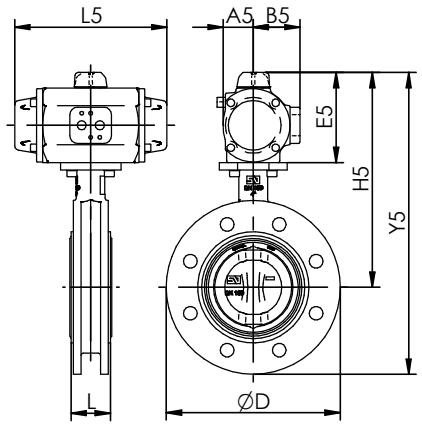
DN		D	L	MR					
				E3	H3	Y3	L3	M3	Kg
80	**3"**	200	46	113	254	354	260	90	5.9
100	**4"**	230	52	113	278	393	260	90	7.7
125	**5"**	255	56	113	293	420	310	90	10.2
150	**6"**	285	56	113	306	448	310	90	11.7
200	**8"**	345	60	113	338	510	310	90	19.1
250	**10"**	406	68	121	403	613	500	130	32.5
300	**12"**	480	78	121	429	669	500	130	47.0



"MDV"

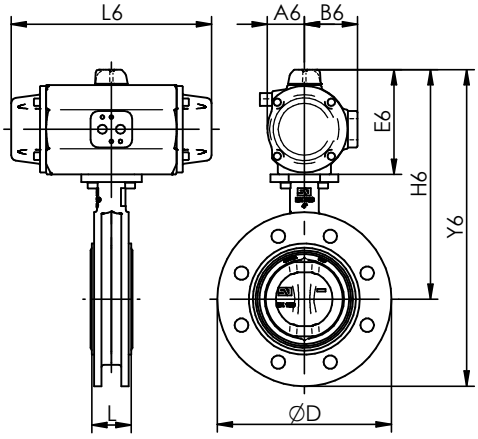
DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
80	**3"**	200	46	10-16	0/X-21	125	229	329	129	43.5	50.5	6.6
100	**4"**	230	52	10-16	0/X-21	125	253	368	129	43.5	50.5	8.3
125	**5"**	255	56	10-16	1/X-21	160	286	413	135	43.5	50.5	10.9
150	**6"**	285	56	10-16	1/X-21	160	298	441	135	43.5	50.5	12.5
200	**8"**	345	60	10-16	1A/X-41	200	355	528	152	52.5	59	21.0
250	**10"**	406	68	10-16	2/X-61	250	442	652	222	61.2	70.5	34.2
300	**12"**	480	78	10-16	2/X-61	250	468	708	222	61.2	70.5	48.7
350	**14"**	535	78	10-16	2/X-61	250	498	770	222	61.2	70.5	58.5
400	**16"**	597	102	10-16	2A/Q-800	300	572	880	277	68.8	72.5	89.0
450	**18"**	640	114	10-16	3/Q-2000	400	630	970	321	96.5	91.5	119
500	**20"**	700	127	10-16	3/Q-2000	400	682	1062	321	96.5	91.5	156
600	**24"**	834	154	10-16	4/Q-4000	500	798	1239	408	138	140	255
700	**28"**	927	165	10	4/Q-4000	500	864	1350	408	138	140	317
				16	5/Q-6500	600	914	1400	456	138	140	320
750	**30"**	995	190	10-16	5/Q-6500	600	944	1474	456	138	140	393
800	**32"**	1060	190	10	5/Q-6500	600	984	1550	456	138	140	440
				16	6/Q-12000	700	1044	1608	510	180	156	456
900	**36"**	1170	203	10-16	6/Q-12000	700	1108	1718	510	180	156	573
1000	**40"**	1290	216	10-16	7/Q-16000	700	1184	1858	579	180	156	754
1050	**42"**	1346	216	10-16	7/Q-16000	700	1184	1858	579	180	156	843
1100	**44"**	1405	216	10	7/Q-16000	700	1228	1962	579	180	156	933
				16	8/Q-24000	700	1250	1983	593	252	228	1056
1200	**48"**	1485	254	10-16	8/Q-24000	700	1310	2128	593	252	228	1270
1400	**56"**	1735	280	10	8/Q-24000	700	1435	2404	593	252	228	1782
1500	**60"**	1855	318	10	9/Q-32000	700	1510	2560	593	252	228	2317
1600	**64"**	1930	318	10	9/Q-32000	700	1550	2640	593	252	228	2359

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



D.E. - D.A.

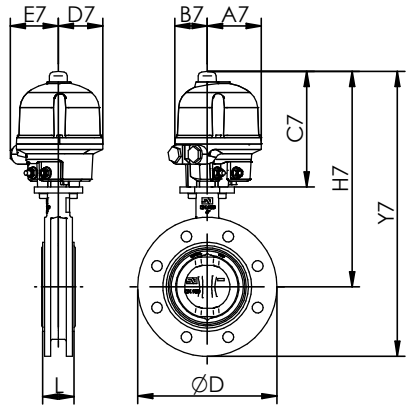
DN		D	L	P.N. Bar	DOBLE EFECTO - *DOUBLE ACTING*							
					REF	A5	B5	E5	H1	Y5	L5	Kg5
80	**3”**	200	46	10-16	PA05	40	62	119	260	360	201	7.9
100	**4”**	230	52	10	PA05	40	62	119	284	399	201	9.7
				16	PA10	41	63	123	288	403	225	10.2
125	**5”**	255	56	10	PA10	41	63	123	303	431	225	12.6
				16	PA15	49	71	139	319	446	265	13.7
150	**6”**	285	56	10	PA15	49	71	139	332	474	265	15.3
				16	PA20	52	75	147	340	482	310	16.7
200	**8”**	345	60	10	PA20	52	75	147	372	544	310	24.1
				16	PA25	64	89	175	400	572	358	27.5
250	**10”**	406	68	10	PA25	64	89	175	457	667	358	40.2
				16	PA30	72	97	191	474	684	428	42.0
300	**12”**	480	78	10-16	PA30	72	97	191	499	739	428	57
350	**14”**	535	78	10-16	P40	106	120	272	611	882	444	73
400	**16”**	597	102	10	P40	106	120	272	652	960	444	98
				16	PA50	127	142	379	759	1067	694	119
450	**18”**	640	114	10-16	PA50	127	142	309	690	1030	694	136
500	**20”**	700	127	10	PA50	127	142	309	742	1122	694	172
				16	PA60	159	172	368	801	1181	690	183
600	**24”**	834	154	10	PA60	159	172	368	862	1302	690	276
				16	PA70	186	216	428	922	1362	743	295
700	**28”**	927	165	10	PA70	186	216	453	1013	1498	743	373



S.E - S.R.

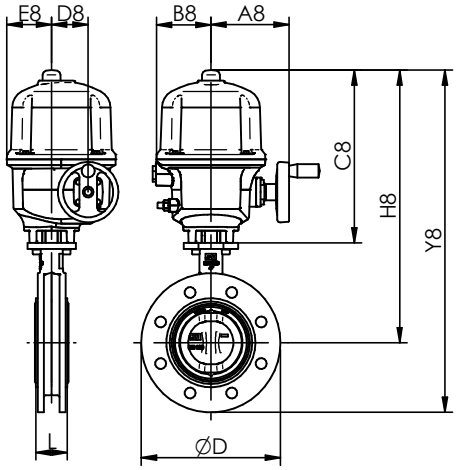
DN		D	L	P.N. Bar	SIMPLE EFECTO – *SPRING RETURN*							
					REF	A6	B6	E6	H6	Y6	L6	Kg6
80	**3”**	200	46	10	PA10S	41	63	123	264	346	225	8.8
				16	PA15S	49	71	139	280	380	265	10.4
100	**4”**	230	52	10	PA15S	49	71	139	304	419	265	12.2
				16	PA20S	52	75	147	312	427	310	13.7
125	**5”**	255	56	10	PA20S	52	75	147	327	454	310	16.1
				16	PA25S	64	89	175	355	482	358	20.8
150	**6”**	285	56	10	PA25S	64	89	175	368	510	358	22.4
				16	PA30S	72	97	191	384	527	428	26.5
200	**8”**	345	60	10-16	PA30S	72	97	191	416	589	428	33.8
250	**10”**	406	68	10-16	P40S	106	120	272	555	765	598	67.3
300	**12”**	480	78	10-16	P40S	106	120	272	580	820	598	81.8
350	**14”**	535	78	10	P40S	106	120	272	611	882	598	91.6
				16	PA50S	127	142	309	648	919	694	107
400	**16”**	597	102	10	PA50S	127	142	379	759	1067	694	137
				16	PA60S	159	172	458	838	1146	690	167
450	**18”**	640	114	10	PA60S	159	172	438	819	1159	690	188
				16	PA70S	186	216	498	878	1218	742	261
500	**20”**	700	127	10	PA70S	186	216	498	930	1311	742	302

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
ACTUADOR ELECTRICO BERNARD / *ELECTRIC ACTUATOR*



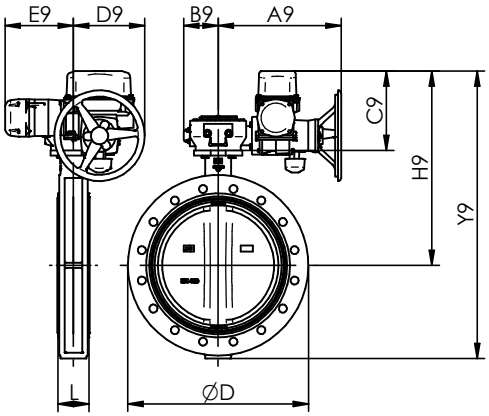
AQ L

DN		D	L	P.N. Bar	MOTOR AQ L								
					REF	A7	B7	C7	D7	E7	H7	Y7	Kg7
80	**3”**	200	46	10-16	AQ7L	89	54	191	73	80	332	432	8.9
100	**4”**	230	52	10-16	AQ7L	89	54	191	73	80	356	471	10.6



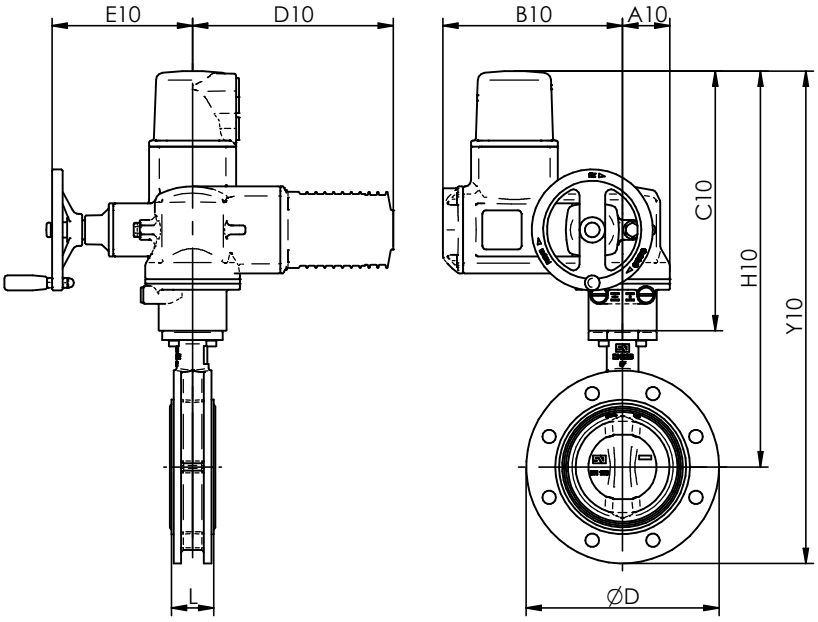
AQ

DN		D	L	P.N. Bar	MOTOR AQ								
					REF	A8	B8	C8	D8	E8	H8	Y8	Kg8
80	**3”**	200	46	10-16	AQ5	129	96	286	110	74	427	527	15.4
100	**4”**	230	52	10-16	AQ5	129	96	286	110	74	451	566	17.1
125	**5”**	255	56	10	AQ10	129	96	286	110	74	466	593	19.5
				16	AQ15	129	96	286	110	74	466	593	19.5
150	**6”**	285	56	10-16	AQ15	129	96	286	110	74	479	621	21.1
200	**8”**	345	60	10	AQ15	129	96	286	110	74	511	683	28.5
				16	AQ25	199	117	318	138	86	543	715	31.1
250	**10”**	406	68	10-16	AQ50	230	117	328	174	86	610	820	45.9
300	**12”**	480	78	10-16	AQ50	230	117	328	174	86	636	876	60.4
350	**14”**	535	78	10	AQ50	230	117	328	174	86	667	938	70.2



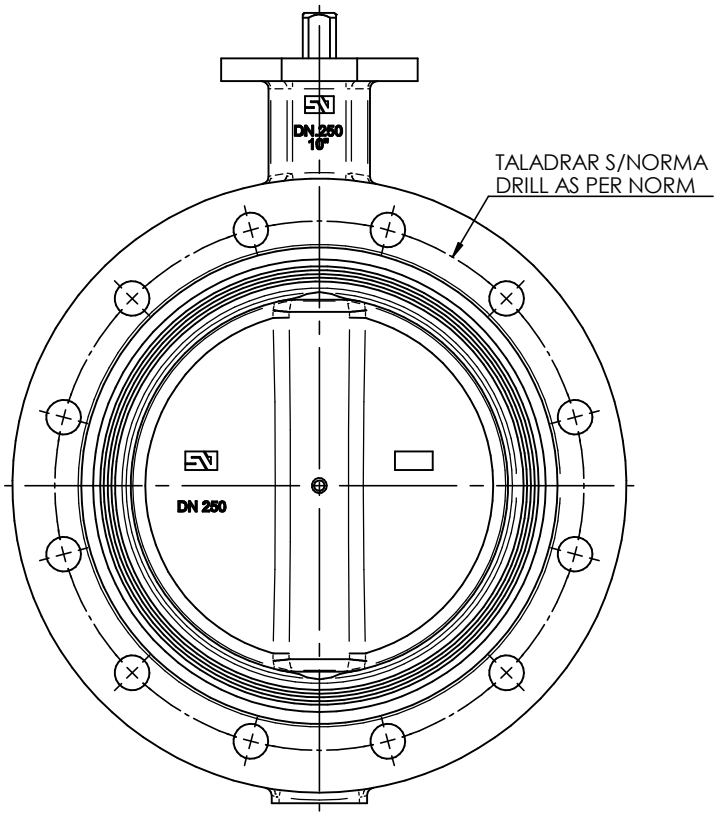
EZ

DN		D	L	P.N. Bar	MOTOR EZ								
					REF	A9	B9	C9	D9	E9	H9	Y9	Kg9
350	**14”**	535	78	16	EZ100	407	114	332	236	226	670	942	104
400	**16”**	597	102	10-16	EZ100	407	114	262	236	226	642	950	127
450	**18”**	640	114	10-16	EZ250	476	188	284	333	129	664	1004	163
500	**20”**	700	127	10-16	EZ250	476	188	284	333	129	716	1096	201
600	**24”**	834	154	10-16	EZ400	510	154	284	288	174	778	1218	284
700	**28”**	927	165	10-16	EZ1000	596	184	303	332	152	863	1348	375
750	**30”**	995	190	10-16	EZ1000	596	184	303	332	152	893	1423	443
800	**32”**	1060	190	10-16	EZ1000	596	184	303	332	152	933	1498	488
900	**36”**	1170	190	10	EZ1000	596	184	303	332	152	998	1608	596



DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
80	**3”**	200	46	10-16	SQ 05.2	62	238	344	266	186	484	584	26.4
100	**4”**	230	52	10-16	SQ 05.2	62	238	344	266	186	509	624	28.1
125	**5”**	255	56	10-16	SQ 05.2	62	238	344	266	186	524	651	30.5
150	**6”**	285	56	10-16	SQ 05.2	62	238	344	266	186	536	679	32.1
200	**8”**	345	60	10-16	SQ 07.2	62	238	344	266	186	568	741	39.5
250	**10”**	406	68	10-16	SQ 10.2	80	248	361	266	191	644	854	56.9
300	**12”**	480	78	10-16	SQ 10.2	80	248	361	266	191	669	909	71.4
350	**14”**	535	78	10	SQ 10.2	80	248	361	266	191	700	971	80.1
				16	SQ 12.2	105	248	385	266	191	724	994	88.4
400	**16”**	597	102	10-16	SQ 12.2	105	248	385	266	191	765	1073	115
450	**18”**	640	114	10-16	SQ 14.2	112	255	447	265	216	828	1168	143
500	**20”**	700	127	10-16	SQ 14.2	112	255	447	265	216	880	1260	180
600	**24”**	834	154	10-16	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	281
700	**28”**	927	165	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	883	1368	353
750	**30”**	995	190	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	913	1443	421
800	**32”**	1060	190	10	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	953	1518	469
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	953	1518	513
900	**36”**	1170	203	10	GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	1008	1618	617
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1018	1628	626
1000	**40”**	1290	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	805
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	869
1050	**42”**	1346	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	895
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	964
1100	**44”**	1405	216	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1138	1871	984
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1153	1886	1046
1200	**48”**	1485	254	10	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1213	2031	1261
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1213	2031	1261
1400	**56”**	1735	280	10	GS200.3/GZ200.3(16:1)/SA10.2	760	366	338	208	391	1338	2307	1783
				16	GS250.3/GZ250.3(16:1)/SA14.2	796	402	416	258	492	1416	2385	1993
1500	**50”**	1855	318	10	GS250.3/GZ250.3(16:1)/SA14.2	796	402	416	258	492	1501	2551	2486
1600	**64”**	1930	318	10	GS250.3/GZ250.3(16:1)/SA14.2	796	402	416	258	492	1541	2631	2528

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*

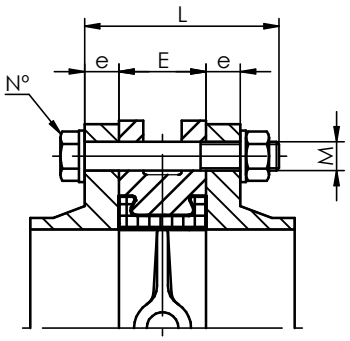


X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

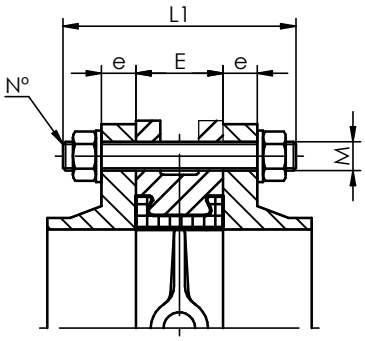
POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
80	3"	X	X	X	X	X						X	X	X	X	X	X
100	4"	X	X	X	X	X	X					X	X	X	X	X	X
125	5"	X	X	X	X	X	X					X	X	X	X	X	X
150	6"	X	X	X	X	X	X					X	X	X	X	--	X
200	8"	X	X	X	X	X	X					X	X	X	X	X	X
250	10"	X	X	X	X	X	X					X	X	X	X	--	X
300	12"	X	X	X	X	X	X					X	X	X	X	X	X
350	14"	X	X	X	X	X	X					X	X	X	X	X	X
400	16"	X	X	X	X	X	X					X	X	X	X	X	X
450	18"	X	X	X	X	X	X					X	X	X	X	X	X
500	20"	X	X	X	X	X	X					X	X	X	X	X	X
600	24"	X	X	X	X	X	X					X	X	X	X	X	X
700	28"	X	X	X		X	X	X	--	X	X			X	X	X	X
750	30"	X	X	X		X	X	X	--	X	X	X	X	X	X	X	X
800	32"	X	X	X		X	X	X	--	X	X			X	X	X	X
900	36"	X	X	X		X	X	X	--	X	X	X	X	X	X	X	X
1000	40"	X	X	X		X	X	X	X	X	X			X	X	X	X
1050	42"					X	X	X	X	X	X						
1100	44"	X	X	X		X	X	X	X	O	X			X	X	X	
1200	48"	O	X	X		X	X	X	X	O	O	X	X	O	X	X	X
1400	56"	X	X	X		X		X	O	O	X						
1500	60"	O	X	X		X	X	X	X	O	X						
1600	64"	X	X	X													

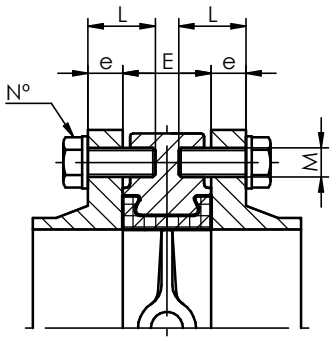
VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*



"A-A"
TORNILLO / *SCREW*

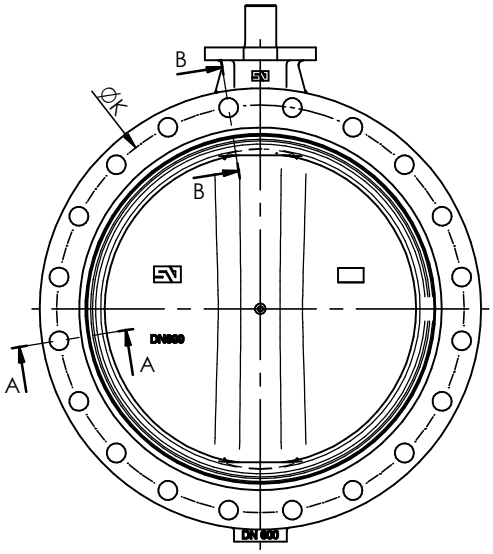


"A-A"
TIRANTE / *LINK*



"B-B"
TORNILLO SOLO/
SCREW ONLY

DN.450	PN.10-PN.16
DN.500	ANSI 150
DN.700/1600	PN.10-PN.16-ANSI 150



LOS TALADROS ROSCADOS PARA EL MONTAJE ENTRE BRIDAS SERÁN:
- ROSCA METRICA PARA NORMAS PN.
- ROSCA UNC PARA NORMAS ANSI 150.

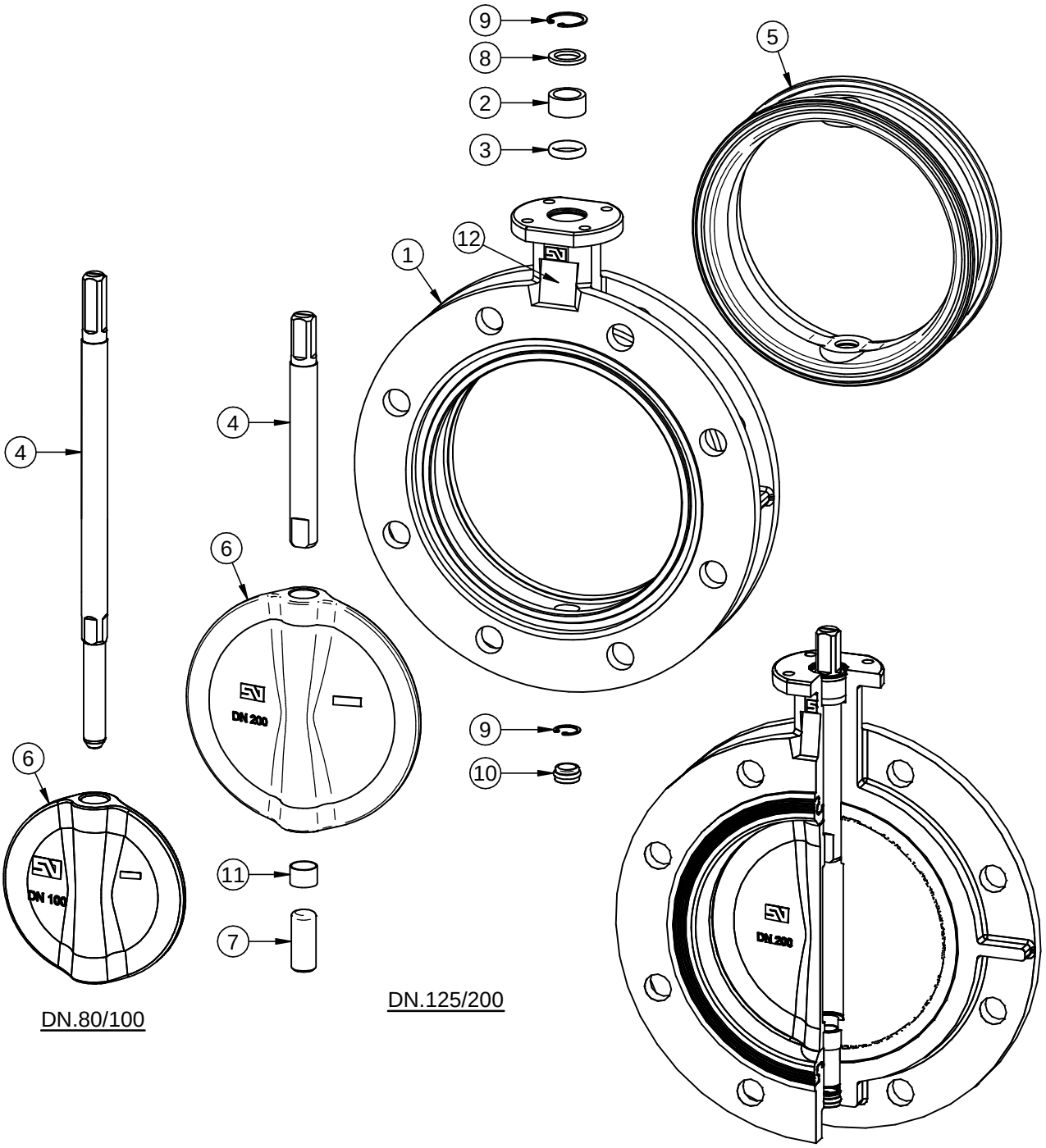
OTRO TIPO DE ROSCAS BAJO DEMANDA.

THREADED HOLES FOR THE ASSEMBLY BETWEEN FLANGES WILL BE:
- *METRIC THREAD STANDARDS FOR PN. NORMS.*
- *UNC THREAD STANDARDS FOR ANSI 150 NORMS.*

OTHER THREAD ON REQUEST.

DN		E	PN.10						PN.16						ANSI 150 Lbs / PN.20						
			K	e	M	L	L1	Nº	K	e	M	L	L1	Nº	K	e	M		L	L1	Nº
80	**3"**	46	160	20	M16	110	130	8	160	20	M16	110	130	8	152.4	23.8	5/8"	M16	110	130	4
100	**4"**	52	180	20	M16	110	130	8	180	20	M16	110	130	8	190.5	23.8	5/8"	M16	120	140	8
125	**5"**	56	210	22	M16	120	140	8	210	22	M16	120	140	8	215.9	23.8	3/4"	M20	130	150	8
150	**6"**	56	240	22	M20	130	150	8	240	22	M20	130	150	8	241.3	25.4	3/4"	M20	130	150	8
200	**8"**	60	295	24	M20	130	160	8	295	24	M20	130	160	12	298.5	28.6	3/4"	M20	140	160	8
250	**10"**	68	350	26	M20	150	170	12	355	26	M24	150	170	12	361.9	30.2	7/8"	M24	160	180	12
300	**12"**	78	400	26	M20	160	180	12	410	28	M24	160	180	12	431.8	31.7	7/8"	M24	170	190	12
350	**14"**	78	460	26	M20	170	180	16	470	30	M24	170	190	16	476.2	34.9	1"	M27	180	200	12
400	**16"**	102	515	26	M24	180	210	16	525	32	M27	200	220	16	539.7	36.5	1"	M27	210	230	16
450	**18"**	114	565	26	M24	190	220	16	585	32	M27	210	240	16	577.8	39.7	1.1/8"	M30	230	250	16
					M24	60		8			M27	60		8							
500	**20"**	127	620	28	M24	210	230	20	650	34	M30	230	260	20	635.0	46	1.1/8"	M30	250	280	20
																	1.1/8"	M30	105		8
600	**24"**	154	725	28	M27	240	270	20	770	36	M33	260	290	20	749.3	47.6	1.1/4"	M33	280	310	20
700	**28"**	165	840	30	M27	260	280	20	840	36	M33	270	300	20	863.5	52.5	1.1/4"	M33	310	340	24
					M27	80		8			M33	85		8			1.1/4"	M33	110		8
750	**30"**	190	900	32	M30	290	320	20	900	38	M33	300	340	20	914.4	54	1.1/4"	M33	335	375	24
					M30	95		8			M33	100		8			1.1/4"	M33	110		8
800	**32"**	190	950	32	M30	290	320	20	950	38	M36	310	345	20	978	57	1.1/2"	M39	340	380	24
					M30	110		8			M36	80		8			1.1/2"	M39	95		8
900	**36"**	203	1050	34	M30	310	350	24	1050	40	M36	330	375	24	1086	60	1.1/2"	M39	370	415	28
					M30	100		8			M36	100		8			1.1/2"	M39	110		8
1000	**40"**	216	1160	34	M33	325	360	24	1170	42	M39	345	390	24	1200	63.5	1.1/2"	M39	390	430	32
					M33	95		8			M39	100		8			1.1/2"	M39	120		8
1050	42"	216													1257.3	66.7	1.1/2"	M39	400		32
																	1.1/2"	M39	125		8
1100	**44"**	216	1270	38	M33	330	37	28	1270	48	M39	360	400	28	1314.5	101	1.1/2"	M39	465	410	36
					M33	100		8			M39	110		8			1.1/2"	M39	150		8
1200	**48"**	254	1380	38	M36	375	420	28	1390	48	M45	395	445	28	1422	108	1.1/2"	M39	475	520	40
					M36	110		8			M45	115		8			1.1/2"	M39	165		8
1400	**56"**	280	1590	42	M39	410	450	32	1590	52	M45	440	490	32	1651	124	1.3/4"	M45	580	630	44
					M39	100		8			M45	110		8			1.3/4"	M45	160		8
1500	**60"**	318	1700	48	M39	460	505	32	1710	54	M52	490	550	32	1759	132	1.3/4"	M45	635	690	44
					M39	110		8			M52	110		8			1.3/4"	M45	190		16
1600	**64"**	318	1820	46	M45	460	510	36	1820	58	M52	490	550	36							
					M45	110		8			M52	120		8							

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
DESPIECE DE MATERIALES "DN.80/200" / *MATERIALS DETAIL*



DN.80/100

DN.125/200

POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
12	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
11	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.200	1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.	DN.125/200	1
9	ANILLO ELASTICO DIN 472 *ZEGI RING BODY DIN 472*	ACERO CINCADO *ZINC PLATED STEEL*	DN.80/100	1
			DN.125/200	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.125/200	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN	DN.80/200	1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*

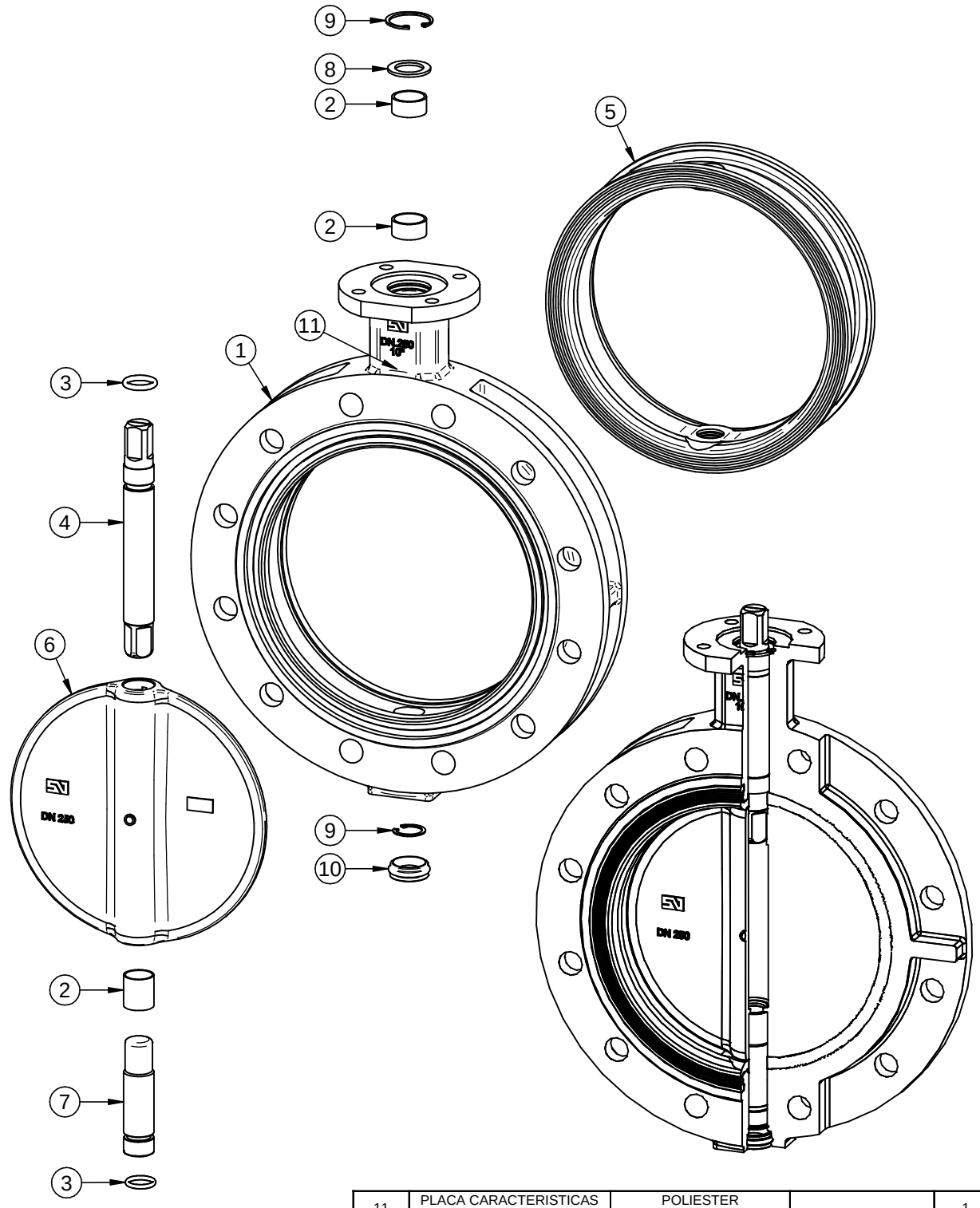
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.80/150 - 16 Bar
- DN.200 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:

CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
- 16 Bar - 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²
- 16 Bar - 17.6 Kg/cm²

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
DESPIECE DE MATERIALES "DN.250/500" / *MATERIALS DETAIL*



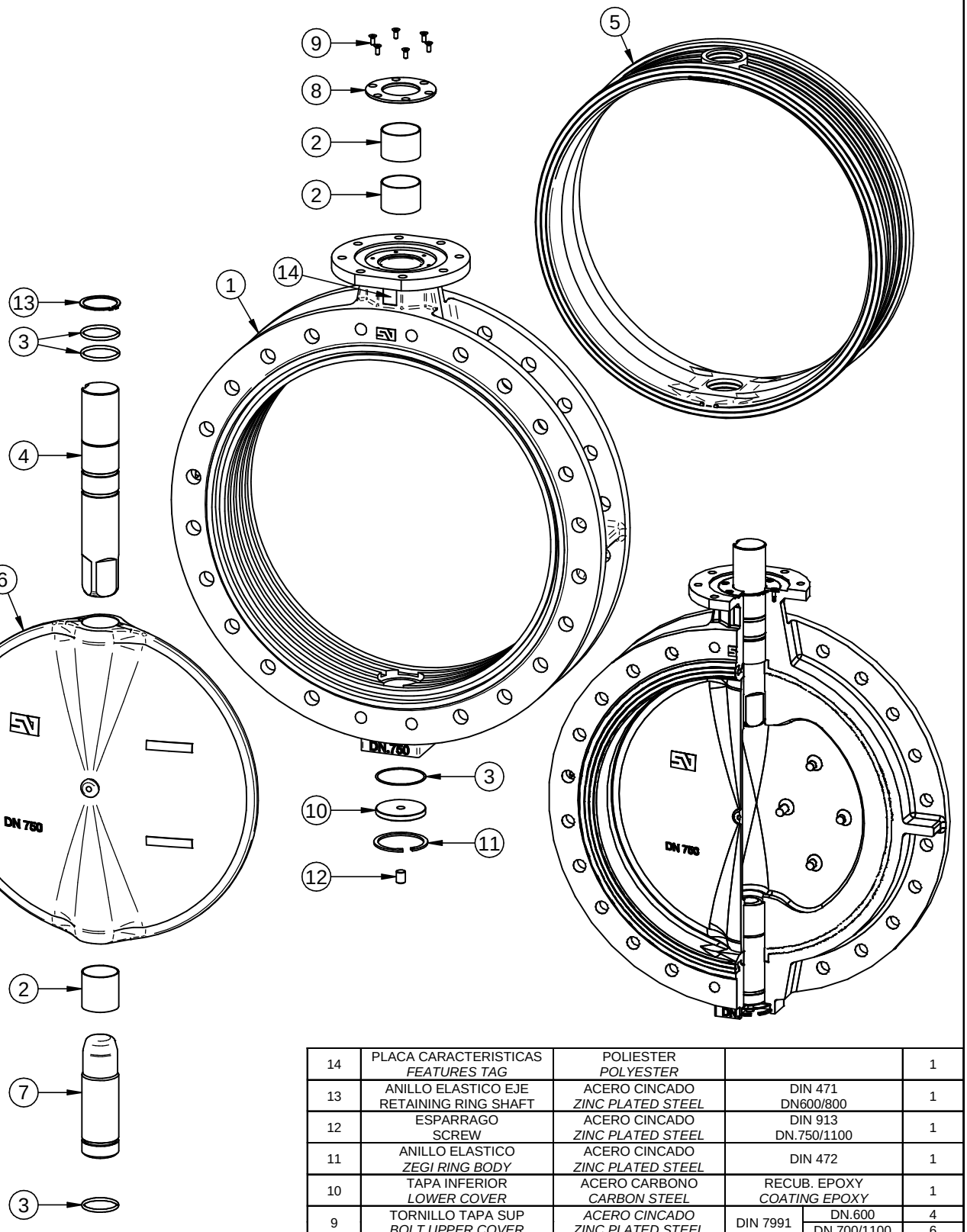
POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

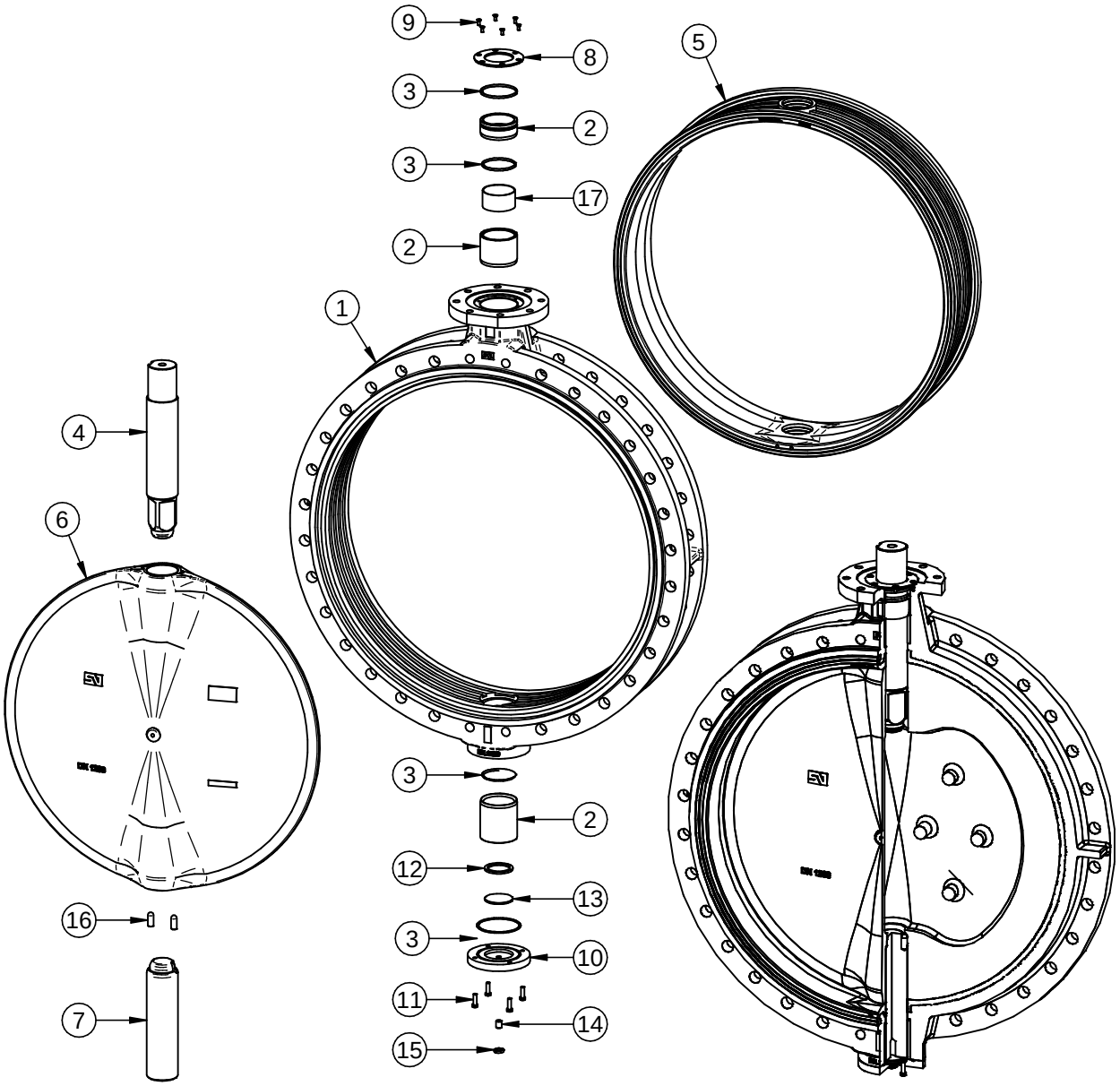
VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
DESPIECE DE MATERIALES "DN.600/1100" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
14	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
13	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471 DN600/800	1
12	ESPARRAGO SCREW	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913 DN.750/1100	1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991 DN.600	4
			DIN 7991 DN.700/1100	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.600/1100 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

VALVULA DE MARIPOSA "FG(W)" / *BUTTERFLY VALVE "FG(W)"*
DESPIECE DE MATERIALES "DN.1200/1600" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
17	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		1
16	CHAVETA CILINDRICA *KEYWAY*	ACERO INOX. AISI 420 STAINLESS STEEL AISI 420		2
15	TUERCA *NUT*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 934	1
14	ESPARRAGO *SCREW*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913	1
13	DISCO ROZAMIENTO FRICTION DISC	*ACERO CINCADO ZINC PLATED STEEL*		1
12	ARANDELA INFERIOR LOWER RING	BRONCE / LATON BRONZE / BRASS		1
11	TORNILLO TAPA INF *BOLT LOWER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 931	4
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 7991	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	BRONCE / LATON BRONZE / BRASS		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.1200/1600 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

Technical characteristics



Body type	DOUBLE FLANGE / Vulcanized seat
Characteristics	Concentric and bidirectional
Production range	DN 40-1200
Design standard	EN 593
Face to Face	EN 558-1 Series 13 ISO 5752 Series 13 BS 5155 series 2 Short type
Top flange	ISO 5211
Assembly flanges	PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	16 bar DN 040-150 10 bar DN 200-1200 (16 bar optionally)
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU

General description

The BBNV(w) butterfly valve with the vulcanized seat is used when a flanged valve is required for mounting with bolts on each side of the valve. It is very used for buried services, since it does not require almost maintenance by the type of vulcanized ring to the body. Its design allows to be mounted at the end of the line.

Applications

- Naval industry
- Water treatment plants
- Buried valves
- Pipelines water distribution
- Cooling systems



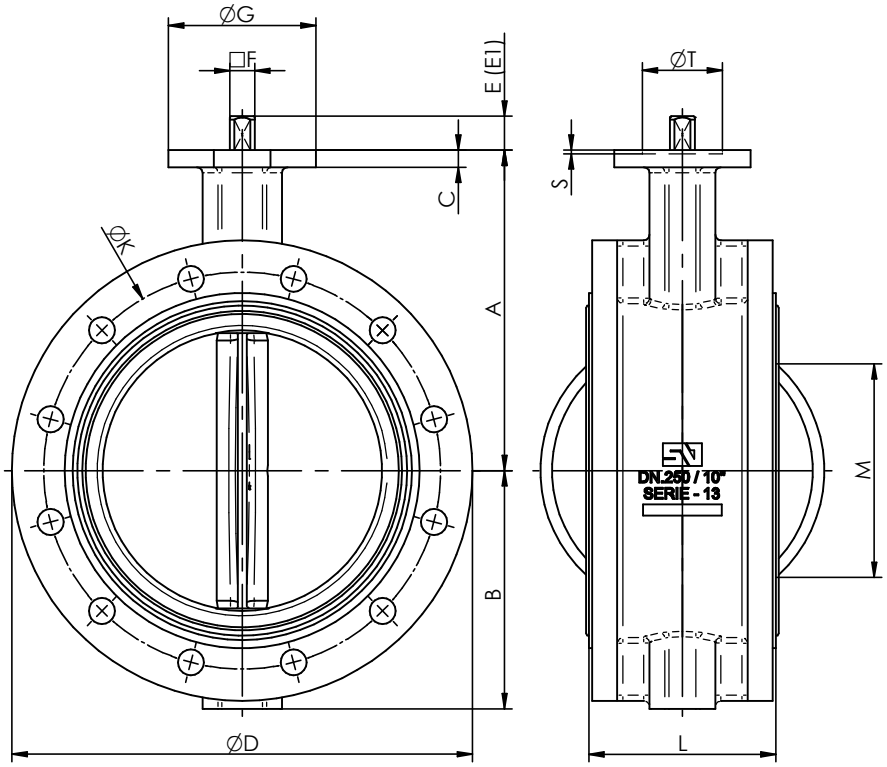
Technical sheets and dimensional drawings

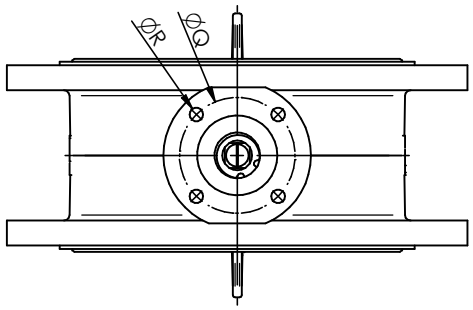
BBNV(w)-001-DT	General dimensions
BBNV(w)-002-DT	Dimensions manual actuator
BBNV(w)-003-DT	Dimensions pneumatic actuator
BBNV(w)-004-DT	Dimensions electrical actuator Bernard
BBNV(w)-005-DT	Dimensions electrical actuator AUMA
BBNV(w)-006-DT	Assembly flanges
BBNV(w)-007-DT	Assembling screws
BBNV(w)-0010-DT	Materials detail DN 040-200
BBNV(w)-0011-DT	Materials detail DN 250-500
BBNV(w)-0012-DT	Materials detail DN 600-1100
BBNV(w)-0013-DT	Materials detail DN 1200



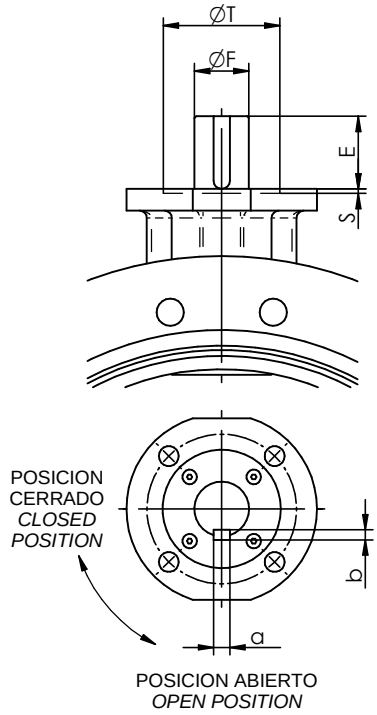
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VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*





DN 40/500

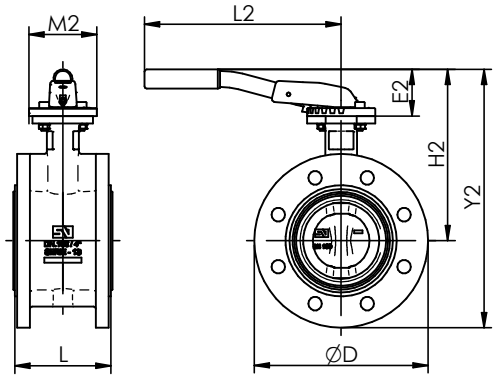


DN 600/1400

E1 - EJE CORTO OPCIONAL BAJO PEDIDO
E1 - SHORT SHAFT ON REQUEST

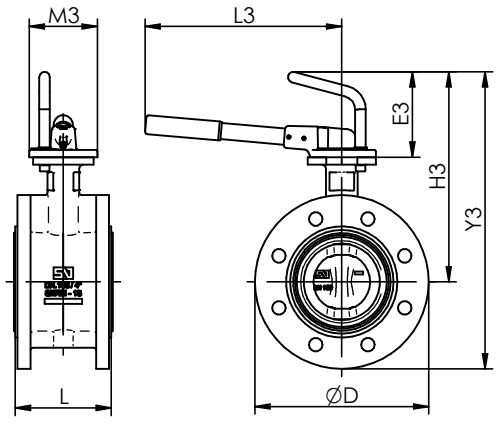
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*																**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**E1**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
										PN10	**PN16**	**Cl.150**									
40	**1½"**	110	75	10	150	30	16	11	90	110	110	98.5	106	-	5.5	F-07	70	4x9			
50	**2"**	120	82	10	165	30	16	11	90	125	125	120.6	108	-	6.5	F-07	70	4x9			
65	**2½"**	135	92	10	185	30	16	11	90	145	145	139.7	112	-	8.2	F-07	70	4x9			
80	**3"**	141	100	10	200	30	16	11	90	160	160	152.4	114	-	9.5	F-07	70	4x9			
100	**4"**	165	115	10	230	30	16	11	90	180	180	190.5	127	-	12.4	F-07	70	4x9			
125	**5"**	180	127	12	255	33	18	14	90	210	210	215.9	140	-	16.3	F-07	70	4x9			
150	**6"**	193	143	12	285	33	18	14	90	240	240	241.3	140	53	19.9	F-07	70	4x9			
200	**8"**	225	172	12	343	33	18	17	90	295	295	298.5	152	130	29.9	F-07	70	4x9			
250	**10"**	283	210	15	406	30	23	22	130	350	355	361.9	165	188	45.1	F-10	102	4x12	3	70	
300	**12"**	308	240	15	480	30	23	22	130	400	410	431.8	178	241	70.2	F-10	102	4x12	3	70	
350	**14"**	339	271	16	535	31		22	160	460	470	476.2	190	288	85.7	F-10	102	4x12	3	70	
400	**16"**	380	308	18	597	31		27	160	515	525	539.7	216	337	112	F-12	125	4x14	4	85	
450	**18"**	381	340	20	640	38		36	190	565	585	577.8	222	390	143	F-14	140	4x18	4	100	
500	**20"**	433	380	22	715	38		36	210	620	650	635.0	229	438	187	F-14	140	4x18	4	100	
600	**24"**	494	440	24	840	80		60	210	725	770	749.3	267	526	295	F-16	165	4x22	5	130	18x11
700	**28"**	560	485	25	927	106		65	300	840	840	863.5	292	614	384	F-25	254	8x18	5	200	18x11
750	**30"**	590	530	25	995	106		80	300	900	900	914.4	318	657	463	F-25	254	8x18	5	200	22x14
800	**32"**	630	565	29	1060	106		80	300	950	950	978	318	719	523	F-25	254	8x18	5	200	22x14
900	**36"**	695	610	32	1170	110		80	350	1050	1050	1086	330	827	679	F-25	254	8x18	5	200	22x14
1000	**40"**	770	675	32	1290	110		80	350	1160	1170	1200	410	901	905	F-25	254	8x18	5	200	22x14
1100	**44"**	815	733	32	1405	110		80	350	1270	1270	1314.5	410	995	1162	F-25	254	8x18	5	200	22x14
1200	**48"**	875	818	40	1510	110		100	350	1380	1390	1422	470	1083	1479	F-30	298	8x23	5	230	28x16

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



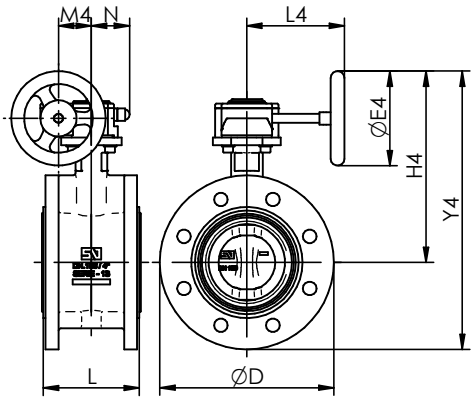
"MN"

DN		D	L	MN					
				E2	H2	Y2	L2	M2	Kg
40	**1½"**	150	106	49	159	234	220	90	6.0
50	**2"**	165	108	49	171	254	220	90	6.9
65	**2½"**	185	112	49	186	279	220	90	8.6
80	**3"**	200	114	60	201	303	260	90	10.0
100	**4"**	230	127	60	225	340	260	90	13.1
125	**5"**	255	140	75	255	383	315	90	16.9
150	**6"**	285	140	75	268	411	315	90	20.5
200	**8"**	343	152	75	300	473	315	90	30.5



"MR"

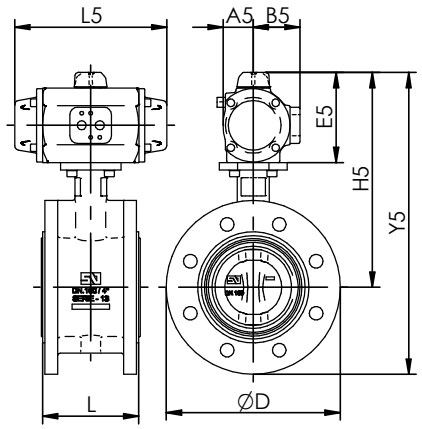
DN		D	L	MR					
				E3	H3	Y3	L3	M3	Kg
40	**1½"**	150	106	113	223	298	260	90	6.2
50	**2"**	165	108	113	233	315	260	90	7.1
65	**2½"**	185	112	113	248	340	260	90	8.6
80	**3"**	200	114	113	254	354	260	90	10.1
100	**4"**	230	127	113	278	393	260	90	13.0
125	**5"**	255	140	113	293	420	310	90	17.0
150	**6"**	285	140	113	306	448	310	90	20.6
200	**8"**	343	152	113	338	510	310	90	30.6
250	**10"**	406	165	121	403	613	500	130	46.8
300	**12"**	480	178	121	429	669	500	130	71.9



"MDV"

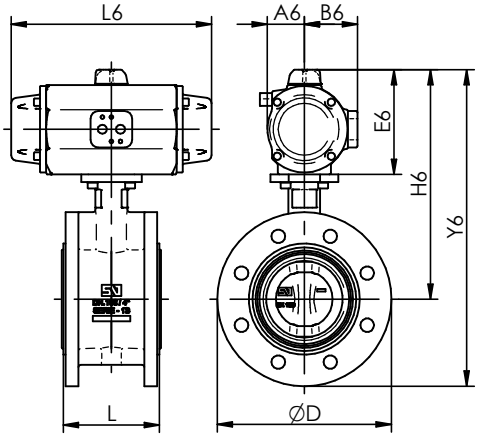
DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
40	**1½"**	150	106	10-16	0/X-21	125	198	273	129	43.5	50.5	6.8
50	**2"**	165	108	10-16	0/X-21	125	208	290	129	43.5	50.5	7.8
65	**2½"**	185	112	10-16	0/X-21	125	223	316	129	43.5	50.5	9.5
80	**3"**	200	114	10-16	0/X-21	125	229	329	129	43.5	50.5	10.7
100	**4"**	230	127	10-16	0/X-21	125	253	368	129	43.5	50.5	13.6
125	**5"**	255	140	10-16	1/X-21	160	286	413	135	43.5	50.5	17.8
150	**6"**	285	140	10-16	1/X-21	160	298	441	135	43.5	50.5	21.3
200	**8"**	343	152	10-16	1A/X-41	200	355	526	152	52.5	59	32.4
250	**10"**	406	165	10-16	2/X-61	250	442	652	222	61.2	70.5	48.5
300	**12"**	480	178	10-16	2/X-61	250	468	708	222	61.2	70.5	73.6
350	**14"**	535	190	10-16	2/X-61	250	498	770	222	61.2	70.5	90.2
400	**16"**	597	216	10-16	2A/Q-800	300	572	880	277	68.8	72.5	122
450	**18"**	640	222	10-16	3/Q-2000	400	630	970	321	96.5	91.5	162
500	**20"**	715	229	10-16	3/Q-2000	400	682	1062	321	96.5	91.5	206
600	**24"**	840	267	10-16	4/Q-4000	500	798	1239	408	138	140	330
700	**28"**	927	292	10	4/Q-4000	500	864	1350	408	138	140	419
				16	5/Q-6500	600	914	1400	456	138	140	422
750	**30"**	995	318	10-16	5/Q-6500	600	944	1474	456	138	140	505
800	**32"**	1060	318	10	5/Q-6500	600	984	1550	456	138	140	565
				16	6/Q-12000	700	1044	1608	510	180	156	579
900	**36"**	1170	330	10-16	6/Q-12000	700	1108	1718	510	180	156	741
1000	**40"**	1290	410	10-16	7/Q-16000	700	1184	1858	579	180	156	973
1100	**44"**	1405	415	10	7/Q-16000	700	1228	1962	579	180	156	1229
				16	8/Q-24000	700	1250	1983	593	252	228	1350
1200	**48"**	1510	470	10-16	8/Q-24000	700	1310	2128	593	252	228	1676

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



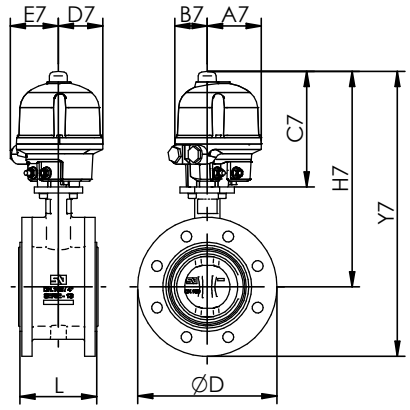
D.E. - D.A.

DN		D	L	P.N. Bar	DOBLE EFECTO - *DOUBLE ACTING*							
					REF	A5	B5	E5	H5	Y5	L5	Kg5
40	1½"	150	106	10-16	PA00	32	52	121	231	306	153	7.1
50	2"	165	108	10-16	PA00	32	52	121	241	323	153	8.1
65	2½"	185	112	10-16	PA05	40	62	201	254	347	201	10.8
80	3"	200	114	10-16	PA05	40	62	119	260	360	201	12.1
100	4"	230	127	10	PA05	40	62	119	284	399	201	15.0
				16	PA10	41	63	123	288	403	225	15.5
125	5"	255	140	10	PA10	41	63	123	303	431	225	19.4
				16	PA15	49	71	139	319	446	265	20.5
150	6"	285	140	10	PA15	49	71	139	332	474	265	24.2
				16	PA20	52	75	147	340	482	310	25.6
200	8"	343	152	10	PA20	52	75	147	372	543	310	35.6
				16	PA25	64	89	175	400	571	358	38.8
250	10"	406	165	10	PA25	64	89	175	457	667	358	54.5
				16	PA30	72	97	191	474	684	428	56.2
300	12"	480	178	10-16	PA30	72	97	191	499	739	428	82.0
350	14"	535	190	10-16	P40	106	120	272	611	882	444	105
400	16"	597	216	10	P40	106	120	272	652	960	444	131
				16	PA50	127	142	379	759	1067	694	152
450	18"	640	222	10-16	PA50	127	142	309	690	1030	694	179
500	20"	715	229	10	PA50	127	142	309	742	1122	694	223
				16	PA60	159	172	368	801	1181	690	234
600	24"	840	267	10	PA60	159	172	368	862	1302	690	351
				16	PA70	186	216	428	922	1362	743	370
700	28"	927	292	10	PA70	186	216	453	1013	1498	743	475



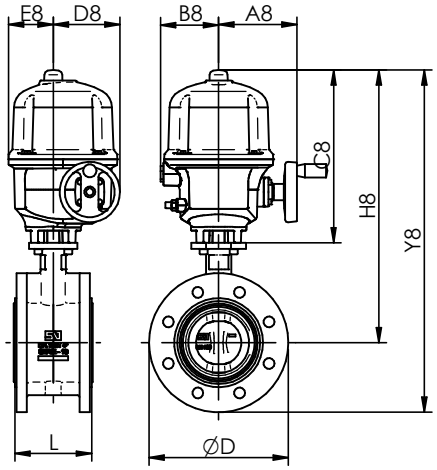
S.E - S.R.

DN		D	L	P.N. Bar	SIMPLE EFECTO – *SPRING RETURN*							
					REF	A6	B6	E6	H6	Y6	L6	Kg6
40	1½"	150	106	10	PA00S	32	52	121	231	306	153	7.3
				16	PA05S	40	62	119	229	304	201	8.2
50	2"	165	108	10	PA00S	32	52	121	241	323	153	8.3
				16	PA05S	40	62	119	239	322	201	9.5
65	2½"	185	112	10	PA05S	40	62	119	254	347	201	11.2
				16	PA10S	41	63	123	258	351	225	11.8
80	3"	200	114	10	PA10S	41	63	123	264	346	225	13.0
				16	PA15S	49	71	139	280	380	265	14.2
100	4"	230	127	10	PA15S	49	71	139	304	419	265	17.5
				16	PA20S	52	75	147	312	427	310	19.0
125	5"	255	140	10	PA20S	52	75	147	327	454	310	22.9
				16	PA25S	64	89	175	355	482	358	27.6
150	6"	285	140	10	PA25S	64	89	175	368	510	358	31.2
				16	PA30S	72	97	191	384	527	428	35.4
200	8"	343	152	10-16	PA30S	72	97	191	416	589	428	45.3
250	10"	406	165	10-16	P40S	106	120	272	555	765	598	81.6
300	12"	480	178	10-16	P40S	106	120	272	580	820	598	107
350	14"	535	190	10	P40S	106	120	272	611	882	598	123
				16	PA50S	127	142	309	648	919	694	138
400	16"	597	216	10	PA50S	127	142	379	759	1067	694	170
				16	PA60S	159	172	458	838	1146	690	200
450	18"	640	222	10	PA60S	159	172	438	819	1159	690	230
				16	PA70S	186	216	498	878	1218	742	264
500	20"	715	229	10	PA70S	186	216	498	930	1311	742	309



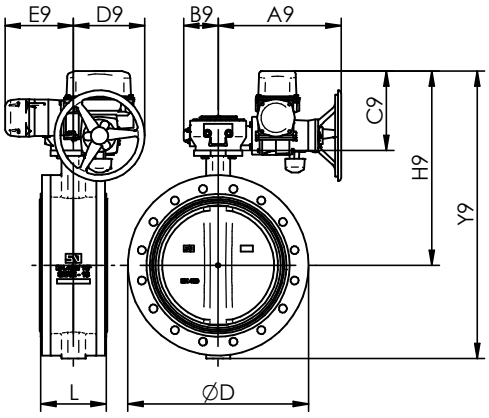
AQ L

DN		D	L	P.N. Bar	MOTOR AQ L								
					REF	A7	B7	C7	D7	E7	H7	Y7	Kg7
40	**1½"**	150	106	10-16	AQ3L	60	83	191	67	85	301	376	8.2
50	**2"**	165	108	10-16	AQ3L	60	83	191	67	85	311	394	9.2
65	**2½"**	185	112	10-16	AQ7L	89	54	191	73	80	326	419	11.8
80	**3"**	200	114	10-16	AQ7L	89	54	191	73	80	332	432	13.1
100	**4"**	230	127	10-16	AQ7L	89	54	191	73	80	356	471	15.9



AQ

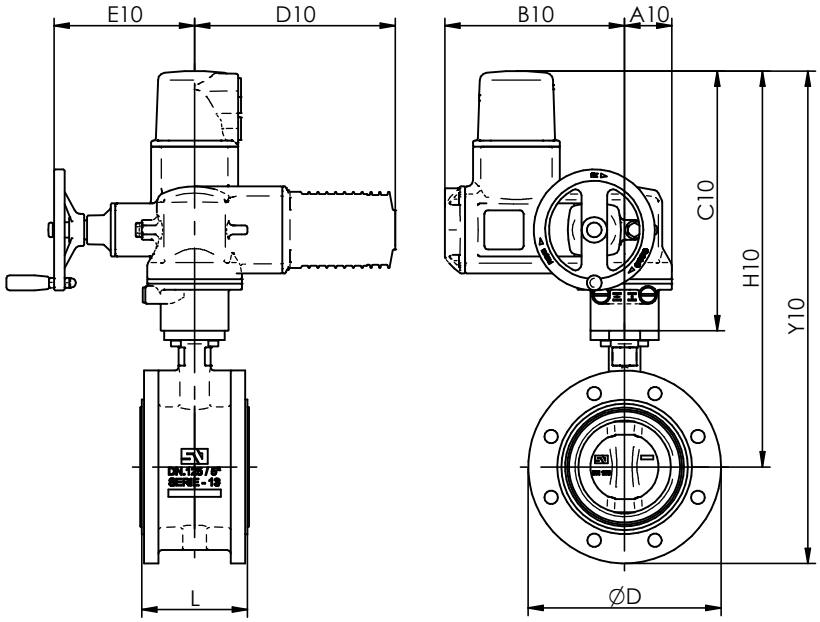
DN		D	L	P.N. Bar	MOTOR AQ								
					REF	A8	B8	C8	D8	E8	H8	Y8	Kg8
40	**1½"**	150	106	10-16	AQ5	129	96	286	110	74	396	471	15.6
50	**2"**	165	108	10-16	AQ5	129	96	286	110	74	406	488	16.6
65	**2½"**	185	112	10-16	AQ5	129	96	286	110	74	421	513	18.3
80	**3"**	200	114	10-16	AQ5	129	96	286	110	74	427	527	19.5
100	**4"**	230	127	10-16	AQ5	129	96	286	110	74	451	566	22.4
125	**5"**	255	140	10	AQ10	129	96	286	110	74	466	593	26.4
				16	AQ15	129	96	286	110	74	466	593	26.4
150	**6"**	285	140	10-16	AQ15	129	96	286	110	74	479	621	30.0
200	**8"**	343	152	10	AQ15	129	96	286	110	74	511	683	40.0
				16	AQ25	199	117	318	138	86	543	715	42.5
250	**10"**	406	165	10-16	AQ50	230	117	328	174	86	610	820	60.2
300	**12"**	480	174	10-16	AQ50	230	117	328	174	86	636	876	85.3
350	**14"**	535	190	10	AQ50	230	117	328	174	86	667	938	102



EZ

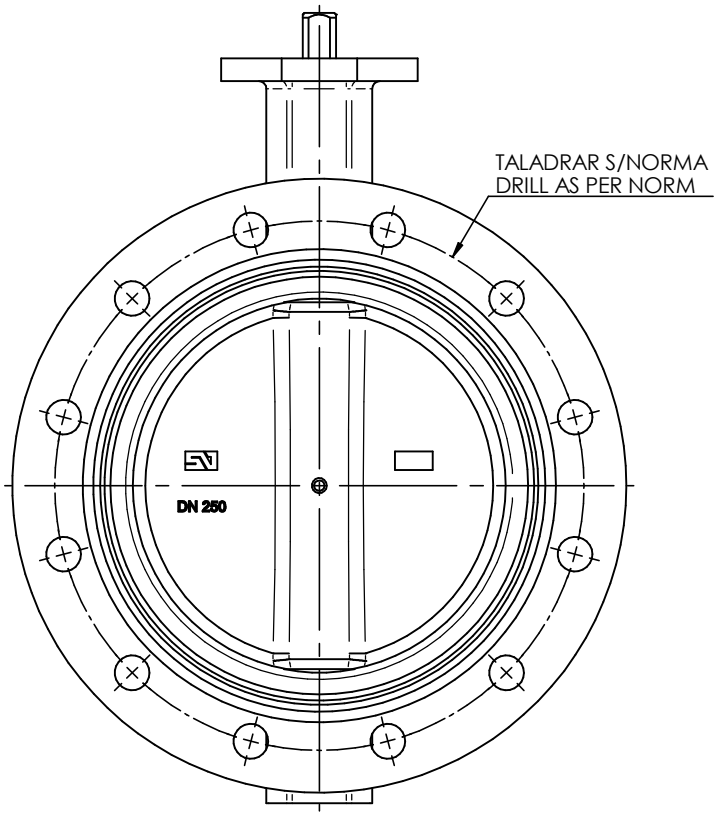
DN		D	L	P.N. Bar	MOTOR EZ								
					REF	A9	B9	C9	D9	E9	H9	Y9	Kg9
350	**14"**	535	190	16	EZ100	407	114	332	236	226	670	942	135
400	**16"**	597	216	10-16	EZ100	407	114	262	236	226	642	950	160
450	**18"**	640	222	10-16	EZ250	476	188	284	333	129	664	1004	207
500	**20"**	715	229	10-16	EZ250	476	188	284	333	129	716	1096	220
600	**24"**	840	267	10-16	EZ400	510	154	284	288	174	778	1218	359
700	**28"**	927	292	10-16	EZ1000	596	184	303	332	152	863	1348	477
750	**30"**	995	318	10-16	EZ1000	596	184	303	332	152	893	1423	556
800	**32"**	1060	318	10-16	EZ1000	596	184	303	332	152	933	1498	610
900	**36"**	1170	330	10	EZ1000	596	184	303	332	152	998	1608	772

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
ACTUADOR ELECTRICO AUMA / *ELECTRIC ACTUATOR AUMA*



DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
40	**1½"**	150	106	10-16	SQ 05.2	62	238	344	266	186	344	454	26.6
50	**2"**	165	108	10-16	SQ 05.2	62	238	344	266	186	464	546	27.6
65	**2½"**	185	112	10-16	SQ 05.2	62	238	344	266	186	478	571	29.3
80	**3"**	200	114	10-16	SQ 05.2	62	238	344	266	186	484	584	30.5
100	**4"**	230	127	10-16	SQ 05.2	62	238	344	266	186	509	624	33.4
125	**5"**	255	140	10-16	SQ 05.2	62	238	344	266	186	524	651	37.4
150	**6"**	285	140	10-16	SQ 05.2	62	238	344	266	186	536	679	41.0
200	**8"**	343	152	10-16	SQ 07.2	62	238	344	266	186	568	741	51.0
250	**10"**	406	165	10-16	SQ 10.2	80	248	361	266	191	644	854	71.2
300	**12"**	480	178	10-16	SQ 10.2	80	248	361	266	191	669	909	96.3
350	**14"**	535	190	10	SQ 10.2	80	248	361	266	191	700	971	113
				16	SQ 12.2	105	248	385	266	191	724	994	121
400	**16"**	597	212	10-16	SQ 12.2	105	248	385	266	191	765	1073	146
450	**18"**	640	222	10-16	SQ 14.2	112	255	447	265	216	828	1168	186
500	**20"**	715	229	10-16	SQ 14.2	112	255	447	265	216	880	1260	231
600	**24"**	840	267	10-16	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	356
700	**28"**	927	292	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	883	1368	455
750	**30"**	995	318	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	913	1443	534
800	**32"**	1060	318	10	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	953	1518	594
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	953	1518	637
900	**36"**	1170	330	10	GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	1008	1618	792
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1018	1628	792
1000	**40"**	1290	410	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	1025
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	1086
1100	**44"**	1405	410	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1138	1871	1281
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1153	1886	1341
1200	**48"**	1510	470	10	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1213	2031	1667
				16	GS200.3/GZ200.3(16:1)/SA10.2	715	366	338	208	391	1213	2031	1667

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*

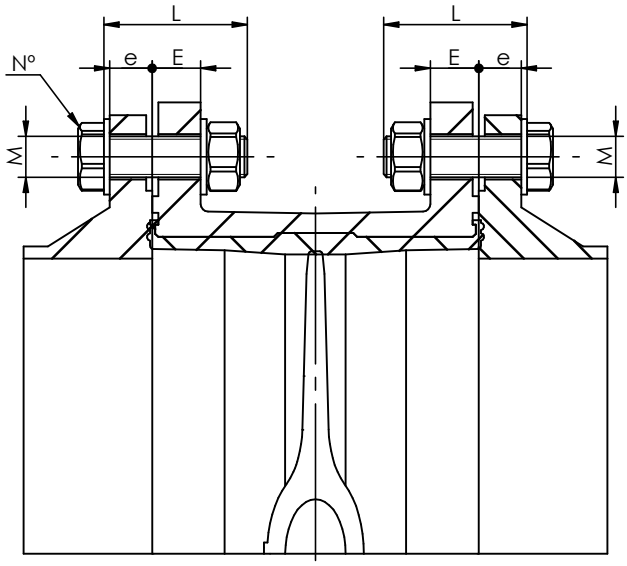


X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

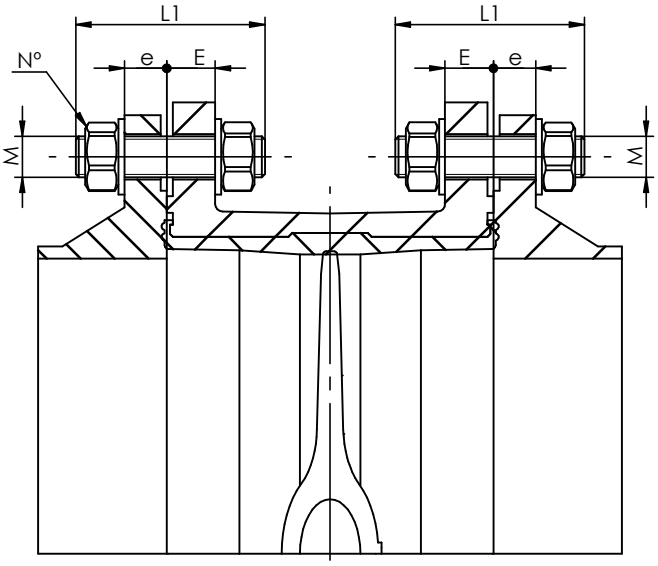
POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
40	1½"	X	X	X	X	X						X	X	X	X	X	X
50	2"	X	X	X	X	X						X	X	X	X	X	X
65	2½"	X	X	X	X	X						X	X	X	X	X	X
80	3"	X	X	X	X	X						X	X	X	X	X	X
100	4"	X	X	X	X	X	X					X	X	X	X	X	X
125	5"	X	X	X	X	X	X					X	X	X	X	X	X
150	6"	X	X	X	X	X	X					X	X	X	X	--	X
200	8"	X	X	X	X	X	X					X	X	X	X	X	X
250	10"	X	X	X	X	X	X					X	X	X	X	--	X
300	12"	X	X	X	X	X	X					X	X	X	X	X	X
350	14"	X	X	X	X	X	X					X	X	--	X	X	X
400	16"	X	X	X	X	X	X					X	X	--	X	X	X
450	18"	X	X	X	X	X	X					X	X	X	X	X	X
500	20"	X	X	X	X	X	X					X	X	X	X	X	X
600	24"	X	X	X	X	X	X					X	X	X	X	X	X
700	28"	X	X	X		X	X	X	--	X	X	X	X	X	X	X	X
750	30"	X	X	X		X	X	X	--	--	X	X	X	X	X	X	X
800	32"	X	X	X		X	X	X	--	--	X			X	X	X	X
900	36"	X	X	X		X	X	X	--	--	X	X	X	X	X	X	X
1000	40"	X	X	X		X	X	X	X	X	X			X	X	X	X
1100	44"	X	X	X		X	X	X	X	X	X			X	X	X	
1200	48"	X	X	X		X	X	X	--	--	X	X	X	X	X	X	X

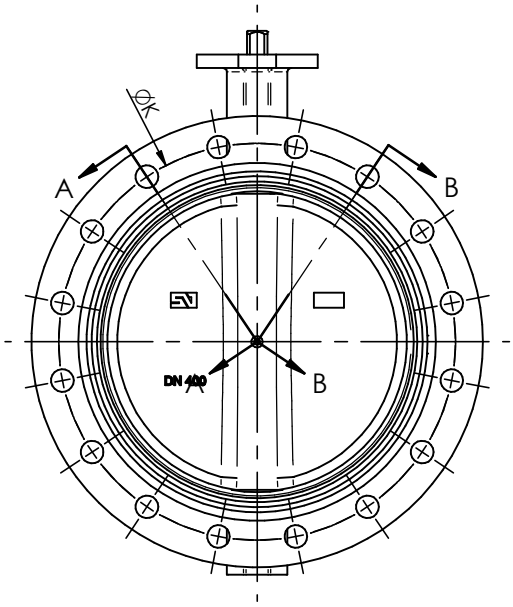
VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*



CORTE A-A
TORNILLO / SCREW

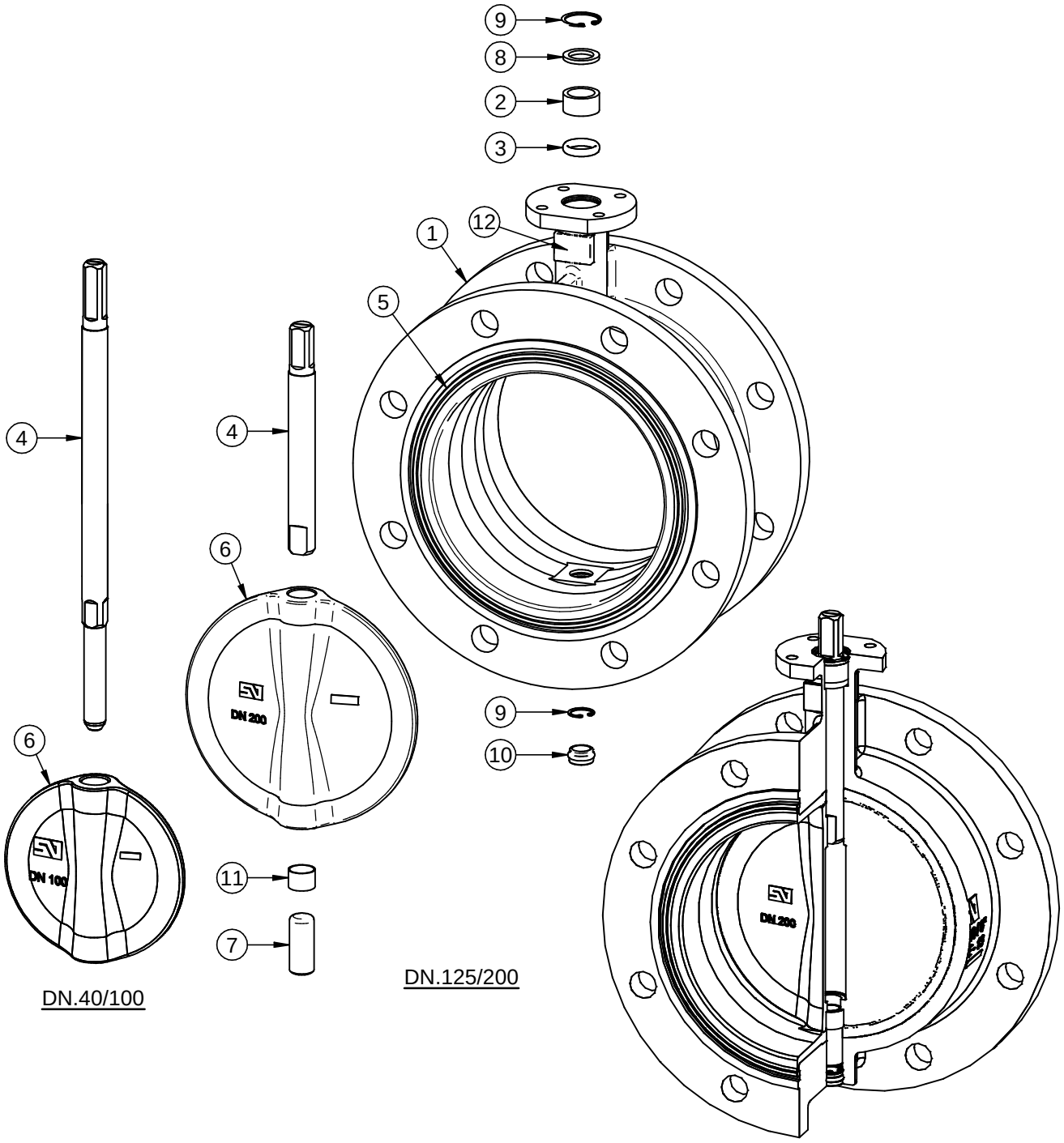


CORTE B-B
VARILLA / ROD



DN		E	PN.10							PN.16						ANSI 150 Lbs / PN.20					
			K	e	M	L	L1	Nº	K	e	M	L	L1	Nº	K	e	M		L	L1	Nº
40	**1½"**	18	110	16	M16	60	75	8	110	16	M16	60	75	8	98.4	17.5	1/2"	M14	55	70	8
50	**2"**	18	125	18	M16	60	75	8	125	18	M16	60	75	8	120.6	19.0	5/8"	M16	60	80	8
65	**2½"**	18	145	18	M16	60	75	8	145	18	M16	60	75	8	139.7	22.2	5/8"	M16	65	80	8
80	**3"**	20	160	20	M16	65	80	16	160	20	M16	65	80	16	152.4	23.8	5/8"	M16	70	85	8
100	**4"**	20	180	20	M16	65	80	16	180	20	M16	65	80	16	190.5	23.8	5/8"	M16	70	85	16
125	**5"**	22	210	22	M16	70	85	16	210	22	M16	70	85	16	215.9	23.8	3/4"	M20	75	95	16
150	**6"**	22	240	22	M20	70	95	16	240	22	M20	70	95	16	241.3	25.4	3/4"	M20	75	100	16
200	**8"**	23	295	24	M20	75	95	16	295	24	M20	75	95	24	298.5	28.6	3/4"	M20	80	105	16
250	**10"**	25	350	26	M20	80	100	24	355	26	M24	85	110	24	361.9	30.2	7/8"	M24	90	110	24
300	**12"**	28	400	26	M20	80	105	24	410	28	M24	90	115	24	431.8	31.7	7/8"	M24	90	115	24
350	**14"**	30	460	26	M20	85	105	32	470	30	M24	95	120	32	476.2	34.9	1"	M27	100	130	24
400	**16"**	32	515	26	M24	90	115	32	525	32	M27	100	130	32	539.7	36.5	1"	M27	105	135	32
450	**18"**	34	565	26	M24	95	120	40	585	32	M27	105	130	40	577.8	39.7	1.1/8"	M30	115	145	32
500	**20"**	36	620	28	M24	100	125	40	650	34	M30	110	140	40	635.0	46.0	1.1/8"	M30	125	150	40
600	**24"**	41	725	28	M27	105	135	40	770	36	M33	120	155	40	749.3	47.6	1.1/4"	M33	130	165	40
700	**28"**	44	840	30	M27	110	140	48	840	36	M33	125	155	48	863.5	52.5	1.1/4"	M33	140	175	56
750	**30"**	48	900	32	M30	120	150	48	900	38	M33	130	165	48	914.4	54.0	1.1/4"	M33	145	180	56
800	**32"**	48	950	32	M30	120	150	48	950	38	M36	135	170	48	978	57.0	1.1/2"	M39	155	195	56
900	**36"**	51	1050	34	M30	125	160	56	1050	40	M36	140	175	56	1086	60.0	1.1/2"	M39	165	200	64
1000	**40"**	55	1160	34	M33	135	165	56	1170	42	M39	150	190	56	1200	63.5	1.1/2"	M39	170	210	72
1100	**44"**	58	1270	38	M33	145	180	64	1270	48	M39	160	195	64	1314.5	101	1.1/2"	M39	210	250	80
1200	**48"**	62	1380	38	M36	150	185	64	1390	48	M45	170	215	64	1422	108	1.1/2"	M39	220	260	88

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
DESPIECE DE MATERIALES "DN.40/200" / *MATERIALS DETAIL*



DN.40/100

DN.125/200

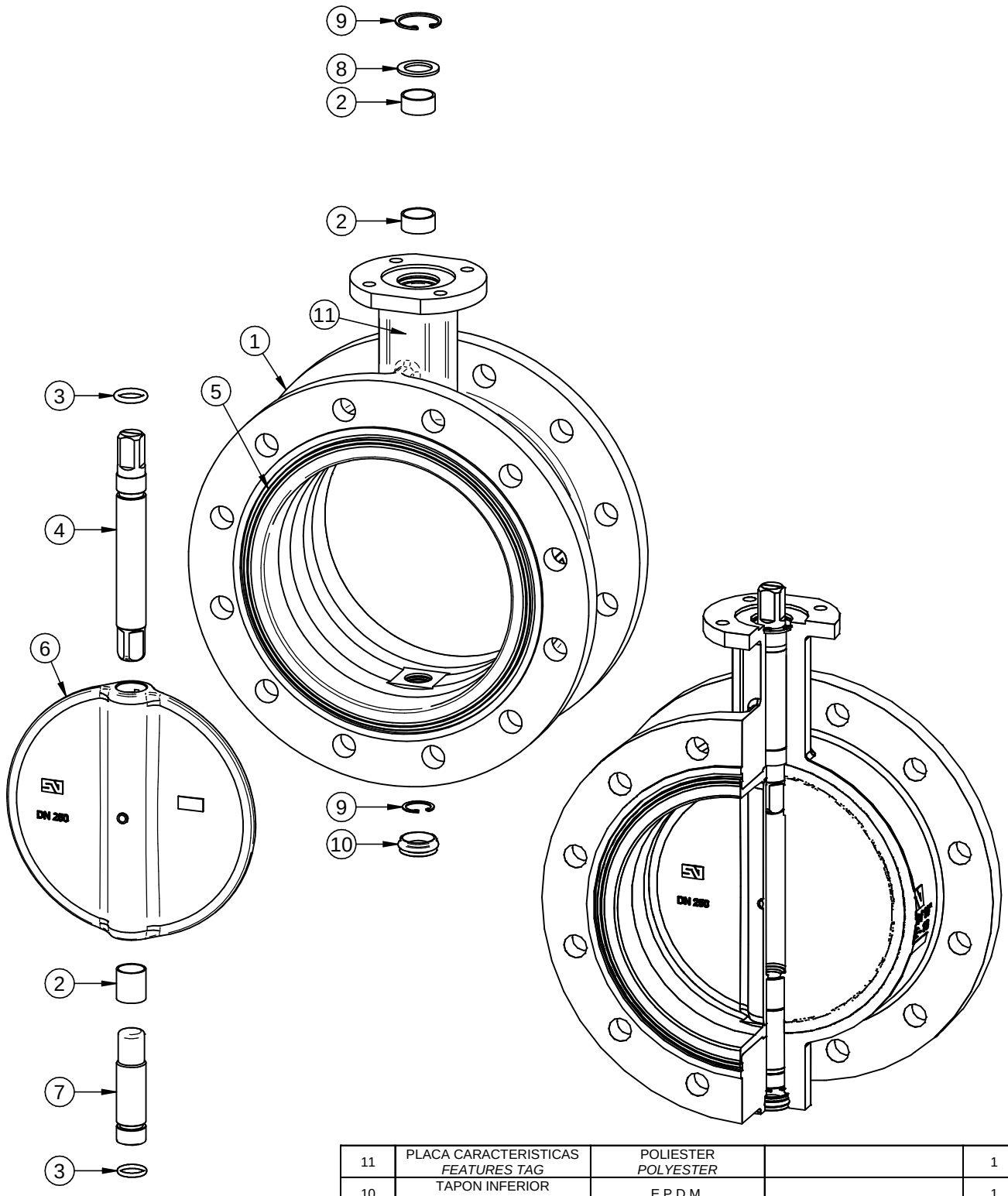
POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
12	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
11	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.200	1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.	DN.125/200	1
9	ANILLO ELASTICO DIN 472 *ZEGI RING BODY DIN 472*	ACERO CINCADO *ZINC PLATED STEEL*	DN.80/100	1
			DN.125/200	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.125/200	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN	DN.80/200	1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.40/150 - 16 Bar
- DN.200 - 10 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
- 16 Bar - 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²
- 16 Bar - 17.6 Kg/cm²

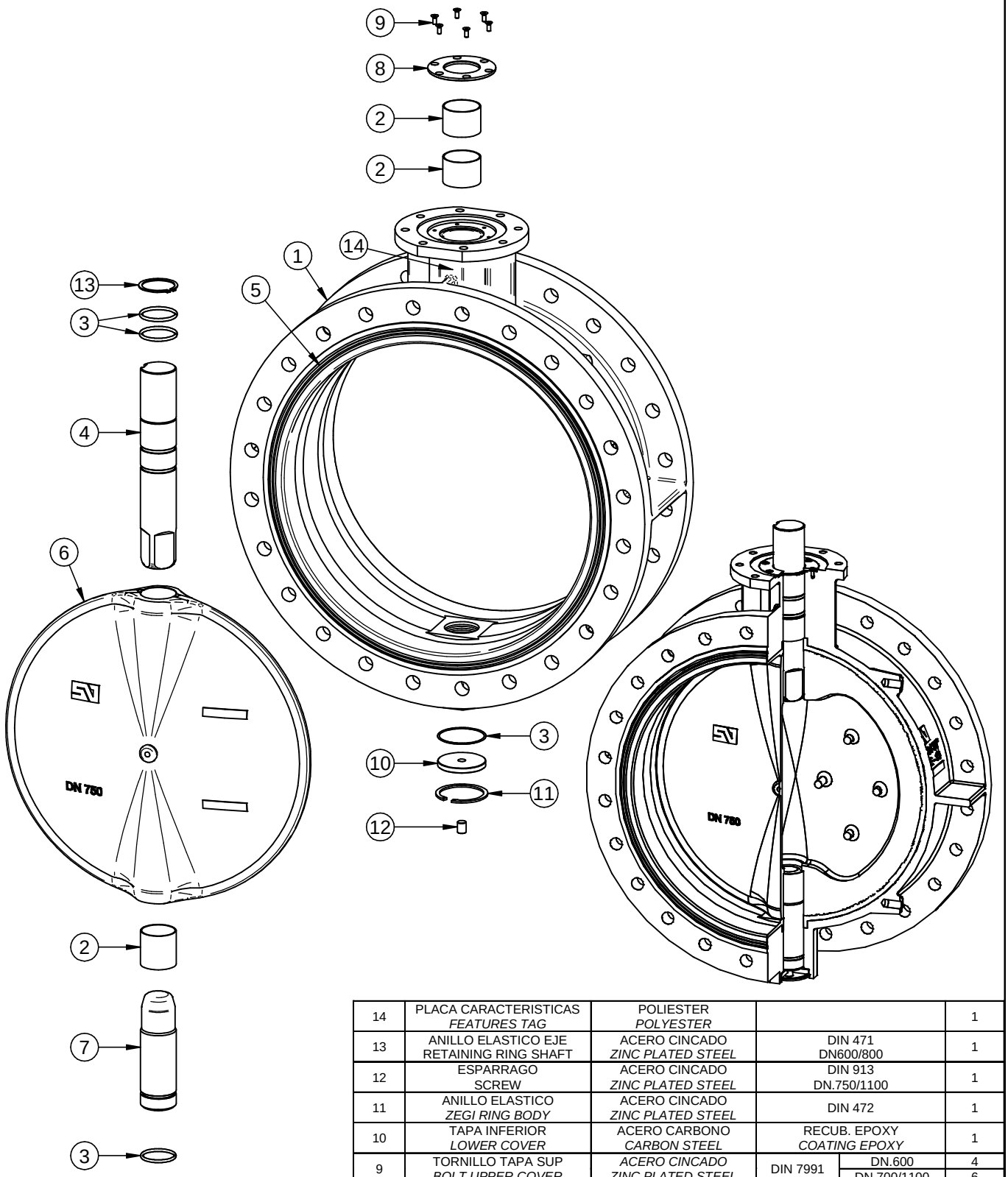
VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
DESPIECE DE MATERIALES "DN.250/500" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

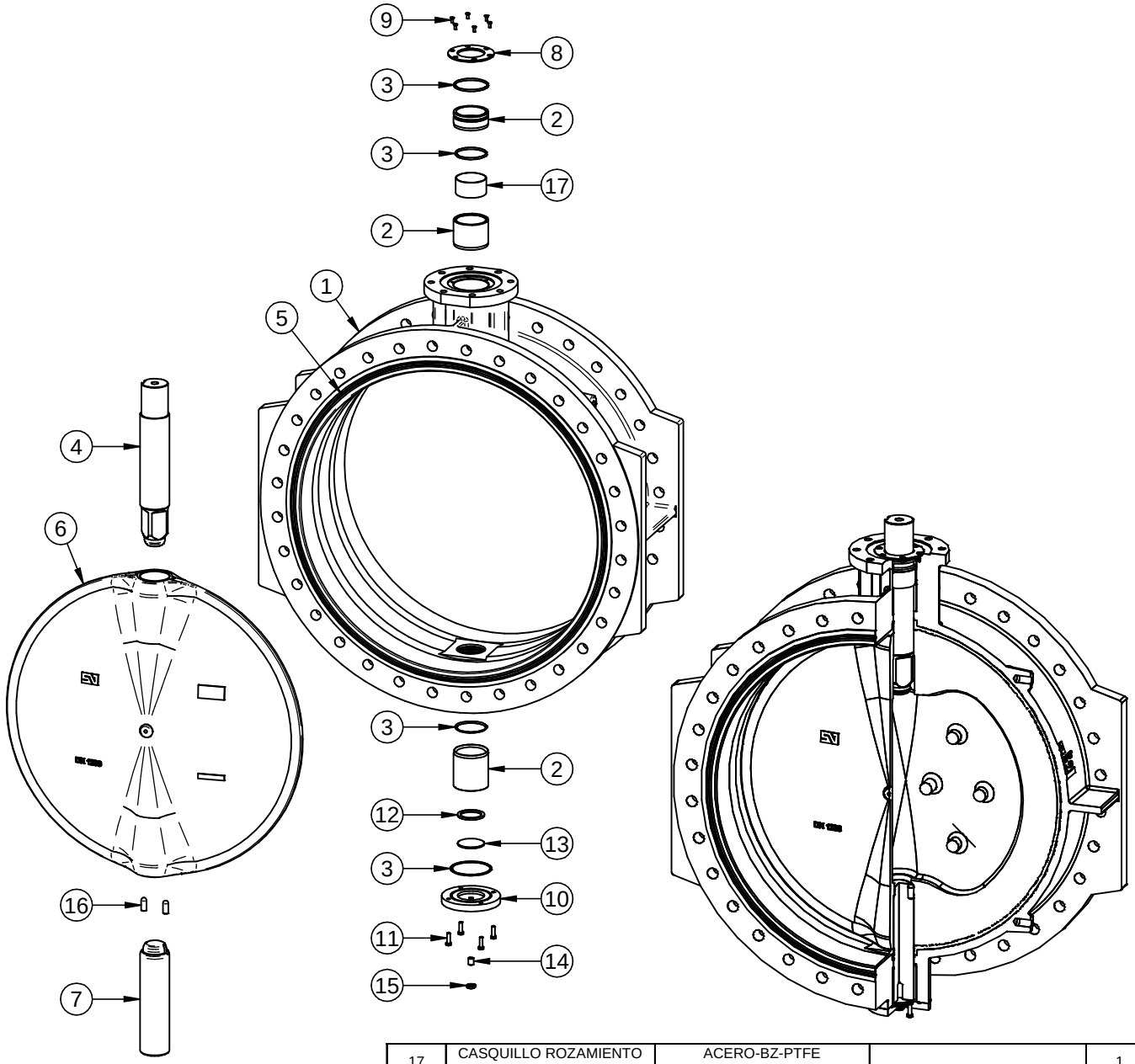
VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
DESPIECE DE MATERIALES "DN.600/1100" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
14	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
13	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471 DN600/800	1
12	ESPARRAGO SCREW	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913 DN.750/1100	1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991 DN.600	4
			DIN 7991 DN.700/1100	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.600/1100 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

VALVULA DE MARIPOSA "BBNV(W)" / *BUTTERFLY VALVE "BBNV(W)"*
DESPIECE DE MATERIALES "DN.1200" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
17	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		1
16	CHAVETA CILINDRICA *KEYWAY*	ACERO INOX. AISI 420 STAINLESS STEEL AISI 420		2
15	TUERCA *NUT*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 934	1
14	ESPARRAGO *SCREW*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913	1
13	DISCO ROZAMIENTO FRICTION DISC	*ACERO CINCADO ZINC PLATED STEEL*		1
12	ARANDELA INFERIOR LOWER RING	BRONCE / LATON BRONZE / BRASS		1
11	TORNILLO TAPA INF *BOLT LOWER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 931	4
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO ZINC PLATED STEEL*	DIN 7991	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	BRONCE / LATON BRONZE / BRASS		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.1200 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

Technical characteristics



Body type	DOUBLE FLANGE / Vulcanized seat
Characteristics	Concentric and bidirectional
Production range	DN 400-1000
Design standard	EN 593
Face to Face	EN 558-1 Series 14 ISO 5752 Series 14 BS 5155 series 3 Long type
Top flange	ISO 5211
Assembly flanges	PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	16 bar DN 040-150 10 bar DN 200-1000 (16 bar optionally)
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU

General description

The FFNV(w) butterfly valve with the vulcanized seat is used when a flanged valve is required for mounting with bolts on each side of the valve. It is very used for buried services, since it does not require almost maintenance by the type of vulcanized ring to the body. Its design allows to be mounted at the end of the line.

Applications

- Naval industry
- Water treatment plants
- Buried valves
- Pipelines water distribution
- Cooling systems



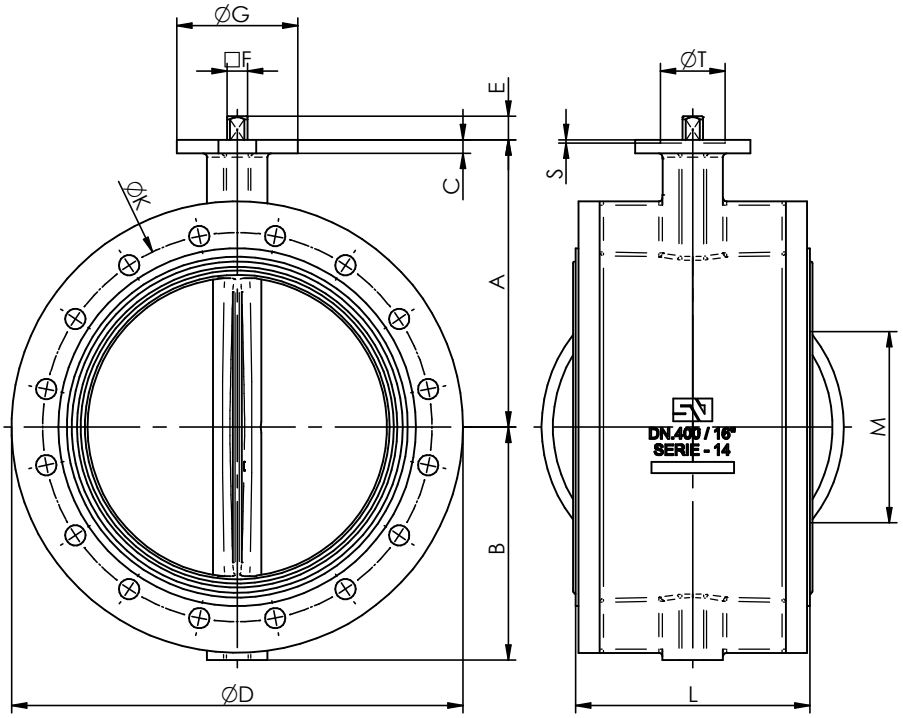
Technical sheets and dimensional drawings

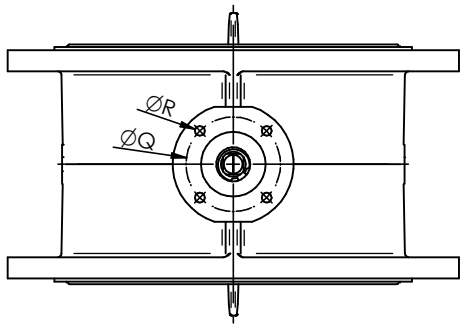
FFNV(w)-001-DT	General dimensions
FFNV(w)-002-DT	Dimensions manual actuator
FFNV(w)-003-DT	Dimensions pneumatic actuator
FFNV(w)-004-DT	Dimensions electrical actuator Bernard
FFNV(w)-005-DT	Dimensions electrical actuator AUMA
FFNV(w)-006-DT	Assembly flanges
FFNV(w)-007-DT	Assembling screws
FFNV(w)-0011-DT	Materials detail DN 400-500
FFNV(w)-0012-DT	Materials detail DN 600-1000



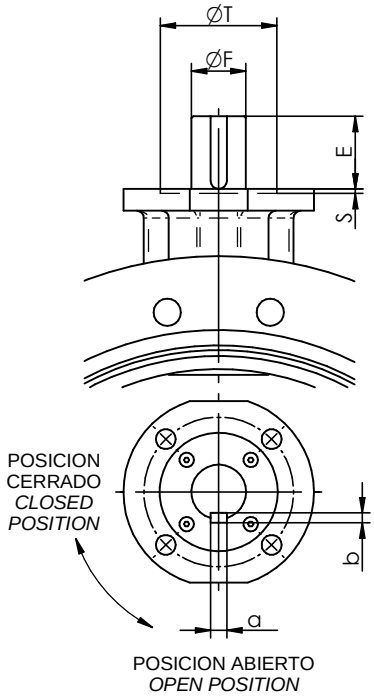
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VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*





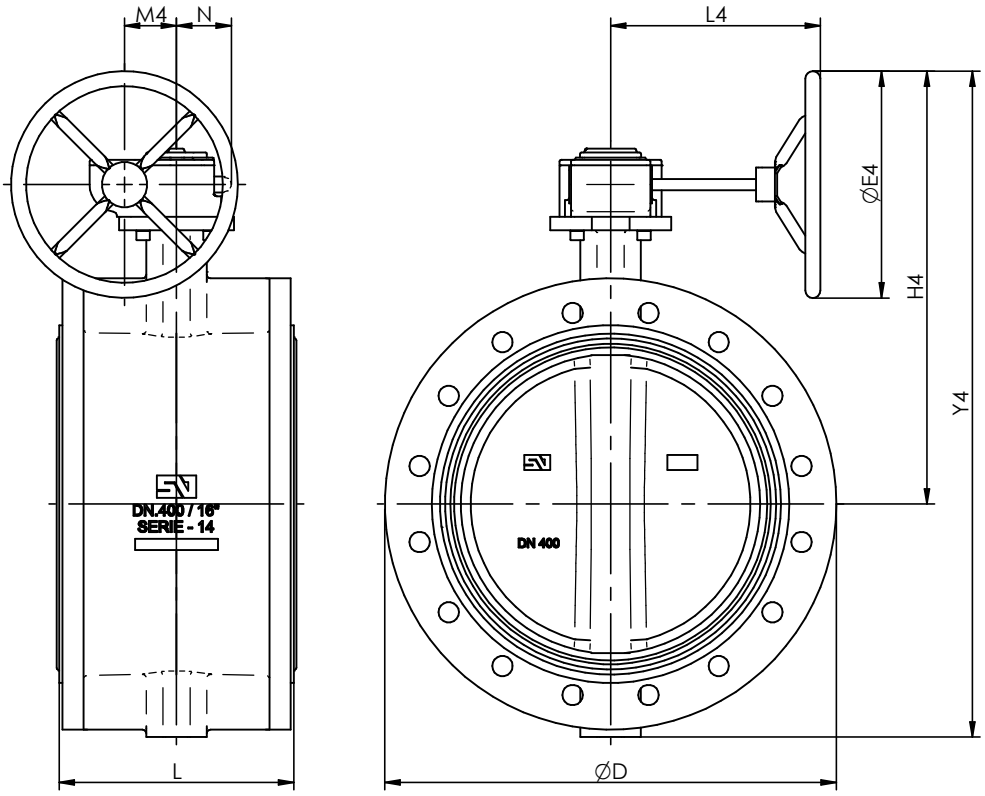
DN 400/500



DN 600/1000

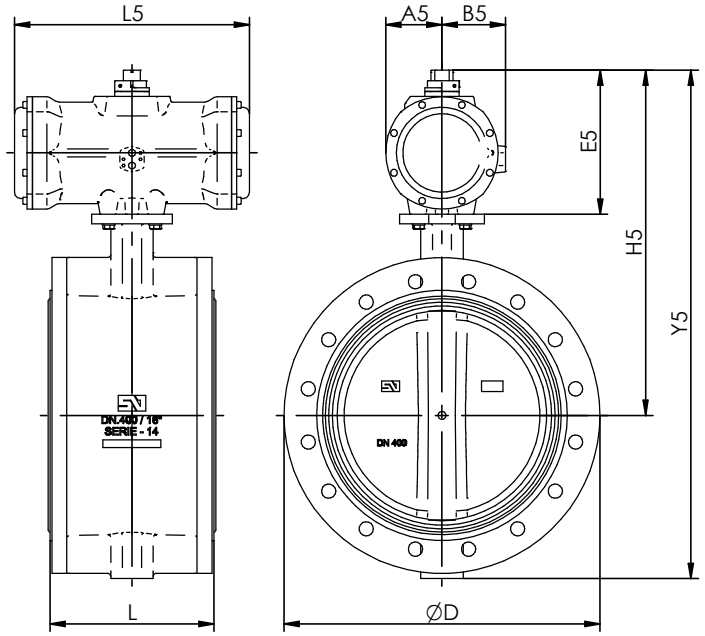
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*															**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
									PN10	**PN16**	**Cl.150**									
400	**16"**	380	308	18	597	31	27	160	515	525	539.7	310	253	132	F-12	125	4x14	4	85	
450	**18"**	381	340	20	640	38	36	190	565	585	577.8	330	304	171	F-14	140	4x18	4	100	
500	**20"**	433	380	22	715	38	36	210	620	650	635.0	350	349	225	F-14	140	4x18	4	100	
600	**24"**	494	440	24	840	80	60	210	725	770	749.3	390	443	346	F-16	165	4x22	5	130	18x11
700	**28"**	560	485	25	927	106	65	300	840	840	863.5	430	527	453	F-25	254	8x18	5	200	18x11
750	**30"**	590	530	25	995	106	80	300	900	900	914.4	470	559	545	F-25	254	8x18	5	200	22x14
800	**32"**	630	565	29	1060	106	80	300	950	950	978	470	630	613	F-25	254	8x18	5	200	22x14
900	**36"**	695	610	32	1170	110	80	350	1050	1050	1086	510	729	808	F-25	254	8x18	5	200	22x14
1000	**40"**	770	675	32	1290	110	80	350	1160	1170	1200	550	823	1007	F-25	254	8x18	5	200	22x14

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



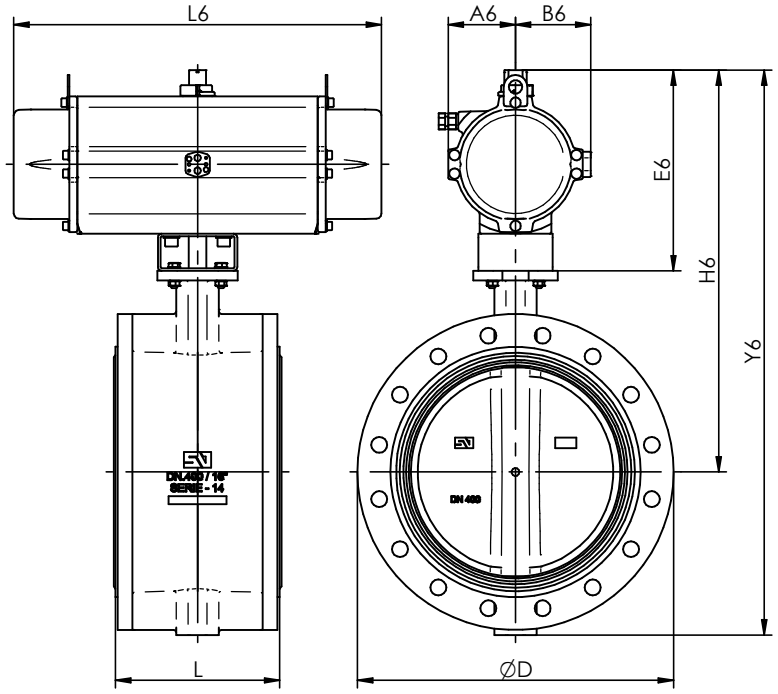
DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
400	**16"**	597	310	10-16	2A/Q-800	300	572	880	277	68.8	72.5	141
450	**18"**	640	330	10-16	3/Q-2000	400	630	970	321	96.5	91.5	190
500	**20"**	715	350	10-16	3/Q-2000	400	682	1062	321	96.5	91.5	244
600	**24"**	840	390	10-16	4/Q-4000	500	798	1239	408	138	140	381
700	**28"**	927	430	10	4/Q-4000	500	864	1350	408	138	140	488
				16	5/Q-6500	600	914	1400	456	138	140	491
750	**30"**	995	470	10-16	5/Q-6500	600	944	1474	456	138	140	587
800	**32"**	1060	470	10	5/Q-6500	600	984	1550	456	138	140	655
				16	6/Q-12000	700	1044	1608	510	180	156	669
900	**36"**	1170	510	10-16	6/Q-12000	700	1108	1718	510	180	156	871
1000	**40"**	1290	545	10-16	7/Q-16000	700	1184	1858	579	180	156	1075

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



D.E. - D.A.

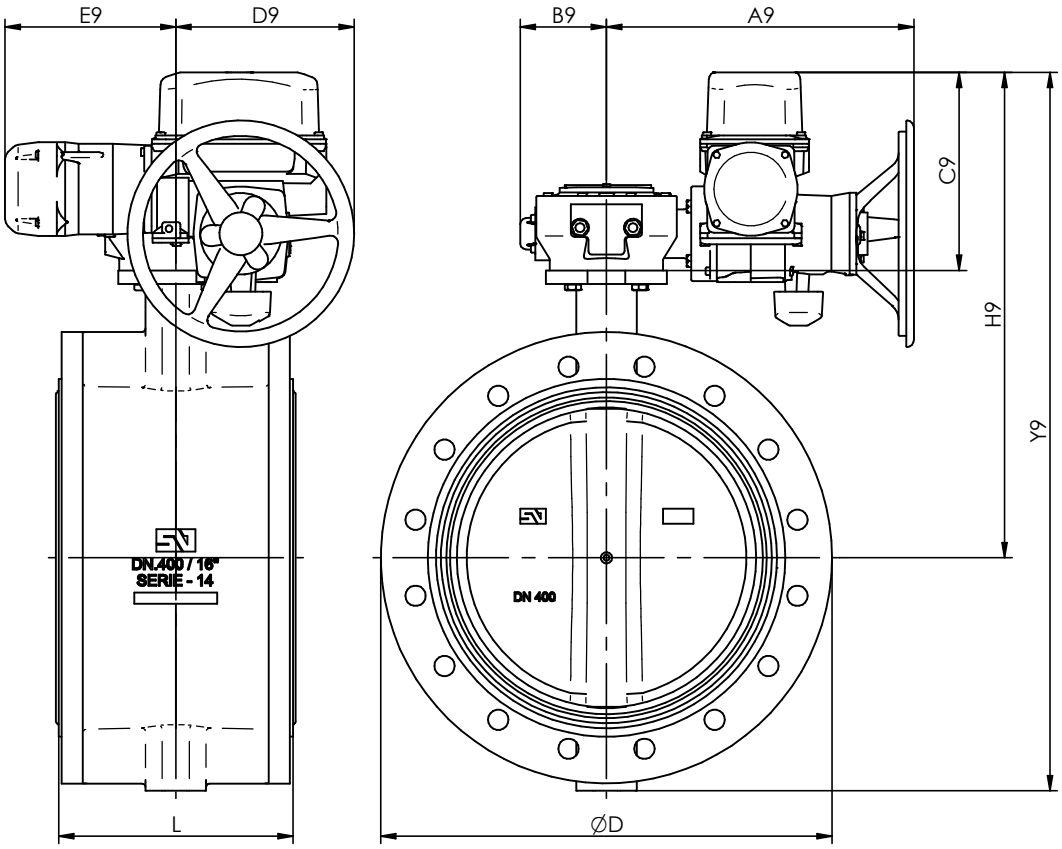
DN		D	L	P.N. Bar	DOBLE EFECTO - *DOUBLE ACTING*							
					REF	A5	B5	E5	H5	Y5	L5	Kg5
400	16"	597	310	10	P40	106	120	272	652	960	444	150
				16	PA50	127	142	379	759	1067	694	171
450	18"	640	330	10-16	PA50	127	142	309	690	1030	694	206
500	20"	715	350	10	PA50	127	142	309	742	1122	694	260
				16	PA60	159	172	368	801	1181	690	271
600	24"	840	390	10	PA60	159	172	368	862	1302	690	402
				16	PA70	186	216	428	922	1362	743	421
700	28"	927	430	10	PA70	186	216	453	1013	1498	743	544



S.E - S.R.

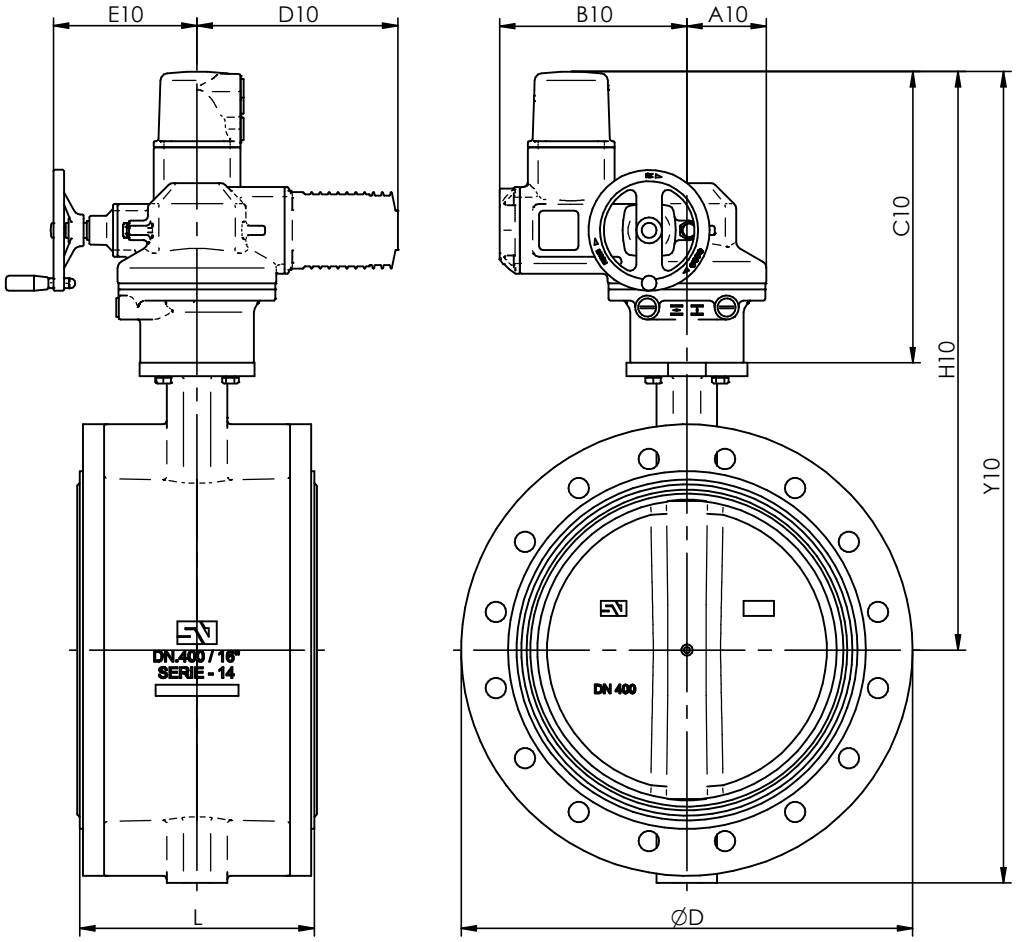
DN		D	L	P.N. Bar	SIMPLE EFECTO – *SPRING RETURN*							
					REF	A6	B6	E6	H6	Y6	L6	Kg6
400	16"	597	310	10	PA50S	127	142	379	759	1067	694	189
				16	PA60S	159	172	458	838	1146	690	219
450	18"	640	330	10	PA60S	159	172	438	819	1159	690	258
				16	PA70S	186	216	498	878	1218	742	331
500	20"	715	350	10	PA70S	186	216	498	930	1311	742	346

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
ACTUADOR ELECTRICO BERNARD / *ELECTRIC ACTUATOR*



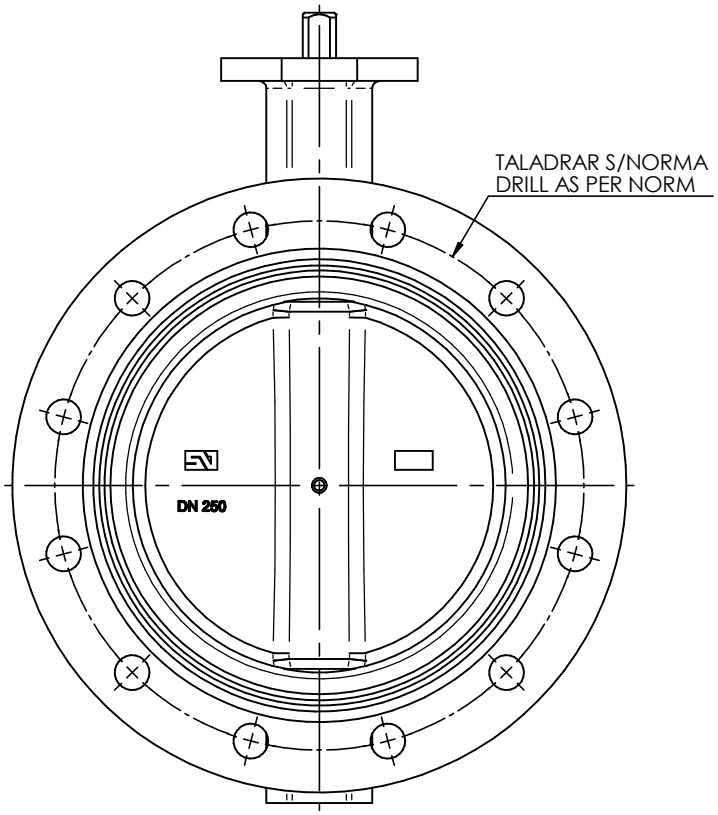
DN		D	L	P.N. Bar	MOTOR EZ								
					REF	A9	B9	C9	D9	E9	H9	Y9	Kg9
400	**16"**	597	310	10-16	EZ100	407	114	262	236	226	642	950	179
450	**18"**	640	330	10-16	EZ250	476	188	284	333	129	664	1004	213
500	**20"**	715	350	10-16	EZ250	476	188	284	333	129	716	1096	289
600	**24"**	840	390	10-16	EZ400	510	154	284	288	174	778	1218	414
700	**28"**	927	430	10-16	EZ1000	596	184	303	332	152	863	1348	546
750	**30"**	995	470	10-16	EZ1000	596	184	303	332	152	893	1423	638
800	**32"**	1060	470	10-16	EZ1000	596	184	303	332	152	933	1498	701
900	**36"**	1170	510	10	EZ1000	596	184	303	332	152	998	1608	901

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
ACTUADOR ELECTRICO AUMA / *ELECTRIC ACTUATOR AUMA*



DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
400	**16"**	597	310	10-16	SQ 12.2	105	248	385	266	191	765	1073	167
450	**18"**	640	330	10-16	SQ 14.2	112	255	447	265	216	828	1168	215
500	**20"**	715	350	10-16	SQ 14.2	112	255	447	265	216	880	1260	268
600	**24"**	840	390	10-16	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	407
700	**28"**	927	430	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	883	1368	524
750	**30"**	995	470	10-16	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	913	1443	615
800	**32"**	1060	470	10	GS125.3/VZ4.3/SA10.2	554	194	323	158	316	953	1518	683
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	953	1518	726
900	**36"**	1170	510	10	GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	1008	1618	922
				16	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1018	1628	921
1000	**40"**	1290	550	10	GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	1093	1768	1026
				16	GS200.3/GZ200.3(8:1)/SA10.2	715	366	338	208	391	1108	1783	1087

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*

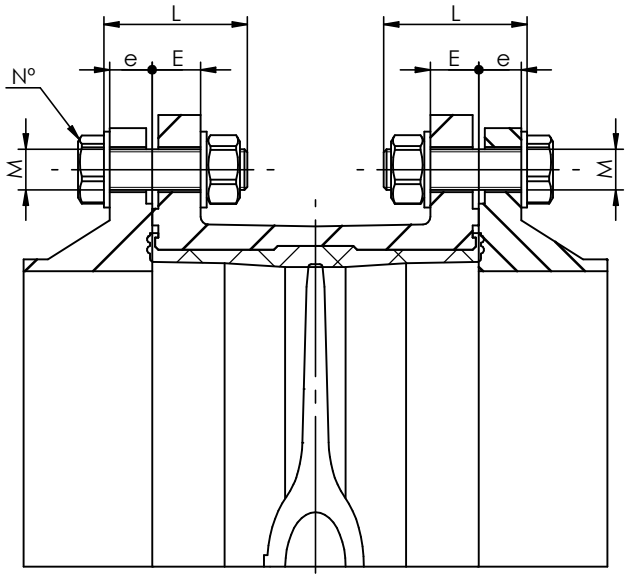


X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

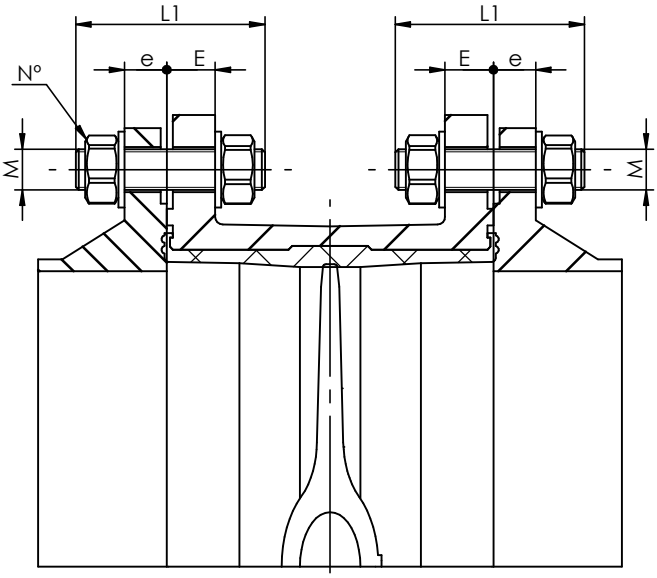
POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
400	16"	X	X	X	X	X	X					X	X	--	X	X	X
450	18"	X	X	X	X	X	X					X	X	X	X	X	X
500	20"	X	X	X	X	X	X					X	X	X	X	X	X
600	24"	X	X	X	X	X	X					X	X	X	X	X	X
700	28"	X	X	X		X	X	X	--	X	X	X	X	X	X	X	X
750	30"	X	X	X		X	X	X	--	--	X	X	X	X	X	X	X
800	32"	X	X	X		X	X	X	--	--	X			X	X	X	X
900	36"	X	X	X		X	X	X	--	--	X	X	X	X	X	X	X
1000	40"	X	X	X		X	X	X	X	X	X			X	X	X	X

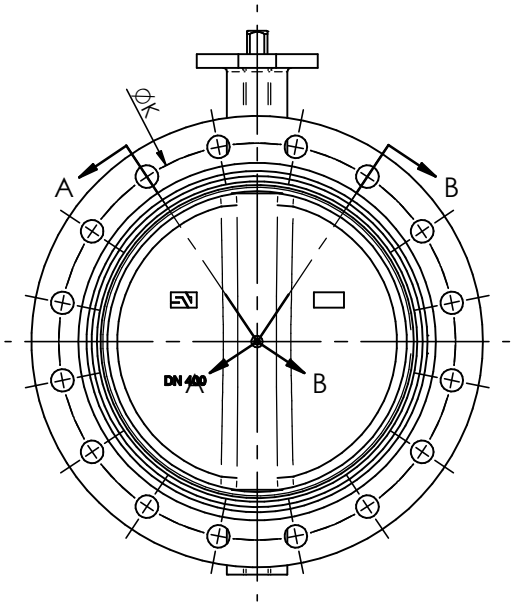
VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*



CORTE A-A
TORNILLO / SCREW

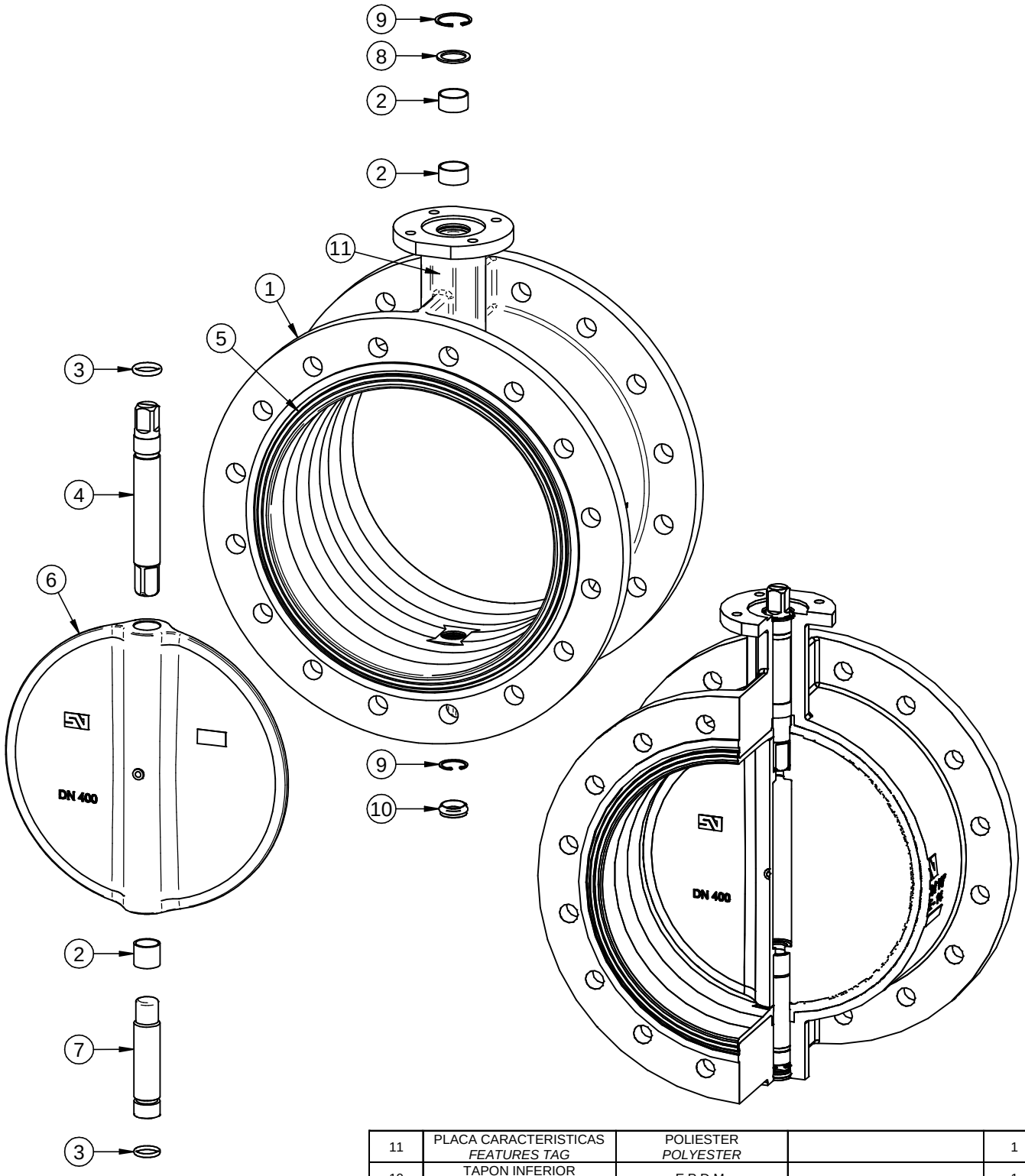


CORTE B-B
VARILLA / ROD



DN		E	PN.10							PN.16						ANSI 150 Lbs / PN.20					
			K	e	M	L	L1	Nº	K	e	M	L	L1	Nº	K	e	M		L	L1	Nº
400	**16”**	32	515	26	M24	90	115	32	525	32	M27	100	130	32	539.7	36.5	1"	M27	105	135	32
450	**18”**	34	565	26	M24	95	120	40	585	32	M27	105	130	40	577.8	39.7	1.1/8"	M30	115	145	32
500	**20”**	36	620	28	M24	100	125	40	650	34	M30	110	140	40	635.0	46.0	1.1/8"	M30	125	150	40
600	**24”**	41	725	28	M27	105	135	40	770	36	M33	120	155	40	749.3	47.6	1.1/4"	M33	130	165	40
700	**28”**	44	840	30	M27	110	140	48	840	36	M33	125	155	48	863.5	52.5	1.1/4"	M33	140	175	56
750	**30”**	48	900	32	M30	120	150	48	900	38	M33	130	165	48	914.4	54.0	1.1/4"	M33	145	180	56
800	**32”**	48	950	32	M30	120	150	48	950	38	M36	135	170	48	978	57.0	1.1/2"	M39	155	195	56
900	**36”**	51	1050	34	M30	125	160	56	1050	40	M36	140	175	56	1086	60.0	1.1/2"	M39	165	200	64
1000	**40”**	55	1160	34	M33	135	165	56	1170	42	M39	150	190	56	1200	63.5	1.1/2"	M39	170	210	72

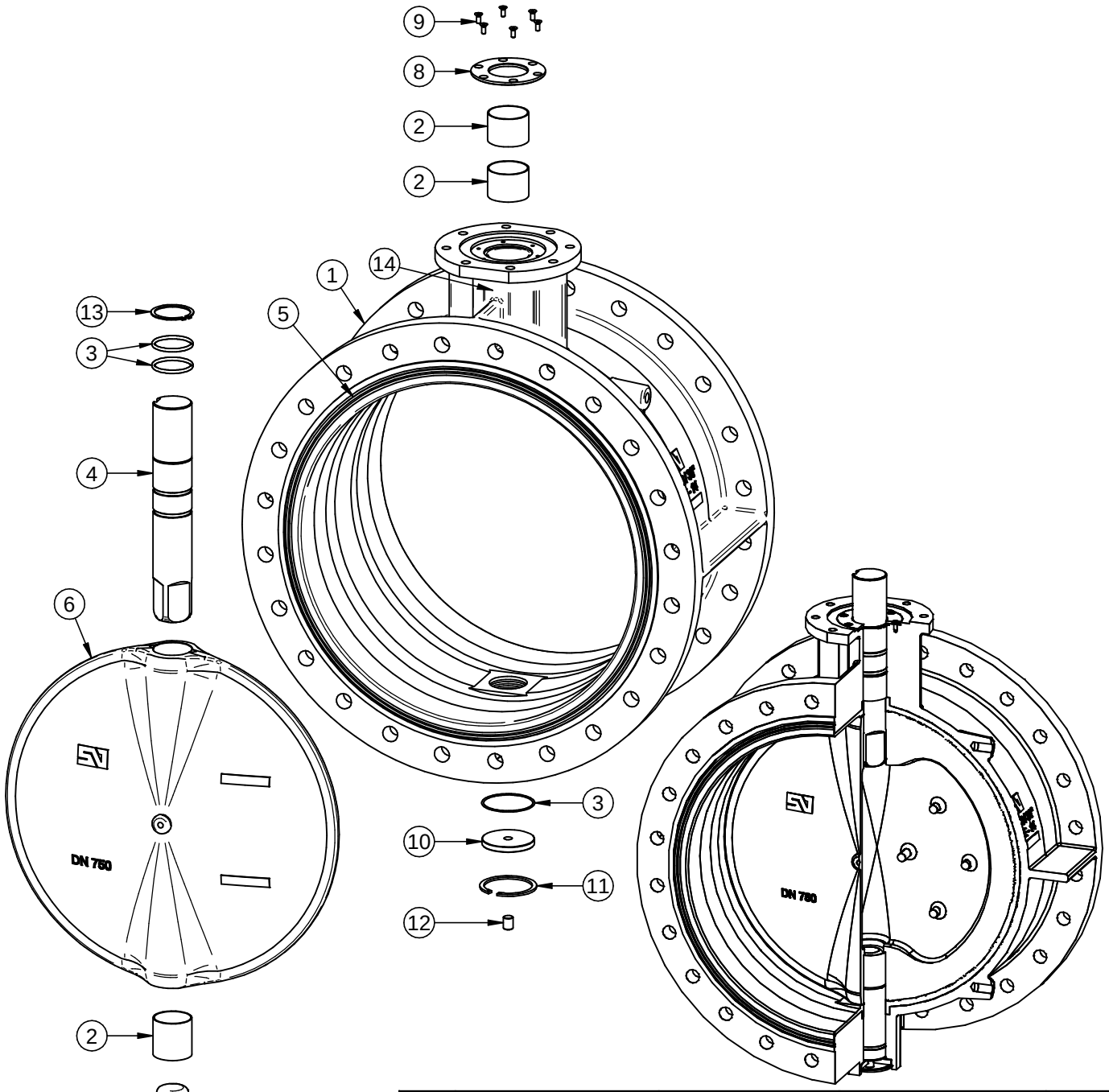
VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
DESPIECE DE MATERIALES "DN.400/500" / *MATERIALS DETAIL*



11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL** ***MATERIAL***	**OBSERVACIONES** ***REMARKS***	**CANT** ***QUAN***

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.400/500 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

VALVULA DE MARIPOSA "FFNV(W)" / *BUTTERFLY VALVE "FFNV(W)"*
DESPIECE DE MATERIALES "DN.600/1000" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*		CANT *QUAN*
14	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*			1
13	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471 DN600/800		1
12	ESPARRAGO SCREW	ACERO CINCADO *ZINC PLATED STEEL*	DIN 913 DN.750/1100		1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472		1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*		1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991	DN.600	4
				DN.700/1000	6
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*			1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*			1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*			1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*			4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*			3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*		1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.600/1000 - 10 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²

Technical characteristics



Body type	WAFER / Replaceable seat rubber / Aluminium body materila
Characteristics	Concentric and bidirectional
Production range	DN 50-600
Design standard	EN 593
Face to Face	EN 558-1 Series 20 ISO 5752 Series 20 DIN 3202 T3 K1 API 609 Category A BS 5155 series 4-5 except DN350
Top flange	ISO 5211
Assembly flanges	PN 6/PN 10/PN 16/ANSI class 150
Marking	EN 19
Maximum working pressure	10 bar DN 050-100 6 bar DN 125-200 3 bar DN 250-600
Temperature range	-40ºC a 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU

General description

Sigeval has developed this new type of valve using the experience of more than 40 years, designing and producing butterfly valves and the latest technology. The KL type butterfly valve covers all the HVAC field: cold and hot water, air conditioning and more. The valve offers reduced weight and is suitable for the most common drilling norms in the market. This valve has been designed mainly for heating, ventilation and air conditioning but it is suitable when a light and economically valve is necessary: installations of air and non-corrosive gases, agricultural irrigation, agriculture-food industry and more.

Applications

- HVAC systems
- Air and gas installations
- Irrigation
- Food industry
- Pharma industry



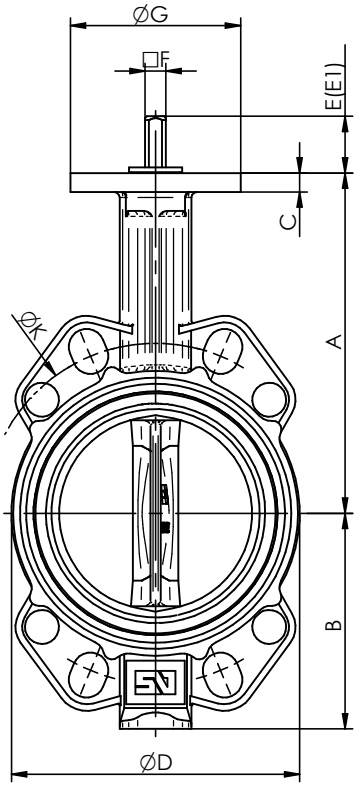
Technical sheets and dimensional drawings

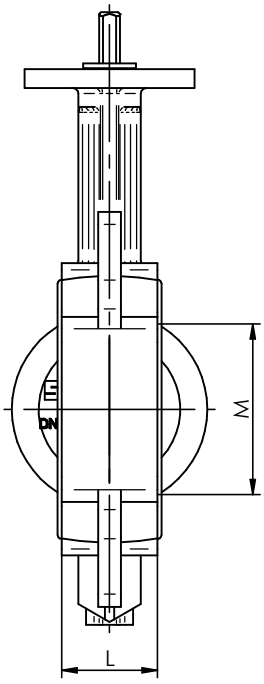
KL-001-DT	General dimensions
KL-002-DT	Dimensions manual actuator
KL-003-DT	Dimensions pneumatic actuator
KL-004-DT	Dimensions electrical actuator Bernard
KL-005-DT	Dimensions electrical actuator AUMA
KL-006-DT	Assembly flanges
KL-007-DT	Assembling screws
KL-0010-DT	Materials detail DN 050-200
KL-0011-DT	Materials detail DN 250-500
KL-0012-DT	Materials detail DN 600



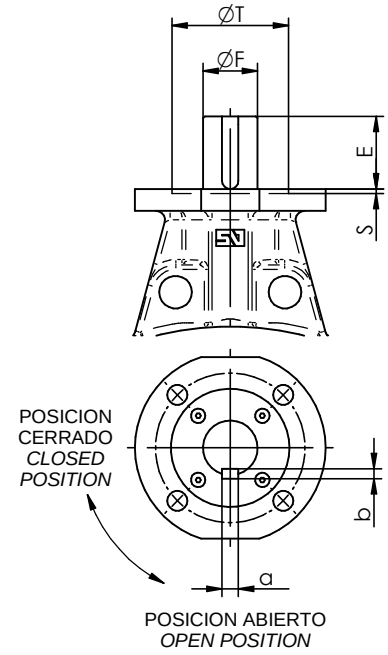
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VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*

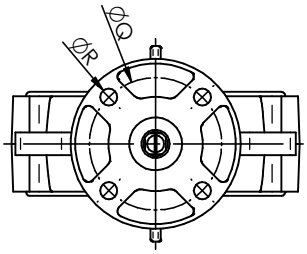




DN 50/500



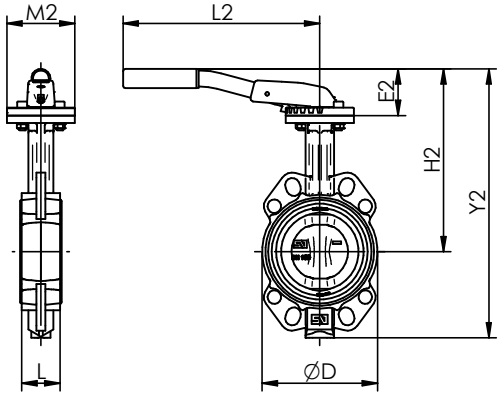
DN 600



E1 - EJE CORTO OPCIONAL BAJO PEDIDO
E1 - SHORT SHAFT ON REQUEST

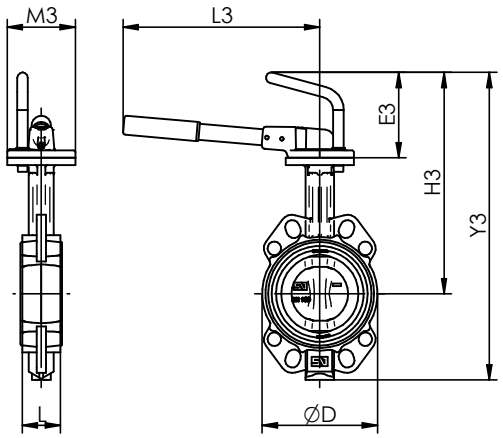
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*																**BRIDA** / *TOP FLANGE*					
DN		**A**	**B**	**C**	**D**	**E**	**E1**	**F**	**G**	**K**			**L**	**M**	**Kg**	**ISO**	**Q**	**R**	**S**	**T**	**a x b**
										PN10	**PN16**	**Cl.150**									
50	**2”**	140	80	10	97	30	16	11	90	125	125	120.6	43	29	1.2	F-07	70	4x9			
65	**2½”**	154	91	10	113	30	16	11	90	145	145	139.7	46	46	1.6	F-07	70	4x9			
80	**3”**	160	100	10	128	30	16	11	90	160	160	152.4	46	65	1.9	F-07	70	4x9			
100	**4”**	180	114	10	153	30	16	11	90	180	180	190.5	52	90	2.3	F-07	70	4x9			
125	**5”**	197	130	10	182	33	18	14	90	210	210	215.9	56	112	3.4	F-07	70	4x9			
150	**6”**	211	145	10	207	33	18	14	90	240	240	241.3	56	139	4.2	F-07	70	4x9			
200	**8”**	240	175	10	262	33	18	17	90	295	295	298.5	60	191	7.3	F-07	70	4x9			
250	**10”**	283	210	14	324	30	23	22	130	350	355	361.9	68	241	12.1	F-10	102	4x12	3	70	
300	**12”**	308	240	14	376	30	23	22	130	400	410	431.8	78	290	18.1	F-10	102	4x12	3	70	
350	**14”**	339	263	16	422	31		22	160	460	470	476.2	78	338	23.0	F-10	102	4x12	3	70	
400	**16”**	380	308	18	480	31		27	160	515	525	539.7	102	387	36.1	F-12	125	4x14	4	85	
450	**18”**	381	340	20	536	38		36	190	565	585	577.8	114	434	54.6	F-14	140	4x18	4	100	
500	**20”**	433	380	20	593	38		36	210	620	650	635.0	127	478	72.9	F-14	140	4x18	4	100	
600	**24”**	494	440	24	690	80		60	210	725	770	749.3	154	570	114	F-16	165	4x22	5	130	18x11

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



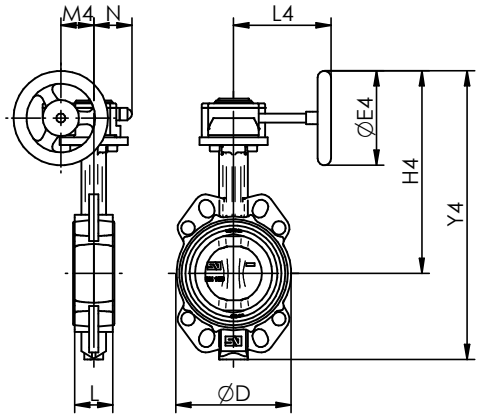
"MN"

DN		D	L	MN					
				E2	H2	Y2	L2	M2	Kg
50	**2"**	96	43	49	189	269	220	90	1.6
65	**2½"**	112	46	49	203	294	220	90	2.1
80	**3"**	128	46	60	220	320	260	90	2.4
100	**4"**	152	52	60	240	354	260	90	2.9
125	**5"**	182	56	75	272	402	315	90	4.0
150	**6"**	207	56	75	286	431	315	90	4.8
200	**8"**	262	60	75	315	490	315	90	7.9



"MR"

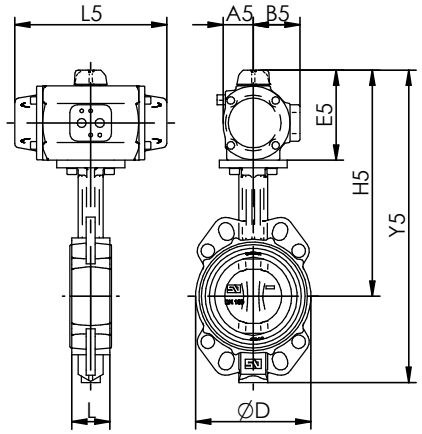
DN		D	L	MR					
				E3	H3	Y3	L3	M3	Kg
50	**2"**	96	43	113	253	333	260	90	1.8
65	**2½"**	112	46	113	267	358	260	90	2.2
80	**3"**	128	46	113	273	373	260	90	2.6
100	**4"**	152	52	113	293	407	260	90	3.0
125	**5"**	182	56	113	310	440	310	90	4.1
150	**6"**	207	56	113	324	468	310	90	4.9
200	**8"**	262	60	113	353	528	310	90	8.0
250	**10"**	324	68	121	403	613	500	130	14.0
300	**12"**	376	78	121	429	669	500	130	19.2



"MDV"

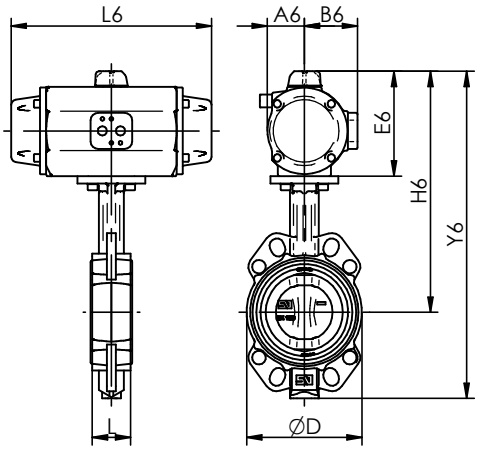
DN		D	L	P.N. Bar	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
50	**2"**	96	43	10	0/X-21	125	228	308	129	43.5	50.5	2.4
65	**2½"**	112	46	10	0/X-21	125	242	333	129	43.5	50.5	2.9
80	**3"**	128	46	10	0/X-21	125	248	348	129	43.5	50.5	3.2
100	**4"**	152	52	10	0/X-21	125	268	382	129	43.5	50.5	3.6
125	**5"**	182	56	6	1/X-21	160	302	432	135	43.5	50.5	4.9
150	**6"**	207	56	6	1/X-21	160	316	461	135	43.5	50.5	5.6
200	**8"**	262	60	6	1A/X-41	200	370	545	152	52.5	59	9.9
250	**10"**	324	68	3	2/X-61	250	442	652	222	61.2	70.5	15.7
300	**12"**	376	78	3	2/X-61	250	468	708	222	61.2	70.5	21.0
350	**14"**	422	78	3	2/X-61	250	498	762	222	61.2	70.5	26.7
400	**16"**	480	102	3	2A/Q-800	300	572	880	277	68.8	72.5	44.5
450	**18"**	536	114	3	3/Q-2000	400	630	970	321	96.5	91.5	74.0
500	**20"**	593	127	3	3/Q-2000	400	682	1062	321	96.5	91.5	92.0
600	**24"**	690	154	3	4/Q-4000	500	798	1239	408	138	140	149

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



D.E. - D.A.

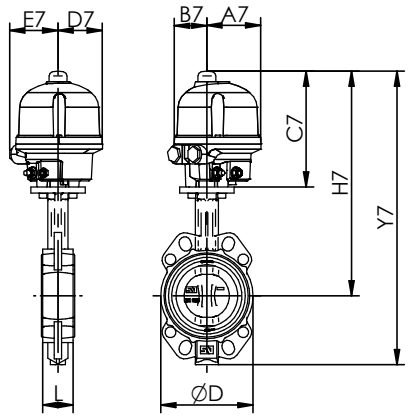
DN		D	L	P.N. Bar	**DOBLE EFECTO** - *DOUBLE ACTING*							
					REF	**A5**	**B5**	**E5**	**H1**	**Y5**	**L5**	**Kg5**
50	**2"**	96	43	10	PA00	32	52	121	261	341	153	2.7
65	**2½"**	112	46	10	PA05	40	62	119	273	364	201	4.2
80	**3"**	128	46	10	PA05	40	62	119	279	379	201	4.6
100	**4"**	152	52	10	PA05	40	62	119	299	413	201	5.0
125	**5"**	182	56	6	PA10	41	63	123	320	450	225	6.5
150	**6"**	207	56	6	PA15	49	71	139	350	494	265	8.4
200	**8"**	262	60	6	PA20	52	75	147	387	562	310	13.0
250	**10"**	324	68	3	PA25	64	89	175	457	667	358	21.7
300	**12"**	376	78	3	PA30	72	97	191	499	739	428	29.3
350	**14"**	422	78	3	P40	106	120	272	611	874	444	41.1
400	**16"**	480	102	3	P40	106	120	272	652	960	444	53.4
450	**18"**	536	114	3	PA50	127	142	309	690	1030	694	95.0
500	**20"**	593	127	3	PA50	127	142	309	742	1122	694	109
600	**24"**	690	154	3	PA60	159	172	368	862	1302	690	170



S.E - S.R.

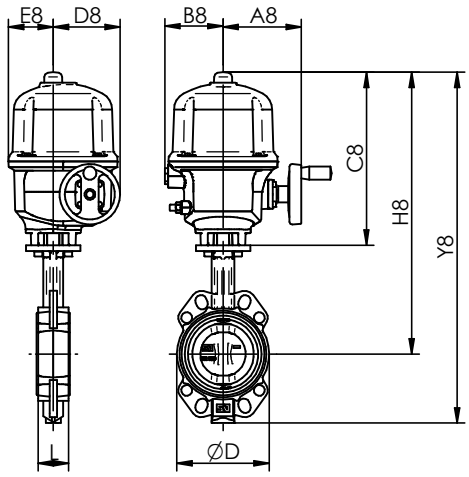
DN		D	L	P.N. Bar	**SIMPLE EFECTO** – *SPRING RETURN*							
					REF	**A6**	**B6**	**E6**	**H6**	**Y6**	**L6**	**Kg6**
50	**2"**	96	43	10	PA00S	32	52	121	261	341	153	2.9
65	**2½"**	112	46	10	PA05S	40	62	119	273	364	201	4.6
80	**3"**	128	46	10	PA10S	41	63	123	283	383	225	5.5
100	**4"**	152	52	10	PA15S	49	71	139	319	433	265	7.5
125	**5"**	182	56	6	PA20S	52	75	147	344	474	310	10.1
150	**6"**	207	56	6	PA25S	64	89	175	386	530	358	15.5
200	**8"**	262	60	6	PA30S	72	97	191	431	606	428	22.7
250	**10"**	324	68	3	P40S	106	120	272	555	765	598	48.8
300	**12"**	376	78	3	P40S	106	120	272	580	820	598	54.0
350	**14"**	422	78	3	P40S	106	120	272	611	874	598	60.0
400	**16"**	480	102	3	PA50S	127	142	379	759	1067	694	94.0
450	**18"**	536	114	3	PA60S	159	172	438	819	1159	690	141
500	**20"**	593	127	3	PA70S	186	216	498	930	1311	742	195

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
ACTUADOR ELECTRICO BERNARD / *ELECTRIC ACTUATOR*



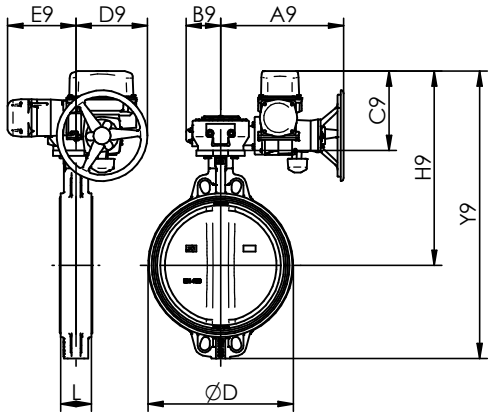
AQ L

DN		D	L	P.N. Bar	MOTOR AQ L								
					REF	A7	B7	C7	D7	E7	H7	Y7	Kg7
50	**2"**	96	43	10	AQ3L	60	83	191	67	85	331	411	3.8
65	**2½"**	112	46	10	AQ7L	89	54	191	73	80	345	436	5.2
80	**3"**	128	46	10	AQ7L	89	54	191	73	80	351	451	5.5
100	**4"**	152	52	10	AQ7L	89	54	191	73	80	371	485	5.9



AQ

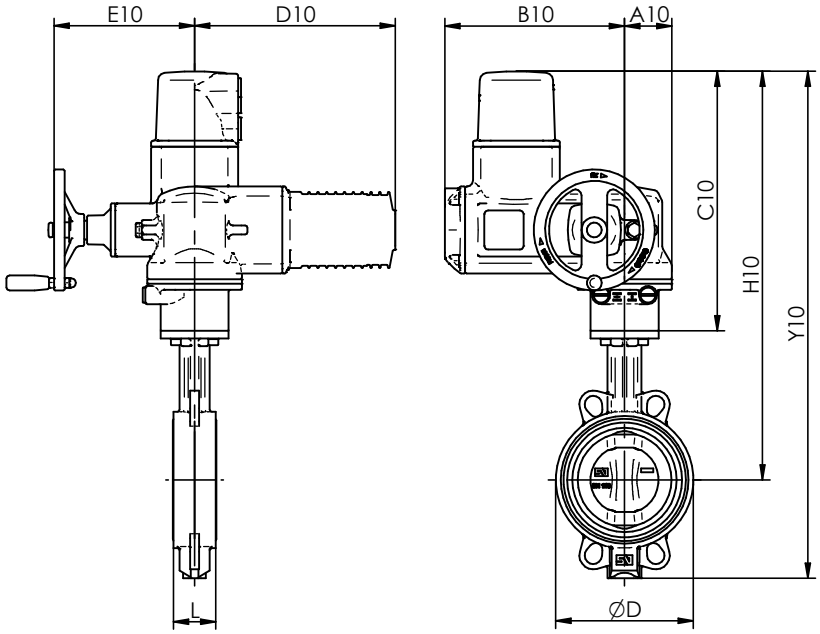
DN		D	L	P.N. Bar	MOTOR AQ								
					REF	A8	B8	C8	D8	E8	H8	Y8	Kg8
50	**2"**	96	43	10	AQ5	129	96	286	110	74	426	506	11.2
65	**2½"**	112	46	10	AQ5	129	96	286	110	74	440	531	11.7
80	**3"**	128	46	10	AQ5	129	96	286	110	74	446	546	12.0
100	**4"**	152	52	10	AQ5	129	96	286	110	74	466	580	12.4
125	**5"**	182	56	6	AQ10	129	96	286	110	74	483	613	13.5
150	**6"**	207	56	6	AQ15	129	96	286	110	74	497	641	14.2
200	**8"**	262	60	6	AQ15	129	96	286	110	74	526	701	17.4
250	**10"**	324	68	3	AQ50	230	117	328	174	86	610	820	27.4
300	**12"**	376	78	3	AQ50	230	117	328	174	86	636	876	32.6
350	**14"**	422	78	3	AQ50	230	117	328	174	86	667	930	38.4



EZ

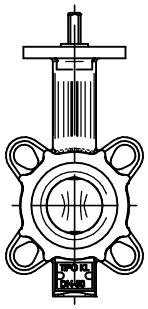
DN		D	L	P.N. Bar	MOTOR EZ								
					REF	A9	B9	C9	D9	E9	H9	Y9	Kg9
350	**14"**	422	78	3	EZ100	407	114	332	236	226	670	934	73
400	**16"**	480	102	3	EZ100	407	114	262	236	226	642	950	83
450	**18"**	536	114	3	EZ250	476	188	284	333	129	664	1004	120
500	**20"**	593	127	3	EZ250	476	188	284	333	129	716	1096	138
600	**24"**	690	154	3	EZ400	510	154	284	288	174	778	1218	182

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
ACTUADOR ELECTRICO AUMA / *ELECTRIC ACTUATOR AUMA*

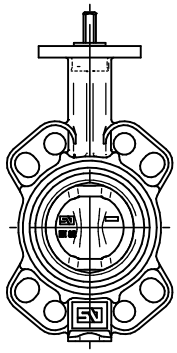


DN		D	L	P.N. Bar	AUMA								
					REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
50	**2”**	96	43	10	SQ 05.2	62	238	344	266	186	484	564	22.2
65	**2½”**	112	46	10	SQ 05.2	62	238	344	266	186	498	588	22.7
80	**3”**	128	46	10	SQ 05.2	62	238	344	266	186	504	604	23.0
100	**4”**	152	52	10	SQ 05.2	62	238	344	266	186	509	638	23.4
125	**5”**	182	56	6	SQ 05.2	62	238	344	266	186	540	670	24.5
150	**6”**	207	56	6	SQ 05.2	62	238	344	266	186	554	699	25.2
200	**8”**	262	60	6	SQ 07.2	62	238	344	266	186	584	758	28.4
250	**10”**	324	68	3	SQ 10.2	80	248	361	266	191	644	854	38.4
300	**12”**	376	78	3	SQ 10.2	80	248	361	266	191	669	909	43.6
350	**14”**	422	78	3	SQ 10.2	80	248	361	266	191	700	963	49.4
400	**16”**	480	102	3	SQ 12.2	105	248	385	266	191	765	1073	70.7
450	**18”**	536	114	3	SQ 14.2	112	255	447	265	216	828	1168	99.0
500	**20”**	593	127	3	SQ 14.2	112	255	447	265	216	880	1260	117
600	**24”**	690	154	3	GS100.3/VZ4.3/SA07.6	547	189	313	164	287	807	1247	175

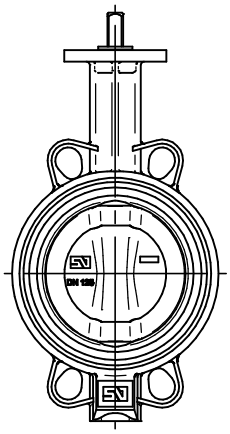
VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
BRIDAS DE MONTAJE / *ASSEMBLY FLANGES*



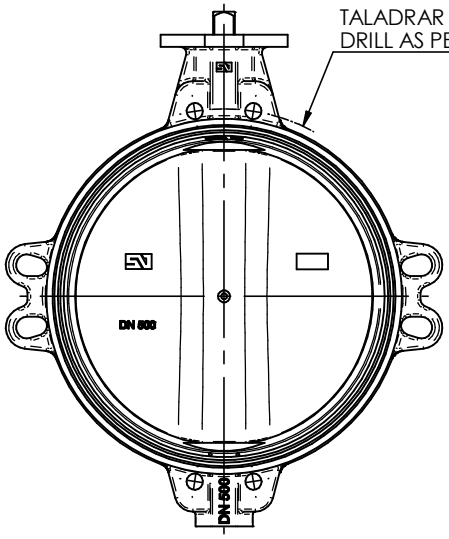
DN.50/65



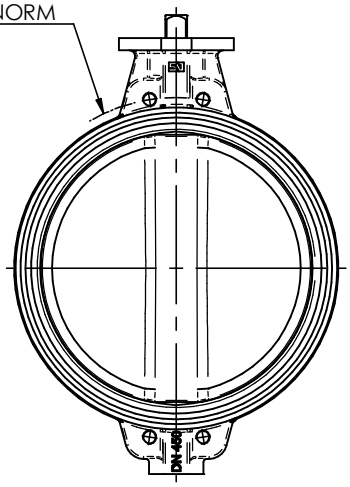
DN.80/100



DN.125/400



DN.500/600



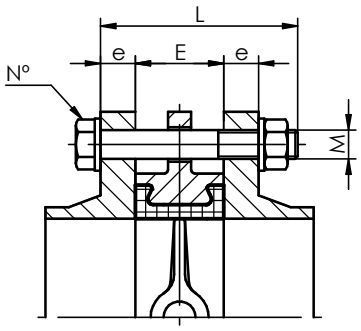
DN.450

X ESTANDARD / *STANDARD*
O BAJO DEMANDA / *ON REQUEST*
-- NO POSIBLE / *NOT POSSIBLE*

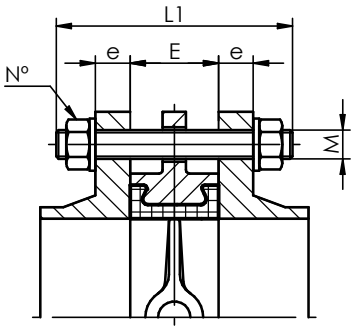
POSIBILIDADES DE MONTAJE S/NORMAS DE BRIDAS
POSSIBILITIES ASSEMBLY ACCORDING NORMS OF FLANGES

DN		PN.6	PN.10	PN.16	PN.20	ANSI 150 Lbs	AWWA C207	ASME B16.47a-150	ASME B16.47a-300	ASME B16.47b-150	ASME B16.47b-300	BS, D	BS, E	JIS 5k	JIS 10k	JIS 16k	AS 2129 E
50	2”	X	X	X	X	X						O	O	--	X	O	O
65	2½”	X	X	X	X	X						--	--	X	X	O	X
80	3”	X	X	X	X	X						O	O	O	O	O	X
100	4”	X	X	X	X	X	X					O	X	--	O	O	X
125	5”	X	X	X	X	X	X					X	X	X	X	O	X
150	6”	X	X	X	X	X	X					X	X	X	X	O	X
200	8”	X	X	X	X	X	X					X	X	O	O	O	X
250	10”	X	X	X	X	X	X					O	X	X	X	O	X
300	12”	X	X	X	X	X	X					X	X	X	O	O	X
350	14”	X	X	X	X	X	X					X	X	O	X	O	X
400	16”	O	X	X	X	X	X					O	O	O	X	X	O
450	18”	O	X	X	X	X	X					X	X	O	X	X	X
500	20”	O	X	X	X	X	X					O	O	O	X	X	O
600	24”	O	X	X	X	X	X					O	O	O	X	X	O

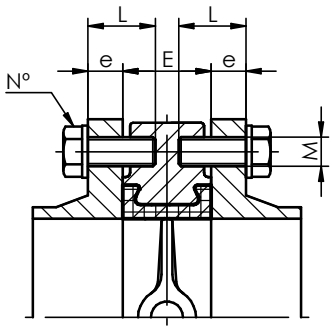
VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
TORNILLERIA DE MONTAJE / *ASSEMBLYING SCREWING*



"A-A"
TORNILLO / *SCREW*

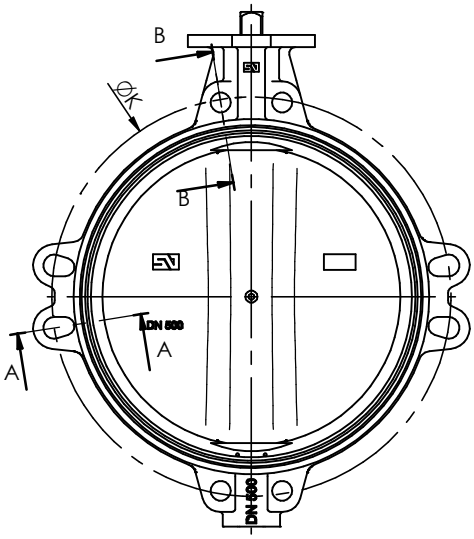


"A-A"
TIRANTE / *LINK*



"B-B"
TORNILLO SOLO/
SCREW ONLY

DN.450	PN.10-PN.16
DN.500	ANSI 150



LOS TALADROS ROSCADOS PARA EL MONTAJE ENTRE BRIDAS SERÁN:
- ROSCA METRICA PARA NORMAS PN.
- ROSCA UNC PARA NORMAS ANSI 150.

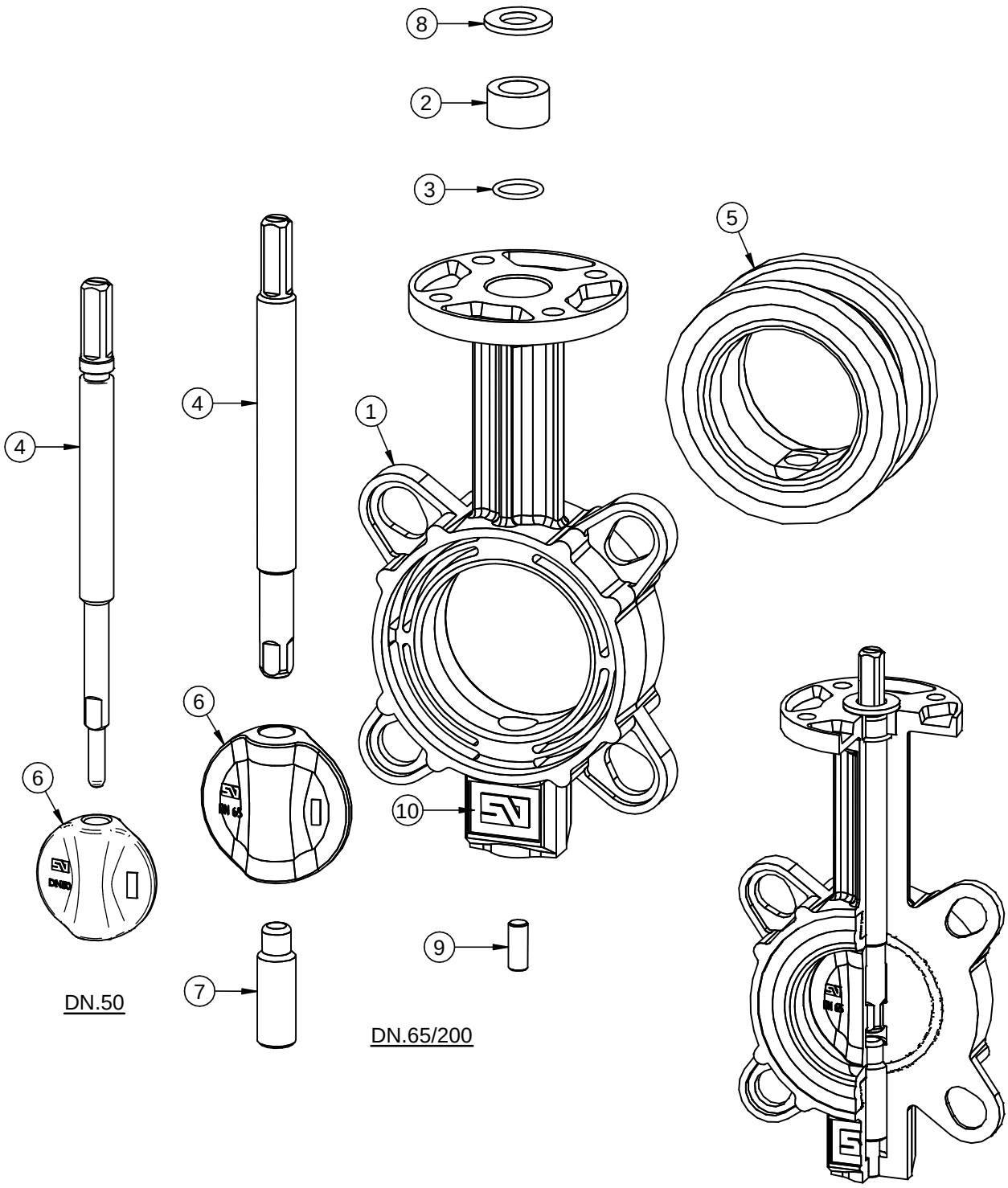
OTRO TIPO DE ROSCAS BAJO DEMANDA.

THREADED HOLES FOR THE ASSEMBLY BETWEEN FLANGES WILL BE:
- *METRIC THREAD STANDARDS FOR PN. NORMS.*
- *UNC THREAD STANDARDS FOR ANSI 150 NORMS.*

OTHER THREAD ON REQUEST.

DN		E	PN.10						PN.16						ANSI 150 Lbs / PN.20						
			K	e	M	L	L1	Nº	K	e	M	L	L1	Nº	K	e	M		L	L1	Nº
50	**2”**	43	125	18	M16	100	120	4	125	18	M16	100	120	4	120.6	19	5/8"	M16	100	120	4
65	**2½”**	46	145	18	M16	100	120	4	145	18	M16	100	120	4	139.7	22.2	5/8"	M16	110	130	4
80	**3”**	46	160	20	M16	110	130	8	160	20	M16	110	130	8	152.4	23.8	5/8"	M16	110	130	4
100	**4”**	52	180	20	M16	110	130	8	180	20	M16	110	130	8	190.5	23.8	5/8"	M16	120	140	8
125	**5”**	56	210	22	M16	120	140	8	210	22	M16	120	140	8	215.9	23.8	3/4"	M20	130	150	8
150	**6”**	56	240	22	M20	130	150	8	240	22	M20	130	150	8	241.3	25.4	3/4"	M20	130	150	8
200	**8”**	60	295	24	M20	130	160	8	295	24	M20	130	160	12	298.5	28.6	3/4"	M20	140	160	8
250	**10”**	68	350	26	M20	150	170	12	355	26	M24	150	170	12	361.9	30.2	7/8"	M24	160	180	12
300	**12”**	78	400	26	M20	160	180	12	410	28	M24	160	180	12	431.8	31.7	7/8"	M24	170	190	12
350	**14”**	78	460	26	M20	170	180	16	470	30	M24	170	190	16	476.2	34.9	1"	M27	180	200	12
400	**16”**	102	515	26	M24	180	210	16	525	32	M27	200	220	16	539.7	36.5	1"	M27	210	230	16
450	**18”**	114	565	26	M24	190	220	16	585	32	M27	210	240	16	577.8	39.7	1.1/8"	M30	230	250	16
					M24	60		8			M27	60		8							
500	**20”**	127	620	28	M24	210	230	20	650	34	M30	230	260	20	635.0	46	1.1/8"	M30	250	280	16
																	1.1/8"	M30	105		8
600	**24”**	154	725	28	M27	240	270	20	770	36	M33	260	290	20	749.3	47.6	1.1/4"	M33	280	310	20

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
DESPIECE DE MATERIALES "DN.50/200" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
10	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
9	TORNILLO INFERIOR *LOWER SCREW*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 916	1
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.65/200	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN		1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*

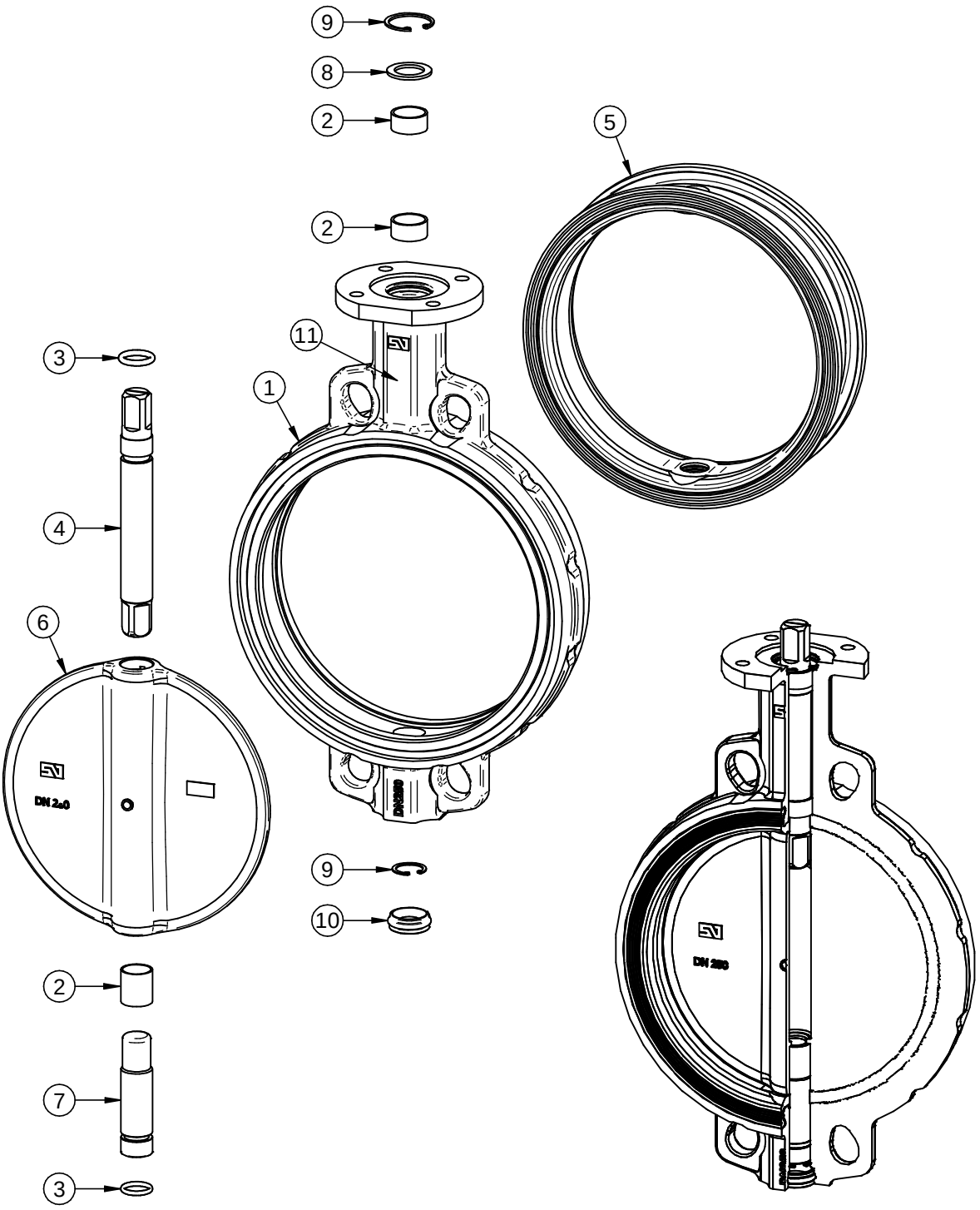
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.50/100 - 10 Bar
- DN.125/200 - 6 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA *HYDROSTATIC AND RESISTANCE TEST:*

CON VALVULA ABIERTA / *OPEN VALVE:*
- 10 Bar - 15 Kg/cm²
- 6 Bar - 9 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 10 Bar - 11 Kg/cm²
- 6 Bar - 7 Kg/cm²

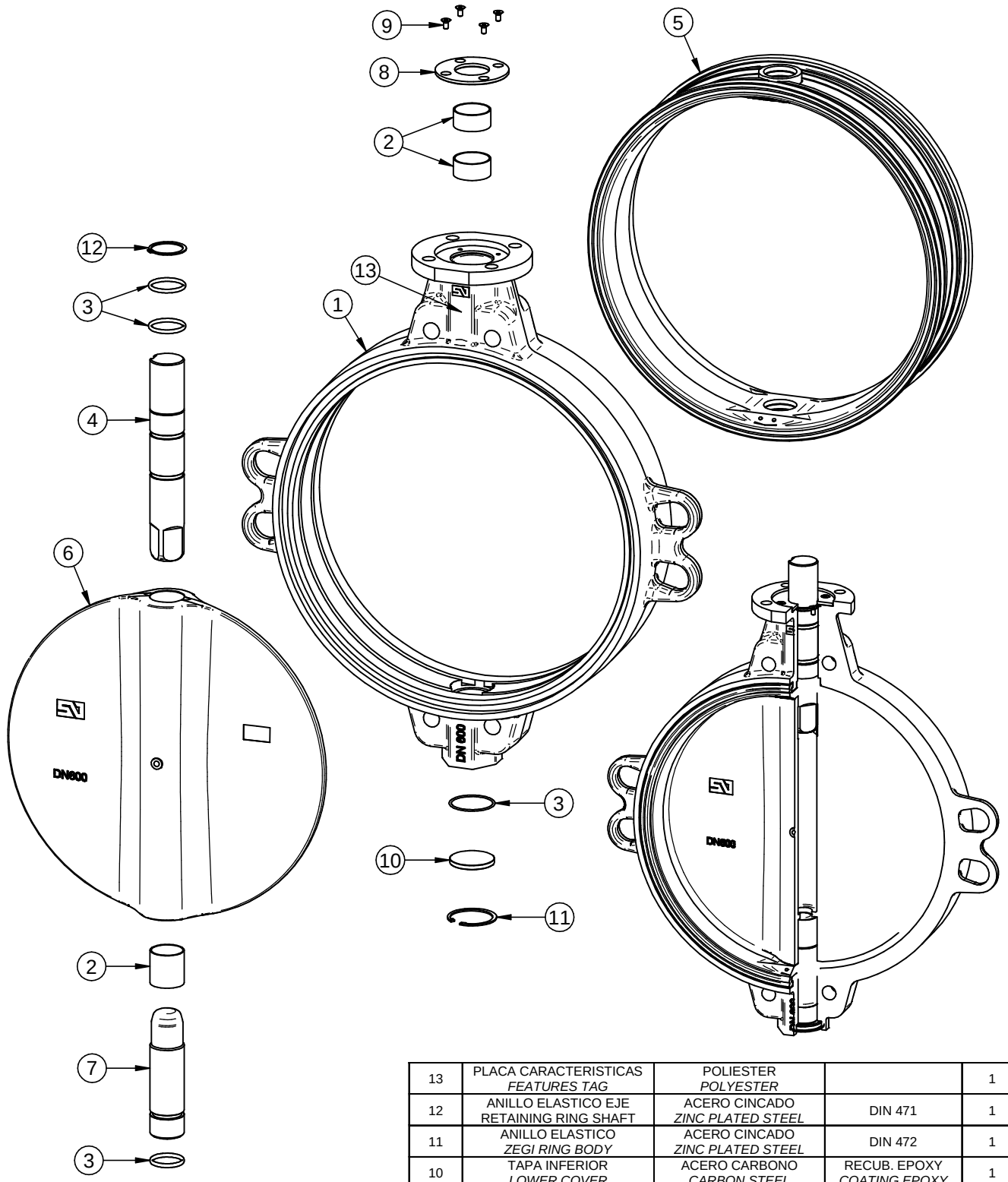
VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
DESPIECE DE MATERIALES "DN.250/500" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	E.P.D.M.		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		2
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.250/500 - 3 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 3 Bar - 4.5 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 3 Bar - 3.3 Kg/cm²

VALVULA DE MARIPOSA "KL" / *BUTTERFLY VALVE "KL"*
DESPIECE DE MATERIALES "DN.600" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
13	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
12	ANILLO ELASTICO EJE RETAINING RING SHAFT	ACERO CINCADO *ZINC PLATED STEEL*	DIN 471	1
11	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	1
10	TAPA INFERIOR *LOWER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
9	TORNILLO TAPA SUP *BOLT UPPER COVER*	*ACERO CINCADO* *ZINC PLATED STEEL*	DIN 7991	4
8	TAPA SUPERIOR *UPPER COVER*	ACERO CARBONO *CARBON STEEL*	RECUB. EPOXY *COATING EPOXY*	1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*		1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		4
2	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*		3
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- DN.600 - 3 Bar
PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 3 Bar - 4.5 Kg/cm²
CON VALVULA CERRADA / *CLOSED VALVE:*
- 3 Bar - 3.3 Kg/cm²

Technical characteristics



Body type	Grooved / Vulcanized seat
Characteristics	Concentric and bidirectional
Production range	DN 50-200
Design standard	EN 593
Face to Face	MSS SP 67
Top flange	ISO 5211
Marking	EN 19
Maximum working pressure	16 bar DN 050-200
Temperature range	-40ºC up to 210ºC depends of material
Hydraulic tests	EN 12266 / ISO 5208 Rate A
Remarks	Pressure equipment directive
Options	ATEX (II 2GD) 2014/34/EU

General description

The VV Type valve has been designed to achieve a quick and simple assembling when needed, such fire-fighting and irrigation. The valve seat is vulcanized on the body providing a longer endurance. Assembly is carried out in an easy way with quick joints. Flanges, welding and specialized Manpower are not required, what reduces time and assembling cost. This valve can be used in end pipes at the maximum operating pressure.

Applications

- Fire fighting system
- Industry
- Filtration systems
- Irrigation
- Building and works



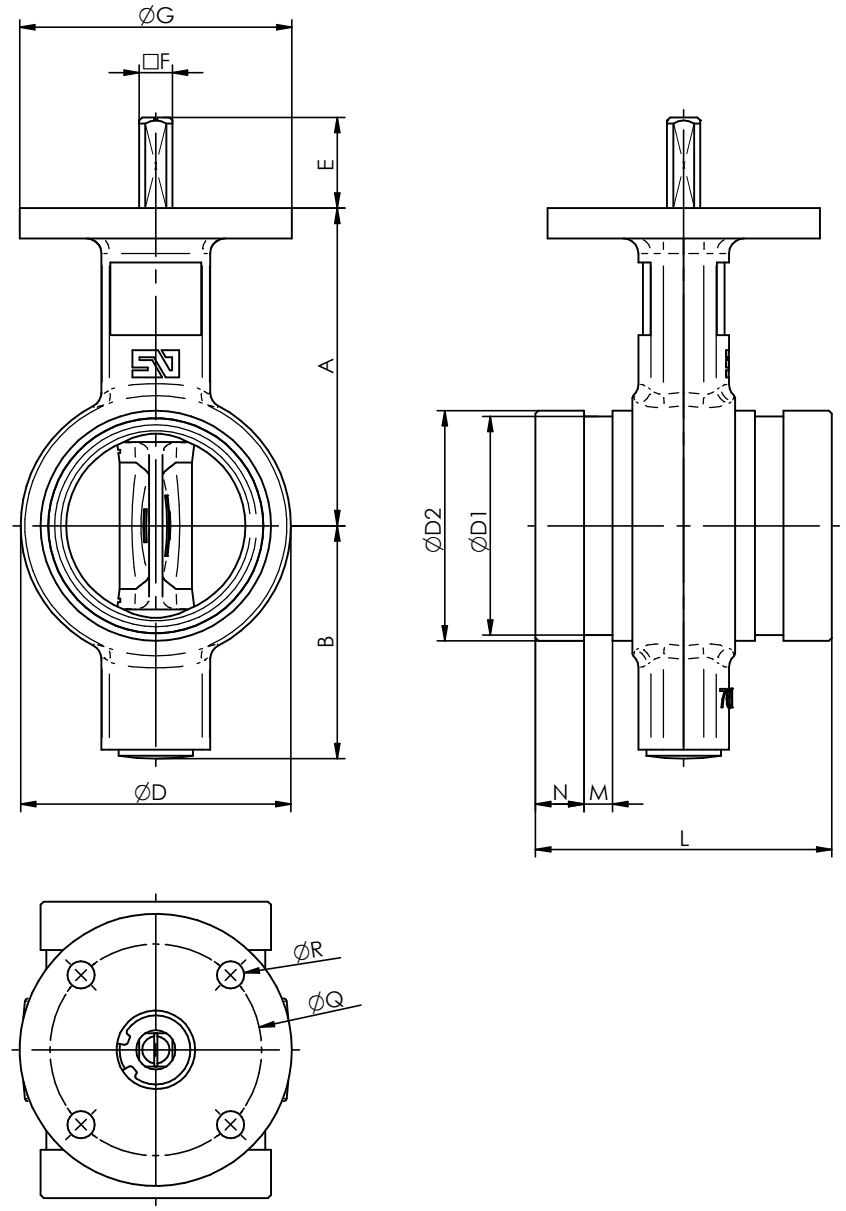
Technical sheets and dimensional drawings

VV-001-DT	General dimensions
VV-002-DT	Dimensions manual actuator
VV-003-DT	Dimensions pneumatic actuator
VV-004-DT	Dimensions electrical actuator Bernard
VV-005-DT	Dimensions electrical actuator AUMA
VV-0010-DT	Materials detail DN 050-100
VV-0011-DT	Materials detail DN 125-200



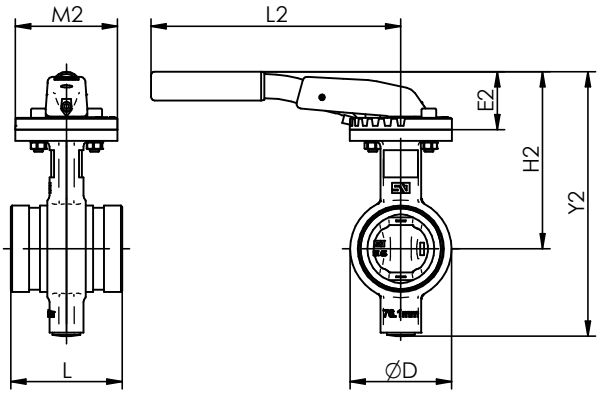
Data of this brochure are subject to change without notice.
This technical information it´s property of SIGEVAL,S.A. and must be not used or copied without their specific written consent.

VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*



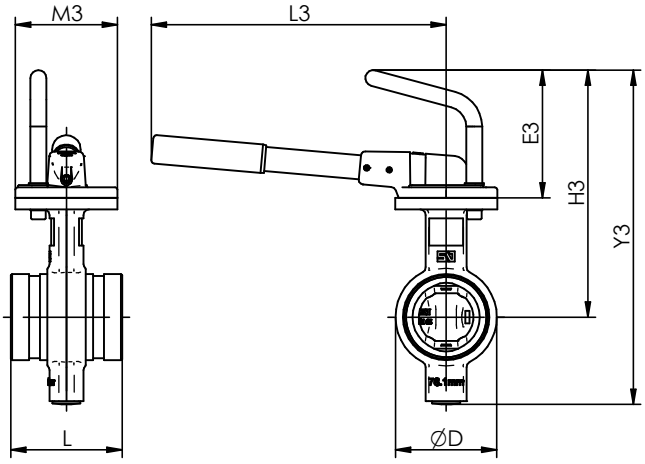
DIMENSIONES GENERALES / *GENERAL DIMENSIONS*															BRIDA / *TOP FLANGE*			
DN		O.D.	A	B	D	D1	D2	E	F	G	L	M	N	Kg	ISO	P	Q	R
50	**2”**	**60.3**	100	50	70	57.1	60.3	30	11	90	86	8	16	1.7	F-07	13	70	4x9
65	**2 ½”**	**76.1**	105	77	89.5	72.3	76.1	30	11	90	97	9.5	16	2.3	F-07	13	70	4x9
80	**3”**	**88.9**	112	85	102	84.9	88.9	30	11	90	97	9.5	16	2.8	F-07	13	70	4x9
100	**4”**	**114.3**	135	97	128	110.1	114.3	30	11	90	116	9.5	16	3.9	F-07	13	70	4x9
125	**5”**	**139.7**	147	108	155	135.5	139.7	33	14	90	148	9.5	16	5.9	F-07	17	70	4x9
125	**5”**	**141.3**	147	108	155	137	141.3	33	14	90	148	9.5	16	6.1	F-07	17	70	4x9
150	**6”**	**165.1**	180	120	180	160.9	165.1	33	14	90	148	9.5	16	7.3	F-07	17	70	4x9
150	**6”**	**168.3**	180	120	180	164	168.3	33	14	90	148	9.5	16	7.8	F-07	17	70	4x9
200	**8”**	**219.1**	204	148	234	214.4	219.1	33	17	90	133	12.4	19	10.4	F-07	20.3	70	4x9

VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
ACTUADOR MANUAL / *MANUAL ACTUATOR*



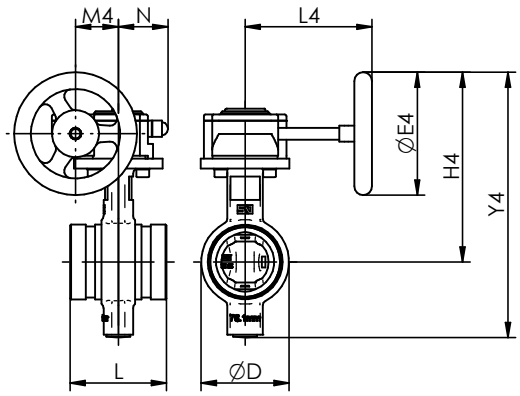
"MN"

DN		O.D.	D	L	MN					
					E2	H2	Y2	L2	M2	Kg
50	**2"**	**60.3**	70	86	49	149	199	220	90	2.3
65	**2½"**	**76.1**	89	97	49	154	231	220	90	3.0
80	**3"**	**88.9**	102	97	60	172	257	260	90	3.5
100	**4"**	**114.3**	128	116	60	195	292	260	90	4.6
125	**5"**	**139.7**	155	148	75	222	330	315	90	6.5
125	**5"**	**141.3**	155	148	75	222	330	315	90	6.7
150	**6"**	**165.1**	180	148	75	255	375	315	90	7.9
150	**6"**	**168.3**	180	148	75	255	375	315	90	8.4
200	**8"**	**219.1**	234	133	75	279	427	315	90	11.0



"MR"

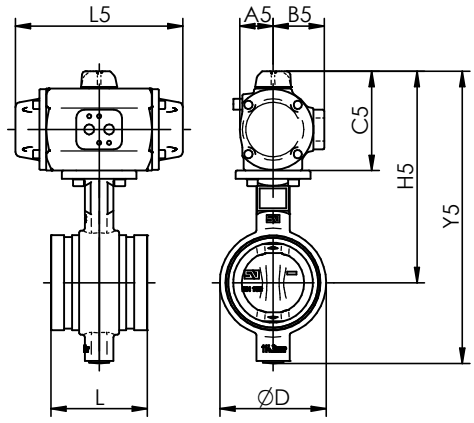
DN		O.D.	D	L	MR					
					E3	H3	Y3	L3	M3	Kg
50	**2"**	**60.3**	70	86	113	213	263	260	90	2.3
65	**2½"**	**76.1**	89	97	113	218	295	260	90	2.9
80	**3"**	**88.9**	102	97	113	225	310	260	90	3.4
100	**4"**	**114.3**	128	116	113	248	345	260	90	4.5
125	**5"**	**139.7**	155	148	113	260	368	310	90	6.6
125	**5"**	**141.3**	155	148	113	260	368	310	90	6.8
150	**6"**	**165.1**	180	148	113	293	413	310	90	8.0
150	**6"**	**168.3**	180	148	113	293	413	310	90	8.5
200	**8"**	**219.1**	234	133	113	317	465	310	90	11.1



"MDV"

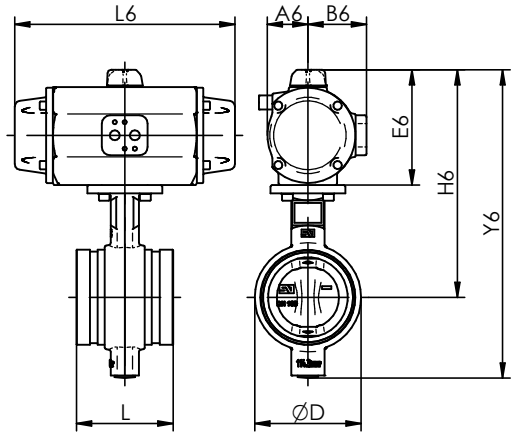
DN		O.D.	D	L	MDV							
					REF	E4	H4	Y4	L4	M4	N	Kg
50	**2"**	**60.3**	70	86	0/X-21	125	188	238	129	43.5	50.5	2.9
65	**2½"**	**76.1**	89	97	0/X-21	125	193	270	129	43.5	50.5	3.5
80	**3"**	**88.9**	102	97	0/X-21	125	200	285	129	43.5	50.5	4.0
100	**4"**	**114.3**	128	116	0/X-21	125	223	320	129	43.5	50.5	5.1
125	**5"**	**139.7**	155	148	1/X-21	160	252	360	135	43.5	50.5	7.0
125	**5"**	**141.3**	155	148	1/X-21	160	252	360	135	43.5	50.5	7.6
150	**6"**	**165.1**	180	148	1/X-21	160	286	406	135	43.5	50.5	8.7
150	**6"**	**168.3**	180	148	1/X-21	160	286	406	135	43.5	50.5	9.2
200	**8"**	**219.1**	234	133	1A/X-41	200	334	482	152	52.5	59	13.0

VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
ACTUADOR NEUMATICO / *PNEUMATIC ACTUATOR*



D.E. - D.A.

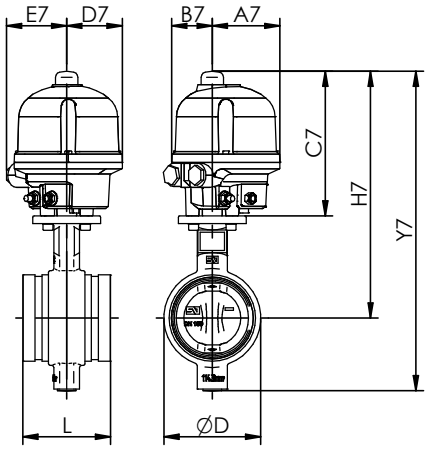
DN		O.D.	D	L	P.N. Bar	**DOBLE EFECTO** - *DOUBLE ACTING*							
						REF	**A5**	**B5**	**E5**	**H1**	**Y5**	**L5**	**Kg5**
50	**2"**	**60.3**	70	86	10-16	PA00	32	52	121	221	271	153	3.2
65	**2½"**	**76.1**	89	98	10-16	PA05	40	62	119	224	301	201	4.9
80	**3"**	**88.9**	102	98	10-16	PA05	40	62	119	231	316	201	5.4
100	**4"**	**114.3**	128	116	10	PA05	40	62	119	254	351	201	6.6
					16	PA10	41	63	123	258	355	225	7.1
125	**5"**	**139.7 141.3**	155	148	10	PA10	41	63	123	270	378	225	9.3
					16	PA15	49	71	139	286	394	265	10.5
150	**6"**	**165.1 168.3**	180	148	10	PA15	49	71	139	319	439	265	11.6
					16	PA20	52	75	147	327	447	310	12.9
200	**8"**	**219.1**	234	133	10	PA20	52	75	147	351	499	310	16.1
					16	PA25	64	89	175	379	527	358	19.8



S.E. - S.R.

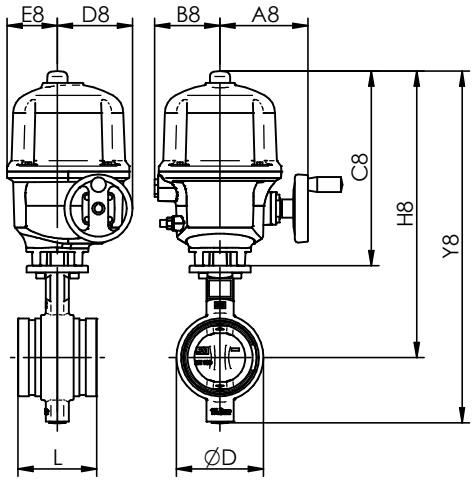
DN		O.D.	D	L	P.N. Bar	**SIMPLE EFECTO** – *SPRING RETURN*							
						REF	**A6**	**B6**	**E6**	**H6**	**Y6**	**L6**	**Kg6**
50	**2"**	**60.3**	70	86	10	PA00S	32	52	121	221	271	153	3.4
					16	PA05S	40	62	119	219	269	201	4.6
65	**2½"**	**76.1**	89	98	10	PA05S	40	62	119	224	301	201	5.3
					16	PA10S	41	63	123	228	305	225	5.9
80	**3"**	**88.9**	102	98	10	PA10S	41	63	123	235	320	225	6.3
					16	PA15S	49	71	139	251	336	265	7.8
100	**4"**	**114.3**	128	116	10	PA15S	49	71	139	274	371	265	9.0
					16	PA20S	52	75	147	282	379	310	10.6
125	**5"**	**139.7 141.3**	155	148	10	PA20S	52	75	147	294	402	310	12.5
					16	PA25S	64	89	175	322	430	358	17.6
150	**6"**	**165.1 168.3**	180	148	10	PA25S	64	89	175	355	475	358	18.6
					16	PA30S	72	97	191	371	491	428	22.6
200	**8"**	**219.1**	234	133	10-16	PA30S	72	97	191	395	543	428	25.8

VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
ACTUADOR ELECTRICO BERNARD / *ELECTRIC ACTUATOR*



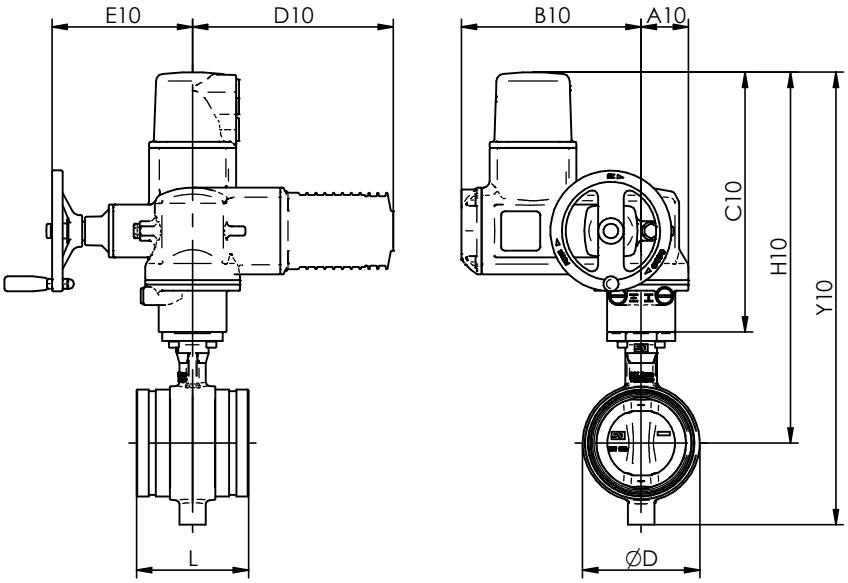
AQL

DN		O.D.	D	L	P.N. Bar	MOTOR AQ L								
						REF	A7	B7	C7	D7	E7	H7	Y7	Kg7
50	**2”**	**60.3**	70	86	10-16	AQ3L	60	83	191	67	85	291	341	4.3
65	**2½”**	**76.1**	89	97	10-16	AQ7L	89	54	191	73	80	296	373	5.9
80	**3”**	**88.9**	102	97	10-16	AQ7L	89	54	191	73	80	303	388	6.3
100	**4”**	**114.3**	128	116	10-16	AQ7L	89	54	191	73	80	326	423	7.5



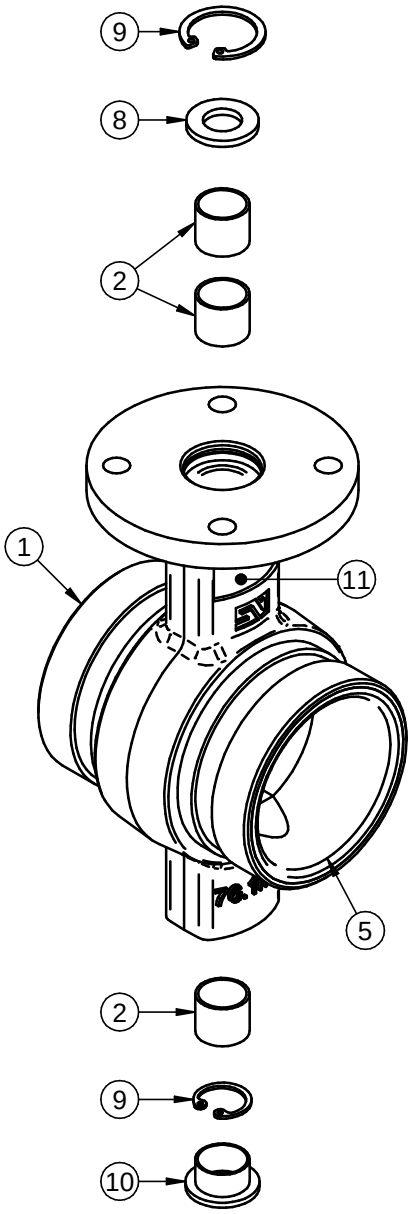
AQ

DN		O.D.	D	L	P.N. Bar	MOTOR AQ								
						REF	A8	B8	C8	D8	E8	H8	Y8	Kg8
50	**2”**	**60.3**	70	86	10-16	AQ5	129	96	286	110	74	386	436	11.7
65	**2½”**	**76.1**	89	97	10-16	AQ5	129	96	286	110	74	391	468	12.4
80	**3”**	**88.9**	102	97	10-16	AQ5	129	96	286	110	74	398	483	12.8
100	**4”**	**114.3**	128	116	10-16	AQ5	129	96	286	110	74	421	518	14.0
125	**5”**	**139.7 141.3**	155	148	10	AQ10	129	96	286	110	74	433	541	16.2
					16	AQ15	129	96	286	110	74	433	541	16.2
150	**6”**	**165.1 168.3**	180	148	10-16	AQ15	129	96	286	110	74	466	586	17.8
200	**8”**	**219.1**	234	133	10	AQ15	129	96	286	110	74	490	638	20.5
					16	AQ25	199	117	318	138	86	522	670	23.5

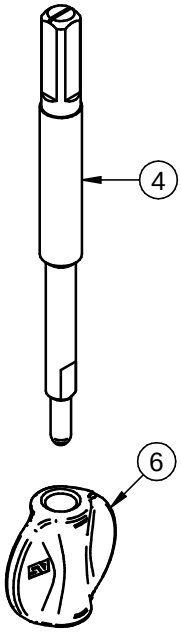


DN		O.D.	D	L	P.N. Bar	AUMA								
						REF	A10	B10	C10	D10	E10	H10	Y10	Kg10
50	**2”**	**60.3**	70	86	10-16	SQ 05.2	62	238	344	266	186	444	494	22.7
65	**2½”**	**76.1**	89	97	10-16	SQ 05.2	62	238	344	266	186	448	526	23.4
80	**3”**	**88.9**	102	97	10-16	SQ 05.2	62	238	344	266	186	456	540	23.8
100	**4”**	**114.3**	128	116	10-16	SQ 05.2	62	238	344	266	186	478	576	25.0
125	**5”**	**139.7**	155	148	10-16	SQ 05.2	62	238	344	266	186	490	598	27.0
125	**5”**	**141.3**	155	148	10-16	SQ 05.2	62	238	344	266	186	491	599	27.2
150	**6”**	**165.1**	180	148	10-16	SQ 05.2	62	238	344	266	186	524	644	28.3
150	**6”**	**168.3**	180	148	10-16	SQ 05.2	62	238	344	266	186	524	644	28.8
200	**8”**	**219.1**	234	133	10-16	SQ 07.2	62	238	344	266	186	548	696	31.5

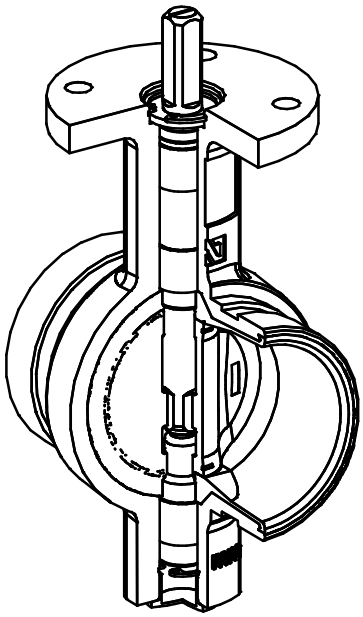
VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
DESPIECE DE MATERIALES "DN.50/100" / *MATERIALS DETAIL*



DN.65-80-100



DN.50



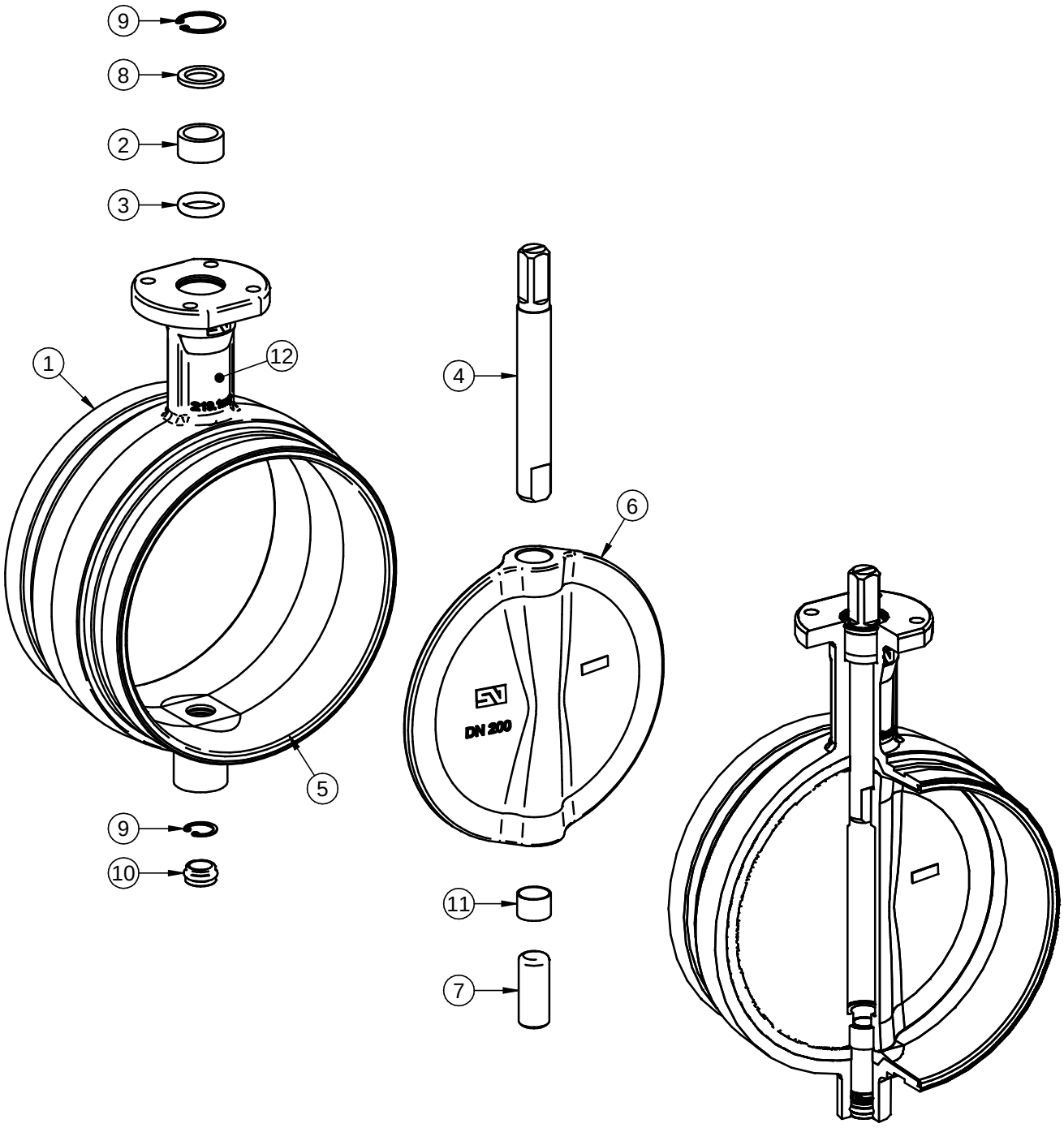
POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
11	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
10	TAPON INFERIOR *LOWER PLUG*	POLIETILENO	DN.65/100	1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*	DN.65/100	1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN	DN.50	1
		ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.65/100	
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- 16 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA *HYDROSTATIC AND RESISTANCE TEST:*
CON VALVULA ABIERTA / *OPEN VALVE:*
- 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 17.6 Kg/cm²

VALVULA DE MARIPOSA "VV" / *BUTTERFLY VALVE "VV"*
DESPIECE DE MATERIALES "DN.125/200" / *MATERIALS DETAIL*



POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	OBSERVACIONES *REMARKS*	CANT *QUAN*
12	PLACA CARACTERISTICAS *FEATURES TAG*	POLIESTER *POLYESTER*		1
11	CASQUILLO ROZAMIENTO *BUSHING*	ACERO-BZ-PTFE *STEEL-BZ-PTFE*	DN.200	1
10	TAPON INFERIOR *LOWER PLUG*	EPDM		1
9	ANILLO ELASTICO *ZEGI RING BODY*	ACERO CINCADO *ZINC PLATED STEEL*	DIN 472	2
8	ARANDELA RETENCION *RETAINING RING*	ACERO CINCADO *ZINC PLATED STEEL*		1
7	EJE INFERIOR *LOWER SHAFT*	S/HOJA E-0001 *ACC. TO SHEET E-0001*		1
6	MARIPOSA *DISC*	S/ HOJA M-0001 *ACC. TO SHEET M-0001*		1
5	ANILLO *SEAT*	S/ HOJA A-0001 *ACC. TO SHEET A-0001*	VULCANIZADO AL CUERPO *VULCANIZED ON BODY*	1
4	EJE SUPERIOR *UPPER SHAFT*	S/ HOJA E-0001 *ACC. TO SHEET E-0001*		1
3	JUNTA TORICA *"O" RING*	NITRILO *NITRILE*		1
2	CASQUILLO ROZAMIENTO *BUSHING*	ACETAL DELRIN		1
1	CUERPO DE VALVULA *VALVE BODY*	S/ HOJA C-0001 *ACC. TO SHEET C-0001*	RECUB. EPOXY *COATING EPOXY*	1

DATOS TECNICOS / *TECHNICAL DATA*
FABRICACION ESTANDAR / *STANDARD PRODUCTION*
- 16 Bar

PRUEBA HIDROSTATICA Y DE RESISTENCIA
HYDROSTATIC AND RESISTANCE TEST:
CON VALVULA ABIERTA / *OPEN VALVE:*
- 24 Kg/cm²

CON VALVULA CERRADA / *CLOSED VALVE:*
- 17.6 Kg/cm²

Technical description

MN Hand Lever

Hand lever in aluminium casting. Range DN 32-200
Position indicator. Possibility of 7 positions.



Options: Material in Ductile iron GGG 40. Model MN(NOD)

Accessories: Limit switches
Lockable by padlock

MR Hand Lever

Hand lever in aluminium casting. Range DN 32-300
Position indicator. Regulation.



Options: Material in Stainless steel AISI316. Model MRI.
Material in Carbon steel. Modelo MRA

Accessories: Limit switches
Lockable by padlock

MDV Gearbox series X

Body in dye aluminium casting. Range DN 25-350
Output torques up to 600 N·m
Weatherproof: IP-67
Stroke: -5º up to 95º
Temperature range -25 °C up to + 110 °C



MDV Gearbox series Q

Body in Cast iron GG 25. Range DN 25-1600
Output torques up to 70.000 N·m
Weatherproof: IP-68
Stroke: -5º up to 95º
Temperature range -25 °C up to + 110 °C



Options: Material in ductile Iron GGG 40
Material in stainless Steel casting AISI 316 . Modelo QSS
Special coatings: C5M marine enviroment
Application for Low Temperature

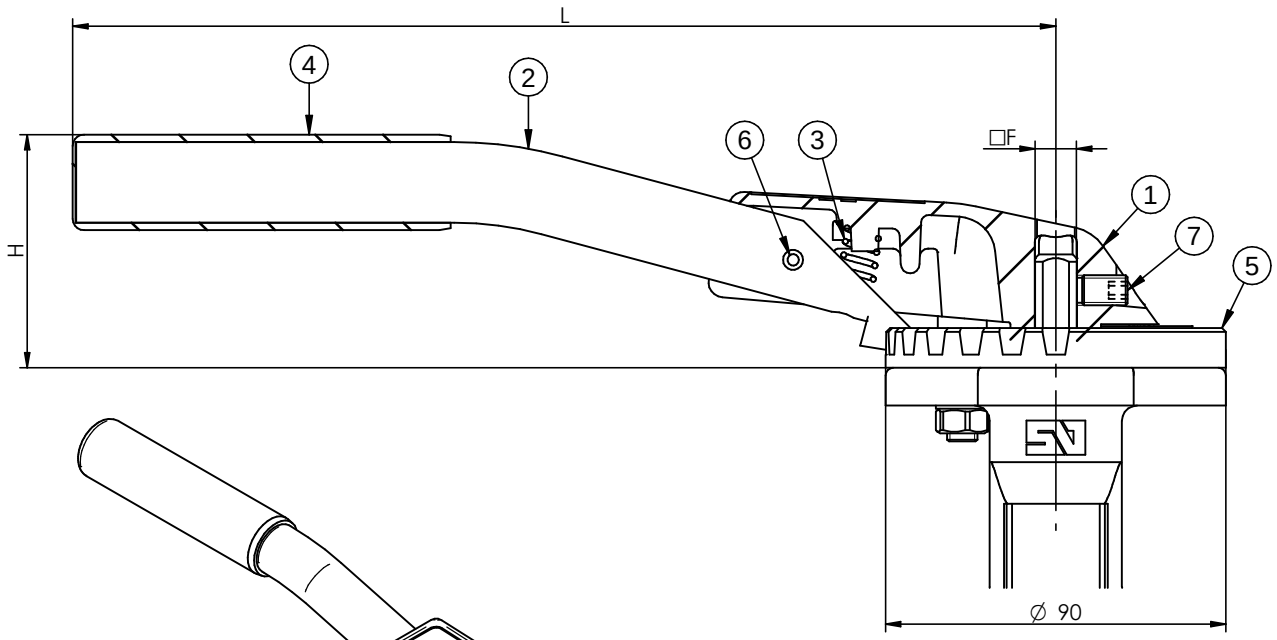
Accessories: Limit switches
Lockable by padlock
Extensions

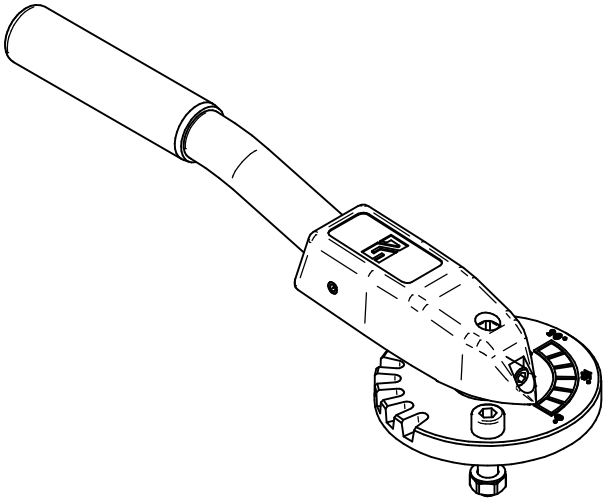
Technical sheets and dimensional drawings

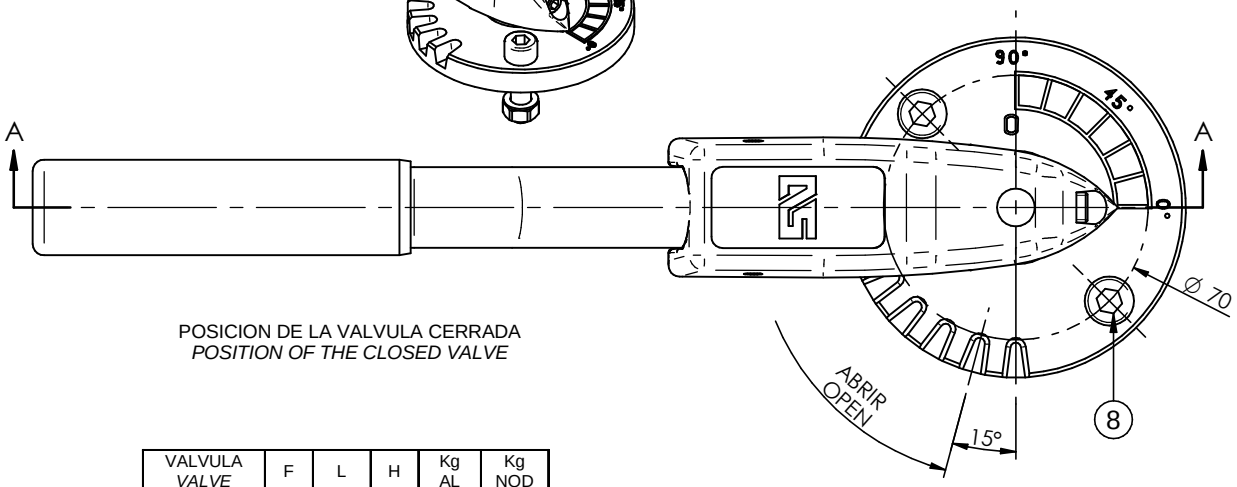
9-1	Hand lever "MN" DN 025/200.
9-2	Hand lever "MR" DN 025/200.
9-3	Hand lever "MR" DN 250/300.
9-4	Hand lever "MN" DN 025/200 with Padlock
9-5	Selection table for manual gearboxes.
9-6	Manual Gearbox MDV-0 / MDV-2.
9-7	Manual Gearbox MDV-2A / MDV-4.
9-8	Manual Gearbox MDV-5 / MDV-9.
9-11	Planetary gear "MDVV" DN 025-200.
9-12	Direct wheel "V" DN 025-150

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ACTO. PALANCA TIPO "MN" DN.32/200 - DIM. GENERALES
"MN" HANDLEVER DN.32/200 - GENERAL DIMENSIONS





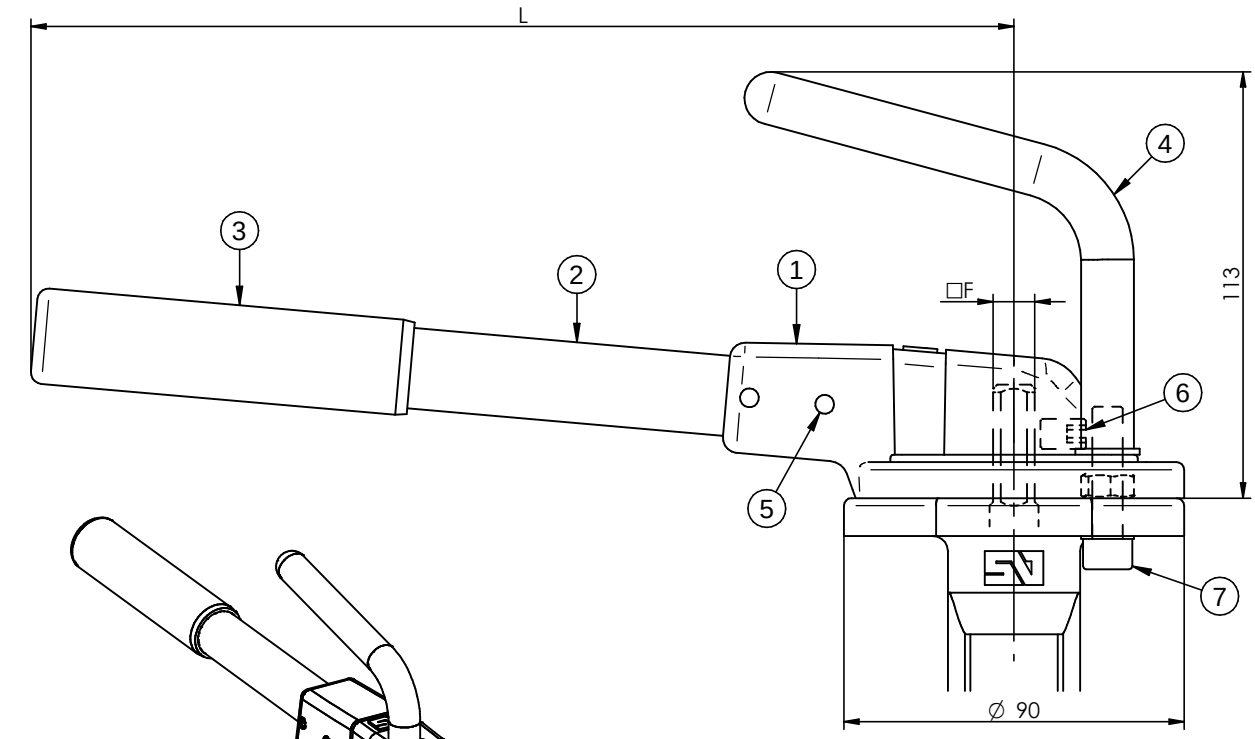


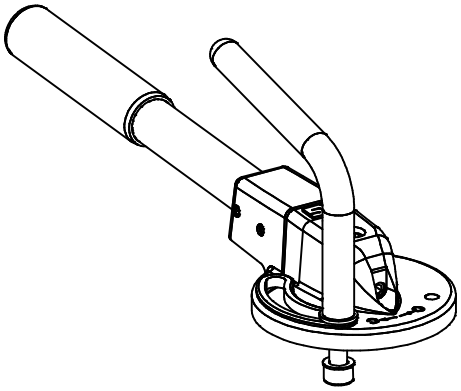
POSICION DE LA VALVULA CERRADA
POSITION OF THE CLOSED VALVE

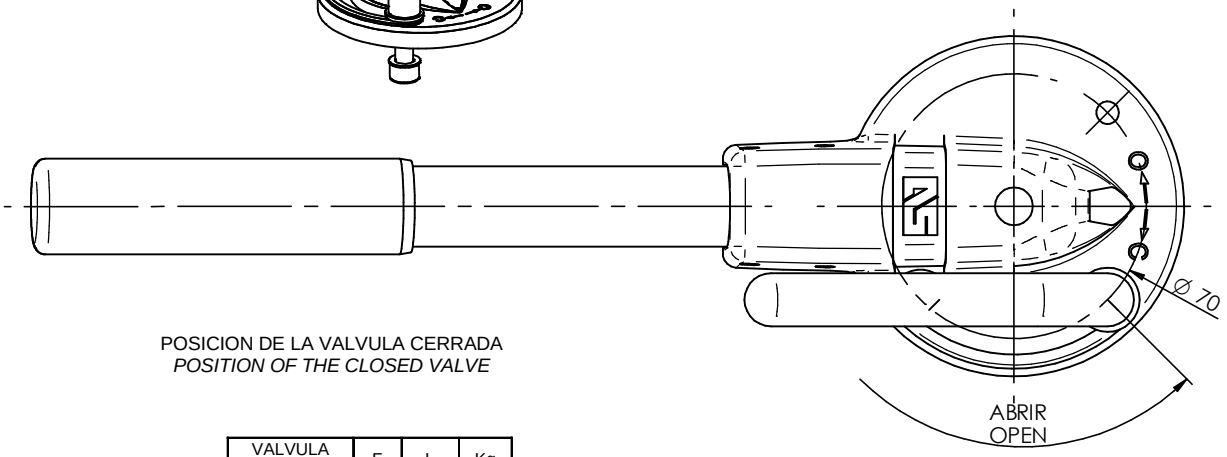
VALVULA *VALVE*	F	L	H	Kg AL	Kg NOD
DN.32-65	11	220	49	0.40	0.70
DN.80-100	11	260	60	0.45	0.75
DN.125-150	14	315	75	0.55	0.85
DN.200	17	315	75	0.55	0.85

POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL *MATERIAL*	CANT *QUAN*
8	TORNILLO C/ ALLEN DIN 912 + TUERCA DIN 934 *ALLEN SCREW DIN 912 + NUT DIN 934*	ACERO CINCADO *ZINC PLATED STEEL*	1
7	ESPARRAGO ALLEN DIN 916 *ALLEN SCREW DIN 916*	ACERO CINCADO *ZINC PLATED STEEL*	1
6	PASADOR ELASTICO *ELASTIC PIN*	ACERO CARBONO *CARBON STEEL*	1
5	BRIDA TOPE *END FLANGE*	POLIAMIDA REFORZADA *REINFORCE POLYAMIDE*	1
4	FUNDA *COVER*	VINILO *VINYL*	1
3	MUELLE *SPRING*	ACERO INOX. AISI 302 *STAINLESS STEEL AISI 302*	1
2	BRAZO DE PALANCA *LEVER ARM*	TUBO DE ACERO + EPOXY *STEEL TUBE + EPOXY*	1
1	CABEZA DE PALANCA *LEVER HEAD*	FUND. ALUMINIO + EPOXY *ALUMINIUM CAST + EPOXY* FUND. NODULAR + EPOXY *NODULAR CAST IRON + EPOXY*	1

ACTO. PALANCA TIPO "MR" DN.32/200 - DIM.GENERALES
"MR" HANDLEVER DN.32/200 - GENERAL DIMENSIONS





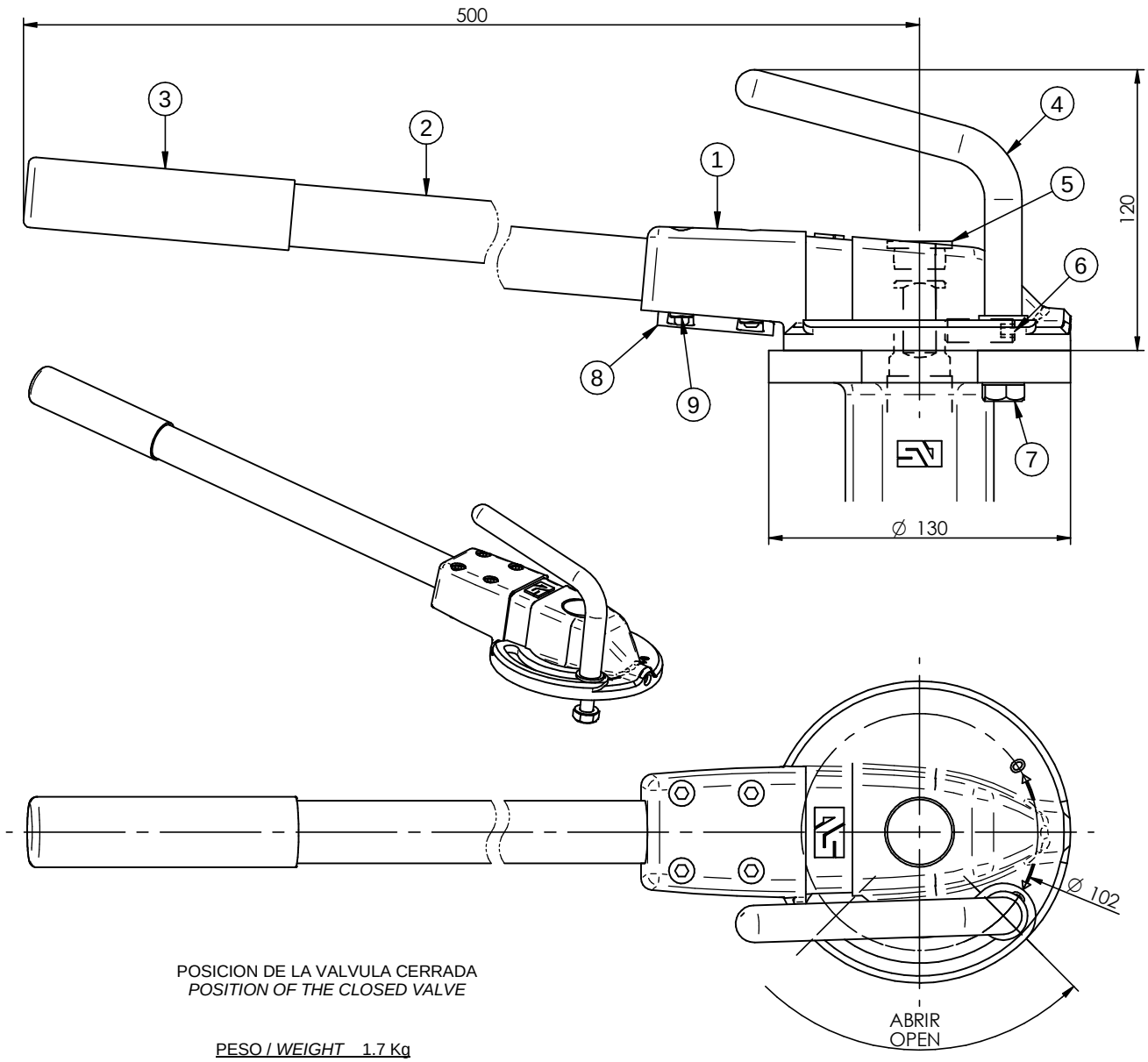


POSICION DE LA VALVULA CERRADA
POSITION OF THE CLOSED VALVE

VALVULA *VALVE*	F	L	Kg
DN. 32/100	11	260	0,6
DN. 125/150	14	310	0,7
DN. 200	17	310	0,7

7	TORNILLO C/ ALLEN DIN 912 + TUERCA DIN 934 *ALLEN SCREW DIN 912 + NUT DIN 934*	ACERO CINCADO *ZINC PLATED STEEL*	1
6	ESPARRAGO ALLEN DIN 916 *ALLEN SCREW DIN 916*	ACERO CINCADO *ZINC PLATED STEEL*	1
5	PASADOR ELASTICO *ELASTIC PIN*	ACERO CARBONO *CARBON STEEL*	2
4	PALANCA DE BLOQUEO *BLOCKING LEVER*	ACERO INOXIDABLE AISI 420 *STAINLESS STEEL AISI 420*	1
3	FUNDA *COVER*	VINILO *VINYL*	1
2	BRAZO DE PALANCA *LEVER ARM*	TUBO DE ACERO + EPOXY *STEEL TUBE + EPOXY*	1
1	CABEZA DE PALANCA *LEVER HEAD*	FUND. ALUMINIO + EPOXY *ALUMINIUM CAST + EPOXY*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***

ACTO. PALANCA TIPO "MR" DN.250/300 DIM.GENERALES
"MR" HANDLEVER DN.250/300 - GENERAL DIMENSIONS

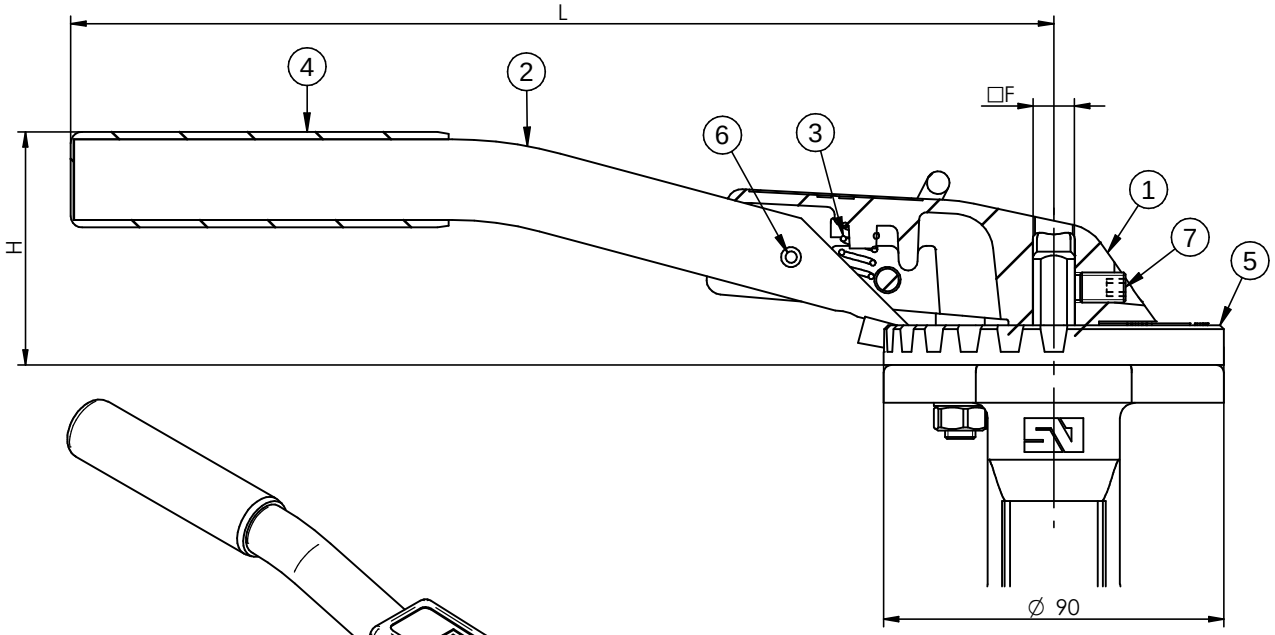


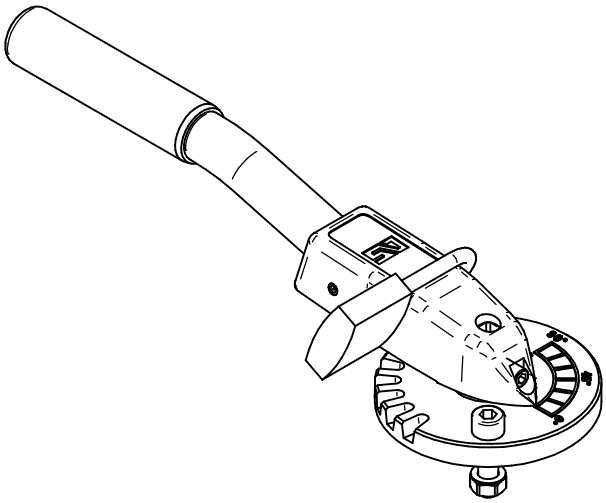
POSICION DE LA VALVULA CERRADA
POSITION OF THE CLOSED VALVE

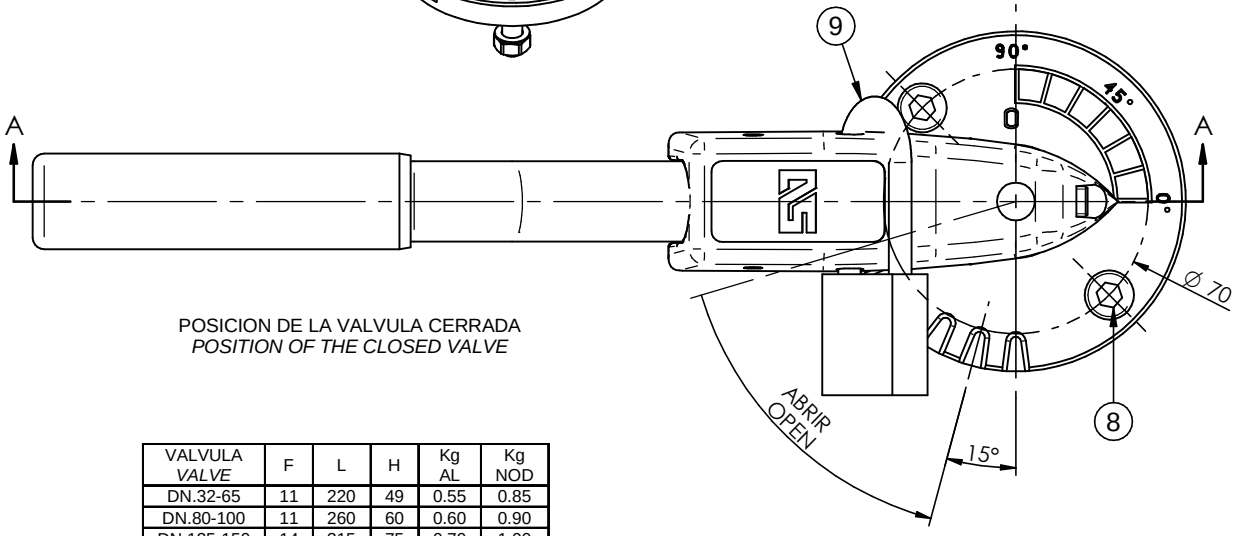
PESO / *WEIGHT* 1.7 Kg

POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL	CAN *QTY*
9	TORNILLO C/ ALLEN DIN 912 + TUERCA DIN 934 *ALLEN SCREW DIN 912 + NUT DIN 934*	ACERO CINCADO *ZINC PLATED STEEL*	4
8	BRIDA *FLANGE*	FUND. ALUMINIO + EPOXY *ALUMINIUM CAST + EPOXY*	1
7	TORNILLO C/ ALLEN DIN 931 + TUERCA DIN 934 *ALLEN SCREW DIN 931 + NUT DIN 934*	ACERO CINCADO *ZINC PLATED STEEL*	1
6	ESPARRAGO ALLEN DIN 916 *ALLEN SCREW DIN 916*	ACERO CINCADO *ZINC PLATED STEEL*	1
5	TAPON *COVER*	POLIETILENO *POLYETILENE*	1
4	PALANCA DE BLOQUEO *BLOCKING LEVER*	ACERO INOXIDABLE AISI 420 *STAINLESS STEEL AISI 420*	1
3	FUNDA *COVER*	VINILO *VINYL*	1
2	BRAZO DE PALANCA *LEVER ARM*	TUBO DE ACERO + EPOXY *STEEL TUBE + EPOXY*	1
1	CABEZA DE PALANCA *LEVER HEAD*	FUND. ALUMINIO + EPOXY *ALUMINIUM CAST + EPOXY*	1

ACTO. PALANCA TIPO "MN" DN.32/200 - DIM. GENERALES
"MN" HANDLEVER DN.32/200 - GENERAL DIMENSIONS







POSICION DE LA VALVULA CERRADA
POSITION OF THE CLOSED VALVE

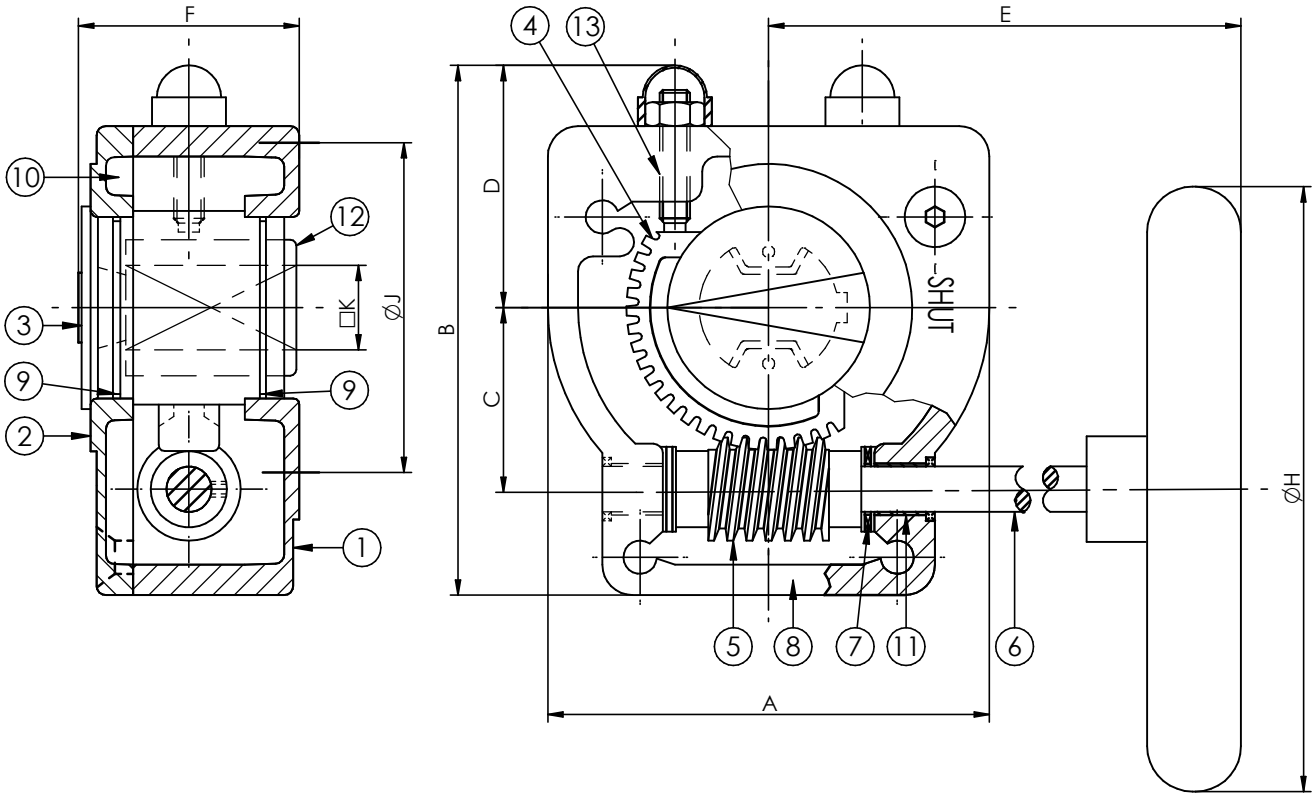
VALVULA *VALVE*	F	L	H	Kg AL	Kg NOD
DN.32-65	11	220	49	0.55	0.85
DN.80-100	11	260	60	0.60	0.90
DN.125-150	14	315	75	0.70	1.00
DN.200	17	315	75	0.70	1.00

9	CANDADO *PADLOCK*	LATON *BRASS*	1
8	TORNILLO C/ ALLEN DIN 912 + TUERCA DIN 934 *ALLEN SCREW DIN 912 + NUT DIN 934*	ACERO CINCADO *ZINC PLATED STEEL*	1
7	ESPARRAGO ALLEN DIN 916 *ALLEN SCREW DIN 916*	ACERO CINCADO *ZINC PLATED STEEL*	1
6	PASADOR ELASTICO *ELASTIC PIN*	ACERO CARBONO *CARBON STEEL*	1
5	BRIDA TOPE *END FLANGE*	POLIAMIDA REFORZADA *REINFORCE POLYAMIDE*	1
4	FUNDA *COVER*	VINILO *VINYL*	1
3	MUELLE *SPRING*	ACERO INOX. AISI 302 *STAINLESS STEEL AISI 302*	1
2	BRAZO DE PALANCA *LEVER ARM*	TUBO DE ACERO + EPOXY *STEEL TUBE + EPOXY*	1
1	CABEZA DE PALANCA *LEVER HEAD*	FUND. ALUMINIO + EPOXY *ALUMINIUM CAST + EPOXY* FUND. NODULAR + EPOXY *NODULAR CAST IRON + EPOXY*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CANT** ***QUAN***

TABLA DE SELECCION DE REDUCTORES MANUALES
SELECTION TABLE MANUAL GEARBOXES

<table>
<tr><th>DN</th><th>PN-10</th><th>PN-16</th><th>DN</th></tr>
<tr><td>32</td><td colspan="2" rowspan="6">MDV-0 / X-21
□11 – Volante / Handwheel Ø125</td><td>32</td></tr>
<tr><td>40</td><td>40</td></tr>
<tr><td>50</td><td>50</td></tr>
<tr><td>65</td><td>65</td></tr>
<tr><td>80</td><td>80</td></tr>
<tr><td>100</td><td>100</td></tr>
<tr><td>125</td><td colspan="2" rowspan="2">MDV-1 / X-21
□14 – Volante / Handwheel Ø160</td><td>125</td></tr>
<tr><td>150</td><td>150</td></tr>
<tr><td>200</td><td colspan="2">MDV-1A / X-41
□17 – Volante / Handwheel Ø200</td><td>200</td></tr>
<tr><td>250</td><td colspan="2" rowspan="3">MDV-2 / X-61
□22 – Volante / Handwheel Ø250</td><td>250</td></tr>
<tr><td>300</td><td>300</td></tr>
<tr><td>350</td><td>350</td></tr>
<tr><td>400</td><td colspan="2">MDV-2A / Q-800
□27 – Volante / Handwheel Ø300</td><td>400</td></tr>
<tr><td>450</td><td colspan="2" rowspan="2">MDV-3 / Q-2000
□36 - Volante / Handwheel Ø400</td><td>450</td></tr>
<tr><td>500</td><td>500</td></tr>
<tr><td>600</td><td colspan="2">MDV-4 / Q-4000
Ø60 – Volante / Handwheel Ø500</td><td>600</td></tr>
<tr><td>700</td><td>MDV-4 / Q-4000
Ø65 – Volante / Handwheel Ø500</td><td>MDV-5 / Q-6500
Ø65 – Volante / Handwheel Ø600</td><td>700</td></tr>
<tr><td>750</td><td colspan="2">MDV-5 / Q-6500
Ø80 – Volante / Handwheel Ø600</td><td>750</td></tr>
<tr><td>800</td><td>MDV-5 / Q-6500
Ø80 – Volante / Handwheel Ø600</td><td>MDV-6 / Q-12000
Ø80 – Volante / Handwheel Ø700</td><td>800</td></tr>
<tr><td>900</td><td colspan="2">MDV-6 / Q-12000
Ø80 – Volante / Handwheel Ø700</td><td>900</td></tr>
<tr><td>1000</td><td colspan="2" rowspan="2">MDV-7 / Q-16000
Ø80 – Volante / Handwheel Ø700</td><td>1000</td></tr>
<tr><td>1050</td><td>1050</td></tr>
<tr><td>1100</td><td>MDV-7 / Q-16000
Ø80 – Volante / Handwheel Ø700</td><td>MDV-8 / Q-24000
Ø80 – Volante / Handwheel Ø700</td><td>1100</td></tr>
<tr><td>1200</td><td colspan="2">MDV-8 / Q-24000
Ø100 – Volante / Handwheel Ø700</td><td>1200</td></tr>
<tr><td>1400</td><td colspan="2">MDV-8 / Q24000
Ø120 – Volante / Handwheel Ø700</td><td></td></tr>
<tr><td>1500</td><td colspan="2" rowspan="2">MDV-9 / Q-32000
Ø130 – Volante / Handwheel Ø700</td><td></td></tr>
<tr><td>1600</td><td></td></tr>
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ACTO. REDUCTOR MANUAL TIPO "MDV" - DIM.GENERALES
OPERATION BY "MDV" GEARBOX - GENERAL DIMENSIONS

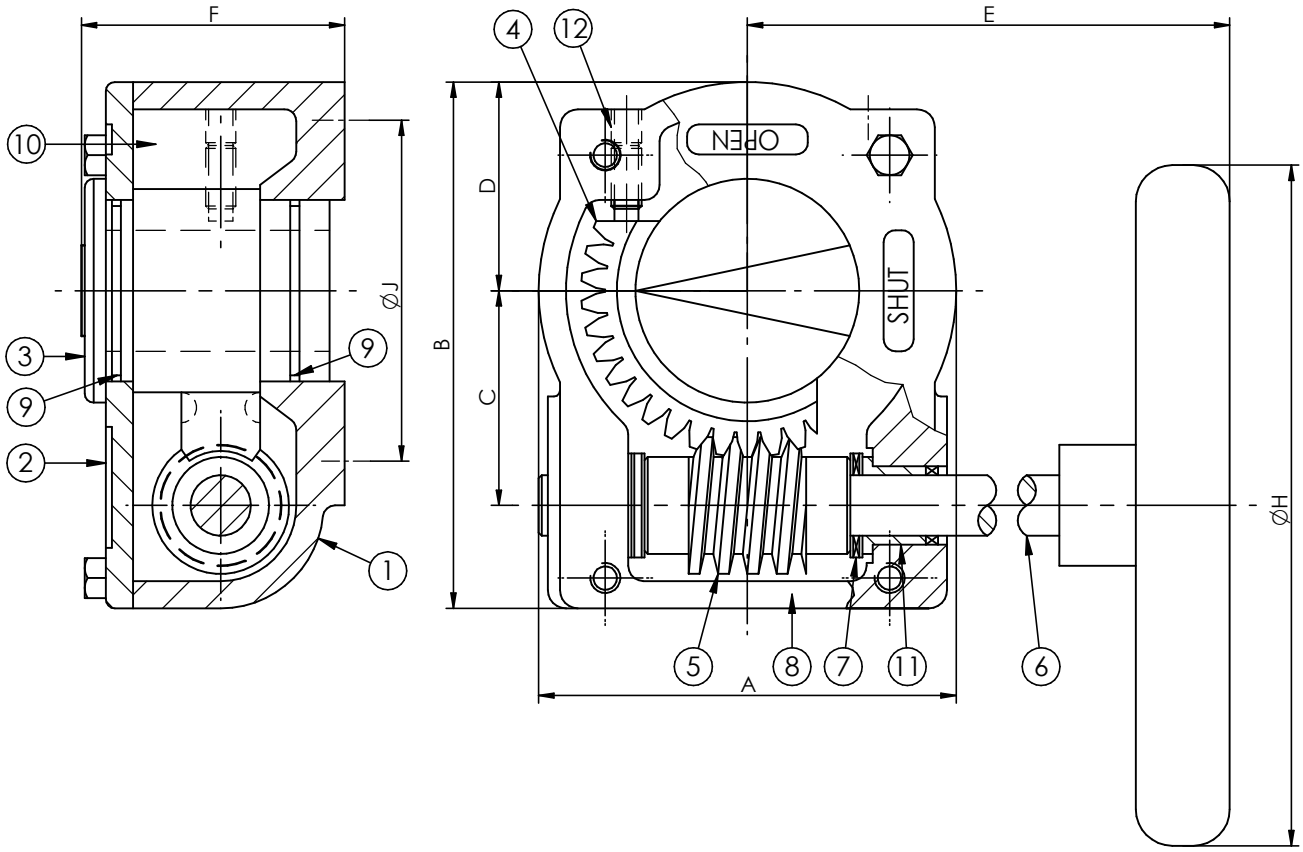


DIMENSIONES / *DIMENSIONS*									
Ref	A	B	C	D	E	F	H	J	K
MDV-0 / X-21	84	118	43.5	50.5	129	51.2	125	F-07	11
MDV-1 / X-21	84	118	43.5	50.5	135	51.2	160	F-07	14
MDV-1A / X-41	112	140.5	52.5	59	152	63.5	200	F-07/F-10	17
MDV-2 / X-61	120	170.5	61.2	70.5	222	77	250	F-10/F-12	22

DATOS TECNICOS / *TECNICAL NOTE*						
Ref.	Par Máx. Salida *Max. Output Torque*	Par Máx. Entrada *Max. Input Torque*	Relación *Ratio*	Vueltas para cerrar *Turns to close*	Peso *Weight*	Ventaja Mecánica *Mechanical Advantaje*
MDV-0 / X-21	200 Nm	16.8 Nm	40:1	10	1.2 Kg	11.9 %
MDV-1 / X-21	200 Nm	16.8 Nm	40:1	10	1.4 Kg	11.9 %
MDV-1A / X-41	400 Nm	31.25 Nm	44:1	11	2.6 Kg	12.8 %
MDV-2 / X-61	600 Nm	46.5 Nm	34:1	8.5	3.5 Kg	12.9 %

POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***
13	TORNILLO *SET SCREW*	ACERO 45H / DIN 915 *STEEL 45H/DIN 915*	2
12	INSERTOS *INSERTS*	ACERO SINTERIZADO *SINTERED STEEL*	1
11	COJINETE *PLAIN BEARING*	PERMAGLIDE P-10 *PERMAGLIDE P-10*	2
10	GRASA *GREASE*	GRASA LITILO / CALCIO *LITHIUM / CALCIUM GREASE*	1
9	RETEN *OIL SEAL*	NITRILO *NITRILE*	2
8	JUNTA DE ESTANQUEIDAD *GASKET*	NITRILO / SILICONA *NITRILE / SILICONE*	1
7	CASQUILLO DE AGUA *AXIAL NEEDLE BEARING*	AXK-AS *AXK-AS*	2
6	EJE DEL SINFÍN *WORMSHAFT*	ACERO INOXIDABLE AISI 303 *STAINLESS STEEL AISI 303*	1
5	SIN FIN *WORM*	ACERO CARBONO C45/AISI 1045 *CARBON STEEL C45/AISI 1045*	1
4	CORONA DENTADA *QUADRANT*	FUND. NODULAR GGG-40 - ASTM A356 *NOD. CAST IRON GGG-40 - ASTM A356*	1
3	INDICADOR DE POSICION *POSITION INDICATOR*	POLIETILENO *POLYETILENE*	1
2	PLACA DE CUBIERTA *COVERPLATE*	FUND. ALUMINIO *ALUMINIUM CAST*	1
1	CUERPO *BODY*	FUND. ALUMINIO *ALUMINIUM CAST*	1

ACTO. REDUCTOR MANUAL TIPO "MDV" - DIM.GENERALES
OPERATION BY "MDV" GEARBOX - GENERAL DIMENSIONS

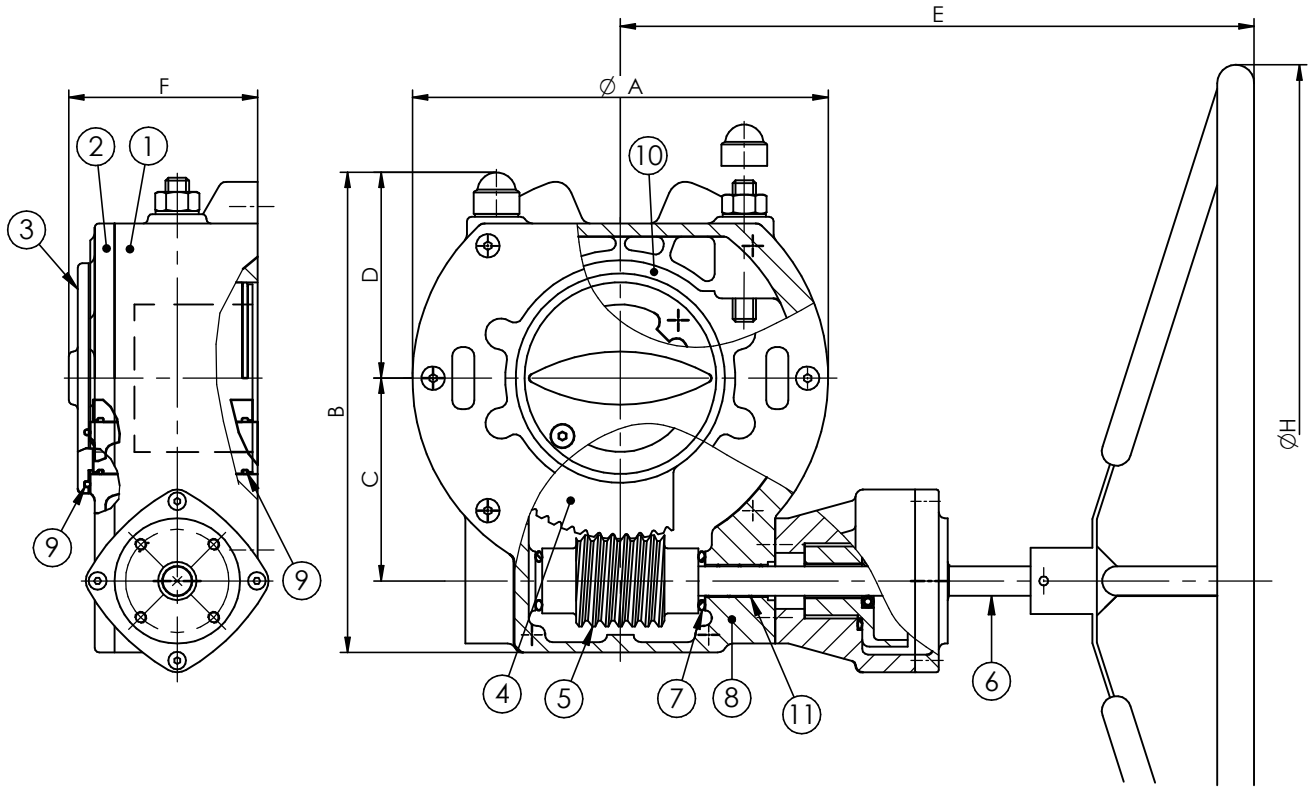


DIMENSIONES / *DIMENSIONS*								
Ref	A	B	C	D	E	F	H	J
MDV-2A / Q-800	135	187	68	72.5	278	90.5	300	F-10/F-14
MDV-3 / Q-2000	180	235	96.5	91.5	321	100	400	F-12/F-16
MDV-4 / Q-4000	*282*	*326*	*137.5*	*140*	*408*	*128*	*500*	*F-16/F-25*

DATOS TECNICOS / *TECNICAL NOTE*						
Ref.	Par Máx. Salida *Max. Output Torque*	Par Máx. Entrada *Max. Input Torque*	Relación *Ratio*	Vueltas para cerrar *Turns to close*	Peso *Weight*	Ventaja Mecánica *Mechanical Advantaje*
MDV-2A / Q-800	800 Nm	60 Nm	40:1	10	8.9 Kg	13.3 %
MDV-3 / Q-2000	2000 Nm	131 Nm	48:1	12	18.4 Kg	15.3 %
MDV-4 / Q-4000	4000 Nm	185 Nm	72:1	18	34.2 Kg	21.6 %

POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***
12	TORNILLO *SET SCREW*	ACERO 45H / DIN 915 *STEEL 45H / DIN 915*	2
11	COJINETE *PLAIN BEARING*	ACERO SINTERIZADO *SINTERED STEEL*	2
10	GRASA *GREASE*	GRASA LITILO / CALCIO *LITHIUM / CALCIUM GREASE*	1
9	RETEN *OIL SEAL*	NITRILO *NITRILE*	2
8	JUNTA DE ESTANQUEIDAD *GASKET*	NITRILO / SILICONA *NITRILE / SILICONE*	1
7	CASQUILLO DE AGUA *AXIAL NEEDLE BEARING*	AXK-AS *AXK-AS*	2
6	EJE DEL SINFÍN *WORMSHAFT*	ACERO INOXIDABLE AISI 303 *STAINLESS STEEL AISI 303*	1
5	SIN FIN *WORM*	ACERO CARBONO C45/AISI 1045 *CARBON STEEL C45/AISI 1045*	1
4	CORONA DENTADA *QUADRANT*	FUND. NODULAR GGG-40 - ASTM A356 *NOD. CAST IRON GGG-40 - ASTM A356*	1
3	INDICADOR DE POSICION *POSITION INDICATOR*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1
2	PLACA DE CUBIERTA *COVERPLATE*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1
1	CUERPO *BODY*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1

ACTO. REDUCTOR MANUAL TIPO "MDV" - DIM.GENERALES
OPERATION BY "MDV" GEARBOX - GENERAL DIMENSIONS

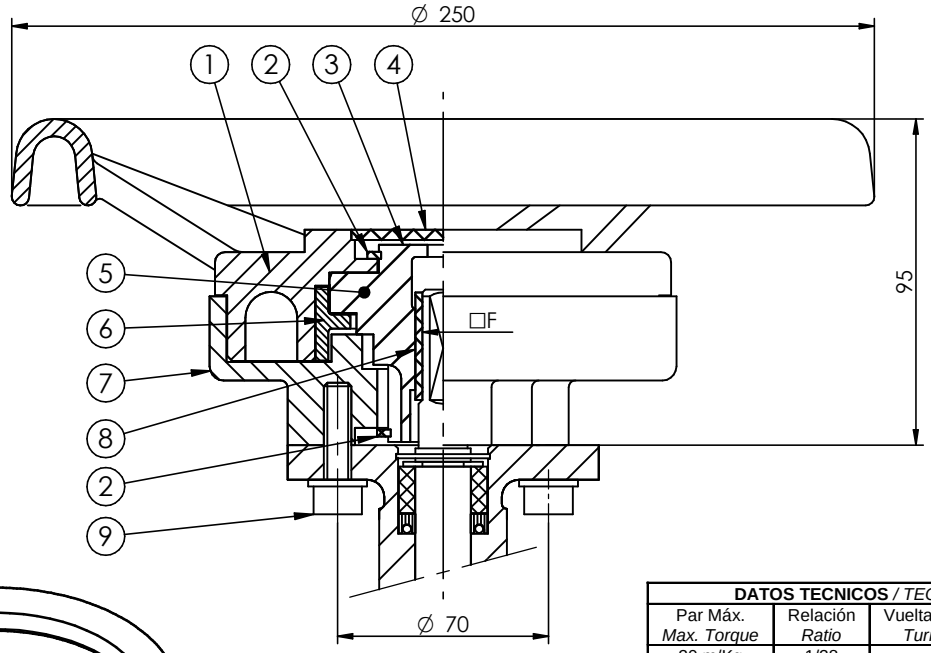


DIMENSIONES / *DIMENSIONS*								
Ref	A	B	C	D	E	F	H	J
MDV-5 / Q-6500	282	326	137.5	140	456	128	600	F-16/F-25
MDV-6 / Q-12000	376	396	180	156	510	135	700	F-25/F-30
MDV-7 / Q-16000	376	396	180	156	579	135	700	F-25/F-30
MDV-8 / Q-24000	510	536	252.5	201	593	189	700	F-25/F-40
MDV-9 / Q-32000	510	536	252.5	201	593	189	700	F-25/F-40

DATOS TECNICOS / *TECNICAL NOTE*						
Ref.	Par Máx. Salida *Max. Output Torque*	Par Máx. Entrada *Max. Input Torque*	Relación *Ratio*	Vueltas para cerrar *Turns to close*	Peso *Weight*	Ventaja Mecánica *Mechanical Advantaje*
MDV-5 / Q-6500	6500 Nm	95 Nm	267:1	67	41 Kg	68.4 %
MDV-6 / Q-12000	12000 Nm	168.48 Nm	267:1	67	60.6 Kg	71 %
MDV-7 / Q-16000	16000 Nm	120 Nm	648:1	162	66.4 Kg	133.3 %
MDV-8 / Q-24000	24000 Nm	140 Nm	720:1	180	196	171.5 %

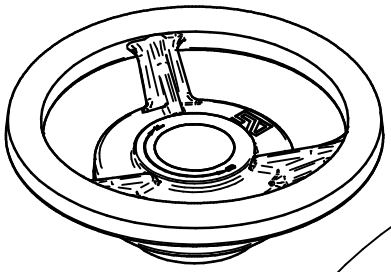
11	COJINETE *PLAIN BEARING*	ACERO SINTERIZADO *SINTERED STEEL*	2
10	GRASA *GREASE*	GRASA LITILO / CALCIO *LITHIUM / CALCIUM GREASE*	1
9	RETEN *OIL SEAL*	NITRILO *NITRILE*	2
8	JUNTA DE ESTANQUEIDAD *GASKET*	NITRILO / SILICONA *NITRILE / SILICONE*	1
7	CASQUILLO DE AGUA *AXIAL NEEDLE BEARING*	AXK-AS *AXK-AS*	2
6	EJE DEL SINFÍN *WORMSHAFT*	ACERO INOXIDABLE AISI 303 *STAINLESS STEEL AISI 303*	1
5	SIN FIN *WORM*	ACERO CARBONO C45/AISI 1045 *CARBON STEEL C45/AISI 1045*	1
4	CORONA DENTADA *QUADRANT*	FUND. NODULAR GGG-40 - ASTM A356 *NOD. CAST IRON GGG-40 - ASTM A356*	1
3	INDICADOR DE POSICION *POSITION INDICATOR*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1
2	PLACA DE CUBIERTA *COVERPLATE*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1
1	CUERPO *BODY*	FUND. GRIS GG-25 / ASTM A48 *CAST IRON GG-25 / ASTM A48*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***

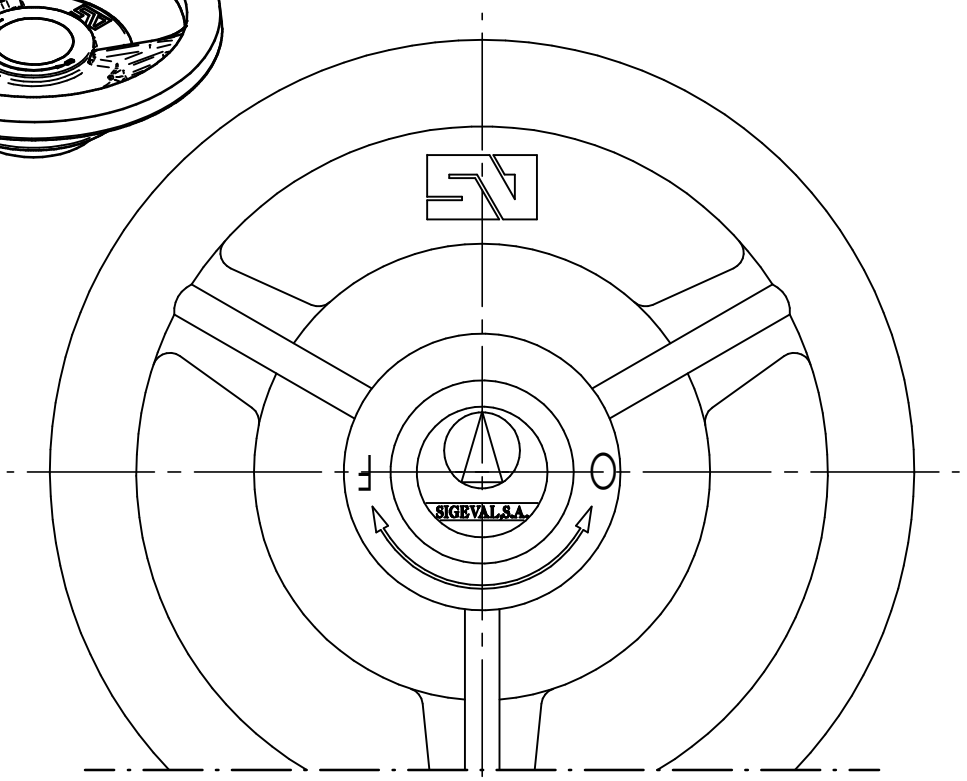
VOLANTE PLANETARIO "MDVV" DN.32/200
PLANETARY GEAR "MDVV" TYPE DN.32/200



VALVULA *VALVE*	F
DN.32-100	11
DN.125-150	14
DN.200	17

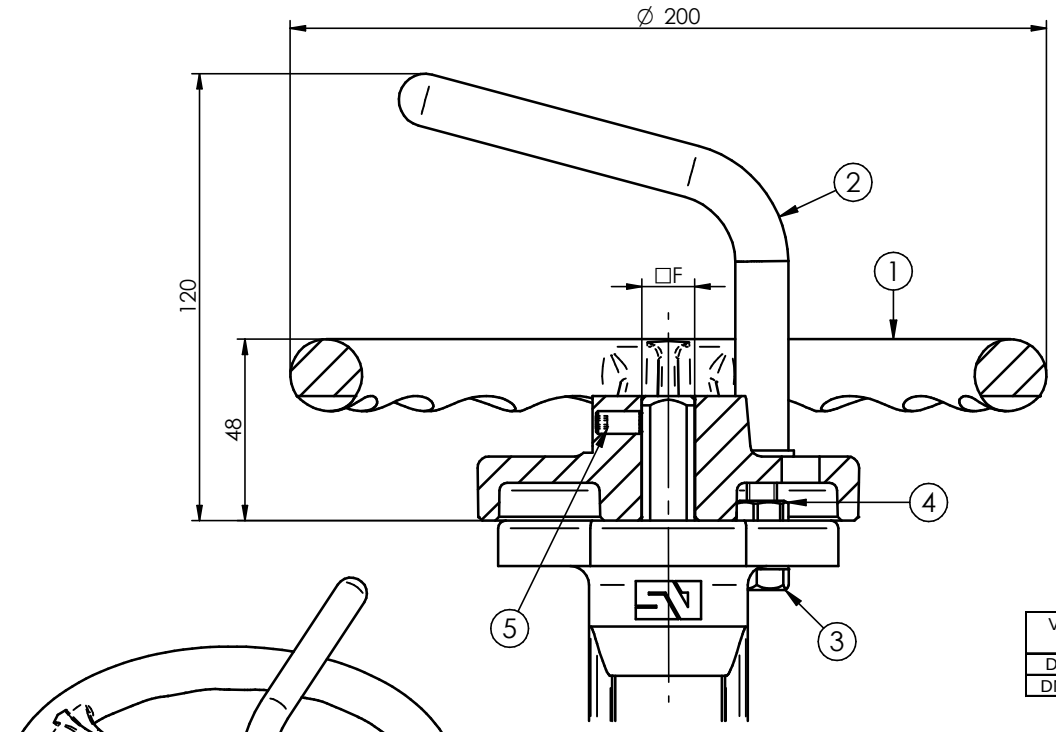
DATOS TECNICOS / *TECNICAL NOTE*			
Par Máx. *Max. Torque*	Relación *Ratio*	Vueltas para cerrar *Turns to close*	Peso *Weight*
20 m/Kg	1/28	7	5.1 Kg



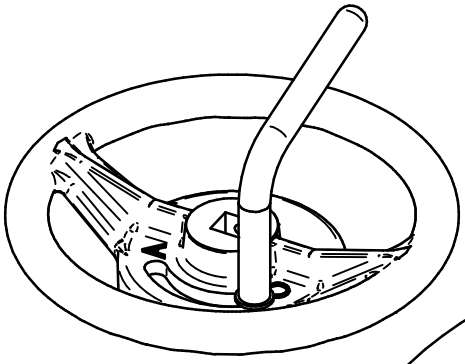


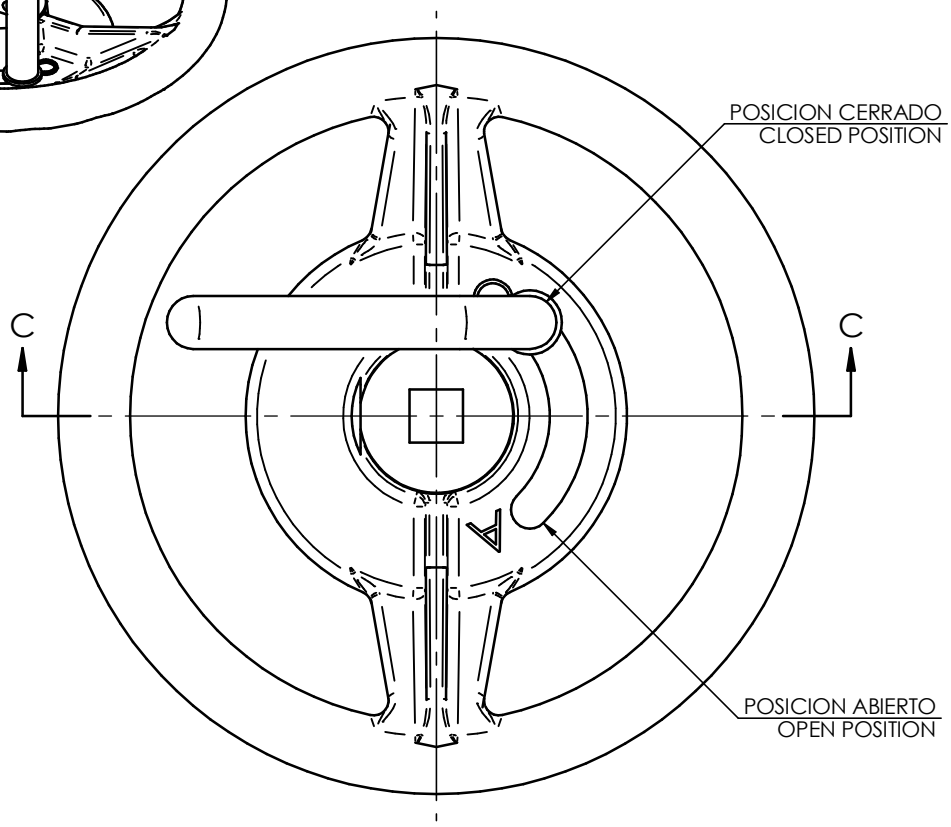
POS *ITEM*	DESIGNACION *DESIGNATION*	MATERIAL	CAN *QTY*
9	TORNILLO C/ ALLEN DIN 912 M8x30 *ALLEN SCREW DIN 912 M8x30*	ACERO CINCADO *ZINC PLATED STEEL*	4
8	CASQUILLO DE COMPENSACION BUSHING	ACERO CARBONO CINCADO *ZINC PLATED CARBON STEEL*	1
7	CARCASA *LID*	FUND. NODULAR DIN GGG-45 *NOD. CAST IRON DIN GGG-45*	1
6	CORONA *CROWN*	FUND. NODULAR DIN GGG-45 *NOD. CAST IRON DIN GGG-45*	1
5	PIÑON *PINION*	FUND. NODULAR DIN GGG-45 *NOD. CAST IRON DIN GGG-45*	1
4	TAPA A PRESION *PRESSURE SEALED LID*	METACRILATO INCOLORO *COLOURLESS METHACRYLATE*	1
3	INDICADOR DE POSICION *POSITION INDICATOR*	ETIQUETA ADHESIVA *ADHESIVE LABEL*	1
2	ANILLO ELASTICO Ø38 *ZEGI RING Ø38*	ACERO PAVONADO UNE 26074 *BRONZED STEEL UNE 26074*	2
1	VOLANTE TIPO "V" *FLYWHEEL*	FUND. GRIS + EPOXY *GREY CAST IRON + EPOXY*	1

VOLANTE TIPO "V" DN.32/150 - DIM. GENERALES
FLYWHEEL "V" TYPE DN.32/150 - GENERAL DIMENSIONS



VALVULA *VALVE*	F	Peso *Weight*
DN.32-100	11	2.2 Kg
DN.125-150	14	





5	ESPARRAGO ALLEN DIN 916 *ALLEN SCREW DIN 916*	ACERO CINCADO *ZINC PLATED STEEL*	1
4	TUERCA DIN 934 *ECROW*	ACERO CINCADO *ZINC PLATED STEEL*	1
3	TORNILLO EXAG. DIN 933 *EXAG. SCREW DIN 933*	ACERO ICINCADON *ZINC PLATED STEEL*	1
2	PALANCA DE BLOQUEO *BLOCKING LEVER*	TUBO DE ACERO + EPOXY *STEEL TUBE + EPOXY*	1
1	VOLANTE TIPO "V" *FLYWHEEL*	FUND. GRIS + EPOXY *GREY CAST IRON + EPOXY*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***

Technical description

PA ALUMINIUM Model

Pneumatic actuators: Double acting and Spring return
Torque range: 17 N·m up to 5.000 N·m
Aluminium body material
Internal and external coating with cataphoresis + Rilsan
Cataphoresis: Electrochemical process that provides high corrosion resistance by means of 20µ of uniform epoxy resin Surface.
Rilsan®: Polyamide 11 coating (250µ). Offers high resistance to corrosion, wearing and impacts
Manufactured with materials resistant to oxidation. Silicone free.
Normal working temperature: -32ºC up to 90ºC
Can be work with air, water or nonaggressive fluid up to 8 bar.
Design standards: ISO-5211, DIN-3337, VDE-3845, NAMUR
Fulfil Directives PED 2014-68-UE y ATEX 94-9-CE
Certificate IEC 61508: SIL
Included mechanical stops



PA/P Model

PP POLYAMIDE Model

Pneumatic actuators: Double acting and Spring return
Torque range: 17 N·m up to 165 N·m
Body material in polyamide with fiberglass reinforcement
Normal working temperature: -32ºC up to 90ºC
Can be work with air, water or nonaggressive fluid up to 8 bar.



PP Model

PI STAINLESS STEEL Model

Pneumatic actuators: Double acting and Spring return
Torque range: 25 N·m up to 1.180 N·m
Stainless steel body material
Specially designed for highly corrosive environments.
Normal working temperature: -32ºC up to 90ºC
Can be work with air, water or nonaggressive fluid up to 8 bar.



PI Model

Options:
Application for High Temperature
Application for Low Temperature
Spring return with Fail open type
Reverse actuators

Accessories:
Limit switches: Electromechanically, inductive
Solenoid valves: 220v 50 Hz/ 24 v DC
Positioners: Pneumatic, Electro Pneumatic
Manual operation: Direct wheel or Declutchable gearbox.

Technical sheets and dimensional drawings

10-1	Sizing sheet for pneumatic actuators.
10-2	Pneumatic actuator. Material details.
10-3	Pneumatic actuator. General dimensions
10-5	Pneumatic actuator. Technical data sheet.
10-6	Pneumatic actuator. Installation diagram.

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TABLA DE SELECCION DE ACTUADORES NEUMATICOS
SELECTION TABLE PNEUMATIC ACTUATORS

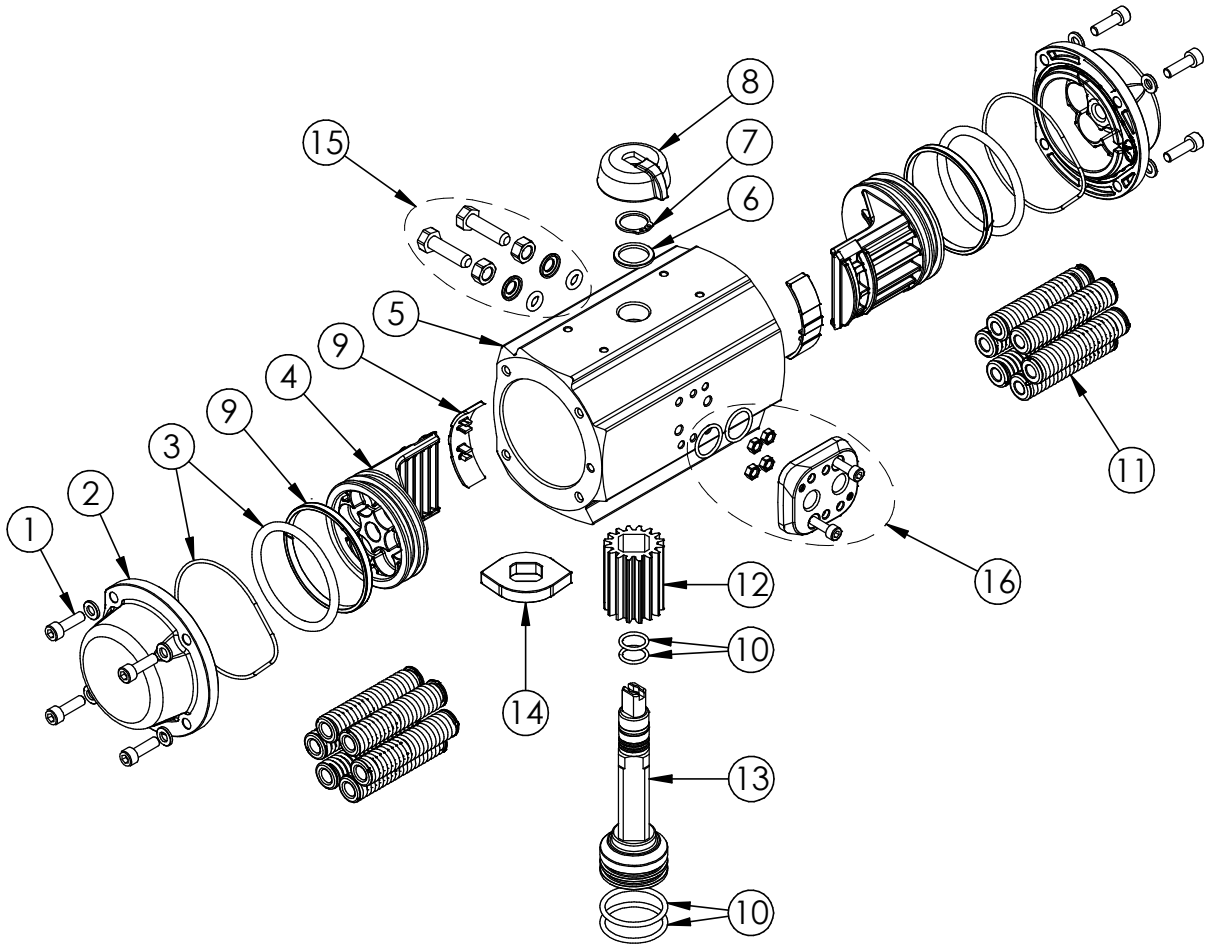
DOBLE EFECTO *DOUBLE ACTING*	**PN.6**	**PN.10**	**PN.16**
PA00	DN.32/65	DN.32/50	DN.32/50
PA05	DN.80/100	DN.65/100	DN.65/80
PA10	DN.125	DN.125	DN.100
PA15	DN.150	DN.150	DN.125
PA20	DN.200	DN.200	DN.150
PA25	DN.250	DN.250	DN.200
PA30	DN.300/350	DN.300	DN.250/300
P40	DN.400	DN.350/400	DN.350
PA50	DN.450/600*	DN.450/500	DN.400*/450
PA60	DN.700*	DN.600*	DN.500*
PA70	DN.800*	DN.700*	DN.600*

SIMPLE EFECTO *SPRING RETURN*	**PN.6**	**PN.10**	**PN.16**
PA00S	DN.32/50	DN.32/50	
PA05S	DN.65	DN.65	DN.32/50
PA10S	DN.80/100	DN.80	DN.65
PA15S		DN.100	DN.80
PA20S	DN.125	DN.125	DN.100
PA25S	DN.150	DN.150	DN.125
PA30S	DN.200	DN.200	DN.150/200
P40S	DN.250/350	DN.250/350	DN.250/300
PA50S	DN.400*	DN.400*	DN.350
PA60S	DN.450*	DN.450*	DN.400*
PA70S	DN.500*	DN.500*	DN.450*

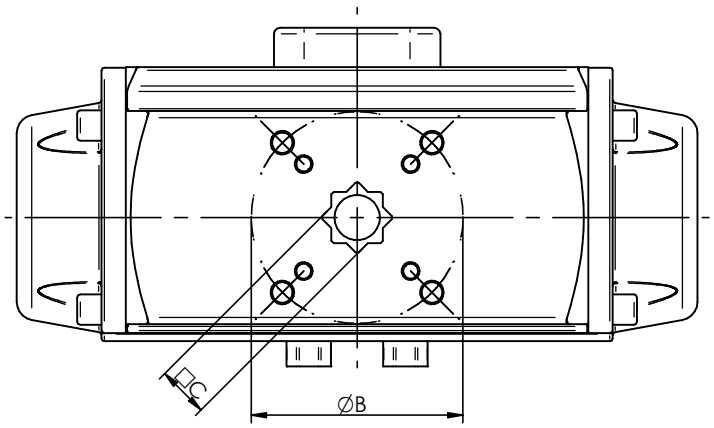
MONTAJES ESPECIALES

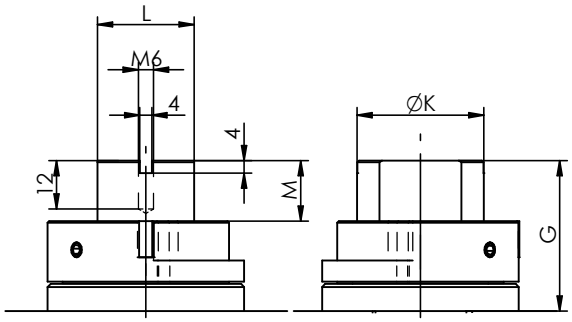
* *SPECIAL ASSEMBLIES*

ACCIONAMIENTO NEUMATICO. DESPIECE DE MATERIALES
PNEUMATIC ACTUATOR. MATERIAL DISASSEMBLY

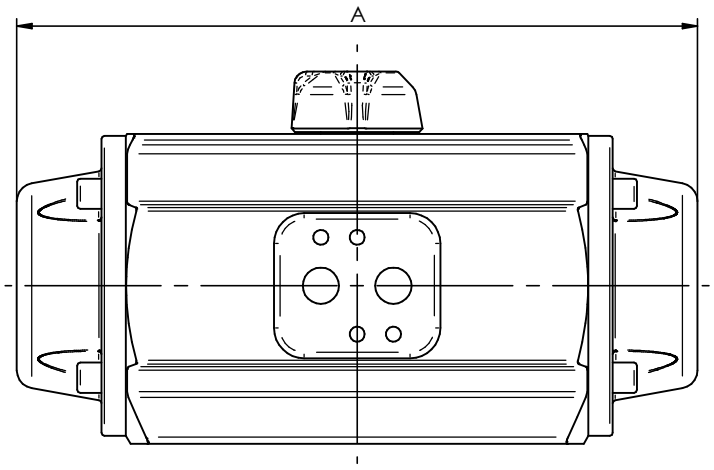


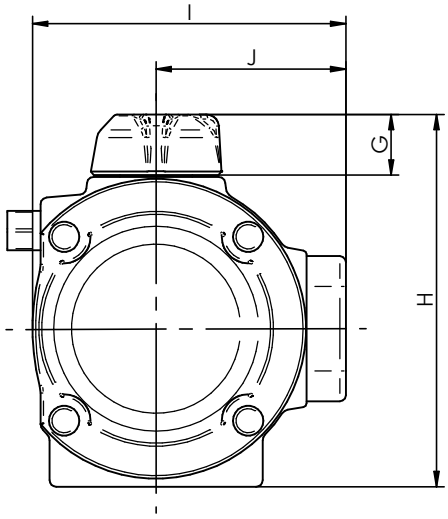
16	CONJUNTO CONEXIÓN NEUMATICA *GROUP PNEUMATIC CONNECTION*	VARIOS *SEVERAL*	2
15	CONJUNTO TOPES DE REGULACION *GROUP STROKE ADJUSTMENTS*	VARIOS *SEVERAL*	1
14	LEVA *CAM"*	ACERO + CATAFORESIS *STEEL + CATAPHORESIS*	1
13	EJE *SHAFT*	ACERO + CATAFORESIS *STEEL + CATAPHOESIS*	1
12	PIÑON *GEAR*	F. ALUMINIO + CATAFORESIS *ALUMINIUM + CATAPORESIS*	1
11	JUEGO DE MUELLES *SPRINGS SET*	ACERO DIN 17-223-C *STEEL DIN 17-223-C*	-
10	JUNTA TORICA *O-RING*	NBR	4
9	GUIA EMBOLO *PISTON GUIDE*	POLIACETAL *POLYACETAL*	4
8	INDICADOR VISUAL *POSITION INDICATOR*	POLIAMIDA *POLYAMIDE*	1
7	ANILLO SEGURIDAD *SPRING CLIP*	ACERO + NIQUEL-TEFLON *STEEL + NICKEL-PTFE*	1
6	ARANDELA *WASHER*	POLIAMIDA 6 *POLYAMIDE 6*	1
5	CILINDRO *CYLINDER*	FUND. ALUMINIO + CATAFORESIS + POLIAMIDA *ALUMINIUM ALLOY+ CATAPHORESIS + POLYAMID*	1
4	EMBOLO *PISTON*	FUND. ALUMINIO + CATAFORESIS *ALUMINIUM ALLOY+ CATAPHORESIS*	2
3	JUNTA TORICA *O-RING*	NBR	4
2	TAPA *CAP*	FUND. ALUMINIO + CATAFORESIS + POLIURETANO *ALUMINIUM ALLOY+ CATAPHORESIS + POLYURET*	2
1	TORNILLO ALLEN + ARANDELA TAPA *CAP ALLEN SCREW + WASHER*	ACERO INOX AISI 304 *STAINLESS STEEL AIS304*	8
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**MATERIAL**	**CAN** ***QTY***

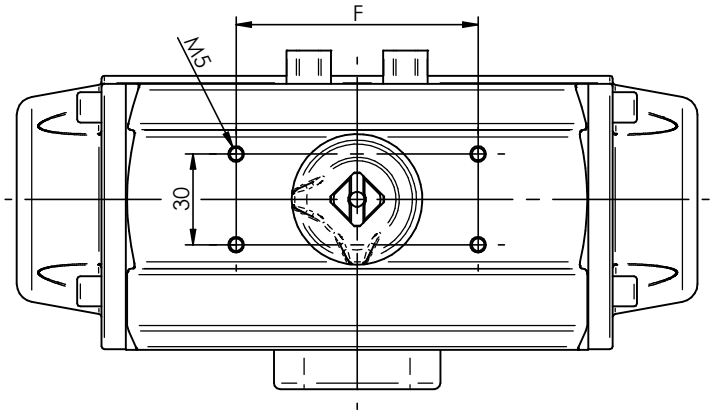


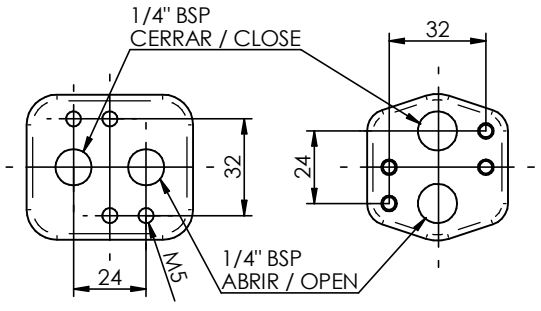


P40-PA50-PA60-PA70









MOD. "PA" MOD. "P"

DIMENSIONES GENERALES / *GENERAL DIMENSIONS*															
Ref.		**A**		**B**	**C**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**Peso /** *Weight* **Kg**	
DE*IDA*	**SE***ISR*	**DE***IDA*	**SE***ISR*											**DE***IDA*	**SE***ISR*
PA00	**PA00S**	153		F05	14	80	20	102	84	52				1.4	1.62
PA05	**PA05S**	201		F05-F07	17	80	20	119	102	62				2.57	2.94
PA10	**PA10S**	225		F05-F07	17	80	20	123	104	63				3.08	3.48
PA15	**PA15S**	265		F05-F07	17	80	20	139	120	71				4.20	5.04
PA20	**PA20S**	310		F05-F07	22	80	20	147	127	75				5.61	6.63
PA25	**PA25S**	358		F07-F10	27	80	20	175	153	89				9.30	11.3
PA30	**PA30S**	428		F07-F10	27	80	20	191	169	97				11.6	15.3
P40	**P40S**	444	598	F10-F12	36	130	50	272	226	120	41.9	32	20	17.6	36.4
PA50	**PA50S**	694		F10-F14	36	130	50	309	269	142	41.9	32	29	35	53
PA60	**PA60S**	690		F16	46	130	50	368	331	172	41.9	32	12	48.3	83.2
PA70	**PA70S**	743		F16	46	130	50	428	402	216	41.9	32	12	77.9	118.2

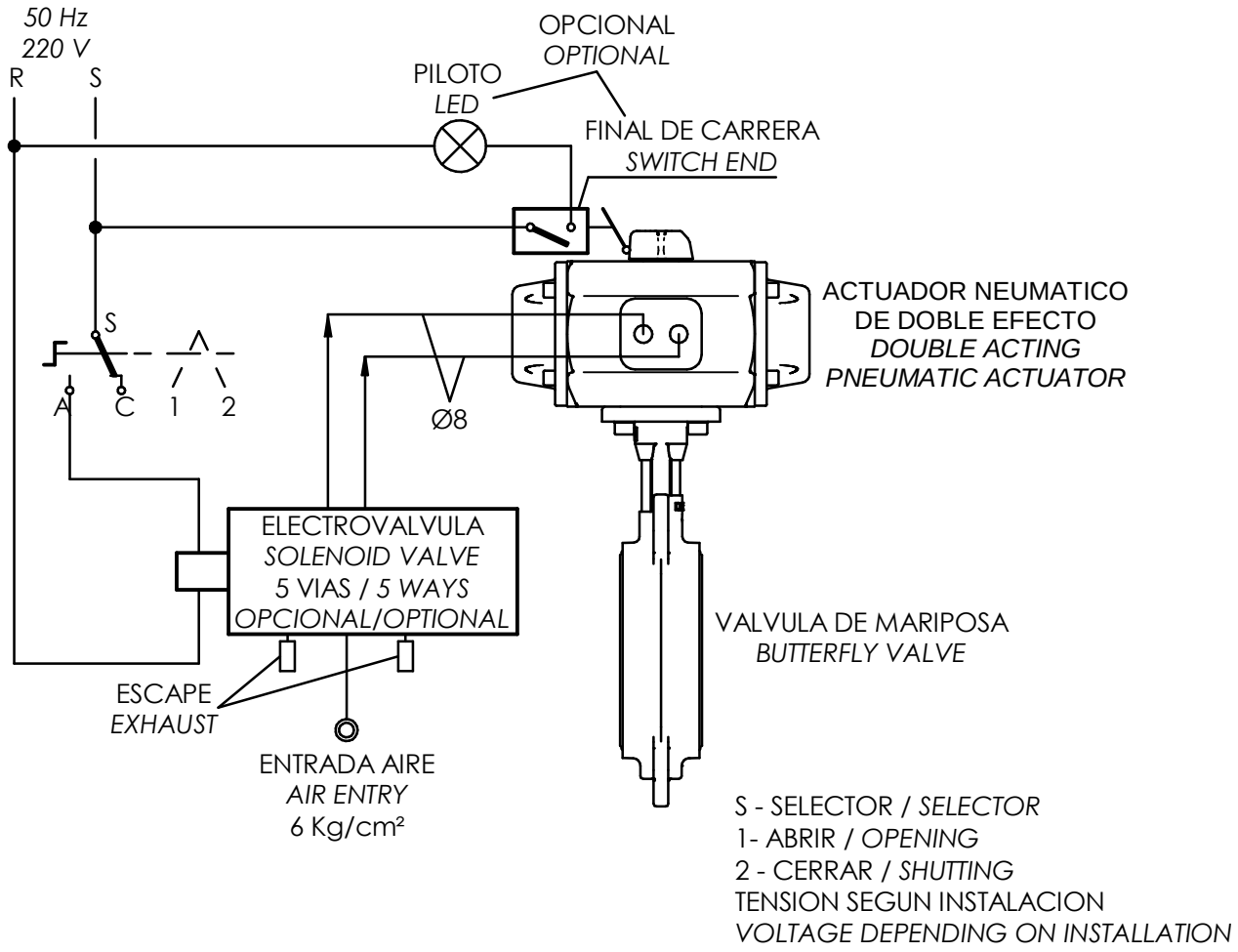
PARES ACT. DOBLE EFECTO Nm *DUOBLE ACTING TORQUES. Nm*		**PARES ACTUADORES SIMPLE EFECTO Nm** *SPRING RETURN ACTUATORS TORQUES Nm*				
			Nº MUELLES POR LADO *SPRING Nº EACH SIDE*	MUELLES / *SPRING*		AIRE A 6 bar
Ref	AIRE A 6 bar *AIR TO 6 bar*	Ref		INICIAL *INITIAL*	FINAL *END*	INICIAL *INITIAL*	FINAL *END*
PA00	28.5	PA00S	6	18.8	12.7	15.8	9.7
PA05	49.7	PA05S	6	31.4	20.9	28.8	18.3
PA10	71	PA10S	6	45.6	30.8	40.2	25.4
PA15	116.5	PA15S	6	71.5	49	67.5	45
PA20	165.5	PA20S	6	104.7	65.8	99.7	60.8
PA25	290	PA25S	6	181.8	119.4	170.6	108.2
PA30	469	PA30S	6	290.3	195.7	273.5	178.9
P40	1180	P40S	4	766.9	491.6	688.3	413
PA50	2067	P50S	6	1425	819.5	1248	642
PA60	3458	PA60S	6	2075	1383	2075	1383
PA70	5043	PA70S	6	3539	1769	3273	1504

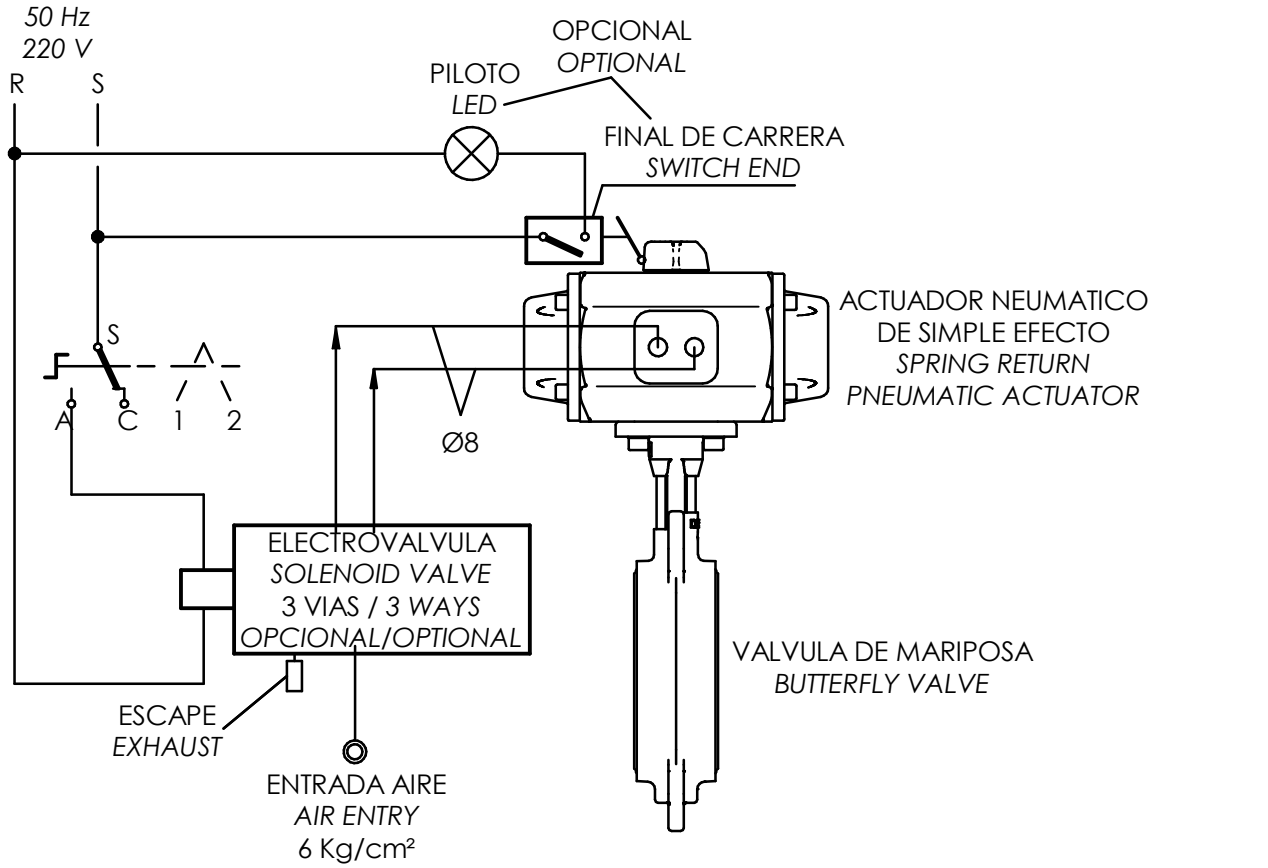
PESO / *WEIGHT* Kg				**TIEMPO DE MANIOBRA EN SEG.** *CYCLE TIME IN SEC.*			
				DE/*DA*		SE/*SR*	
DE/*DA*	SE/*SR*	DE/*DA*	SE/*SR*	PARA ABRIR *TO OPEN*	PARA CERRAR *TO CLOSE*	PARA ABRIR *TO OPEN*	PARA CERRAR *TO CLOSE*
PA00	PA00S	1.40	1.62	0.15	0.15	0.2	0.2
PA05	PA05S	2.57	2.94	0.2	0.2	0.25	0.25
PA10	PA10S	3.08	3.48	0.25	0.25	0.3	0.3
PA15	PA15S	4.20	5.04	0.3	0.3	0.4	0.4
PA20	PA20S	5.61	6.63	0.4	0.4	0.5	0.5
PA25	PA25S	9.30	11.3	0.5	0.5	0.8	0.8
PA30	PA30S	11.6	15.3	1.2	1.2	2	2
P40	P40S	17.6	36.4	1.2	1.2	2	2
PA50	PA50S	35	53	3	2.5	3.7	2.9
PA60	PA60S	48.3	83.2	3	3	6	5
PA70	PA70S	77.9	118.2	4	4	8	6

CAPACIDAD EN LITROS A PRESION ATMOSFERICA *CAPACITY IN LITRES TO ATMOSPHERIC PRESSURE*				
SIMPLE EFECTO *SPRING RETURN*		DOBLE EFECTO *DOUBLE ACTING*		
Ref	PARA ABRIR *TO OPEN*	Ref	PARA ABRIR *TO OPEN*	PARA CERRAR *TO CLOSE*
PA00S	0.15	PA00	0.15	0.18
PA05S	0.28	PA05	0.28	0.37
PA10S	0.35	PA10	0.35	0.45
PA15S	0.65	PA15	0.65	0.82
PA20S	0.8	PA20	0.8	1.15
PA25S	1.5	PA25	1.5	2.02
PA30S	2.05	PA30	2.05	3
P40S	5.3	P40	5.3	5.3
P50S	10.5	P50	10.5	14.1
PA60S	19.5	PA60	19.5	20.7
PA70S	31	PA70	31	30

Para calcular el consumo del actuador, basta multiplicar las cifras correspondientes del cuadro por la presión real de trabajo.
To calculate the consumption of the actuator, it is enough to multiply the corresponding figures of the table by the real working pressure

ACTO. NEUMATICO SIMPLE Y DOBLE EFECTO ESQUEMA INSTALACION
PNEUMATIC ACT. SPRING AND DOUBLE ACTING INSTALLATION DIAGRAM





Technical description motor series AQ

Motor AQ1L to AQ7L

Direct 1/4 quarter turn
Voltage: monophasic 85v AC to 260v AC. Possibility in 24v DC.
Torque range: 15 N·m up to 70 N·m
Service: On/Off (Class A) / Positioning (Class B)
Motor class S4-30% m. Maximum 120 starts per hour.
Casing in aluminium die casting.
Powder coating as standard (RAL 1014)
External protection: C3 according ISO 12944.
Weatherproof IP 68 (2m/24h) / NEMA 4X
Temperature range: -20 ... +60°C
Hand wheel emergency operation by a 10x10 mm square
Mechanical position indicator
Two limit switches SPDT (Open/ Close) and
Two auxiliary limit switches for signalling.



switch model Series AQL

Options:

Positioner Inlet/Outlet signal : 4-20 mA
Position transmitter 4-20 mA

Motor AQ5 to AQ 50

Direct 1/4 quarter turn
Voltage: monophasic 1x220v 50Hz / triphasic 3x380v 50 Hz / 24v DC
Torque range: 50 N·m up to 500 N·m
Service: On/Off (Class A) / Positioning (Class B)
Motor class S4-30% m. Maximum 360 starts per hour.
Casing in aluminium die casting.
Powder coating as standard (RAL 1014)
External protection: C3 according ISO 12944.
Weatherproof IP 68 (2m/24h) / NEMA 4X
Temperature range: -20 ... +60°C
Hand wheel emergency operation
Mechanical position indicator
Two limit switches SPDT (Open/ Close) and
Two auxiliary limit switches for signalling.
Two limit torques available from model AQ25.



switch model Series AQ

Options:

Switch model/ Logic model
Positioner Inlet/Outlet signal : 4-20 mA
Position transmitter 4-20 mA



Logic model Series AQ

Technical sheets and dimensional drawings

11-1	Sizing sheet for Bernard actuators.
11-2	Dimensions and electrical data for model AQL/AQ.
11-3	Dimensions and electrical data for model EZ.
11-4	Wiring diagram AQL
11-5	Wiring diagram AQ 5/10/15
11-6	Wiring diagram AQ 25/30/50
11-7	Wiring diagram EZ 60/100/250/400/1000

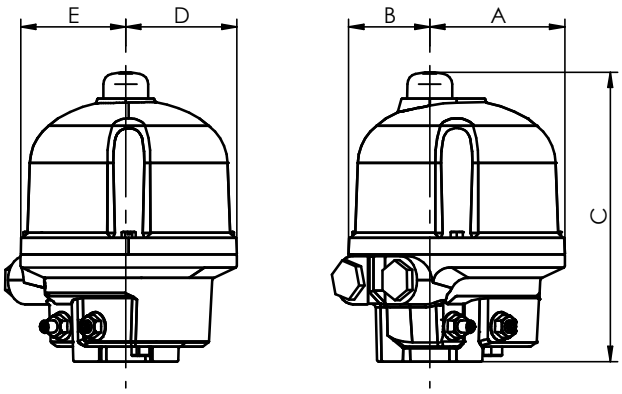
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TABLA DE SELECCION DE SERVOMOTORES "BERNARD"
SELECTION TABLE "BERNARD" ELECTRIC ACTUATORS

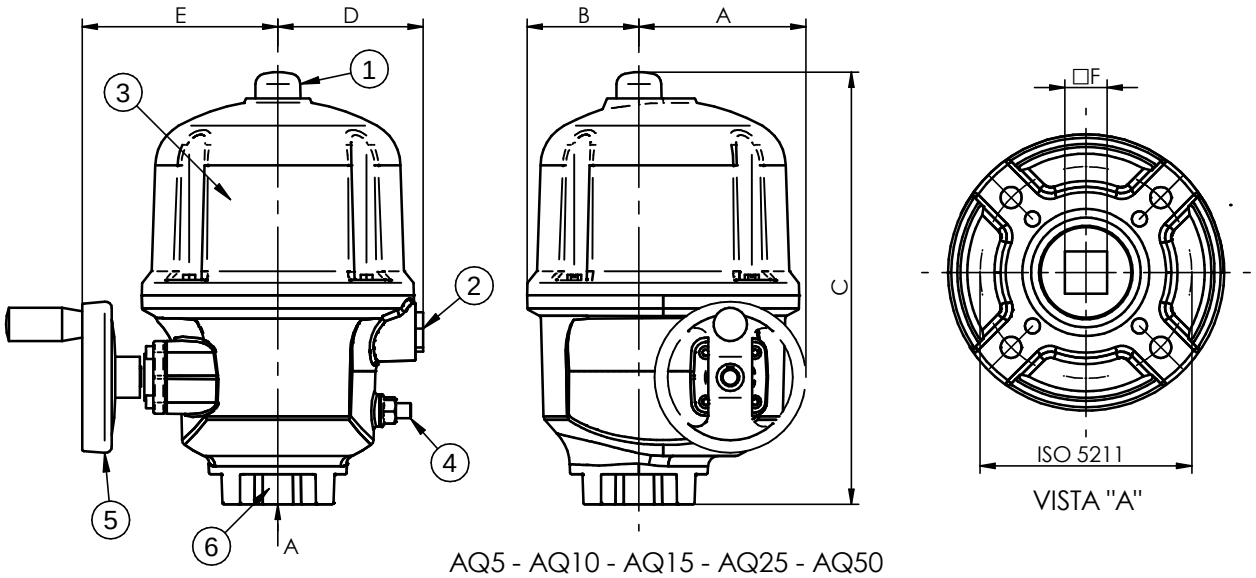
TIPO *TYPE*	**TIEMPO MANIOBRA** *OPERATION TIME*	**MAX. PAR ACT.** *ACT. TORQUE*	**PN.6**	**PN.10**	**PN.16**
AQ3L	15 seg.	30 Nm	DN.25/80	DN.25/50	
AQ7L	15 seg.	70 Nm	DN.100/125	DN.65/100	
AQ5	16 seg.	50 Nm	DN.25/100	DN.25/100	
AQ10	25 seg.	100 Nm	DN.125/150	DN.125	
AQ15	30 seg.	150 Nm	DN.200	DN.150/200	DN.125/150
AQ25	30 seg.	250 Nm	DN.250		DN.200
AQ50	35 seg.	500 Nm	DN.300/350	DN.250/350	DN.250/300
EZ100	30 seg.	1000 Nm	DN.400	DN.400	DN.350/400
EZ250	70 seg.	2500 Nm	DN.450/600	DN.450/500	
EZ400	125 seg.	4000 Nm	DN.700	DN.600	
EZ1000	210 seg.	10000 Nm	DN.900/1000	DN.700/900	DN.700/800

SERVOMOTOR ELECTRICO "BERNARD" TIPO "AQL - AQ"

"BERNARD" ELECTRIC ACTUATORS "AQL - AQ" TYPE



AQ3L - AQ7L



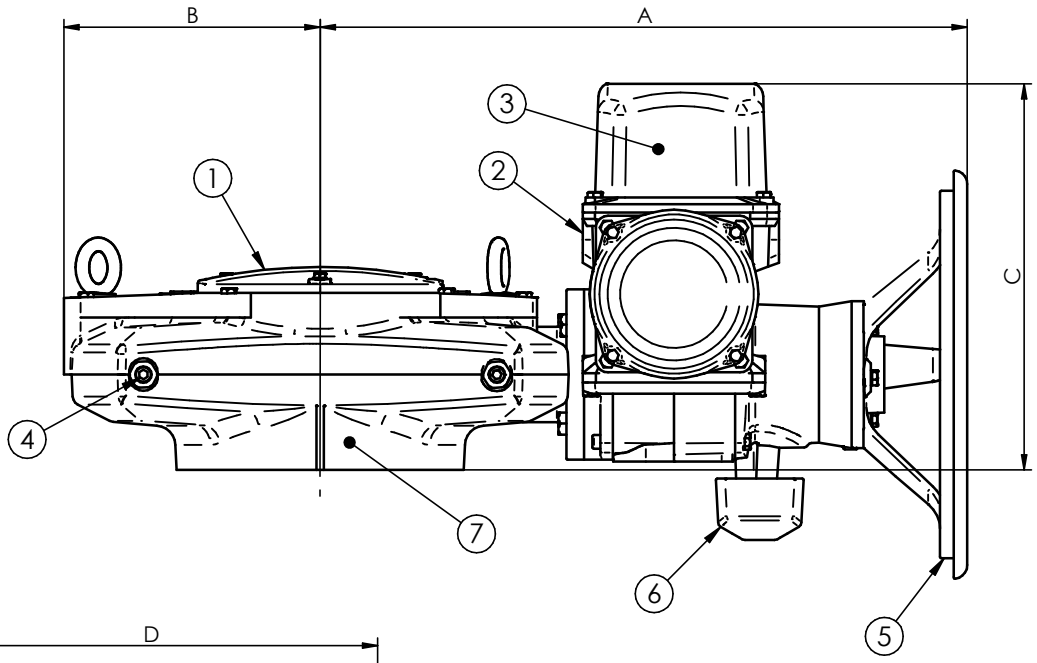
VISTA "A"

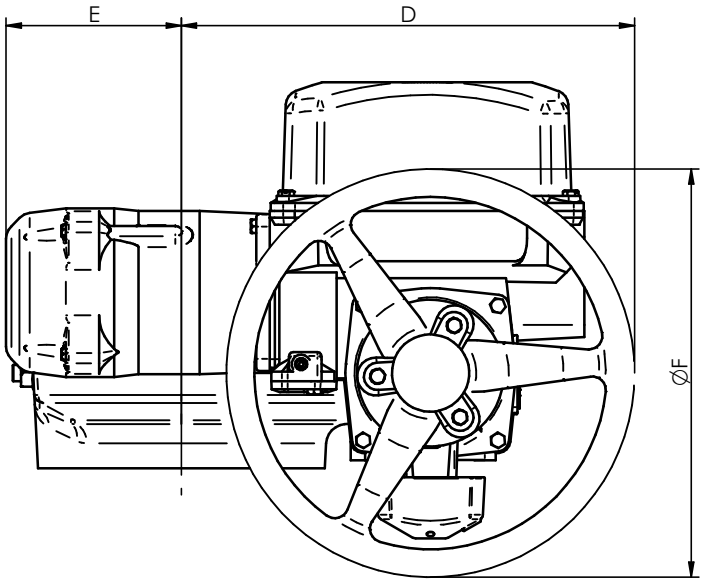
AQ5 - AQ10 - AQ15 - AQ25 - AQ50

Ref	A	B	C	D	E	F	ISO 5211	Par Máx. *Max. Torque*	Tiempo de Maniobra *Operating time*	Potencia Kw *Power Kw*		Peso *Weight*
										1x230V50Hz	3x400V50Hz	
AQ3L	60	83	191	67	85	14	F05	30 Nm	15 seg.	0.02		2.5 Kg
AQ7L	89	54	191	73	80	22	F07	70 Nm	15 seg.	0.02		3.5 Kg
AQ5	110	74	286	96	129	11	F07	50 Nm	16 seg.	0.015	0.03	10 Kg
AQ10	110	74	286	96	129	14	F07	100 Nm	25 seg.	0.015	0.03	10 Kg
AQ15	110	74	286	96	129	14-17	F07	150 Nm	30 seg.	0.03	0.03	10 Kg
AQ25	138	86	318	117	199	17-22	F07-F10	250 Nm	30 seg.	0.04	0.04	13 Kg
AQ50	174	86	328	117	230	22	F07-F10	500 Nm	35 seg.	0.06	0.07	15 Kg

POS *ITEM*	DESIGNACION *DESIGNATION*	CAN *QTY*
6	CASQUILLO DE CONEXION *DRIVE SOCKET*	1
5	VOLANTE DE EMERGENCIA *EMERGENCY HANDWHEEL*	1
4	TORNILLO TOPE DE REGULACION GIRO 90º *ADJUSTABLE STOP SCREWS 90º*	2
3	FINAL DE CARRERA AJUSTABLE *END OF TRAVEL SWITCHES ADJUSTABLE*	2
2	ENTRADA DE CABLES 2xM20 *CABLE ENTRIES 2xM20*	2
1	INDICADOR DE POSICION *POSITION INDICATOR*	1

SERVOMOTOR ELECTRICO "BERNARD" TIPO "EZ"
"BERNARD" ELECTRIC ACTUATORS "EZ" TYPE

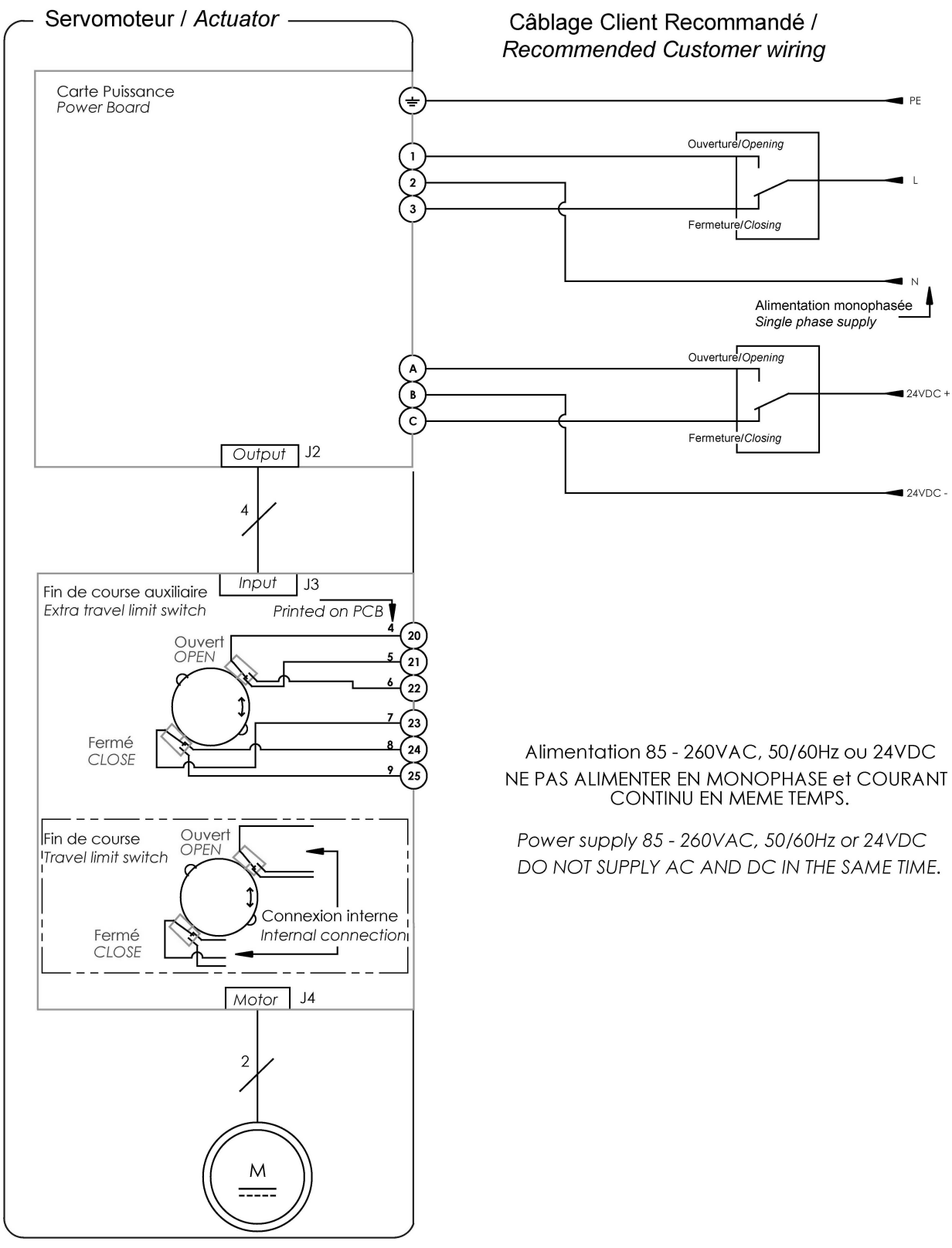




Ref	A	B	C	D	E	F	ISO 5211	Par Máx. *Max. Torque*	Tiempo de Maniobra *Operating time*	Potencia Kw *Power Kw*		Peso *Weight*
										1x230V50Hz	3x400V50Hz	
EZ100	407	114	262	236	226	300	F12	1000 Nm	30 seg.	0.20	0.10	47 Kg
EZ250	476	188	288	333	129	300	F14	2500 Nm	70 seg.	0.40	0.10	64 Kg
EZ400	510	154	284	288	174	300	F16	4000 Nm	125 seg.	0.40	0.10	67 Kg
EZ1000	596	184	303	332	152	300	F25	10000 Nm	210 seg.	0.40	0.14	92 Kg

7	CASQUILLO DE CONEXION *DRIVE SOCKET*	1
6	DESEMBRAGABLE DE MOTOR *MOTOR DECLUTCHABLE*	1
5	VOLANTE DE EMERGENCIA *EMERGENCY HANDWHEEL*	1
4	TORNILLO TOPE DE REGULACION GIRO 90º *ADJUSTABLE STOP SCREWS 90º*	2
3	FINAL DE CARRERA AJUSTABLE *END OF TRAVEL SWITCHES ADJUSTABLE*	2
2	ENTRADA DE CABLES 2xM20 *CABLE ENTRIES 2xM20*	2
1	INDICADOR DE POSICION *POSITION INDICATOR*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**CAN** ***QTY***

SERVOMOTOR ELECTRICO "BERNARD" DIAGRAMA ELECTRICO
"BERNARD" ELECTRIC ACTUATORS WIRING DIAGRAM



Alimentation 85 - 260VAC, 50/60Hz ou 24VDC
NE PAS ALIMENTER EN MONOPHASE et COURANT CONTINU EN MEME TEMPS.

Power supply 85 - 260VAC, 50/60Hz or 24VDC
DO NOT SUPPLY AC AND DC IN THE SAME TIME.

BERNARD CONTROLS

4 rue d'Arsonval BP 91
95505 GONESSE CEDEX
TEL. +33 (0)1 34 07 71 00
FAX. +33 (0)1 34 07 71 01
www.bernardcontrols.com

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AQL MONOPHASE - 24VDC PRECABLE
SINGLE PHASE - 24VDC AQL PREWIRED

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15M24		

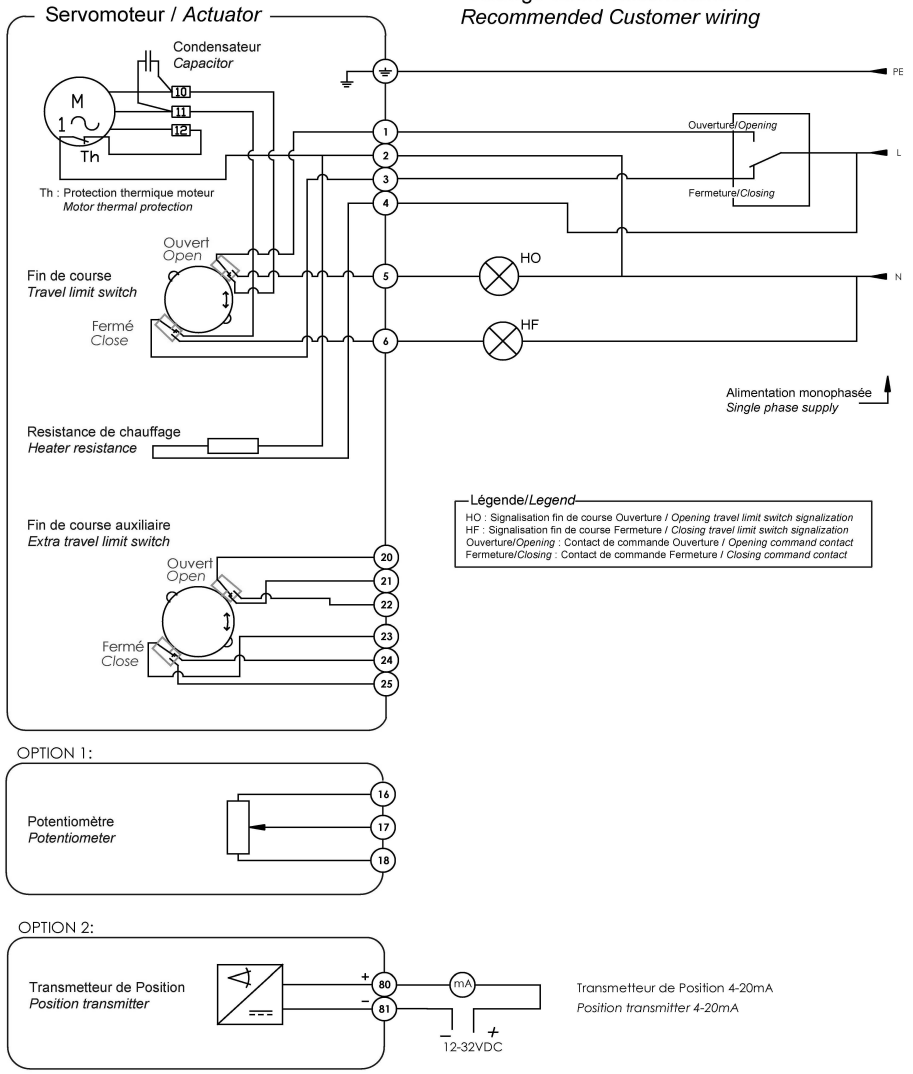
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SERVOMOTOR ELECTRICO "BERNARD" DIAGRAMA ELECTRICO
"BERNARD" ELECTRIC ACTUATORS WIRING DIAGRAM

Câblage Client Recommandé / *Recommended Customer wiring*



BERNARD CONTROLS
4 rue d'Arsonval BP 91
95505 GONESSE CEDEX
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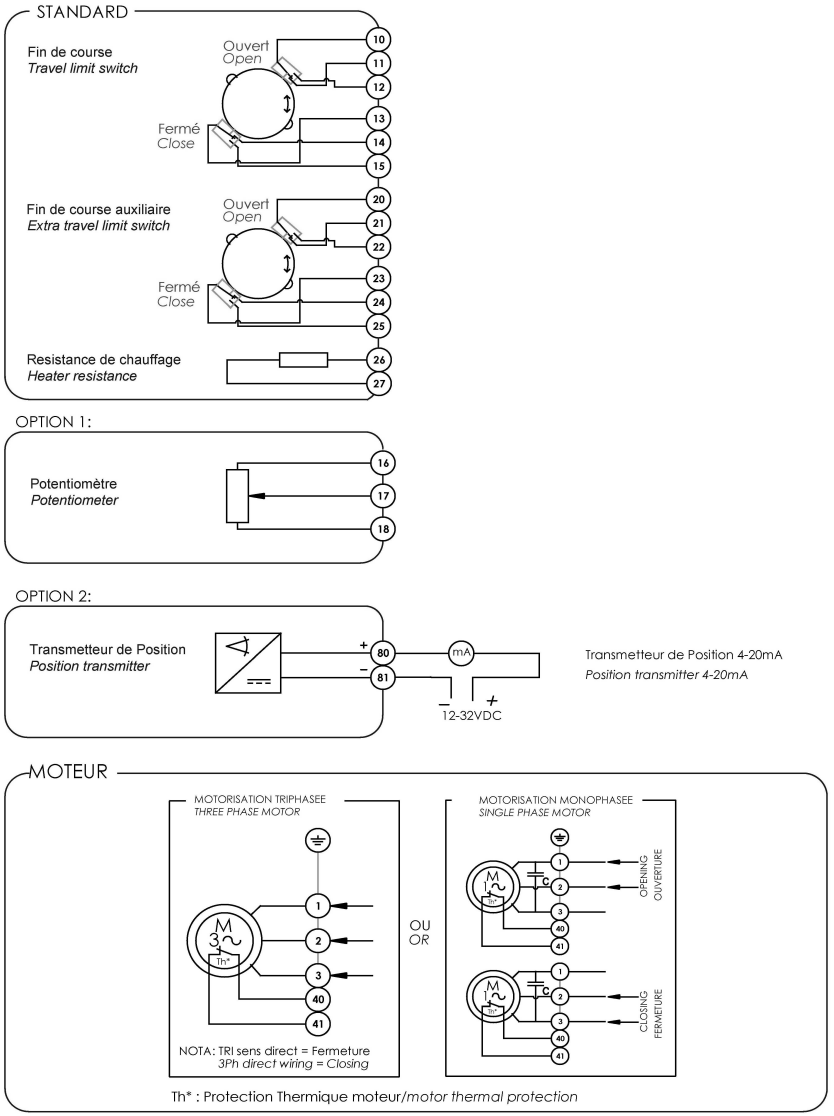
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20/06/17	20/06/17	20/06/17	->	21/07/17

AQ-5-10-15 MONOPHASE PRECABLE
SINGLE PHASE AQ-5-10-15 PREWIRED

Potentiomètre, Transmetteur de position
Potentiometer, Position transmitter

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G.Hou	A.Le Gall	D.Schwebel	->	RGuillaume
19/06/17	19/06/17	19/06/17	->	21/07/17

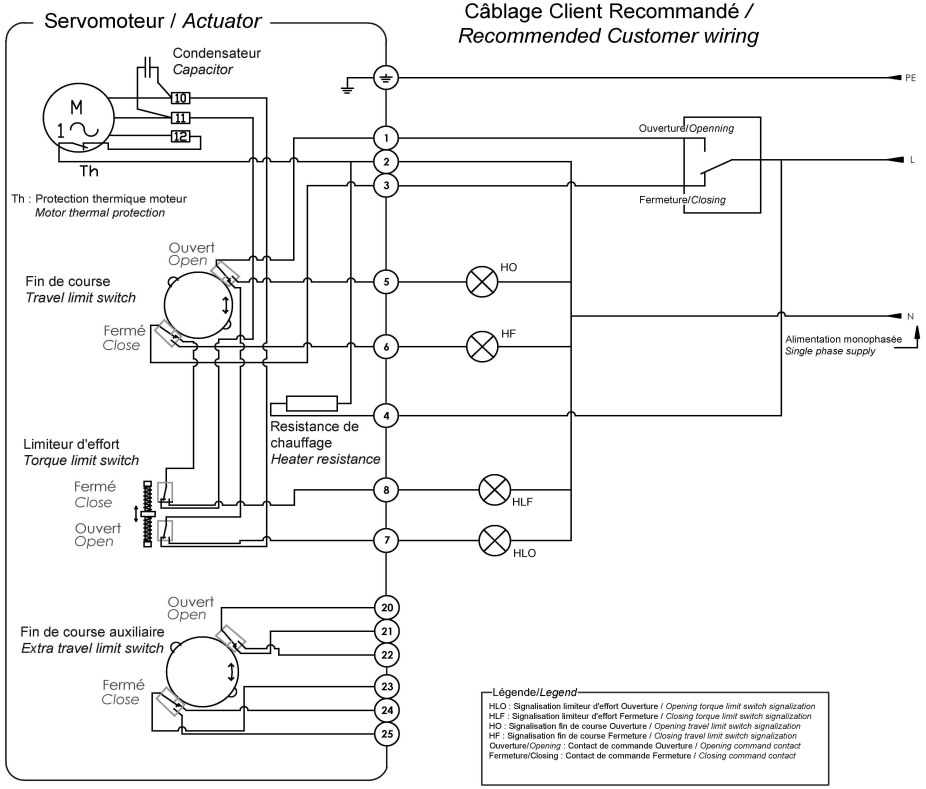
AQ-5-10-15 1PH/3PH STANDARD
1PH/3PH AQ-5-10-15 STANDARD

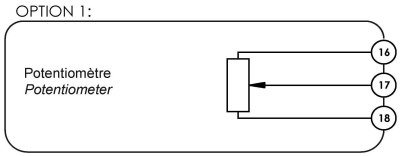
Potentiomètre, Transmetteur de position
Potentiometer, Position transmitter

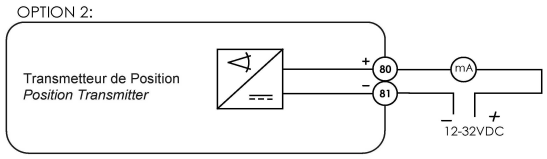
WD_500034_FREN | Planche/Sheet: | Ind./Rev.: C

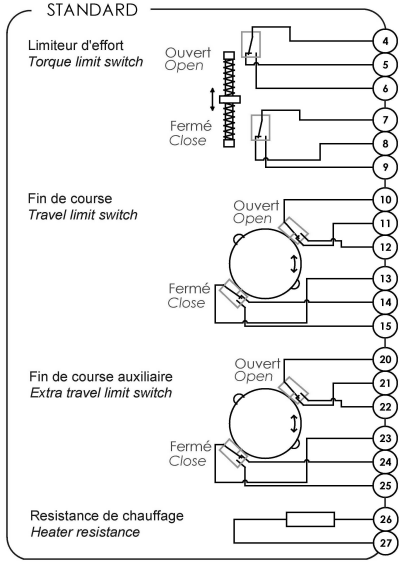
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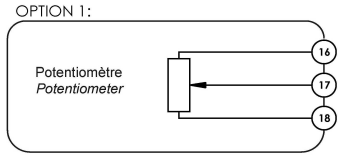
SERVOMOTOR ELECTRICO "BERNARD" DIAGRAMA ELECTRICO
"BERNARD" ELECTRIC ACTUATORS WIRING DIAGRAM

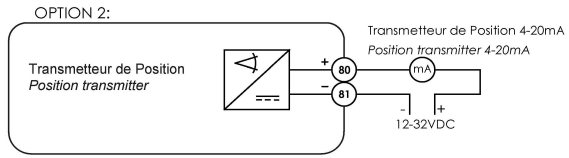


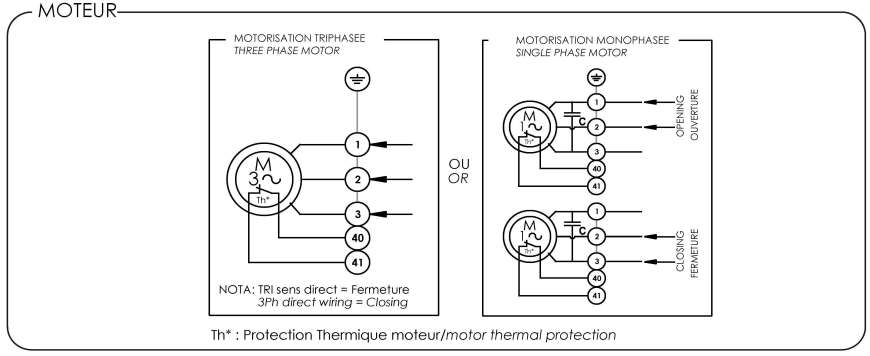












BERNARD CONTROLS
4 rue d'Arsonval BP 91
95505 GONESSE CEDEX
TEL. +33 (0)1 34 07 71 00
FAX. +33 (0)1 34 07 71 01
www.bernardcontrols.com

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Projet/Project:	Etude/Study:	Modification:
15M24		

Dessiné par: Designed by:	Vérifié par: Checked by:	Validé par: Validated by:	Approuvé/Approved PROTO	Approuvé/Approved PROD
G.Hou 19/06/17	A.Le Gall 19/06/17	D.Schwebel 19/06/17	-> ->	RGuillaume 21/07/17

AQ25-30-50 MONOPHASE PRECABLE
SINGLE PHASE AQ25-30-50 PREWIRED

Potentiomètre, Transmetteur de position
Potentiometer, Position transmitter

WD_500035_FREN | Planche/Sheet: | Ind./Rev.: D

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4 rue d'Arsonval BP 91
95505 GONESSE CEDEX
TEL. +33 (0)1 34 07 71 00
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Projet/Project:	Etude/Study:	Modification:
15M24		DM_17369

Dessiné par: Designed by:	Vérifié par: Checked by:	Validé par: Validated by:	Approuvé/Approved PROTO	Approuvé/Approved PROD
G.Hou 17/11/17	F.Han 17/11/17	D.Schwebel 17/11/17	-> ->	RGuillaume 17/11/17

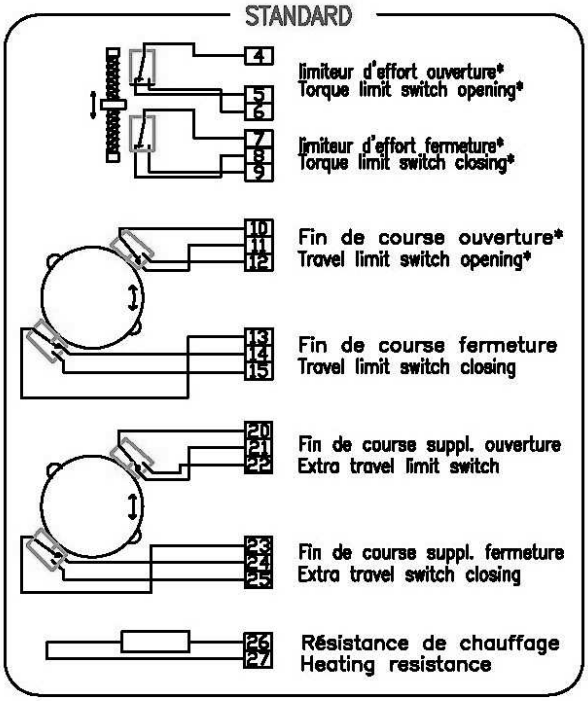
AT/AQ-25-30-50 1PH/3PH STANDARD
1PH/3PH AT/AQ-25-30-50 STANDARD

Potentiomètre, Transmetteur de position
Potentiometer, Position transmitter

WD_500036_FREN | Planche/Sheet: | Ind./Rev.: D

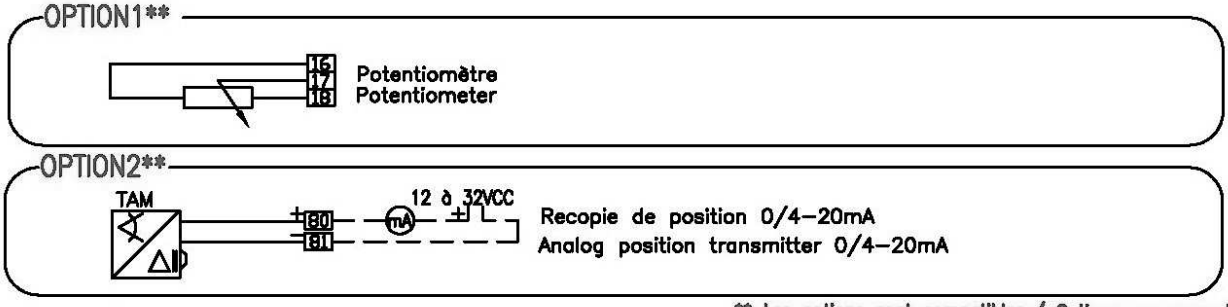
SERVOMOTOR "BERNARD" DIAGRAMA ELECTRICO "EZ4-EZ1000"

"BERNARD" ELECTRIC ACTUATORS WIRING DIAGRAM "EZ4-EZ1000"

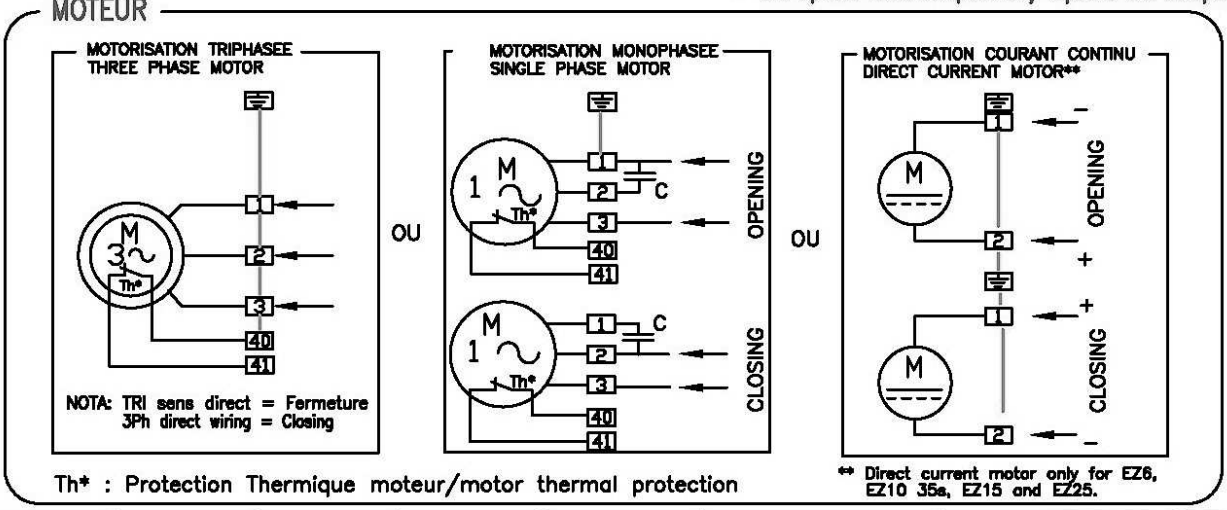


NOTA

* Limiteurs d'effort disponibles de EZ25 à EZ1000
  Les contacts du limiteur d'effort donnent un contact fugitif.
* Torque limiter available from EZ25 à EZ1000
  The torque limiter switches give a pulse signal.



** Les options sont compatibles / Options are compatibles



REV.	DATE	AUTEUR	VERIF.	APPROUV.	MODIF.
D	29/01/2013	YGE	SCHWEBEL	FAURE	T956
A	13/11/12	DIARRA	YGE	FAURE	CREATION

S50999/00

SCHEMA DE CABLAGE/WIRING DIAGRAM

BERNARD CONTROLS
4, rue d'Arsonval
95505 GONESSE
TEL.(0)1.34.07.71.00
FAX.(0)1.34.07.71.01

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Technical description

Motor SQ standard ON-OFF

Direct 1/4 quarter turn
Voltage: monophasic 1x220v 50Hz/ triphasic 3x380v 50 Hz / 24 v DC
Torque range: 150 N·m up to 2.400 N·m
Service: On/Off (Class A) / Positioning (Class B)
Motor class S2– 15 min. Maximum 60 starts per hour.
Swing angles from 75° to 105°
Operation times ranges for 90° from 4 s. to 100 s.
Adjustable mechanical stops
External protection: C5 / KS
Colour Silver Grey (similar to RAL 7037)
Weather proof protection IP 68
Temperature range: -30 ... +70°C
Hand wheel emergency operation
Mechanical position indicator
Two limit switches
Two limit torques



SQ standar model

GS + SA standard ON-OFF

Combination multi turn SA + gearbox 1/4 quarter turn GS.
Voltage: monophasic 1x220v 50Hz/ triphasic 3x380v 50 Hz / 24 v DC
Torque range: 250 N·m up to 675.000 N·m
Service: On/Off (Class A) / Positioning (Class B)
Motor class S2– 15 min. Maximum 60 starts per hour.
Swing angles from 75° to 100°
Operation times ranges for 90° from 9 s. to 392 s.
Adjustable mechanical stops
External protection: C5 / KS , GS 160.3 gear and up will be: C3 / KN
Colour Silver Grey (similar to RAL 7037)
Weather proof protection IP 68
Temperature range: -30 ... +70°C
Hand wheel emergency operation
Mechanical position indicator
Two limit switches
Two limit torques



GS+SA standar model

Options:

Limit switches in intermediate positions
Limit switches in tandem version
Position transmitter
Integrated control under request:
AM (Basic), AC (Advance)

Technical sheets and dimensional drawings

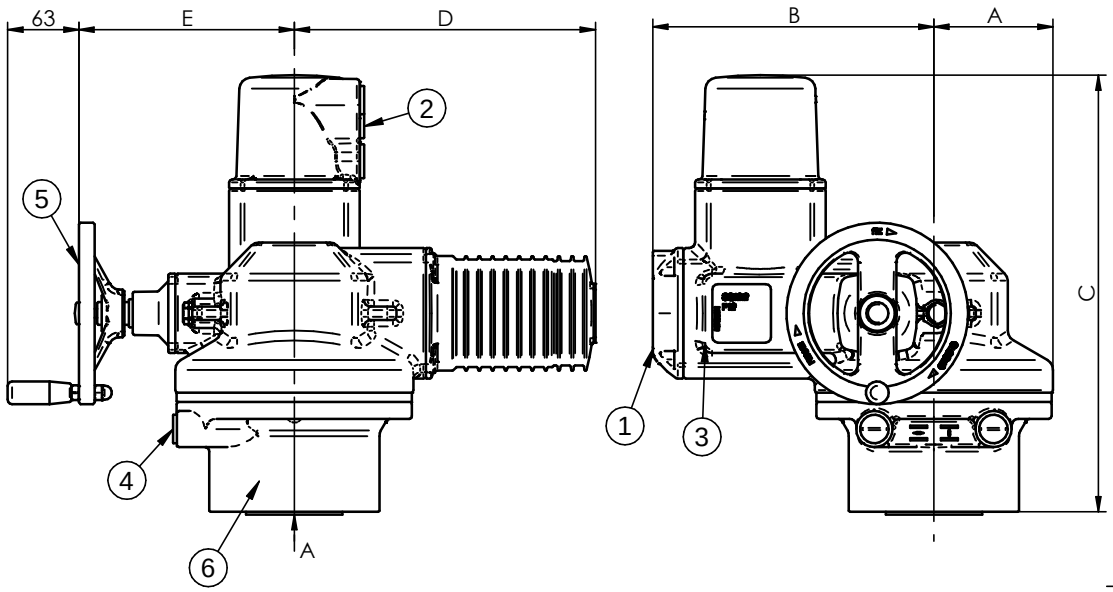
12-1	Sizing sheet for Auma actuators.
12-2	General dimensions and electrical data SQ
12-3	General dimensions and electrical data GS + SA
12-4	Wiring diagram monophasic: TPA01R1AA-101-000
12-5	Wiring diagram triphasic: TPA00R1AA-101-000

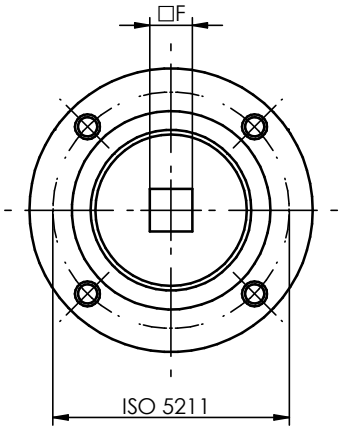
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TABLA DE SELECCION DE SERVOMOTORES "AUMA"
SELECTION TABLE "AUMA" ELECTRIC ACTUATORS

TIPO *TYPE*	**TIEMPO MANIOBRA** *OPERATION TIME*	**MAX. PAR ACT.** *ACT. TORQUE*	**PN.6**	**PN.10**	**PN.16**
SQ05.2	22 seg.	150 Nm	DN.25/200	DN.25/150	
SQ07.2	22 seg.	300 Nm	DN.250	DN.200	
SQ10.2	32 seg.	600 Nm	DN.300/350	DN.250/350	DN.250/300
SQ12.2	32 seg.	1200 Nm	DN.400	DN.400	DN.350/400
SQ14.2	48seg.	2400 Nm	DN.450/600	DN.450/500	
GS100.3/VZ4.3 /SA07.6	69 seg.	4000 Nm	DN.700/750	DN.600	
GS125.3/VZ4.3 /SA10.2	36 seg.	8000 Nm	DN.800/900	DN.700/800	DN.700/750
GS160.3/GZ160.3(8:1) /SA07.6	147 seg.	9300 Nm	DN.1000	DN.900	
GS160.3/GZ160.3(8:1) /SA10.2	144 seg.	14000 Nm	DN.1100/1200	DN.1000/1100	DN.800/900
GS200.3/GZ200.3(8:1) /SA10.2	145 seg.	18000 Nm	DN.1400	DN.1200	DN.1000
GS200.3/GZ200.3(16:1) /SA10.2	288 seg.	28000 Nm	DN.1500/1600	DN.1400	DN.1050/1200
GS250.3/GZ250.3(16:1) /SA14.2	283 seg.	56000 Nm		DN.1500/1600	DN.1400

SERVOMOTOR ELECTRICO "AUMA" TIPO "SQ"
"AUMA" ELECTRIC ACTUATORS "SQ" TYPE





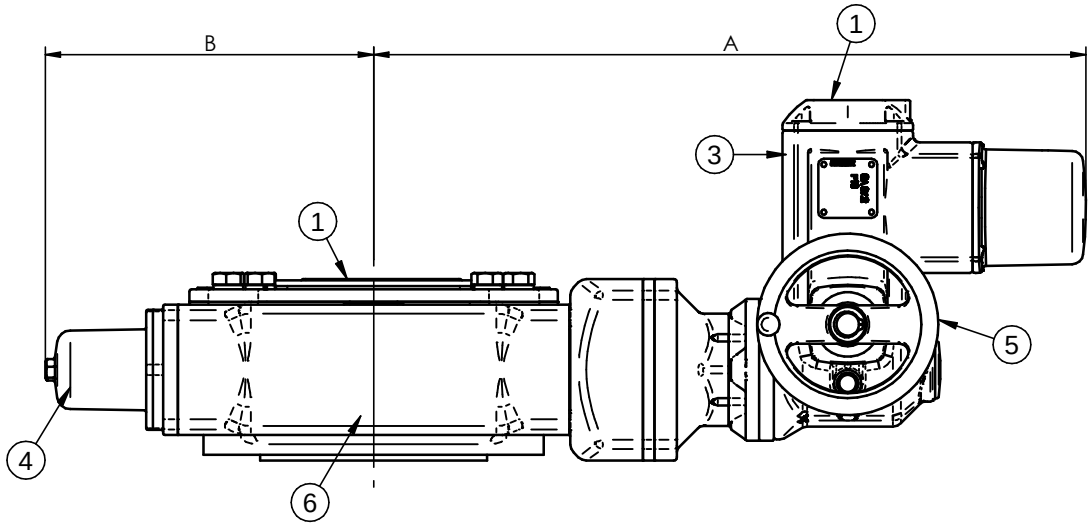
VISTA "A"

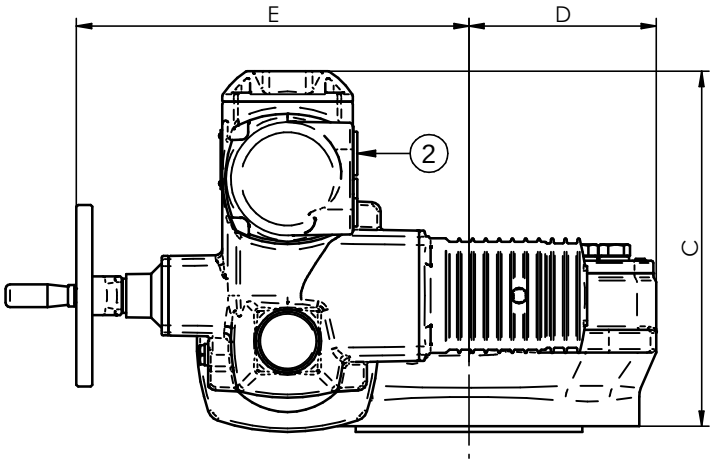
Ref	A	B	C	D	E	F	ISO 5211	Par Máx. *Max. Torque*	Tiempo de Maniobra *Operating time*	Peso *Weight*
SQ 05.2	62	238	344	266	186	11-14	F07	150 Nm	22 seg.	21 Kg
SQ 07.2	62	238	344	266	186	17-22	F07-10	300 Nm	22 seg.	21 Kg
SQ 10.2	80	248	361	266	191	22	F10-12	600 Nm	32 seg.	26 Kg
SQ 12.2	105	248	385	266	191	22-36	F12-14	1200 Nm	32 seg.	35 Kg
SQ 14.2	112	255	447	266	216	36	F14-16	2400 Nm	48 seg.	43 Kg

6	CASQUILLO DE CONEXION *DRIVE SOCKET*	1
5	VOLANTE DE EMERGENCIA *EMERGENCY HANDWHEEL*	1
4	TORNILLO TOPE DE REGULACION GIRO 90º *ADJUSTABLE STOP SCREWS 90º*	2
3	FINAL DE CARRERA AJUSTABLE *END OF TRAVEL SWITCHES ADJUSTABLE*	2
2	ENTRADA DE CABLES *CABLE ENTRIES*	2
1	INDICADOR DE POSICION *POSITION INDICATOR*	1
POS ***ITEM***	**DESIGNACION** ***DESIGNATION***	**CAN** ***QTY***

SERVOMOTOR ELECTRICO "AUMA" TIPO "GS+SA"

"AUMA" ELECTRIC ACTUATORS "GS+SA" TYPE





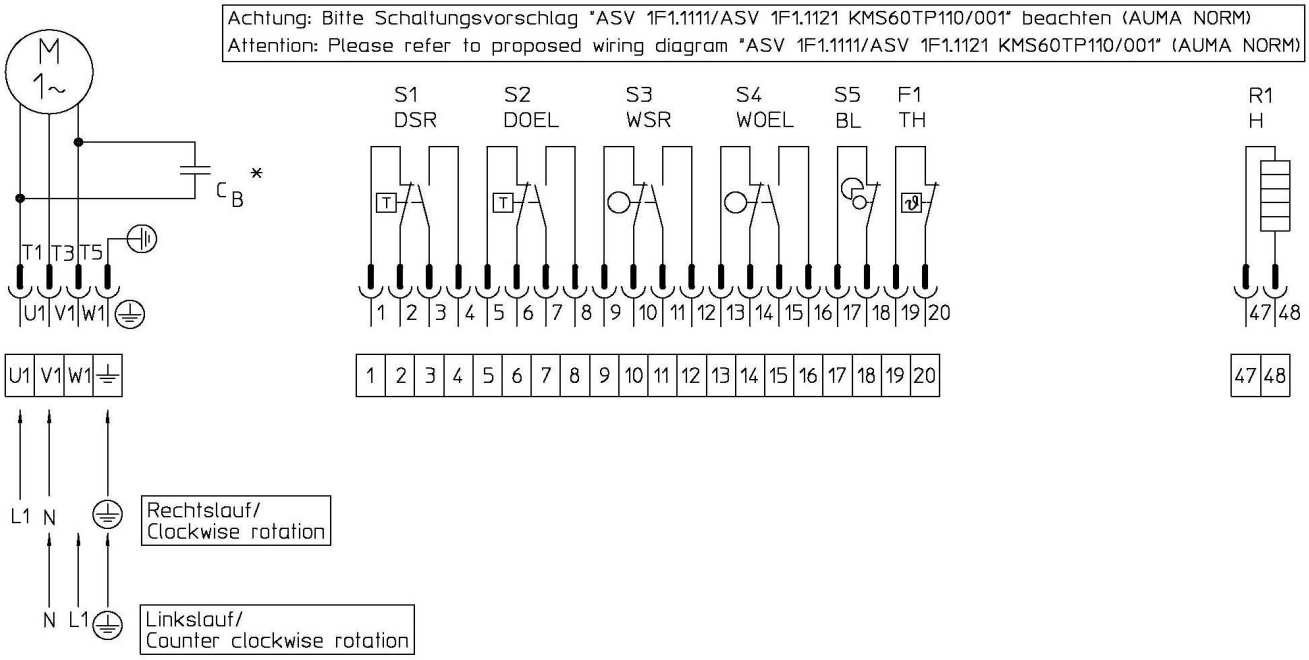
Ref	A	B	C	D	E	ISO 5211	Par Máx. *Max. Torque*	Tiempo de Maniobra *Operating time*	Peso *Weight*
GS100.3/VZ4.3/SA07.6	547	189	313	164	286	F16	4000 Nm	69 seg.	60 Kg
GS125.3/VZ4.3/SA10.2	554	194	323	158	316	F25	8000 Nm	69 seg.	70 Kg
GS160.3/GZ160.3(8:1)/SA07.6	628	290	313	165	346	F25	9300 Nm	147 seg.	113 Kg
GS160.3/GZ160.3(8:1)/SA10.2	630	290	323	165	351	F25	14000 Nm	144 seg.	118 Kg
GS200.3/GZ200.3(8:1)/SA10.2	716	366	338	207	391	F30	18000 Nm	145 seg.	187 Kg
GS200.3/GZ200.3(16:1)/SA10.2	716	366	338	207	391	F30	28000 Nm	288 seg.	196 Kg
GS250.3/GZ250.3(16:1)/SA14.2	796	402	425	258	492	F40	56000 Nm	283 seg.	361 Kg

POS *ITEM*	DESIGNACION *DESIGNATION*	CAN *QTY*
6	CASQUILLO DE CONEXION *DRIVE SOCKET*	1
5	VOLANTE DE EMERGENCIA *EMERGENCY HANDWHEEL*	1
4	TORNILLO TOPE DE REGULACION GIRO 90º *ADJUSTABLE STOP SCREWS 90º*	2
3	FINAL DE CARRERA AJUSTABLE *END OF TRAVEL SWITCHES ADJUSTABLE*	2
2	ENTRADA DE CABLES *CABLE ENTRIES*	2
1	INDICADOR DE POSICION *POSITION INDICATOR*	1

SERVOMOTOR "AUMA" DIAGRAMA ELECTRICO MONOFASICO
"AUMA" ACTUATORS WIRING DIAGRAM MONOPHASIC

Drehantriebe mit Einphasen Wechselstrommotor und Betriebskondensator(en)
Actuators with single-phase AC motor and capacitor(s)

Achtung: Bitte Schaltungsvorschlag "ASV 1F1.1111/ASV 1F1.1121 KMS60TP110/001" beachten (AUMA NORM)
Attention: Please refer to proposed wiring diagram "ASV 1F1.1111/ASV 1F1.1121 KMS60TP110/001" (AUMA NORM)



ZU wegabhängig abschalten
CLOSED stop by limit switch

AUF wegabhängig abschalten
OPEN stop by limit switch

Schalterabwicklung / Switch development

Schalter/ Switch	Kontakt/ Contact	0% ZU CLOSE	100% AUF OPEN
S1 DSR	Öffner/ NC Schließer/ NO		
S2 DOEL	Öffner/ NC Schließer/ NO		
S3 WSR	Öffner/ NC Schließer/ NO		
S4 WOEL	Öffner/ NC Schließer/ NO		

ZU drehmomentabhängig abschalten
CLOSED stop by torque switch (torque seating)

AUF wegabhängig abschalten
OPEN stop by limit switch

Schalterabwicklung / Switch development

Schalter/ Switch	Kontakt/ Contact	0% ZU CLOSE	100% AUF OPEN
S1 DSR	Öffner/ NC Schließer/ NO		
S2 DOEL	Öffner/ NC Schließer/ NO		
S3 WSR	Öffner/ NC Schließer/ NO		
S4 WOEL	Öffner/ NC Schließer/ NO		

——— - Kontakt geschlossen / Contact closed
— — - Kontakt offen / Contact open

S1	DSR	Drehmomentschalter, Schließen, Rechtslauf / Torque switch, closing, clockwise rotation
S2	DOEL	Drehmomentschalter, Öffnen, Linkslauf / Torque switch, opening, counter-clockwise rotation
S3	WSR	Wegschalter, Schließen, Rechtslauf / Limit switch, closing, clockwise rotation
S4	WOEL	Wegschalter, Öffnen, Linkslauf / Limit switch, opening, counter-clockwise rotation
S5	BL	Blinkgeber / Blinker transmitter
F1	TH	Thermoschalter / Thermoswitches
R1	H	Heizung / Heater
*	C_B	Betriebskondensator(1 bis 3 Stueck)/Capacitor(1 to 3 pcs.)

Anschlußplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen/Käfigzugfederklemmen verwendet !
For explosion-proof actuators terminals/cage clamps are used instead of plug/socket connector !

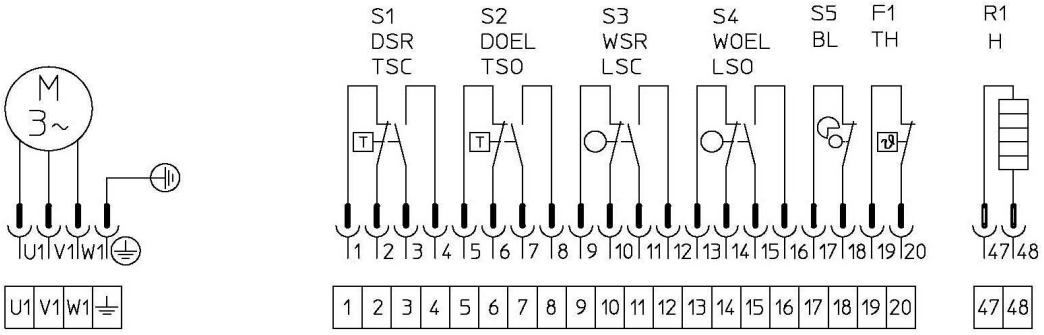
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				Bearb.	Meyer
				Gepr.	Montoire
				Norm	Montoire

auma®
AUMA Riester GmbH & Co. KG

TPA01R1AA-101-000

Legende	Auftragsnummer	Bestellnummer

SERVOMOTOR "AUMA" DIAGRAMA ELECTRICO TRIFASICO
"AUMA" ACTUATORS WIRING DIAGRAM TRIPHASIC



ZU wegabhängig abschalten
CLOSED stop by limit switch

AUF wegabhängig abschalten
OPEN stop by limit switch

ZU drehmomentabhängig abschalten
CLOSED stop by torque switch (torque seating)

AUF wegabhängig abschalten
OPEN stop by limit switch

Schalterabwicklung / Switch development

Schalter/ Switch	Kontakt/ Contact	0% ZU CLOSE	100% AUF OPEN
S1 DSR/TSC	Öffner/ NC	———	———
	Schließer/ NO	– – –	– – –
S2 DOEL/TSO	Öffner/ NC	———	———
	Schließer/ NO	– – –	– – –
S3 WSR/LSC	Öffner/ NC	– – –	———
	Schließer/ NO	———	– – –
S4 WOEL/LSO	Öffner/ NC	———	– – –
	Schließer/ NO	– – –	———

Schalterabwicklung / Switch development

Schalter/ Switch	Kontakt/ Contact	0% ZU CLOSE	100% AUF OPEN
S1 DSR/TSC	Öffner/ NC	– – –	———
	Schließer/ NO	———	– – –
S2 DOEL/TSO	Öffner/ NC	———	———
	Schließer/ NO	– – –	– – –
S3 WSR/LSC	Öffner/ NC	– – –	———
	Schließer/ NO	———	– – –
S4 WOEL/LSO	Öffner/ NC	———	– – –
	Schließer/ NO	– – –	———

——— = Kontakt geschlossen / Contact closed
– – – = Kontakt offen / Contact open

S1	DSR/ TSC	Drehmomentschalter, Schließen, Rechtslauf / Torque switch, closing, clockwise rotation
S2	DOEL/ TSO	Drehmomentschalter, Öffnen, Linkslauf / Torque switch, opening, counter-clockwise rotation
S3	WSR/ LSC	Wegschalter, Schließen, Rechtslauf / Limit switch, closing, clockwise rotation
S4	WOEL/ LSO	Wegschalter, Öffnen, Linkslauf / Limit switch, opening, counter-clockwise rotation
S5	BL	Blinkgeber / Blinker transmitter
F1	TH	Thermoschalter / Thermoswitches
R1	H	Heizung / Heater

Anschlußplan zeigt den Stellantrieb in Zwischenstellung, Schalter sind nicht betätigt.
Terminal plan shows the actuator in intermediate position, switches are not actuated.

Bei Ex-Antrieben werden an Stelle der Stecker Schraubklemmen/Käfigzugfederklemmen verwendet !
For explosion-proof actuators terminals/cage clamps are used instead of plug/socket connector !

				Datum	2009-12-08
				Bearb.	Meyer
01	799/09	2009-12-08	Mey	Gepr.	Montoire
Zust.	Änderung	Datum	Name	Norm	Montoire

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AUMA Riester GmbH & Co. KG

TPA00R1AA-101-000

Legende	Auftragsnummer	Bestellnummer