



SIGEVAL, S.A.

BUTTERFLY VALVES

TECHNICAL CATALOGUE



UNE-EN-ISO 9001



0099

Technical Information

Technical Catalogue
2004 (Ed.02)



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** Specifications are subject to change without notice.



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GUARANTEE OF SIGEVAL VALVES

Sigeval, S.A. guarantees their products during **1 year** for all types of manufacturing defects since date of delivery.

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:

- When valves have been used in a inappropriate application: Special fluids (that can affect the normal behaviour of the rubber), working and temperatures that are out of application limits that Sigeval, S.A. recommends by writing, having in mind that all temperatures and working applications shown in our catalogue are approximate.
- When valves are not mounted following the assembling instructions given in our catalogue.

Depending on diameters and working conditions, Sigeval butterfly valves could resist 5.000 cycles as a standard.

RECOMMENDATION FOR STORAGE OF SIGEVAL VALVES

During storage of valves is recommended following remarks:

- Avoid direct exposure of seat to the sunlight.
- Stock valves partially open in the same way that are supplied by Sigeval, S.A. Be careful that disc is not too much open in order to avoid damaging of edges of disc.
- Try to use first older valves. Seat is getting hardener when the time goes by. Year of manufacturing is indicating on the seat being: "0" year 2000, "1" year 2001, "2" year 2002, etc.
- If you notice that is difficult open a valve (that has been stocked during a long period) proceed as follows: clean it carefully, grease the seat and disc with silicone spray, try to open and close up till movement be soft.

01/08/20

SIGEVAL, S.A. has as main target manufacturing of butterfly valves which satisfy customers and legal requirements.

To reach it, SIGEVAL, S.A. is based on the establishment of a Quality Management System whose three main principles are:

a. Satisfy customer's needs.

That means to reach an agreement among three factors:

- Supply **the most suitable** valve for the customer.
- Supply **the cheapest** valve.
- Ship the valve **as soon as possible**.

b. Improve SIGEVAL, S.A.

That means:

- Improve and modernize manufacturing equipment, hardware and software.
- Take advantage of technology innovation.
- Improve process.
- Improve products.

c. Built a quality culture inside the company in order quality to be an important factor.

Every person is responsible of the quality of his work, the collaboration with the rest of equipment to reach targets and to share knowledge and experience.

REFERENCE STANDARDS, APPROVALS AND CERTIFICATIONS

- **Dimensions of Valves :**

- ⇒ EN 593.
- ⇒ ISO 5752 Table 5 Short series (EN 558-1).
- ⇒ NFE 29.305.
- ⇒ API 609.
- ⇒ BS 5155.(DN 350 mm. Valves excluded) Table 6 Sections 4 and 5.
- ⇒ DIN 3202 Part 3 Series K1 (actual DIN EN-558-1 serie 20).

- **Assembling of the operation :**

- ⇒ EN ISO 5210.
- ⇒ EN ISO 5211.
- ⇒ NFE 29402.

- **Assembling between flanges :**

- ⇒ ISO PN 10, 16 y 20.
- ⇒ NFE 29.222 PN 10.
- ⇒ DIN 2632 PN 10.
- ⇒ DIN 2633 PN 16.
- ⇒ ANSI B 16-5 cl. 150.

- **Materials :**

- ⇒ EN 1503.

- **Identification :**

- ⇒ EN 19.

- **Testing of the valves :**

- ⇒ ISO 5208.
- ⇒ EN 12266.

- **Homologations and Certifications :**

- ⇒ Det Norske Veritas: Type Approval certified for shipbuilding.
- ⇒ Bureau Veritas: Type Approval certified for shipbuilding.
- ⇒ L.H.R.S.P. Nancy: Water distribution approval (France).
- ⇒ SSIGE: Water distribution approval (Switzerland).
- ⇒ SZÚ: Gas and Water distribution approval (Czech Republic).
- ⇒ GOST: Gas and Water Distribution approval (Russia).
- ⇒ DVGW: Gas and Water Distribution approval (Germany).
- ⇒ AENOR: Registered Firm certificate, ISO 9001 Quality Systems.
- ⇒ AENOR: CE certificate in accordance to PED 97/23/CE requirements.

AENOR

Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000003

La Asociación Española de Normalización y Certificación (AENOR), certifica que el Equipo a Presión que se define más abajo, realizado por la empresa/ The Spanish Association for Standardisation and Certification (AENOR) certifies that the Pressure Equipment described below, developed by the firm:

SIGEVAL, S.A.

Dirección/ Address: **Cl Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 400 a 800: PN 10; DN 250 a 800: PN 16; DN 150 a 300: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **III/ grupo 1 (peligroso)**

Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-10 a 100° C (asiento nitrilo)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión.,
Complies with the applicable essential safety requirements included in Annex I of the 97/23/EC Council Directive on the approximation of the laws of the Member States relating to Pressure Equipment.

El presente certificado ha sido extendido por AENOR como Organismo Notificado a la Comisión Europea y a los demás Estados Miembros (número 0099) para la Directiva 97/23/CE de Equipos a Presión de acuerdo con las disposiciones del Anexo IV de la Directiva. *This certificate has been performed by AENOR as a Notified Body to the European Commission and to the Member States (number 0099) for the Directive 97/23/EC for Pressure Equipment, according to the provisions of Annex IV.*

El presente certificado es válido salvo suspensión o retirada notificada en tiempo por. *This certificate is valid unless it is cancelled or withdrawn upon AENOR's written notification.*

Fecha de emisión: 2002-04-05
Issued on:


El Director General de AENOR
General Manager of AENOR

AENOR

Asociación Española de
Normalización y Certificación

ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000003

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES

MATERIALES PRINCIPALES/ MAIN MATERIALS

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITO CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITO CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
	AISI 420		X		
ACERO INOXIDABLE STAINLESS STEELS	ASTM A743/A743M CD4MCU			X	
	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

Fecha de emisión: 2002-04-05

Issued on:

AENOR Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000004

La Asociación Española de Normalización y Certificación (AENOR), certifica que el Equipo a Presión que se define más abajo, realizado por la empresa/ The Spanish Association for Standardisation and Certification (AENOR) certifies that the Pressure Equipment described below, developed by the firm:

SIGEVAL, S.A.

Dirección/ Address: **Cl Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 600 a 800: PN 10; DN 400 a 800: PN 16; DN 250 a 300: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **III/ grupo 2 (no peligroso)**

Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-40 a 110° C (asiento EPDM)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión. Complies with the applicable essential safety requirements included in Annex I of the 97/23/EC Council Directive on the approximation of the laws of the Member States relating to Pressure Equipment.

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Fecha de emisión: 2002-04-05
Issued on:


AENOR Asociación Española de
Normalización y Certificación
El Director General de AENOR
General Manager of AENOR

AENOR

Asociación Española de
Normalización y Certificación

ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000004

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES

MATERIALES PRINCIPALES/ MAIN MATERIALS

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITE CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITE CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
ACERO INOXIDABLE STAINLESS STEELS	AISI 420		X		
	ASTM A743/A743M CD4MCU			X	
ALUMINIO ALUMINIUM	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

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Issued on:

AENOR Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000005

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SIGEVAL, S.A.

Dirección/ Address: **Cl Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 200: PN 6; DN 125 a 350: PN 10; DN 65 a 200: PN 16; DN 50 a 125: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **II/ grupo 1 (peligroso)**

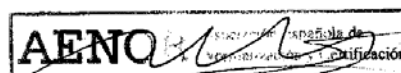
Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-10 a 100° C (asiento de nitrilo)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión. Complies with the applicable essential safety requirements included in Annex I of the 97/23/EC Council Directive on the approximation of the laws of the Member States relating to Pressure Equipment.

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Fecha de emisión: **2002-04-05**
Issued on:



El Director General de AENOR
General Manager of AENOR

AENORAsociación Española de
Normalización y Certificación**ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO**

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000005

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**MATERIALES PRINCIPALES/ MAIN MATERIALS****MATERIALES PRINCIPALES/ MAIN MATERIALS**

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITE CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITE CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
ACERO INOXIDABLE STAINLESS STEELS	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
	AISI 420		X		
	ASTM A743/A743M CD4MCU			X	
ALUMINIO ALUMINIUM	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

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AENOR

Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000006

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SIGEVAL, S.A.

Dirección/ Address: **Cl Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS METÁLICAS DE MARIPOSA/ METALLIC BUTTERFLY
VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 400 a 500: PN 10; DN 250 a 350: PN 16; DN 150 a 200: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **II/ grupo 2 (no peligroso)**

Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-40 a 110° C (asiento EPDM)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión.,
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Issued on:


El Director General de AENOR
General Manager of AENOR

ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000006

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**MATERIALES PRINCIPALES/ MAIN MATERIALS**

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITE CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITE CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
ACERO INOXIDABLE STAINLESS STEELS	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
	AISI 420		X		
	ASTM A743/A743M CD4MCU			X	
ALUMINIO ALUMINIUM	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

Fecha de emisión: 2002-04-05

Issued on:



AENOR

Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000007

La Asociación Española de Normalización y Certificación (AENOR), certifica que el Equipo a Presión que se define más abajo, realizado por la empresa/ The Spanish Association for Standardisation and Certification (AENOR) certifies that the Pressure Equipment described below, developed by the firm:

SIGEVAL, S.A.

Dirección/ Address: **Cl Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 125 a 150: PN 6; DN 32 a 100: PN 10; DN 32 a 50: PN 16; DN 32 a 40: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **I/ grupo 1 (peligroso)**

Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-10 a 100° C (asiento nitrilo)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión.,
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Issued on:


El Director General de AENOR
General Manager of AENOR

AENOR

Asociación Española de
Normalización y Certificación

ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000007

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES

MATERIALES PRINCIPALES/ MAIN MATERIALS

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITE CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITE CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
ACERO INOXIDABLE STAINLESS STEELS	AISI 420		X		
	ASTM A743/A743M CD4MCU			X	
ALUMINIO ALUMINIUM	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

Fecha de emisión: 2002-04-05

Issued on:

AENOR

Asociación Española de
Normalización y Certificación

CERTIFICADO DE EXAMEN CE DE TIPO

EC TYPE EXAMINATION CERTIFICATE

A21/000008

La Asociación Española de Normalización y Certificación (AENOR), certifica que el Equipo a Presión que se define más abajo, realizado por la empresa/ The Spanish Association for Standardisation and Certification (AENOR) certifies that the Pressure Equipment described below, developed by the firm:

SIGEVAL, S.A.

Dirección/ Address: **CI Sauce, 49, Polígono Industrial
28850 TORREJÓN DE ARDOZ (Madrid) ESPAÑA**

Equipo/ Equipment: **VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES**

Marca/ Trade Mark: **SIGEVAL**

Series/ Series: **DN 200 a 350: PN 10; DN 65 a 200: PN 16; DN 50 a 125: PN 25**

Modelos/ Models: **FL, FL(N), LUG, LUG(N), KL, FA, FI, FG(F), FN(F), VV**

Tipo de válvula/ Valve type: **Cuerpo para insertar (materiales ver anexo)**

Categoría/ Tipo de fluido/ Category/ Fluid type: **I/ grupo 2 (no peligroso)**

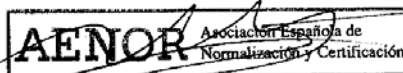
Temperatura mínima/máxima admisible/ Allowable min-max. Temperatures: **-40 a 110° C (asiento EPDM)**

Satisface los Requisitos Esenciales de Seguridad que le son de aplicación y recogidos en el Anexo I de la Directiva 97/23/CE del Consejo, relativa a la aproximación de las legislaciones de los Estados Miembros sobre Equipos a Presión. Complies with the applicable essential safety requirements included in Annex I of the 97/23/EC Council Directive on the approximation of the laws of the Member States relating to Pressure Equipment.

El presente certificado ha sido extendido por AENOR como Organismo Notificado a la Comisión Europea y a los demás Estados Miembros (número 0099) para la Directiva 97/23/CE de Equipos a Presión de acuerdo con las disposiciones del Anexo IV de la Directiva. This certificate has been performed by AENOR as a Notified Body to the European Commission and to the Member States (number 0099) for the Directive 97/23/EC for Pressure Equipment, according to the provisions of Annex IV.

El presente certificado es válido salvo suspensión o retirada notificada en tiempo por. This certificate is valid unless it is cancelled or withdrawn upon AENOR's written notification.

Fecha de emisión: **2002-04-05**
Issued on:



El Director General de AENOR
General Manager of AENOR

GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (EC type examination certificate)

AENOR

Asociación Española de
Normalización y Certificación

ANEXO AL CERTIFICADO DE EXAMEN CE DE TIPO

ANNEX TO EC EXAMINATION CERTIFICATE

A21/000008

Equipo/ Equipment:

VÁLVULAS DE MARIPOSA/ BUTTERFLY VALVES

MATERIALES PRINCIPALES/ MAIN MATERIALS

MATERIAL MATERIAL	DESIGNACION DESIGNATION	CUERPO BODY	ARBOL TREE	OBTURADOR CHOKE	ASIENTO SEAT
FUNDICION DE GRAFITO LAMINAR LAMINAR GRAFITE CAST IRON	EN GIL 250	X			
FUNDICION DE GRAFITO ESFEROIDAL SPHEROIDAL GRAFITE CAST IRON	EN GJS 400-15	X		X	
ACERO AL CARBONO CARBON STEELS	ASTM A216/A216M WCB	X		X	
	EN 10025 S275JR	X			
	ASTM A351/A351M CF8-CF8M	X		X	
	AISI 304	X			
	AISI 316	X			
ACERO INOXIDABLE STAINLESS STEELS	AISI 420		X		
	ASTM A743/A743M CD4MCU			X	
ALUMINIO ALUMINIUM	EN AC 47100	X			
	EN AC 46100	X			
	EN AC 44100			X	
ALEACIÓN Cu/Sn Cu/Sn ALLOYDS	EN 1982- CuSn11Pb2-C (CC482K)			X	
ALEACIÓN Cu/Al Cu/Al ALLOYDS	EN 1982- CuAl10Fe5Ni5-C (CC333G)			X	
ELASTOMERO/ ELASTOMER	EPDM (E, HT)				X
	NBR				X
	NR/IR				X
	MVQ (S, SA, SV)				X
	FPM				X
	CSM				X
	CR				X
	IIR				X
	FPM				X

Fecha de emisión: 2002-04-05

Issued on:

GENERAL INFORMATION

CERTIFICATIONS (PED Classification table)



SIGEVAL, S.A.



SIGEVAL, S.A.

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UNE-EN-ISO 9002

TABLA DE CLASIFICACIÓN DE VÁLVULAS DE MARIPOSA CONFORME A LA DIRECTIVA DE EQUIPOS A PRESIÓN 97/23/CE

Fluido	Presión y diámetros		Categoría PED	Modulo escogido
No peligroso (tabla 7)	PN 6	DN 125 - 200	CBP	-
		DN 50 - 100	I	B + D
	PN 10	DN 200 - 350	II	
		DN 400 - 500	III	
		DN 600 - 800	III	
	PN 16	DN 32 - 50	CBP	-
		DN 65 - 200	I	B + D
		DN 250 - 350	II	
		DN 400 - 800	III	
	PN 25	DN 32 - 40	CBP	
		DN 50 - 125	I	
		DN 150 - 200	II	
		DN 250 - 300	III	
		DN 125 - 150	I	
Peligroso (Anillo NBR y Vitón) (Tabla 6)	PN 6	DN 200	II	
		DN 32 - 100	I	
	PN 10	DN 125 - 350	II	
		DN 400 - 800	III	
	PN 16	DN 32 - 50	I	
		DN 65 - 200	II	
		DN 250 - 800	III	
	PN 25	DN 32 - 40	I	
		DN 50 - 125	II	
		DN 150 - 300	III	

* CBP: Estas válvulas no pueden estar marcadas con CE.

02/04/15

GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED dangerous fluid category I)



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UNE-EN-ISO 9002

DECLARACIÓN CE DE CONFORMIDAD CE CONFORMITY DECLARATION

D. Francisco Javier De Pablos Duclos, como Gerente de:
Mr. Francisco Javier De Pablos Duclos, as General Manager of:

SIGEVAL, S.A.
C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase I con presión nominal PN 6 DN 125 – 150, PN 10 DN 32 – 100, PN 16 DN 32 – 50 y PN 25 DN 32 – 40 mm para fluidos peligrosos.

Type: Butterfly valves class I with nominal pressure PN 6 DN 125 – 150, PN 10 DN 32 – 100, PN 16 DN 32 – 50 y PN 25 DN 32 – 40 mm for dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

They were evaluated by AENOR (0099) following module B + D and they comply with the pressure equipment directive 97/23/CE. These products comply with standard EN 593, EN 19 y prEN 12266-3.

Firmado en Torrejón de Ardoz 02/04/12
Signed in Torrejón de Ardoz 02/04/12

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C/. Sauce, 49
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28850 TORREJON DE ARDOZ (Madrid)

Francisco Javier De Pablos Duclos
Gerente
General Manager

GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED dangerous fluid category II)



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Mr. Francisco Javier De Pablos Duclos, as General Manager of:

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C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase II con presión nominal PN 6 DN 200, PN 10 DN 125 – 350, PN 16 DN 65 – 200 y PN 25 DN 50 – 125 mm para fluidos peligrosos.
Type: Butterfly valves class II with nominal pressure PN 6 DN 200, PN 10 DN 125 – 350, PN 16 DN 65 – 200 y PN 25 DN 50 – 125 mm for dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

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General Manager

GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED dangerous fluid category III)



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Mr. Francisco Javier De Pablos Duclos, as General Manager of:

SIGEVAL, S.A.
C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase III con presión nominal PN 10 DN 400 – 800, PN 16 DN 250 – 800 y PN 25 DN 150 – 300 mm para fluidos peligrosos.
Type: Butterfly valves class III with nominal pressure PN 10 DN 400 – 800, PN 16 DN 250 – 800 y PN 25 DN 150 – 300 mm for dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

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Francisco Javier De Pablos Duclos
Gerente
General Manager

GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED non dangerous fluid category I)



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DECLARACIÓN CE DE CONFORMIDAD CE CONFORMITY DECLARATION

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Mr. Francisco Javier De Pablos Duclos, as General Manager of:

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C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase I con presión nominal PN 10 DN 250 – 350, PN 16 DN 65 – 200 y PN 25 DN 50 – 125 mm para fluidos no peligrosos.
Type: Butterfly valves class I with nominal pressure PN 10 DN 250 – 350, PN 16 DN 65 – 200 y PN 25 DN 50 – 125 mm for not dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

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GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED non dangerous fluid category II)



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D. Francisco Javier De Pablos Duclos, como Gerente de:
Mr. Francisco Javier De Pablos Duclos, as General Manager of:

SIGEVAL, S.A.
C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase II con presión nominal PN 10 DN 400 – 500, PN 16 DN 250 – 350 y PN 25 DN 150 – 200 mm para fluidos no peligrosos.

Type: Butterfly valves class II with nominal pressure PN 10 DN 400 – 500, PN 16 DN 250 – 350 y PN 25 DN 150 – 200 mm for not dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

They were evaluated by AENOR (0099) following module B + D and they comply with the pressure equipment directive 97/23/CE. These products comply with standard EN 593, EN 19 y prEN 12266-3.

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GENERAL INFORMATION



SIGEVAL, S.A.

CERTIFICATIONS (Conformity declaration PED non dangerous fluid category III)



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UNE-EN-ISO 9002

DECLARACIÓN CE DE CONFORMIDAD CE CONFORMITY DECLARATION

D. Francisco Javier De Pablos Duclos, como Gerente de:
Mr. Francisco Javier De Pablos Duclos, as General Manager of:

SIGEVAL, S.A.
C/ Sauce, 49 Pol Ind
28850 Torrejón de Ardoz (Madrid)

declaro, bajo mi responsabilidad, que los productos:
I declare, under own responsibility, that the products:

Marca: Sigeval
Mark: Sigeval

Tipo: Válvulas de mariposa clase III con presión nominal PN 10 DN 600 – 800, PN 16 DN 400 – 800 y PN 25 DN 250 – 300 mm para fluidos no peligrosos.

Type: Butterfly valves class III with nominal pressure PN 10 DN 600 – 800, PN 16 DN 400 – 800 y PN 25 DN 250 – 300 mm for not dangerous fluids.

fueron evaluados por AENOR (0099) según modulo B + D y son conformes con la directiva de equipos a presión 97/23/CE. Estos productos cumplen con las normas EN 593, EN 19 y prEN 12266-3.

They were evaluated by AENOR (0099) following module B + D and they comply with the pressure equipment directive 97/23/CE. These products comply with standard EN 593, EN 19 y prEN 12266-3.

Firmado en Torrejón de Ardoz 02/04/12
Signed in Torrejón de Ardoz 02/04/12

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28850 TORREJON DE ARDOZ (Madrid)

Francisco Javier De Pablos Duclos
Gerente
General Manager



DNV

DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. P-11157

This Certificate consists of 4 pages

This is to certify that the
Butterfly Valves
with type designation(s)
FL, LUG, FG(F)

Manufactured by
Sigeval S.A.

Torrejón de Ardoz (Madrid), Spain

is found to comply with
 Det Norske Veritas' Rules for Classification of Ships and Mobile Offshore Units
 Det Norske Veritas' Standards for Certification 2.9 No. 101

Application

The valves may be used for the following services: Fresh Water, Sea Water, Ballast Water,
 Bilge, Sanitary, Cargo Oil Transfer

Temperature range: dep. on seat and body material, see cert
 Max. working press.: DN 32 to 150 mm: 16 bar DN 200 to 800 mm: 10 bar

Sizes: DN 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, 350, 400, 450,
 500, 600, 700 and 800mm

Place and date
 Høvik, 2002-03-08
 for DET NORSKE VERITAS AS

Kjell Folge
 Head of Section



Local Office
 DNV Madrid

This Certificate is valid until
 2006-06-30

Kristian Lindelof
 Surveyor

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
 The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for the proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS AS

VERITASVEIEN 1, 1322 HØVIK, NORWAY

TEL: (+47) 67 57 99 00

FAX: (+47) 67 57 99 11

Form No.: 20.90a Issue: January 98

Page 1 of 4



Cert. No.: P-11157

File No.: 794.41

Product description

Wafer, lug or flanged type butterfly valves with soft seats.

Materials:

<i>Part</i>	<i>Material</i>
Body	
Cast Iron	EN GIL250
Nodular Cast Iron	EN GJS400-15
Cast Steel	ASTM A216/A216M WCB
Cast Stainless Steel	ASTM A351/A351 M CF8-CF8M
Cast Tin Bronze	DIN 1705 RG10
Laminated Steel	EN10025 S275JR
Laminated Stainless Steel	AISI 304/316
Disc	
Cast Stainless Steel	ASTM A351/A351 M CF8/CF8M
Nodular Cast Iron	EN GJS400-15
Cast Tin Bronze	DIN 1705 RG10
Cast Aluminum Bronze	DIN1714 G Ni Al Bz F60
Stem	
Laminated Stainless Steel	AISI 420, 304 or 316
Seat	EPDM or NBR

Application/Limitation

The valves may be used in the systems mentioned on the front-page of this certificate, but valves of grey cast iron are not permitted fitted in/on the following:

- Service temperatures below 0 °C
- Ship's side or bottom and on sea chest
- Collision bulkheads
- Pipes subject to hydraulic hammering
- Ballast lines to forward tanks through cargo oil tanks



Cert. No.: P-11157

File No.: 794.41

Maximum working temperatures for valves with the following seats (minimum working temperature for valves of grey cast iron in brackets).

Sealing	Temperature
EPDM	-40°C to 120°C
NBR (e.g. Perbunan)	-10°C to 100°C

When used as shipside valves the disc must not extend outside the hull plating in open position.

These valves can be used for bilge suction when fitted in connection with a non-return valve.

Bilge valves should always be arranged for manual operation even if these valves are remote controlled. A portable hydraulic hand pump is not accepted as equivalent to manual operation.

The maximum output torque from actuators used on butterfly valves must not exceed the limit at which the valve spindle or disc can be damaged if the disc is restrained in any position.

The approval does not include any operating gear for remote control of the valves.

Each product/delivery is to be accompanied by the following documents:

- Product certificate prepared by the manufacturer
- Works test report certificate (2.2) for materials used in valve body, stem and disc indicating mechanical and chemical properties:

The valve housing of each valve shall be subjected to a hydrostatic pressure test at minimum 1.5 times the design pressure. No leakage is permitted.

The valve assembly shall be subjected to a hydrostatic seat leakage test. The test pressure shall at least be equal to the design pressure. The test shall be performed with closed valve with the other end open to atmosphere. The pressure shall be applied independently on each side of the closed disc. For valves intended for ship's side or bottom the test pressure is not to be less than 5 bar. Acceptable leakage range: Drop tight.

Holding time:

Sizes	Shell	Seat
DN 32 - 100mm	2 min	N/A
DN 125 - 250mm	5 min	5 min
DN 300 - 450mm	10 min	5 min
DN 500 - 700mm	15 min	5 min



Cert. No.: P-11157

File No.: 794.41

Type Approval documentation

Drawing nos:

FA(M)-0007-DT, FI(M)-0007-DT, FA(M)-0001-DT, FA(M)-0002-DT, FA(M)-0003-DT,
FA(M)-0004-DT, FA(M)-0005-DT, FA(M)-0006-DT, FA(M)-0008-DT, FG(F)-0008-DT,
FG(F)-0001-DT, FG(F)-0002-DT, FG(F)-0003-DT, FG(F)-0004-DT, FG(F)-0005-DT,
FG(F)-0006-DT, FG(F)-0007-DT, FG(F)-0009-DT, FL-0008-DT, FL-0000-DT, FL-0008-
DT, FL-0001-DT, FL-0002-DT, FL-0003-DT, FL-0004-DT, FL-0005-DT, FL-0006-DT,
FL-0007-DT, FL-0009-DT, LUG-0008-DT, LUG-0001-DT, LUG-0002-DT, LUG-0003-
DT, LUG-0004-DT, LUG-0005-DT, LUG-0006-DT, LUG-0007-DT, LUG-0009-DT

Tests carried out

Hydrostatic pressure test and seat leakage test

Marking of product

For traceability to this type approval, each valve is at least to be marked with:

- Manufacturer's name or trade mark: "SIGEVAL"
- Type designation
- Size
- Max. design pressure or pressure class

Certificate retention survey

For retention of the Type Approval, a DNV Surveyor shall perform a survey before the
expiry date of this certificate - to verify that the conditions for the type approval are
complied with.

END OF CERTIFICATE

GENERAL INFORMATION

CERTIFICATIONS (Type Approval certified for shipbuilding)



SIGEVAL, S.A.

MARINE DIVISION
17 Bis Place des Reflets - La Défense 2
92400 Courbevoie - France
Tel. 33 1 42 91 52 04
Fax 33 1 42 91 28 94



**BUREAU
VERITAS**

Certificate N°:
09574/A1 BV
The attached Schedule forms part of the certificate
File Number : ACM 145/1936/002
Product Code : 2205H

CERTIFICATE OF TYPE APPROVAL

This is to certify that the product identified below was found to be in compliance with the relevant hereunder stated Regulations & standards

BUTTERFLY VALVES
Type: "SOL"

MANUFACTURED BY:

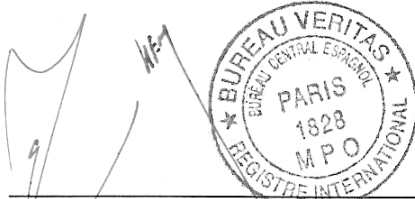
SIGEVAL S.A.
Torrejón de Ardoz (Madrid) - SPAIN

SPECIFIED REGULATIONS & STANDARDS :
BV Rules Chapters 15 and 23.

The Approval is valid until : 08/02/2005

BUREAU VERITAS MADRID

At Paris la Défense, on : 14/02/2000



J.BENOIT
For the Secretary

This Certificate remains valid until the date stated on, hereunder, unless cancelled or revoked, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory into service.

This Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested.

This Certificate is not valid without the stamp of the above mentioned by BUREAU VERITAS Inspection Center.

The manufacturer should notify BUREAU VERITAS of any modification or changes to the equipment in order to obtain a valid Certificate.

The latest published Regulations or Standards referred to, above, and the Marine Division General Conditions are applicable.



THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Butterfly Valves Type: "SOL"

DN 40, 50, 65, 80, 100, 125 and 150: PN 16

DN 200, 250, 300, 350, 400, 450, 500, 600, 700 and 800: PN 10.

Service temperature range:

- EPDM: -40°C to +110°C

- NBR: -10°C to +100°C

2. DESIGN DRAWINGS and/or SPECIFICATIONS

Drawing: SOL - 0002-DT rev.1 dated 99.11.04 (Material details)

Drawing: SOL - 0001-DT rev.1 dated 99.11.04 (General dimensions)

3. TYPE TEST REPORTS / LABORATORY RECOGNITION STATUS

Inspection certificate 51210000002 dated 13.01.2000.

4. MATERIALS and/or COMPONENTS REQUIRED TO BE TYPE APPROVED

5. OTHER MATERIALS and/or COMPONENTS

Body: GG-25 / GGG-40 / Carbon steel

Disc: GGG-40 / Stainless steel / Bronze - Aluminium

Seat: EPDM / NBR.

6. APPLICATION / LIMITATION OF USE

May be used for the following service on board:

1. Bilge and ballast systems
2. Fresh and sea water systems
3. Sanitary systems
4. Cargo oil transfer systems.

7. PRODUCTION SURVEY REQUIREMENTS

Each butterfly valve must be inspected and certified by BV Surveyor when required by the Rules.

8. ON BOARD INSTALLATION & MAINTENANCE REQUIREMENTS

- The nature of materials, joints included, must be chosen according to the nature of the fluids to be conveyed.
- May be accepted for water inlets and outboard discharges on condition that arrangements are made to allow a possible disassembling at sea of the pipes served by these valves without risk of flooding.
- The use of grey cast iron (GG 25) is to be restricted as per Rules (§ 15-082.62 and § 23-025.41)

9. MARKING FOR IDENTIFICATION

Each valve must be marked with:

- Manufacturer's name and type designation
- Size
- Max. working pressure
-  or  Society's brand as relevant.

10. OTHERS

This approval is given on the understanding that SIGEVAL S.A., will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the equipment and of the conditions of this approval.

*** Last page (End of Document) ***

BUREAU VERITAS MADRID



ATTESTATION DE CONFORMITE SANITAIRE

Coordonnées du demandeur des essais : UNICA Ctra. De Alfaro, s/n Apdo. De Correos, 1 31591 CORELLA (Navarra) Espagne	Nom commercial du matériau : EPDM AGUA POTABLE
---	---

Attestation délivrée par : à la date du : 13 Avril 2001	☐ Ministère de la Santé : ☐ N° Dossier : ☐ C.R.E.C.E.P. Paris ☒ L.H.R.S.P. Nancy ☐ I.P. Lille Water distribution approval (France)
 Christelle AUTUGELLE Chef du Service Alimentarité des Matériaux	
N° de dossier attribué par le laboratoire d'essais : 01 MAT NY 015	

Type de matériau : Mélange en EPDM

Fabrique en usine	Appliqué sur site
Tuyaux Ø < 63 mm ☐	Ciment adjuvanté ☐
Ø > 63 mm ☐	Peintures ☐
Raccords ☐	Autres (à préciser) ☐
Joints ☒	
Membranes d'étanchéité ☐	
Autres (à préciser) ☐	
Restriction d'emploi (Commentaires) : /	

Formulation chimique

Certifiée par l'industriel ☐ le :	☒ Vérifiée par un laboratoire habilité Commentaires éventuels : Les éventuelles restrictions (SML ou QM) ont été vérifiées.
--	--

Résultats des essais d'inertie

Date des essais : du 12 Février au 11 Avril 2001 Commentaires : Les essais d'inertie réalisés selon les normes AFNOR XP P 41-250-1, -2 et -3 sur échantillons de 3 cm ² n'ont fait apparaître aucune anomalie. Les résultats sont conformes aux exigences de la circulaire DGS/VS4 n° 99-217 du 12 Avril 1999.
--

GENERAL INFORMATION

CERTIFICATIONS (Water distribution approval. Switzerland)



SIGEVAL, S.A.

SSIGE

Société Suisse de l'Industrie
du Gaz et des Eaux
Grütlistrasse 44
CH- 8027 Zurich

ORGANISME DE CERTIFICATION EAU



accrédité
selon
SN EN 45011
SCES 028



CERTIFICAT N° 9805 - 3956

A la demande de la maison:

EREC A S.A., Zone Industrielle, CH- 1303 Penthaz

du **1.05.1998** et sur la base du règlement W/TPW 101, la Société Suisse de l'Industrie du Gaz et des Eaux SSIGE accorde l'homologation suivante:

Produit: **Vannes à papillon et vannes à glissière**
Marque: **Sigeval**
Types: **FLN**
DN: 32...700 PN: 16 t= 95 °C

Normes

de certification: **SVGW W/TPW 139**

Le commettant est de ce fait autorisé à mentionner ces produits comme ayant été examinés et approuvés par la SSIGE et à y apposer la marque de conformité déposée de la SSIGE, et cela jusqu'au **31.12.2003**.

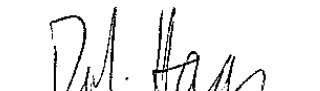
Remarques: -

Index: -

Zurich, le **11.12.1998**

**SOCIÉTÉ SUISSE DE
L'INDUSTRIE DU GAZ ET DES EAUX**


Direction


Organisme de certification eau



STROJÍRENSKÝ ZKUŠEBNÍ ÚSTAV, STÁTNÍ ZKUŠEBNA 202
HUDCOVA 56B, 621 00 BRNO, ČESKÁ REPUBLIKA



ROZHODNUTÍ

08-97-0230/0220

ve věci schvalování výrobků podle zákona č.30/1968 Sb. o státním zkušebnictví ve znění zákona č.54/1987 Sb., zákona č.194/1988 Sb., zákona č.479/1992 Sb. a zákona č.20/1993 Sb.

5 Výrobek
Uzavírací klapka pro plyn mezipřírubová FL-3-MN-N
11 variant: DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150; PN 16
DN 200, DN 250, DN 300; PN 10

Standardní klasifikace produkce 29131

6 Přihlašovatel
Moravia Systems a.s., Kováků 9, 150 00 Praha 5

IČO přihlašovatele 63497450

7 Výrobce
SIGEVAL S.A., C/Sause, 49 Polígono Industrial, 28850 Torrejon de Ardoz, Španělsko

IČO výrobce 441
970228

8 Dne (datum vydání rozhodnutí)

Uvedený typ výrobku podléhá schvalování podle ustanovení § 20, odst.2, písm. a), b) citovaného zákona.

Státní zkušebna

SCHVALUJE

tento typ výrobku, neboť shledala, že vyhovuje podmínkám podle ustanovení § 22, odst.1 citovaného zákona. Odůvodnění rozhodnutí je uvedeno na 2. straně.

Platnost schválení podle ustanovení § 22, odst.4 citovaného zákona je omezena po dobu platnosti současných předpisů (popř. pouze ustanovení předpisů), uvedených v podmínkách schvalování. Dále je omezena do 28.2.2000.



SZ 202

VÁCLAV MERTSEK © 1995 BRNO

Ing. Josef Bartl
ředitel



STROJÍRENSKÝ ZKUŠEBNÍ ÚSTAV, STÁTNÍ ZKUŠEBNA 202
HUDCOVA 56B, 621 00 BRNO, ČESKÁ REPUBLIKA



CERTIFIKÁT

C-97-0037/0220

platný od: 10.3.1997 do: 28.2.2000

Příhlašovatel: Moravia Systems a.s., Kováků 9, 150 00 Praha 5

je oprávněn níže jmenovaný výrobek označovat všeobecnou certifikační značkou podle § 8 vyhlášky MHCŘ č. 233/1993 Sb., kterou se mění a doplňuje vyhláška ÚNM č. 101/1988 Sb. o certifikaci výrobků podle § 24a zákona č. 30/1968 Sb. o státním zkušebnictví, ve znění zákona č. 54/1987 Sb., zákona č. 194/1988 Sb. a zákona č. 479/1992 Sb. Certifikace byla provedena k ověření vlastností výrobků pro stavby ve smyslu § 47 zákona č. 50/1976 Sb. o územním plánování a stavebním řádu (ve znění zákona č. 103/1990 Sb., zákona č. 262/1992 Sb. a č. 43/1994 Sb.).

Výrobek: Uzavírací klapka pro vodu mezipřírubová FL-3-MN-E
11 variant: DN 32, DN 40, DN 50, DN 65, DN 80, DN 100, DN 125, DN 150; PN 16
DN 200, DN 250, DN 300; PN 10

Výrobce: SIGEVAL S.A.,
C/Sause, 49 Polígono Industrial, 28850 Torrejon de Ardoz, Španělsko

Tímto certifikátem se potvrzuje shoda výrobku s následujícími technickými normami, předpisy a dokumenty:
všeobecné technické požadavky (ČSN 13 3005-1:1994, ČSN 13 3060-1:1988);
pevnost (ČSN 13 3060-2:1978); nepropustnost (ČSN 13 3060-2:1978); těsnost uzávěru -
pro stupeň netěsnosti 4 (ČSN 13 3060-2:1978); zkoušku otevírání a zavírání
(ČSN 13 3060-2:1978); ovládací sílu, moment (ČSN 13 3060-2:1978, podmínky certifikace);
materiál a povrchovou úpravu (ČSN 13 3060-1:1978, podmínky certifikace); průvodní
technickou dokumentaci.
Pro studenou a teplou užitkovou vodu, vzduch
Rozsah pracovních teplot: - (-10 až +110)°C pro materiál tělesa CGG-40
- (0 až +110)°C pro materiál tělesa CG 25
Materiál manžety: E (EPDM)

Výrobce má předpoklady pro trvalé dodržování jakosti certifikovaných výrobků.

Podklady pro vydání certifikátu: závěrečný zkušební protokol č. 79-6069 ze dne 24.2.1997
Tímto certifikátem se ruší platnost certifikátu č. C-97-0026/0220 ze dne 28.2.1997.

Datum vydání certifikátu: 10.3.1997


 ředitel ústavu


 v Brně


 certifikační značka

SZ 202

- 2 -

08-97-0230/0220

Výrobky uvedené na str. 1 mohou být uváděny do oběhu a musí být označeny schvalovací značkou č. 1 podle vyhlášky Ministerstva hospodářství č. 232/1993 Sb., kterou se mění a doplňuje vyhláška FÚNM č. 585/1992 Sb., kterou se provádí zákon č. 30/1968 Sb., o státním zkušebnictví ve znění pozdějších předpisů.

1

Odůvodnění rozhodnutí:

Výrobek vyhověl podmínkám, které byly stanoveny státní zkušebnou jako rozhodné pro jeho schválení z hlediska § 20, odst. 2, písm. a), b) zákona č. 30/1968 Sb. o státním zkušebnictví, ve znění zákona č. 54/1987 Sb., zákona č. 194/1988 Sb., zákona č. 479/1992 Sb. a zákona č. 20/1993 Sb.

Výrobek splnil požadavky na

- všeobecné technické požadavky (ČSN 13 3005-1:1994, ČSN 13 3060-1:1988)
- pevnost (ČSN 13 3060-2:1978)
- nepropustnost (ČSN 13 3060-2:1978)
- těsnost uzávěru - pro stupeň netěsnosti 4 (ČSN 13 3060-2:1978)
- zkoušku otevírání a zavírání (ČSN 13 3060-2:1978)
- ovládací sílu, moment (ČSN 13 3060-2:1978, podmínky schvalování)
- materiál a povrchovou úpravu (ČSN 13 3060-2:1978, podmínky schvalování)
- odolnost proti působení plynného paliva (ČSN EN 161:1994)
- průvodní technickou dokumentaci.

Nejvyšší pracovní tlak: 600 kPa

Rozsah pracovních teplot: - (-10 až +80)°C pro materiál tělesa GG-40

- (0 až +80)°C pro materiál tělesa GG 25

Materiál manžety: N (NBR-nitril)

Podmínky pro trvalé dodržování úrovně vlastností rozhodných pro schvalování byly vyhodnoceny kladně na základě prohlášení přihlašovatele. Pravdivost tohoto prohlášení bude ověřena statistickou přejímkou schválených výrobků, jejichž dovoz je přihlašovatel povinen SZÚ ohlásit. V případě nevyhovujících výsledků při statistické přejímce bude rozhodnutí o schválení přihlašovatele odejmuto.

Důvodem pro označování výrobku schvalovací značkou je zvýšení informovanosti uživatelů (odběratelů) výrobku.

Platnost rozhodnutí je omezena nejvýše přípustnou lhůtou pro opětovné ověření výrobku a dodržování jeho vlastností rozhodných pro schválení.

Podklady pro rozhodnutí

- závěrečný zkušební protokol č. 31-6133 ze dne 20.2.1997

Poučení:

Proti tomuto rozhodnutí se může přihlašovatel odvolat k Úřadu pro technickou normalizaci, metrologii a státní zkušebnictví do 15 dnů ode dne jeho doručení. Odvolání musí být řádně zdůvodněno a podáno u této státní zkušebny, nemá však odkladný účinek.

Poslední platné rozhodnutí bylo vydáno ve věci

schvalování pod číslem *)

certifikace pod číslem *)

Rozdělovník: 2x přihlašovatel
1x ÚNMZ ČR, 3x SZÚ

*) Nehodící se škrtněte

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р
ГОССТАНДАРТ РОССИИ

СЕРТИФИКАТ СООТВЕТСТВИЯ

№ РОСС ES.АЯ45.В02122

Срок действия с 08.11.2001г. по 07.11.2004г.

№4855339 *

ОРГАН ПО СЕРТИФИКАЦИИ

РОСС RU.0001.11АЯ45

СЕРТИФИКАЦИОННЫЙ ЦЕНТР НП "СЦ НАСТХОЛ"

125315, г.Москва, 1-й Балтийский пер., 6/21, корп.3, тел. (095) 152-70-28,
152-73-58, тел./факс (095) 152-76-55, E-mail: nasthol@dialup.ptt.ru

ПРОДУКЦИЯ

ЗАТВОРЫ дисковые поворотные типов FL, FLN, LUG, LUG(N), FA, FI,
FG(F), FN(F); DN 32 - 800; PN до 2,5 МПа,
с ручным управлением или с пневмоприводами Prisma типов
PW, P00 - P50, PWS, P00S - P50S (без элементов электрооборудования)
Серийный выпуск

код ОК 005 (ОКП):

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ

ГОСТ 12.2.063-81, ГОСТ 13547-79 (п.п. 1.2, 1.14, 1.15, 1.20, 1.20а),
ГОСТ 9544-93, нормам и правилам Госгортехнадзора России

код ТН ВЭД России:

8 4 8 1 8 0 8 5 0 0

ИЗГОТОВИТЕЛЬ

SIGEVAL, S.A.

Calle Sauce, 49, Poligono Industrial Torrejon, 28850 Torrejon de Ardoz (Madrid), Spain

КОПИЯ ВЕРНА:

Генеральный директор
СЦ НАСТХОЛ

Б.В. Максимовский

СЕРТИФИКАТ ВЫДАН

SIGEVAL, S.A.

Calle Sauce, 49, Poligono Industrial Torrejon, 28850 Torrejon de Ardoz (Madrid), Spain
тел. +34 91 6755307, факс +34 91 6761100

08 НОЯ 2001

НА ОСНОВАНИИ

- протокола испытаний № 125-2001 от 30.07.2001г. НП "СИЦ Гипронгаз-СЭПО", г. Саратов, рег. № РОСС RU.0001.21МГ05;
 - акта о результатах анализа состояния производства от 12.06.2001г., проведенного СЦ "НАСТХОЛ";
 - санитарно-эпидемиологического заключения № 50.ФУ.02.493.П.020916.10.01 от 23.10.2001г.
- ЦГСЭН № 123 ФУ "Медбиоэкстрем" Минздрава России

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Место нанесения знака соответствия - продукция и сопроводительная техническая документация.



Руководитель органа

Эксперт

Б.В. Максимовский

инициалы, фамилия

Г.В. Поляков

инициалы, фамилия

Сертификат имеет юридическую силу на всей территории Российской Федерации



ЛИЦЕНЗИЯ

Регистрационный номер 1894 от 08 ноября 2001г.

РОСС RU.0001.11АЯ45

СЕРТИФИКАЦИОННЫЙ ЦЕНТР НП "СЦ НАСТХОЛ"

125315, г.Москва, 1-й Балтийский пер., 6/21, корп.3, тел. (095) 152-70-28,

152-73-58, тел./факс (095) 152-76-55, E-mail: nasthol@dialup.ptt.ru

разрешает применение знака соответствия системы сертификации ГОСТ Р

Лицензия выдана

SIGEVAL, S.A.

Юридический адрес

Calle Sauce, 49, Poligono Industrial Torrejon, 28850 Torrejon de Ardoz (Madrid), Spain

Телефон +34 91 6755307 Факс +34 91 6761100 Телекс _____

на основании сертификата соответствия рег. номер РОСС ES.АЯ45.В02122

Действителен с 08 ноября 2001г.

Срок действия лицензии до 08 ноября 2004г.

Место нанесения знака соответствия

Продукция и сопроводительная техническая документация.

Условия проведения данного вида работ: в соответствии с правилами системы сертификации ГОСТ Р (в т.ч. см. на обороте)



Руководитель органа по сертификации

Б.В. Максимовский

(подпись)

(инициалы, фамилия)

08 ноября 2001г.

(дата)

Лицензия
продлена до

Руководитель органа по сертификации

М.П.

(подпись)

(инициалы, фамилия)

(дата)

№1488849 ❖



Zertifikat über ein DIN-DVGW Prüfzeichen certificate for a DIN-DVGW test mark

NW-6201BM0438

Registriernummer
registration number

Anwendungsbereich field of application	Produkte der Wasserversorgung products of water supply
Zertifikatinhaber owner of certificate	VAG-Armaturen GmbH Carl-Reuther-Straße 1, D-68305 Mannheim
Vertreiber distributor	VAG-Armaturen GmbH Carl-Reuther-Straße 1, D-68305 Mannheim
Produktart product category	Gas- und Wasser-Absperrarmatur: Absperrklappe (6201)
Produktbezeichnung product description	Absperrklappe zum Anflanschen bzw. Einklemmen für den Trinkwasserbereich
Modell model	AREX, AREX L
Prüfberichte test reports	Mechanik: A 011/01 + A 001/01 vom 22.08.2001 (TZW) Hygiene: C 64/97/st vom 20.01.1997 (TZW)
Prüfgrundlagen basis of type examination	DIN 3547-1 (01.06.1990) DIN 3547-1 (Entwurf 01.07.1996)

Ablaufdatum / AZ
date of expiry / file no.

22.08.2006 / 01-0160-WNE

21.11.2001 Fk A-1/2

Datum, Bearbeiter, Platz, Zeile der Zertifizierungsstelle
date, issued by / sheet, head of certification body

DVGW-Zertifizierungsstelle - von der Deutschen Akkreditierungsstelle Technik
(DATech) e.V. akkreditiert für die Konformitätsbewertung von Produkten der Gas-
und Wasserversorgung

DVGW Certification Body - accredited by Deutsche Akkreditierungsstelle Technik
(DATech) e.V. for conformity assessment of products of gas and water supply



DVGW Deutsche Vereinigung
des Gas- und Wasserfaches e.V.
Technisch-wissenschaftlicher
Verein

Zertifizierungsstelle

Josef-Wirmer-Straße 1-3
D-53123 Bonn

Telefon +49 (228) 91 88 807
Telefax +49 (228) 91 88 993

GENERAL INFORMATION

CERTIFICATIONS (Gas and Water Distribution approval. Germany)



SIGEVAL, S.A.

A-2/2 NW-6201BM0438

Typ type	Technische Daten technical data	Bemerkungen remarks
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 32	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 40	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 50	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 65	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 80	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 100	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 125	
AREX, AREX L	Druckstufe: PN 16 Nennweite: DN 150	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 200	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 250	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 300	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 350	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 400	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 450	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 500	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 600	
AREX, AREX L	Druckstufe: PN 10 Nennweite: DN 800	

Ausführungsvariante type variation	Erläuterungen explanations
AREX	Einklemm-Ausführung, aus Gusseisen mit Lamellengrafit/Aluminium
AREX L	Anflansch- oder Einklemm-Ausführung, aus Gusseisen mit Lamellengrafit



Zertifikat über ein DIN-DVGW Prüfzeichen certificate for a DIN-DVGW test mark

NW-6201BM0439

Registriernummer
registration number

Anwendungsbereich field of application	Produkte der Wasserversorgung products of water supply
Zertifikatinhaber owner of certificate	VAG-Armaturen GmbH Carl-Reuther-Straße 1, D-68305 Mannheim
Vertreiber distributor	VAG-Armaturen GmbH Carl-Reuther-Straße 1, D-68305 Mannheim
Produktart product category	Gas- und Wasser-Absperrarmatur: Absperrklappe (6201)
Produktbezeichnung product description	Absperrklappe zum Anflanschen bzw. Einklemmen für den Trinkwasserbereich
Modell model	CEREX 200, CEREX 200 L
Prüfberichte test reports	Mechanik: A 011/01 + A 001/01 vom 22.08.2001 (TZW) Hygiene: C 64/97/st vom 20.01.1997 (TZW)
Prüfgrundlagen basis of type examination	DIN 3547-1 (01.06.1990) DIN 3547-1 (Entwurf 01.07.1996)

Ablaufdatum / AZ 22.08.2006 / 01-0160-WNE
date of expiry / file no.

21.11.2001/FK A-1/2

Datum, Bearbeiter, Blatt, Leiter der Zertifizierungsstelle
date, issued by, sheet, head of certification body

DVGW-Zertifizierungsstelle - von der Deutschen Akkreditierungsstelle Technik
(DA Tech) e.V. akkreditiert für die Konformitätsbewertung von Produkten der Gas-
und Wasserversorgung

DVGW Certification Body - accredited by Deutsche Akkreditierungsstelle Technik
(DA Tech) e.V. for conformity assessment of products of gas and water supply



DVGW Deutsche Vereinigung
des Gas- und Wasserfaches e.V.
Technisch-wissenschaftlicher
Verein
Zertifizierungsstelle
Josef-Wirmer-Straße 1-3
D-53123 Bonn
Telefon +49 (228) 91 88 807
Telefax +49 (228) 91 88 993

GENERAL INFORMATION

CERTIFICATIONS (Gas and Water Distribution approval. Germany)



SIGEVAL, S.A.

NW-6201BM0439

A-2/2

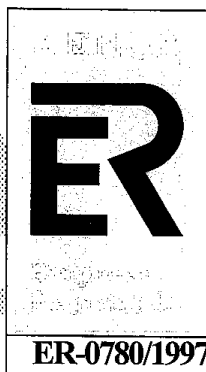
Type type	Technische Daten technical data	Bemerkungen remarks
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 32	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 40	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 50	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 65	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 80	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 100	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 125	
CEREX 200, CEREX 200 L	Druckstufe: PN 16 Nennweite: DN 150	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 200	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 250	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 300	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 350	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 400	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 450	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 500	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 600	
CEREX 200, CEREX 200 L	Druckstufe: PN 10 Nennweite: DN 800	

Ausführungsvariante type variation	Erläuterungen explanations
CEREX 200	Einklemm-Ausführung, aus duktilem Gusseisen
CEREX 200 L	Anflansch- oder Einklemm-Ausführung, aus Gusseisen mit Kugelgrafit

AENOR

Asociación Española de
Normalización y Certificación

Copia



CERTIFICADO DE REGISTRO DE EMPRESA

REGISTERED FIRM CERTIFICATE

ER-0780/1997

La Asociación Española de Normalización y Certificación (AENOR) certifica que el Sistema de Aseguramiento de la Calidad adoptado por la Empresa: *The Spanish Association for Standardization and Certification (AENOR) certifies that quality assurance system adopted by the firm:*

SIGEVAL, S.A.

para: *for:*

LA PRODUCCIÓN DE VÁLVULAS DE MARIPOSA Y CONTROLADORES DE NIVEL MAGNÉTICOS.

THE PRODUCTION OF BUTTERFLY VALVES AND MAGNETIC LEVEL CONTROLLERS.

que se realiza/n en o desde el establecimiento: *which is/are carried out in or from the establishment:*

PI CL SAUCE, 49, APDO 142
28850 - TORREJON DE ARDOZ
(MADRID)

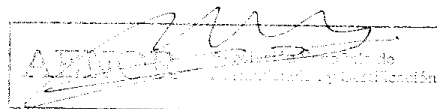
es conforme a las exigencias de la Norma Española **UNE-EN ISO 9001:2000** Sistemas de Gestión de la Calidad. *Requisitos. Complies with the requirements of the Standard UNE-EN ISO 9001:2000 Quality Management Systems. Requirements.*

El presente Certificado es válido salvo suspensión o retirada notificada en tiempo por AENOR. *The Certificate is valid unless it is cancelled or withdrawn upon AENOR'S written notification.*

Cualquier aclaración adicional relativa tanto al alcance de este certificado como a la aplicabilidad de los requisitos de la norma ISO 9001:2000 puede obtenerse consultando a la organización. *Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2000 requirements may be obtained by consulting the organization.*

Fecha de emisión: 1997-11-18 Fecha de renovación: 2002-12-10
Issued on Renewal on

Fecha de expiración: 2005-12-10
Expires on



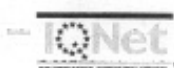
El Director General de AENOR
General Manager of AENOR



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Entidad de certificación acreditada por ENAC con acreditación nº 01/C-SC003



Dr. Fabio Roversi
President of IQNet



Ramón NAZ
General Manager of AENOR

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GENERAL

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 Elastomers) and to the characteristics of adaptability within the activities where a simple, efficient solution is required.

1) Description

The SIGEVAL butterfly valve has the following advantages:

- Minimum load loss.
- Permanent and total water tightness, both inside and outside.
- Bi-directional flow.
- Easy assembly and disassembly, with all the components interchangeable.
- Hardly any maintenance.

As can be seen, the valve is basically composed of a body, shafts, a disc and an elastomer sleeve to make it watertight,

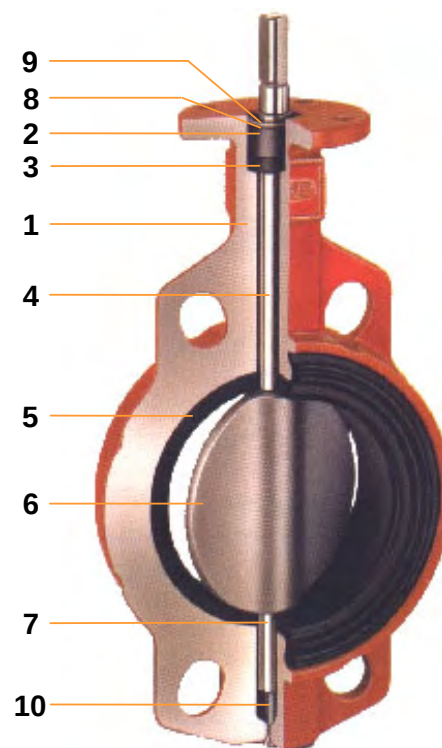
Body.- This is of metal and can be manufactured in various alloys according to its use and the work for which it is required.

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

Sleeve.- 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 out-side the valve, at the service pressure required.

2) Installation

Its assembly in pipe circuits is accomplished between flat-faced standard flanges without requiring any joints since the liner produces a watertight seal both inwards and outwards.



Ref.	Designation
1	Body
2	Friction Bushing
3	Lip Seal
4	Upper Shaft
5	Liner
6	Disc
7	Lower Shaft
8	Retaining Ring
9	Zegi Ring
10	Screw

ADVANTAGES

All components of the valve can be dismantled and are interchangeable.

Standard Shaft to suit any type of actuation.

(Handlever, gearbox, pneumatic or electric).

Zegi Ring.

(Avoid driving shaft can be displaced outwards)

Bushing.

(Guarantees perfect alignment of the shaft, reducing the torque)

Leak Proof Retainer.

(Offering an additional safety factor to the shaft and impedes any external contamination)

High Precision Disc and Shaft Squares.

(Easy to dismantle)

Spherical Disc.

(Ensures low torque and extends life of elastomer seat)

Elastomer Thickness.

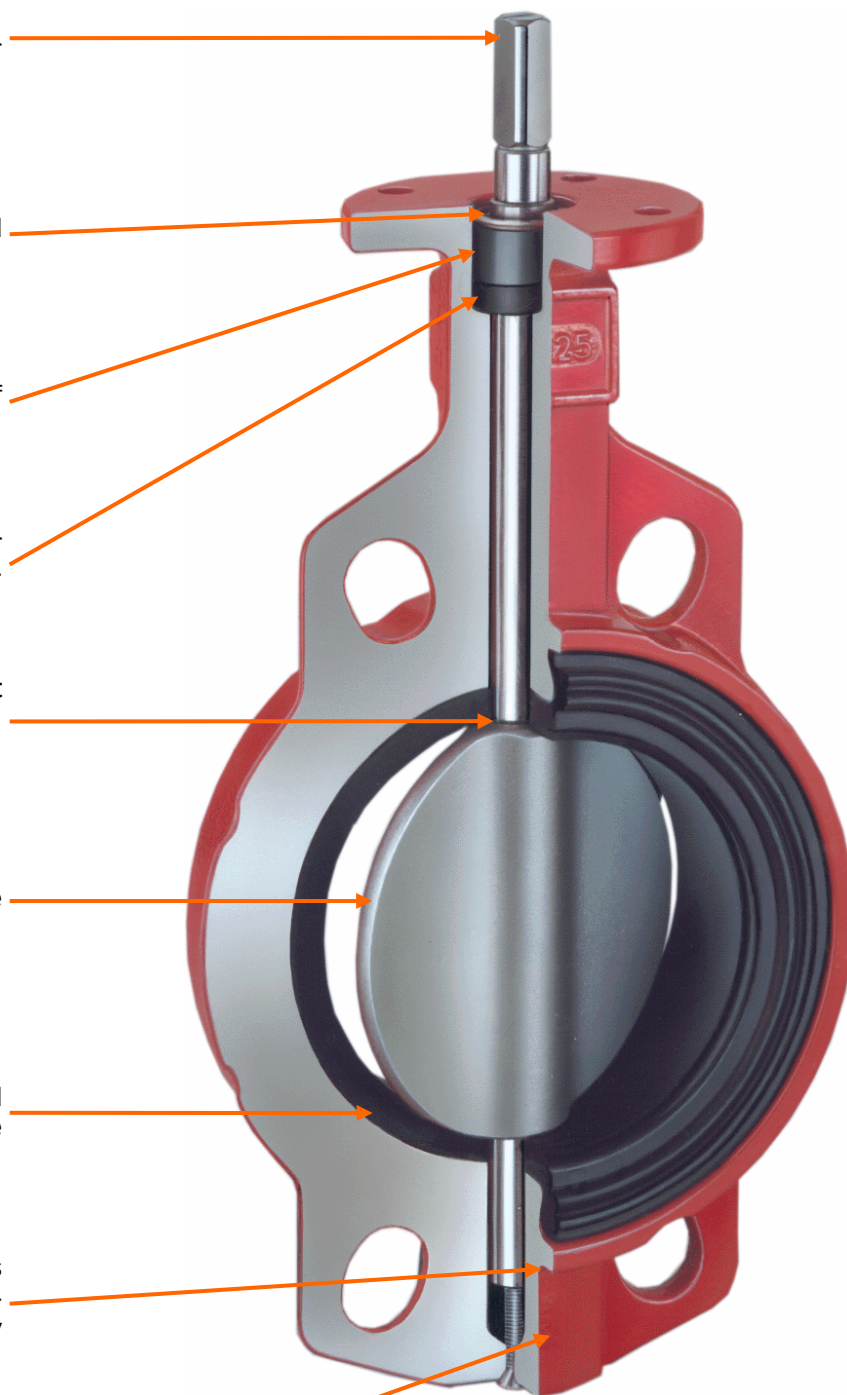
(Gives long lasting resilience and prevents external leakage via the shafts)

Machined Surfaces.

(Accurate dimensions between faces gives the seat a well balanced tightness and an identical torque in every valve)

High Standard of External Coating.

(Epoxy)



GENERAL INFORMATION



SIGEVAL, S.A.

STANDARD DELIVERY PROGRAMME

Type	Characteristics	Diameter	PN	Applications
 FL FL(N)	WAFER body, Cast Iron	DN 32-150 DN 200-800	PN 16 PN 10	• Air Condition • Naval Industry • Fire Fighting • General Service 
	WAFER body, Nodular Cast Iron	DN 32-150 DN 200-800	PN 16 PN 10	
 LUG LUG(N)	LUG body with threaded lugs, Cast Iron	DN 32-150 DN 200-600	PN 16 PN 10	• Naval Industry • Heating • Gas 
	LUG body with threaded lugs, Nodular Cast Iron	DN 32-150 DN 200-600	PN 16 PN 10	
 KL	WAFER body, Cast aluminum	DN 50-100 DN 125-200	PN 10 PN 6	• Irrigated Land • Air Condition • Alimentary Industry 
 FA FI	WAFER body, Cast or laminated carbon steel	DN 32-150 DN 200-800	PN 16 PN 10	• Alimentary Industry • Chemical Industry • Corrosive Athmospheres 
	WAFER body, Cast or laminated stainless steel	DN 32-150 DN 200-800	PN 16 PN 10	
 FG(F) FN(F)	FLANGED body, Cast Iron	DN 200-800	PN 10	• Filtration • Water Industry • Naval Industry 
	FLANGED body, Nodular Cast Iron	DN 200-800	PN 10	

PLEASE CONTACT US FOR NOMINAL PRESSURES WHICH ARE DIFFERENT TO THOSE INDICATED

SIGEVAL BUTTERFLY VALVES SELECTION TABLE

FL		3		200		MN		E	
				DIAMETER					
BODY		DISC		OPERATION		SEAT			
Code	Material	Code	Material	Code	Material	Code	Material	Code	Material
FL	Wafer (Cast iron)	1	Stainless Steel CF-8	EL	Bare shaft	E	EPDM		
FLN	Wafer (Nodular cast iron)	2	Cast aluminium Epoxy coated	MN	Lever (15° Notched)	HT	EPDM high temperature		
LUG	Lugged (Cast iron)	3	Nodular cast iron Epoxy coated	MR	Lever (Clamping)	N	Nitrile		
LUG(N)	Lugged (Nodular cast iron)	4	Cast bronze/alum.. Cast bronze/tin	MDVV	Planetary gearbox	AP	Flucast AB/P		
KL	Wafer (Cast aluminium)	5	Stainless Steel CF-8M	MDV	Gearbox	S	Silicone		
FA	Wafer (Carbon steel)	6	Carbon steel Epoxy coated	MND	Pneumatic actuator doble acting	SA	Alimentary silicone		
FI	Wafer (Stainless steel)	7	Nodular cast iron EPDM Vulcanized	MNS	Pneumatic actuator spring return	SV	Vapour silicone		
FG(F)	Doble Brida (Cast iron)	8	Stainless steel cast + Noridur	MSE	Electric actuator	V	Viton		
FN(F)	Doble Brida (Nodular cast iron)	-	-	-	-	A	Flucast AF		

Note: For special materials on request.

Necessary data for and enquiries:

1. Type of fluid (Concentration).
2. Working conditions (Pressure, Velocity, Temperature).
3. Material quality.
4. Diameter.
5. Norms in application.
6. Drilling Norm.
7. Type of Operation.

TECHNICAL DATA



SIGEVAL, S.A.

MATERIAL OPTIONS (Body)

Notes: For special materials on request.



Material	Norm
Grey cast iron + Epoxi	EN GJL 250 (Former GG-25)
Nodular cast iron + Epoxi	EN GJS400-15 (Former GGG40)
Carbon steel casting + Epoxi	ASTM A216/A216M WCB
Stainless steel casting	ASTM A351/A351 M CF8-CF8M
Bronze casting tin	UNE EN 1705 (RG 10)
Laminated Carbon steel + Epoxi	EN10025 S 275 JR (Former A 410b)
Laminated stainless steel	AISI 304/316
Aluminium casting + Epoxi	EN-AC-47100 diameter $\geq$ 125
Aluminium casting + Epoxi	EN-AC-46100 diameter $<$ 125

TECHNICAL DATA



SIGEVAL, S.A.

MATERIAL OPTIONS (Disc)

Notes: For special materials on request.

Material	Norm	SIGEVAL Code	Main Characteristics	Applications
Stainless steel casting	ASTM A 351/A351M CF-8	1	Very good chemical resistance and corrosion resistance	Chemical products. Nourishing products
Aluminium casting + Resicoat RT9000R4	EN-AC-44100	2	Good corrosion resistance	Cold water. Air
Nodular cast iron + Resicoat RT9000R4	EN GJS400-15 (Former GGG40)	3	Mechanical strength similar to that of steel	Hot water. Demineralized water. Air, Gas, Indust. oils.
Bronze casting tin	UNE EN 1705 (RG 10) ≤ DN 300	4	Good chemical resistance and corrosion resistance	Sea Water. Demineralized water
Bronze casting aluminium	UNE EN 1982 (CuAl10FeSn5C) ≥ 350		Good chemical resistance and corrosion resistance	Sea Water. Demineralized water
Stainless steel casting	ASTM A351/A351M CF-8M	5	Very good chemical resistance and corrosion resistance	Chemical products. Nourishing products
Carbon steel casting	ASTM A216/A216M WCB	6	Good abrasion resistance	Dust fluid. Pneumatic conveyers
Nodular cast iron + EPDM	EN GJS400-15 + EPDM	7	Very good abrasion resistance	Dust fluid. Pneumatic conveyers
Stainless steel casting	NORIDUR ASTM A743/A743M CD4MCU	8	Very good abrasion resistance and corrosion resistance	Chemical products



MATERIAL OPTIONS (Shafts and Bearing)

Notes: For special materials on request.

Shafts	
<i>Material</i>	<i>Norm</i>
Laminated stainless steel	AISI 420

Bearings	
<i>Material</i>	<i>Norm</i>
Acetal Delrin Bronze-Brass	-

TECHNICAL DATA



SIGEVAL, S.A.

MATERIAL OPTIONS (Elastomers)

Notes: For special materials on request.

Material	Designation ISO 1629	Sigeval Code	Colors Code	Working Temperatures
Ethylene Propylene	EPDM	E	-	-40°C +110°C
EPDM High Temperature	EPDM	HT	Orange	+80°C +130°C
Nitrile	NBR	N	Blue	-10°C +100°C
Flucast AB/P	FPM	AP	Red	-35°C + 90°C
Silicone	MVQ	S	-	-60°C +200°C
Alimentary Silicone	MVQ	SA	-	- 60°C +200°C
Vapour Silicone	MVQ	SV	Red White	-60°C +140°C
Vitón	FPM	V	Yellow	-15°C +210°C
Hypalón	CSM	H	Green	-25°C +120°C
Neoprene	CR	NP	White	-25°C + 80°C
Butyl/isoprene	IIR	B	Violet	-10°C + 95°C
Flucast AB/E	FPM	AE	Grey	-20°C + 90°C
Flucast AF	FPM	A	Pink	0°C + 200

***Note:** All temperatures and fields of application are approximate; in order to determine the best option for a fluid, please contact our commercial department.



Sigeval butterfly valves elastomers attributes and behaviour :

Sigeval Code												
		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
	Cold	N	M	S	MB	MB	M	MB	MB	S	B	D
Strength against	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

Suitability Grades
 E = Excellent
 MB = Very good
 S = Sufficient

M = Mediocre
 D = Weak
 N = Not Satisfactory

TECHNICAL DATA



SIGEVAL, S.A.

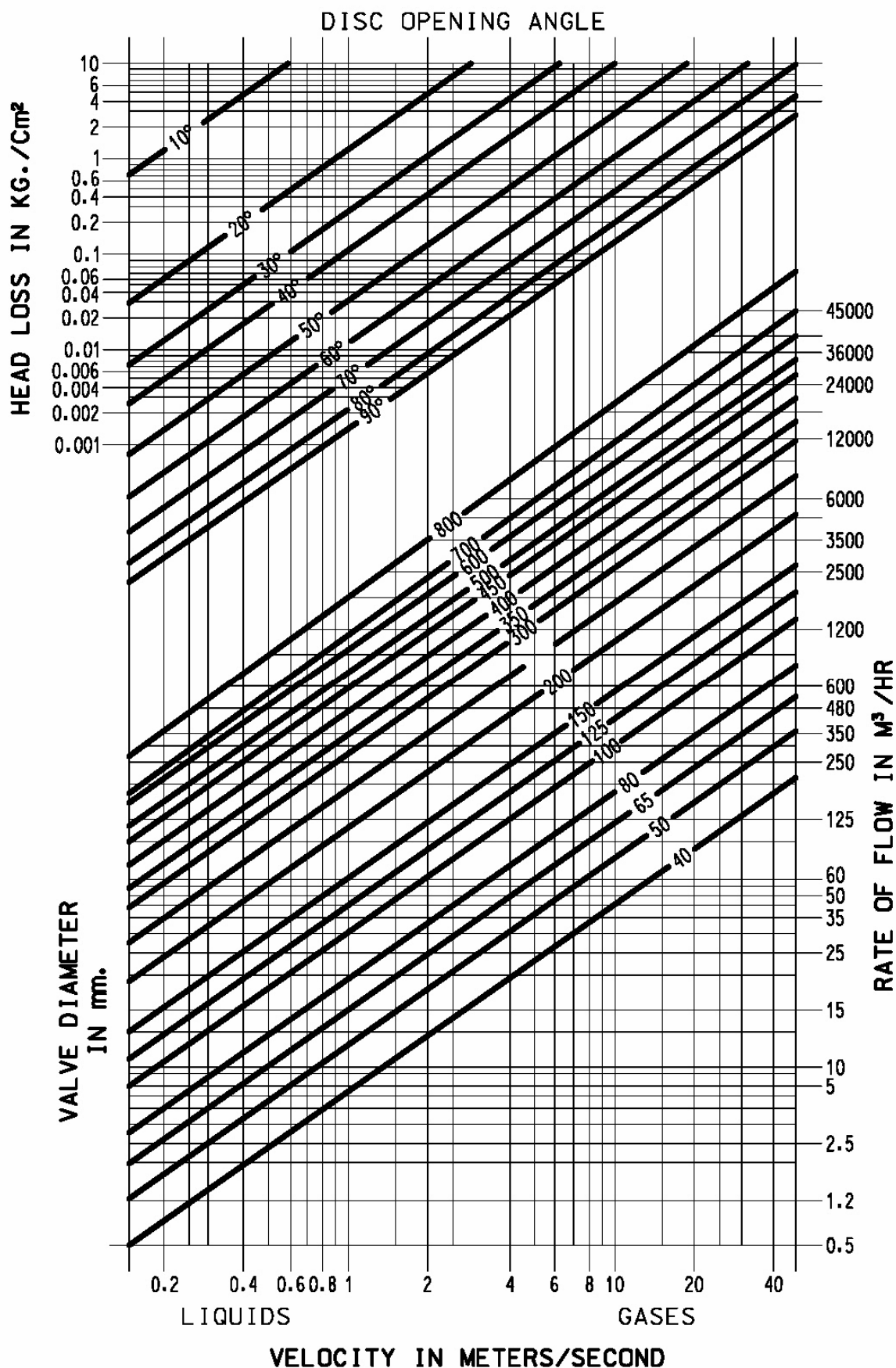
MATERIAL OPTIONS

Notes: For special materials on request.

Component	Coating	Properties	Certification
Body	Epoxi 60-80 microns	Protection against corrosion	-
Disc	Resicoat RT9000R4 200-300 microns	Very good heat resistance (tested at 90°C with excellent results)	KTW: Drinking water (Germany) WRC: Drinking water (United Kingdom) KIWA: Drinking water (The Nederland)
	Halar (resin fluorada) 500-800 microns	Excellent corrosion resistance	-



HEAD LOSS DIAGRAM



KV AND TORQUES

FLOW COEFFICIENT KV IN m³ /h DEPENDING ON ANGLE OF OPENING THE DISC

DN	90°	80°	70°	60°	50°	40°	30°	25°
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	125	146
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
800	44000	29000	20000	125000	8200	4500	2200	1600

KV Coefficient = Indicate water flow in m³ /h. at 20°C passing through the valve giving a pressure loss of 1 Kg/cm².

NECESSARY TORQUE IN Nm FOR CLOSING THE VALVE DEPENDING ON DIFFERENTIAL PRESSURE Δ P

DN D P	1 1/2" 40	2" 50	2 1/2" 65	3" 80	4" 100	5" 125	6" 150	8" 200	10" 250	12" 300	14" 350	16" 400	18" 450	20" 500	24" 600	28" 700	32" 800
3 Kg/ cm 2	5	5	15	18	21	33	45	79	126	161	245	520	590	840	1000	1650	2300
6 Kg/ cm 2	7	7	16	21	28	46	85	140	210	270	300	624	1120	1390	2200	3300	4600
10 Kg/ cm 2	10	15	20	30	50	89	115	180	270	390	500	897	1450	1800	3450	5000	6500
16 Kg/ cm 2	20	23	29	39	59	95	120	220	350	560	950	1400	1950	2500	3800	5860	9500
25 Kg/ cm 2	38	38	50	70	100	160	180	400	600	-	-	-	-	-	-	-	-

In order to determinate torques for standard valves follow this criteria:

- DN 32 - 150 ΔP = 16 Kg/cm²
- DN 200 -800 ΔP = 10 Kg/cm²

Note: These torques are for butterfly valves mounted with EPDM or Nitrile standard seat.
For others seats please contact with our Technical Department .

- OPERATION TEST

First 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. These test can be in accordance with the technical specifications of **SIGEVAL S.A.** or, when accepted by the manufacturer beforehand, in accordance with customer's requirements.



- HYDROSTATIC TEST

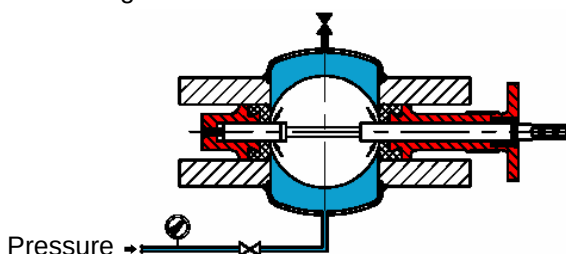


Valves are tested in the factory as per as nominal pressure, following the internal procedure based on standard ISO 5208, by guaranteeing its total tightness. This test is done with water at room temperature. For the hydrostatic test the valve is placed (in open position) between duly tightened flanges

1) Shell test (drawing 1)

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.

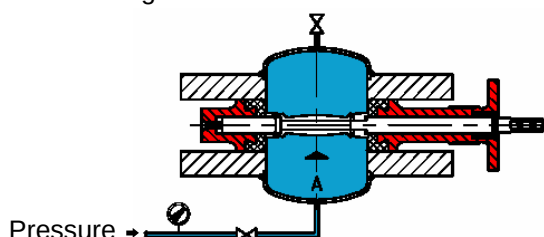
Drawing 1



2) Tightness test (drawing 2)

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.

Drawing 2



When the valve and/or its controls have been dismantled test procedure as above should be repeated.

ASSEMBLY INSTRUCCION

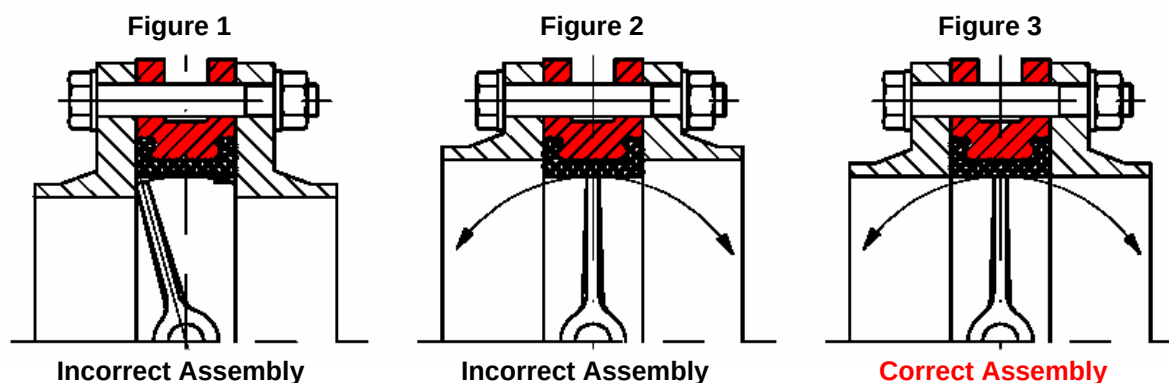
The SIGEVAL butterfly valve has been designed in accordance with the following specifications: - Mounting between flat or welding neck flanges to DIN or ASA standards.

- 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.

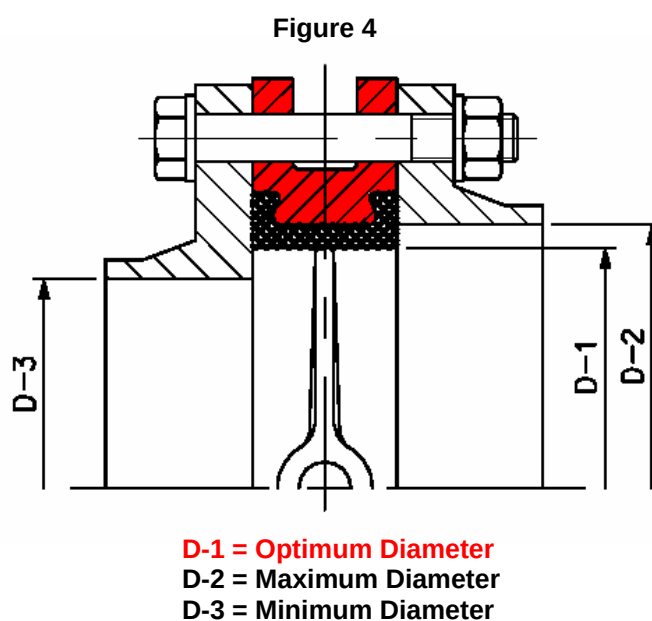
DIMENSIONS OF THE COUPLING PIPES AND FLANGES

Both the flanges and the piping must be 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 1) 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 advisable to adapt to the OPTIMUM D. 1.dimensions, as per table below (Figure 4).



DN		D-1	D-2	D-3
mm	Inches			
32	1 ¼"	32	42	20
40	1 ½"	40	50	30
50	2"	50	61	40
65	1 ½"	65	75	60
80	3"	80	90	70
100	4"	105	115	90
125	5"	125	140	115
150	6"	150	160	140
200	8"	200	210	195
250	10"	250	260	245
300	12"	300	320	295
350	14"	350	365	345
400	16"	400	420	395
450	18"	450	475	442
500	20"	500	525	490
600	24"	600	624	587
700	28"	700	715	693
800	32"	800	815	795

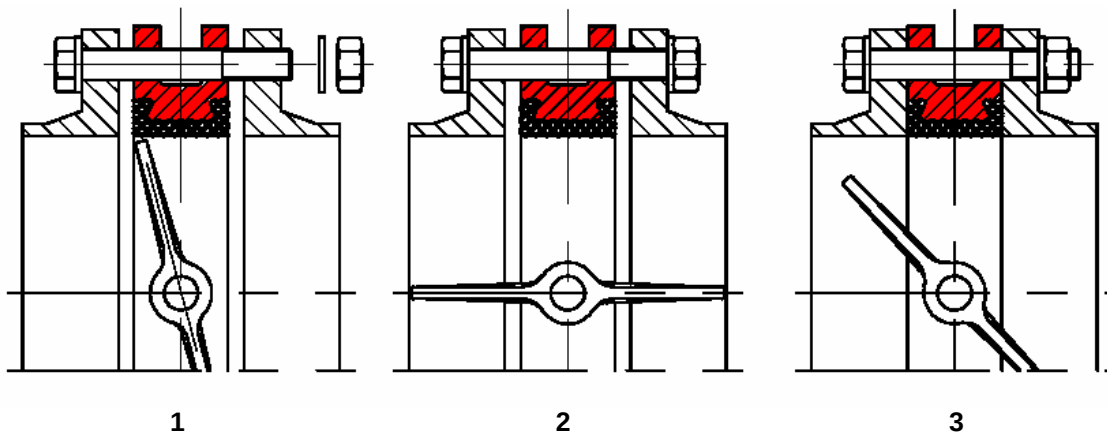


INSTRUCTIONS FOR ASSEMBLY BETWEEN FLANGES

PROCEDURE

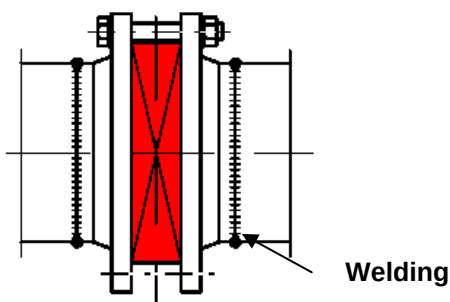
The assembly operation is carried out as follows:

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

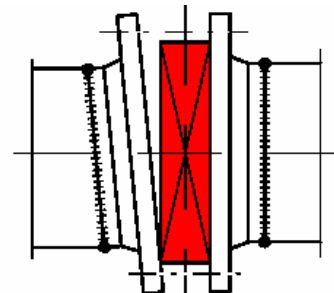


ASSEMBLY ADVISES

Weld the pipe and the flanges well away from the valve to avoid any heat damage to the rubber liner and the covering. 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



NO welding must be done in the vicinity of the valve must be done.



Check that there exists a perfect parallelism between flanges.

ASSEMBLY INSTRUCTIONS FOR TYPE "FL" AT THE PIPE END

The procedure, as stated bellow, allows the valve's downstream pipe to be 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. 32 to DN 150 mm. (PN 16 x 0.4)= 6.4 Kg./cm²

For DN. 200 to DN 400 mm. (PN 10 x 0.4)=4.0 Kg./cm²

When the installation is in operation again, it is safe to reassemble the downstream pipe or counter flange on a pipe.

The valve will regain its nominal resistance (as per its nominal pressure PN) after perfect re-assembly between flanges.

PROCEDURE

The numbers indicated show the operational stages starting from original mounting between flanges to end of line mounting.

Figure. 1 - Is the original mounting between flanges.

The operations (2) (3) and (4) should be carried out in sequence, undoing one bolt and nut at a time.

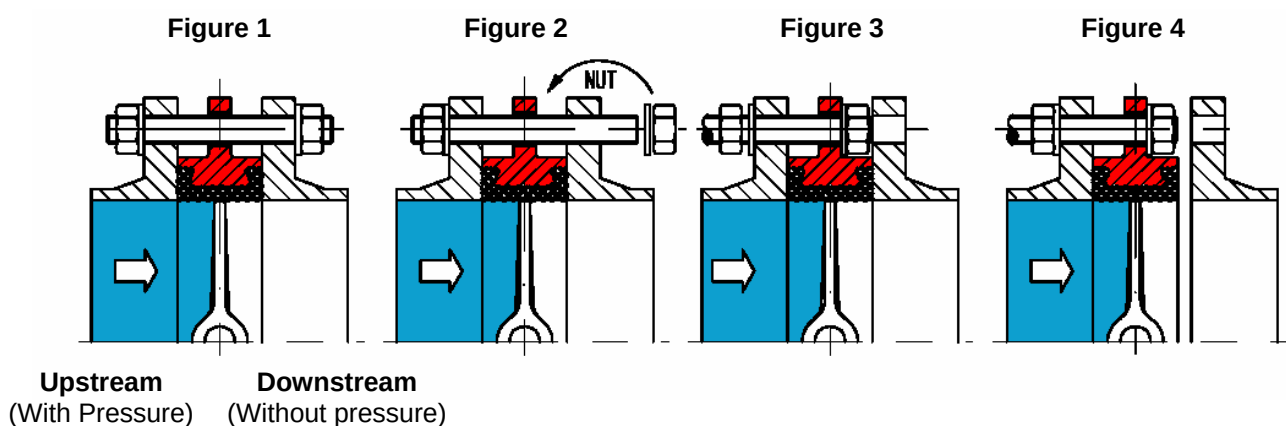
Figure.2 - Remove one bolt and nut at a time at the downstream side.

Figure.3 - Fix the bolt and nut on the upstream flange and valve body.

Figure.4 - Re-tighten the bolt and nut as indicated.

Repeat 2, 3 and 4 in a diagonally opposite sequence until you have completed the operation.

IMPORTANT REMARK: This system of dismantling at pipe end is only authorised when valve body is made in NODULAR CAST IRON or STEEL.



USING WIDER NUTS "X" AT THE PIPE END

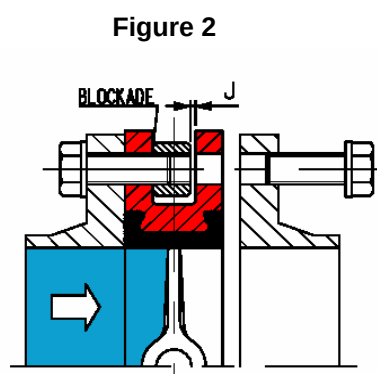
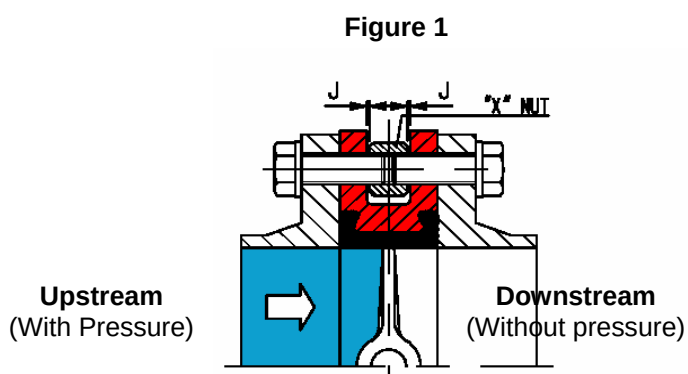
In order to carry out disassembly of the downstream pipe the following measures should be taken:

- 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. 200 to DN 400 mm. (PN 10 x 0.4)=4.0 Kg/cm²

Diagrams below show procedures to follow.

- 1) When using two bolts and one wider nut "X" makes sure there is clearance "J" on either side of the nut. (Figure. 1)
- 2) After nuts "X" have been tightened to the "UPSTREAM" side of the valve flange the "DOWNSTREAM" counter flange can be disassembled, maintaining "UPSTREAM" pressure (Figure.2).



ASSEMBLY INSTRUCTIONS FOR TYPE "LUGGED" AT THE PIPE END

The lugged valve is more suitable for end of line mounting. The "DOWN-STREAM" flange/pipe can be 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 to 32 and DN 150 mm (PN 16 x 0.4)= 6.4 Kg/cm²

For DN to 200 and DN 400 mm. (PN 10 x 0.4)=4.0 Kg/cm²

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).

Figure. 1

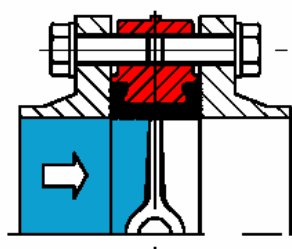


Figure. 2

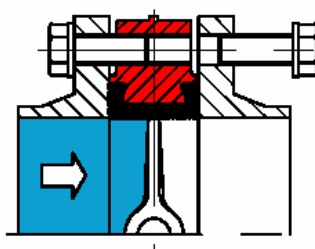
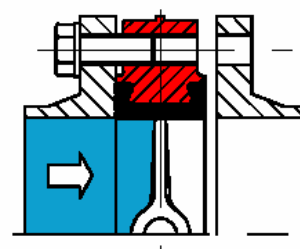
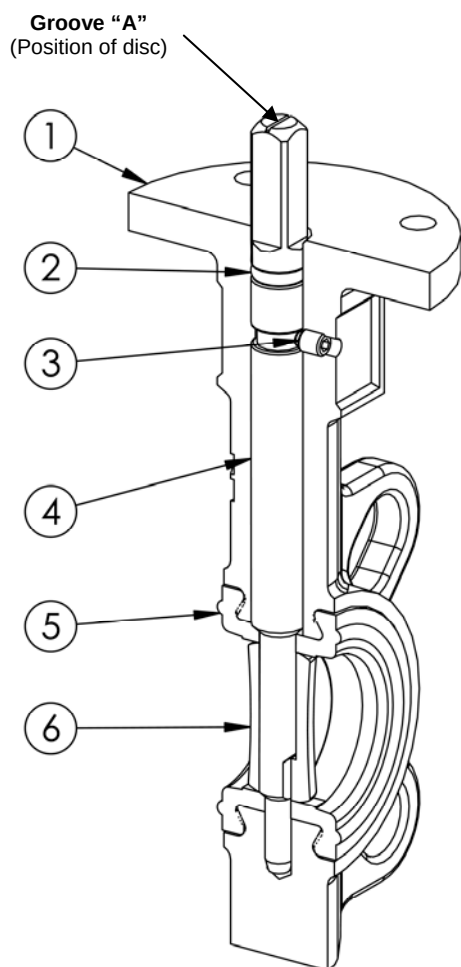


Figure. 3



Upstream (With Pressure) **Downstream** (Without pressure)

MAINTENANCE INSTRUCTIONS FOR DN. 32/50 VALVES



Item	Designation	Qty.
1	Body	1
2	"O" ring	1
3	Screw	1
4	Driving Shaft	1
5	Liner	1
6	Disc	1

I - Procedure for dismantling liner.

- Unscrew set screw (3) removing previously protective silicone.
- Put the disc (6) in open position.
- Pull out the combination of:
Driving shaft (4).
"O" ring (2).
- Remove the disc (6).
- On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat in a heart shape, in order to remove it laterally from the valve body.

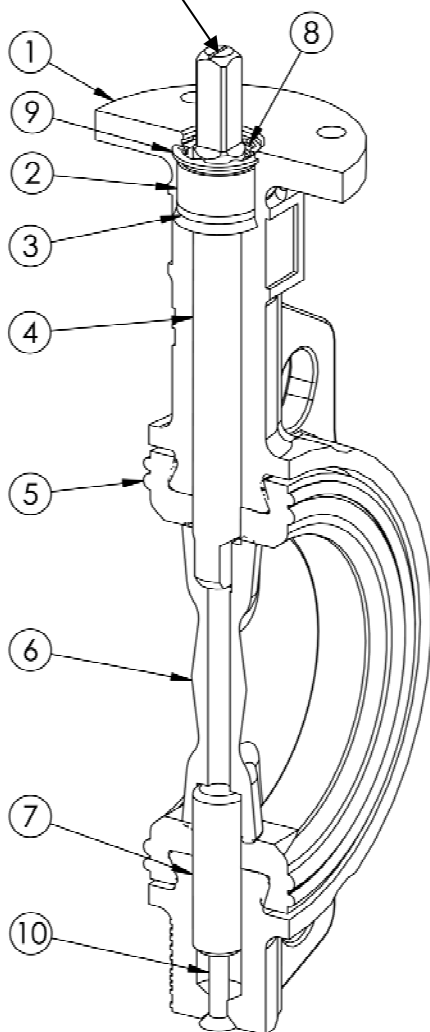
II - Procedure for assembling the liner.

Operations described for dismantling the liner must be repeated in reverse order. Attention must be paid to these remarks:

- Clean all the pieces before assembling using silicone spray on shafts, disc and seat in order to make assembly easier.
- Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
- Put in disc (6) in open position in order to make easier guiding.
- Replace the driving shaft (4) showing the disc in open position.
- Replace the "O" ring (2).
- Tighten.
- Use wrench to open and close the valve to check proper assembly and operation.
- Screw down the bolt (3) to its position. Do not block up driving shaft (4) because of an excessive tightness.
- Seal the screw (3) with silicone in order to avoid manipulation.

MAINTENANCE INSTRUCTIONS FOR DN. 65/200 VALVES

Groove "A"
(Position of disc)



Item	Designation	Qty.
1	Body	1
2	Friction Bushing	1
3	Lip Seal And Ring	1
4	Upper Shaft	1
5	Liner	1
6	Disc	1
7	Lower Shaft	1
8	Retaining Ring	1
9	Zegi Ring	1
10	Screw	1

I - Procedure for dismantling liner.

- Unscrew set screw (10).
- Put the disc (6) in open position.
- Remove Zegi ring (9).
- Pull out the combination of:
 - Upper shaft (4).
 - Friction bushing (2).
 - Lip seal and "o" ring (3).
 - Retaining ring (8).
- Put a metal stick in the upper shaft lodging. Then push down the lower shaft (7).
- Remove the disc (6).
- On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat in a heart shape, in order to remove it laterally from the valve body.

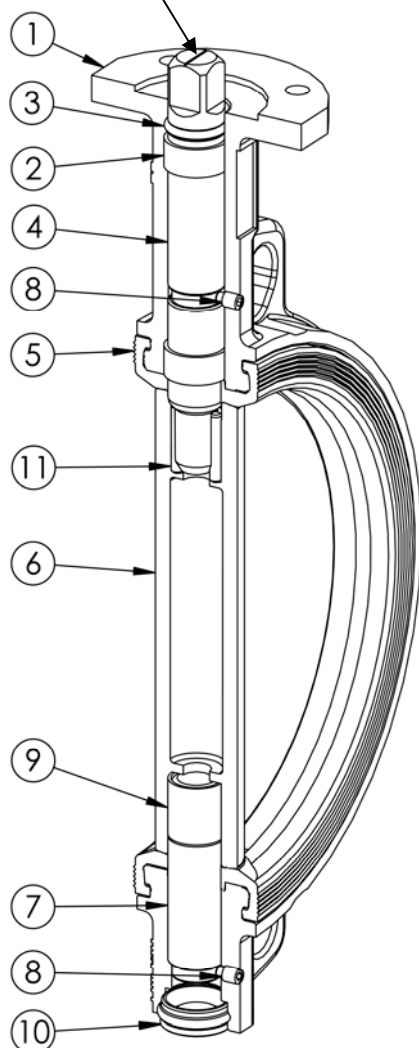
II - Procedure for assembling the liner.

Operations described for dismantling the liner must be repeated in reverse order. Attention must be paid to these remarks:

- Clean all the pieces before assembling using silicone spray on shafts, disc and seat in order to make assembly easier.
- Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
- Put in disc (6) in open position in order to make easier guiding.
- The lower shaft (7) has been mounted and set properly with set screw (10). Do not forget to secure the set screw.
- Replace the upper shaft (4) showing the disc in open position.
- Replace the friction bushing (2), the lip seal and "o" ring (3) and the retaining ring (8).
- Put in the Zegi ring (9).
- Use wrench to open and close the valve to check proper assembly and operation.

MAINTENANCE INSTRUCTIONS FOR DN. 250/400 VALVES

Groove "A"
(Position of disc)



Item	Designation	Qty.
1	Body	1
2	Friction bushing	2
3	"O" ring	1
4	Upper shaft	1
5	Liner	1
6	Disc	1
7	Lower shaft	1
8	Screw	2
9	Friction bushing	1
10	Plug	1
11	Keyway	2/4

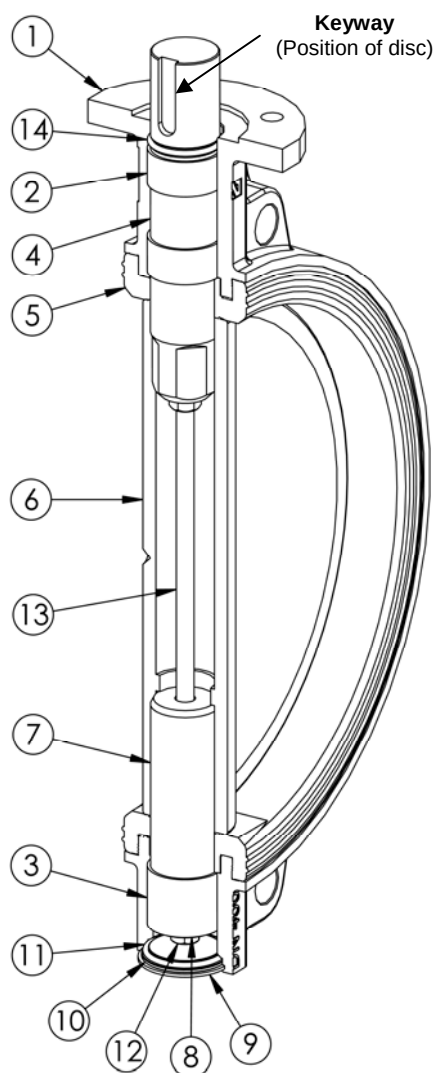
I - Procedure for dismantling liner.

- Remove the plug (10).
- Put the disc (6) in open position.
- Unscrew set screws (8) removing previously protective silicone.
- Pull out the upper shaft (4) along with the "O" ring (3).
- Put a metal stick in the upper shaft lodging. Then push down the lower shaft (7) .
- Remove the disc (6).
- On one side of the valve, remove the lips of the liner (5) from the lodging of the body. Deform the seat in a heart shape in order to remove it laterally from the valve body.

II - Procedure for assembling the liner.

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

- Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easier.
- Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
- Put in disc (6) in open position in order to make easier guiding. Disc will have incorporated the bushing (9) and cilindric keyways (11).
- Push the lower shaft (7) smoothly until it stop with the inner of the disc.
- Verify, before to assemble driving shaft, that bushings (2) are correctly placed in the inner of the valve neck.
- Put in the upper shaft (4), with the "O" ring (3), until it stops with the inner of the disc. Direction of assembling must be respected (keyway defines position of the disc).
- Screw the bolt (8) as much as possible in order that lower shaft (7) remain blocked.
- Screw down the bolt (8) to its position. Do not block up driving shaft (4) because of an excessive tightness.
- Seal the screw (8) with silicone in order to avoid manipulation.
- Assembled Plug (10).
- Use wrench to open and close the valve to check proper assembly and operation.



I - Procedure for dismantling liner.

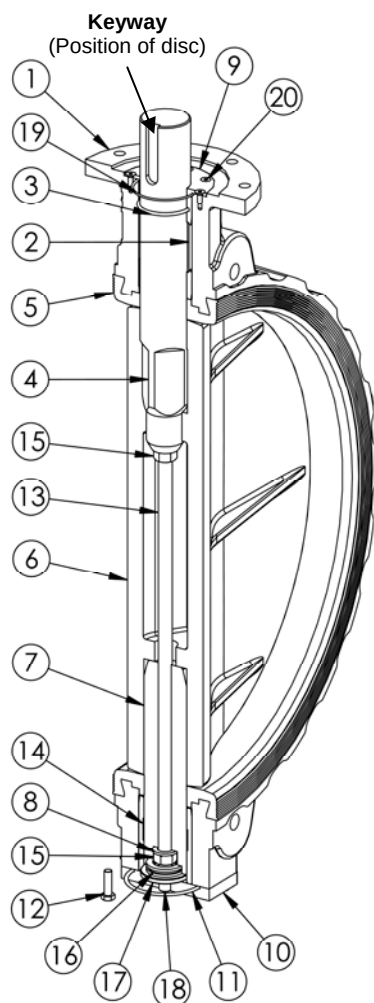
- Pull out Zegi ring (9) and remove the cover (10).
- Put the disc (6) in open position.
- Unscrew the blind nut (12) and pull out the washer.
- Pull out the combination of:
Upper shaft (4) along with the threaded link (13).
"O" ring (14).
- Put a metal stick in the upper shaft lodging. Then push down the lower shaft (7).
- Remove the disc (6).
- 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:

- Clean all the pieces before assembling using silicone spray in shafts, disc and seat in order to make assembly easier.
- Holes of the liner must be correctly placed into position with reference to the entries of the shafts.
- Put in disc (6) in open position in order to make easier guiding.
- Verify that bushings (2 and 3) are correctly placed in upper and lower holes in the body of the valve.
- Push the lower shaft (7) smoothly until it stops with the inner of the disc.
- Put in the upper shaft (4) with the "O" ring (14) until the threaded link (13) comes out at the lower part of the lower shaft (7). Direction of assembling must be respected (groove "A" defines position of the disc).
- Place washer (8) and tighten nut (12). Assembled lower cover (10) with its tightness joint (11) and elastic ring (9).
- Use wrench to open and close the valve to check proper assembly and operation.

Item	Designation	Qty.
1	Body	1
2	Friction Bushing	2
3	Friction Bushing	1
4	Upper Shaft	1
5	Liner	1
6	Disc	1
7	Lower Shaft	1
8	Washer	1
9	Zegi Ring	1
10	Cover	1
11	Screw	1
12	Blind Nut	1
13	Threaded Link	1
14	"O" Ring	1
	Keyway	



I - Procedure for dismantling liner.

- a) Remove the upper cover (9).
- b) Remove the lower cover (10).
- c) Put the disc (6) in open position.
- d) Remove the ball bearing supporting disc (17) and the ball bearing (16).
- e) Unscrew the blind nut (15).
- f) Pull out the combination of: Upper shaft (4) along with the threaded link (13). Friction bushings (2) along with their "O" rings (3).
- g) Put a metal stick in the upper shaft lodging. Then push down the lower shaft (7) and the lower friction bushing (14).
- h) Remove the disc (6).
- i) 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 easier.
- 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) Push the lower shaft (7) smoothly until it stops with the inner of the disc, along with the lower friction bushing (14).
- e) Put in the upper shaft (4) until the threaded link (13) comes out at the lower part of the lower shaft (7). Direction of assembling must be respected (keyway defines position of the disc).
- f) Replace the friction bushing (2) and the "O" ring (3).
- g) Blind nut must be tightened (15), mount the ball bearing (16), the ball bearing supporting disc (17) and the lower cover (10).
- h) Mount the upper cover
- i) Open and close (by hand) the valve to check proper assembly and operation.

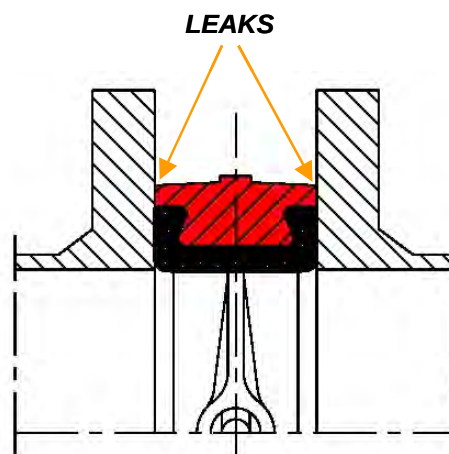
Item	Designation	Qty.
1	Body	1
2	Friction Bushing	1
3	"O" Ring	1
4	Upper Shaft	1
5	Liner	1
6	Disc	1
7	Lower Shaft	1
8	Washer	1
9	Upper Cover	1
10	Lower Cover	1
11	"O" Ring	1
12	Screw	4
13	Threaded Link	1
14	Friction Bushing	1
15	Blind Nut	2
16	Ball Bearing	1
17	Ball Bearing Supporting Disc	1
18	Screw	1
19	"O" Ring Upper Cover	1
20	Screw	8

POSSIBLE CAUSES OF LEAKS

Leak between flanges :

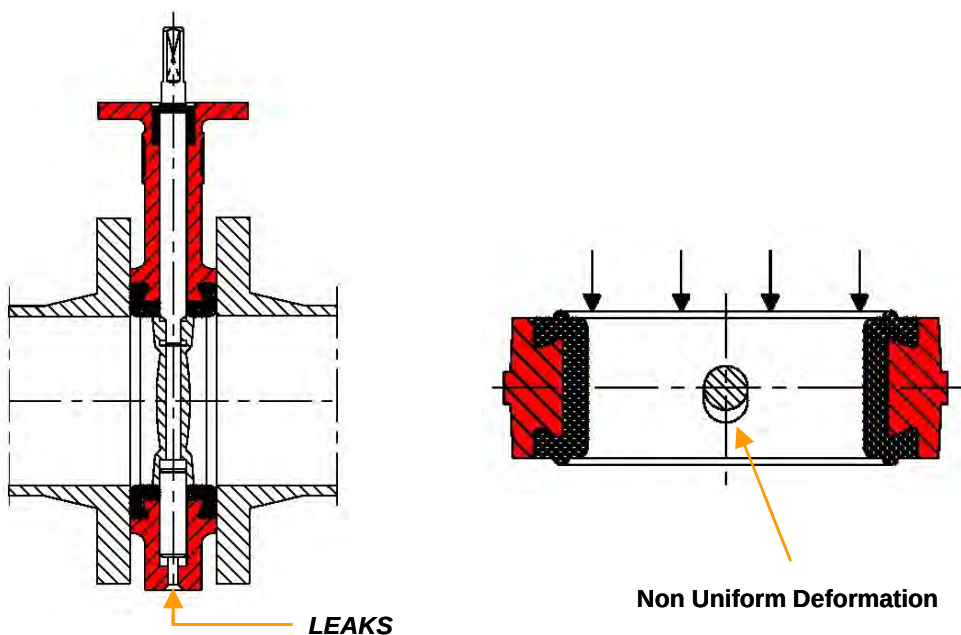
This may be caused by:

1. Flanges not parallel.
2. The assembly screws for the valve are not tightened sufficiently. The flanges must have a metal-metal contact with the valve body.
3. Flanges have scraps of welding, and /or are not completely flat.
4. 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.

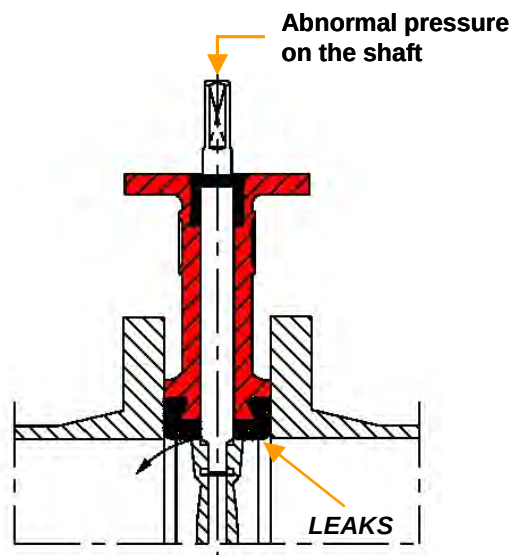


POSSIBLE CAUSES OF LEAKS

Internal leak :

This may be caused by:

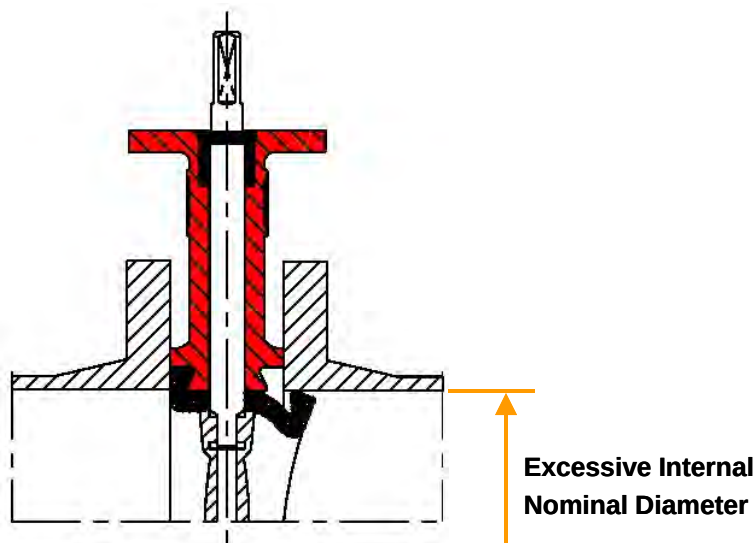
1. If there is leakage via top of the disc, this can be caused by excessive pressure from the shaft on the disc, pushing down the disc.
2. If there is leakage via other parts of the disc the maximum working pressure has been exceeded.



The liner has come out of its housing :

This may be caused by:

1. When the fluid passes through the valve at high speed, a Venturi effect is produced which causes the liner to be dragged, out of the body's housing. The only solution is to glue the liner or change the design of the valve.
2. The counter flanges have an excessive internal diameter.

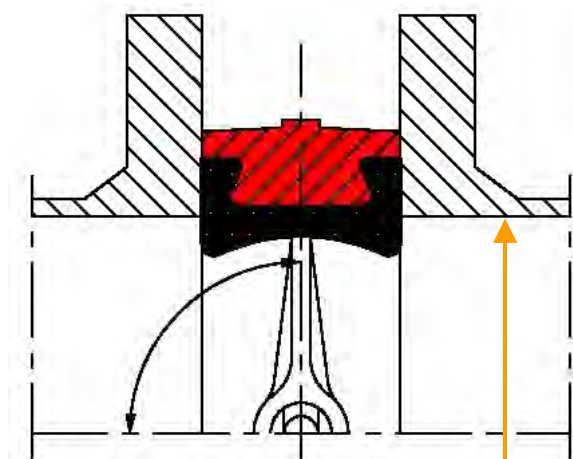


POSSIBLE CAUSES OF LEAKS

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

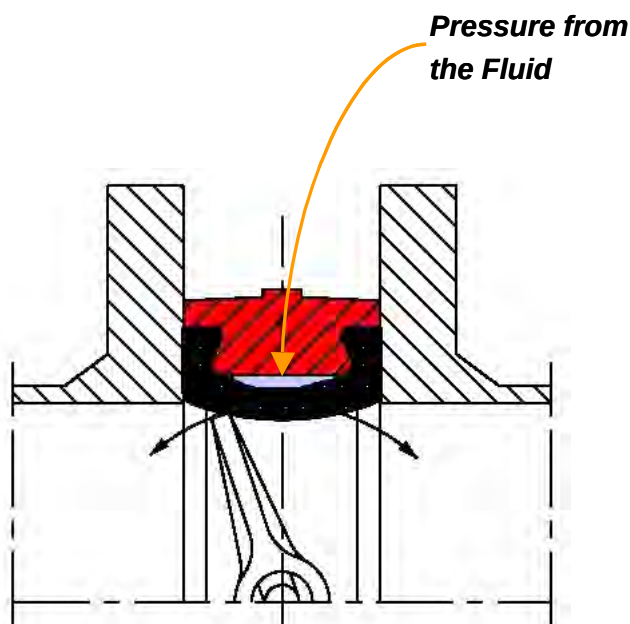
This may be caused by:

1. 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.



**Excessive Internal
Nominal Diameter**

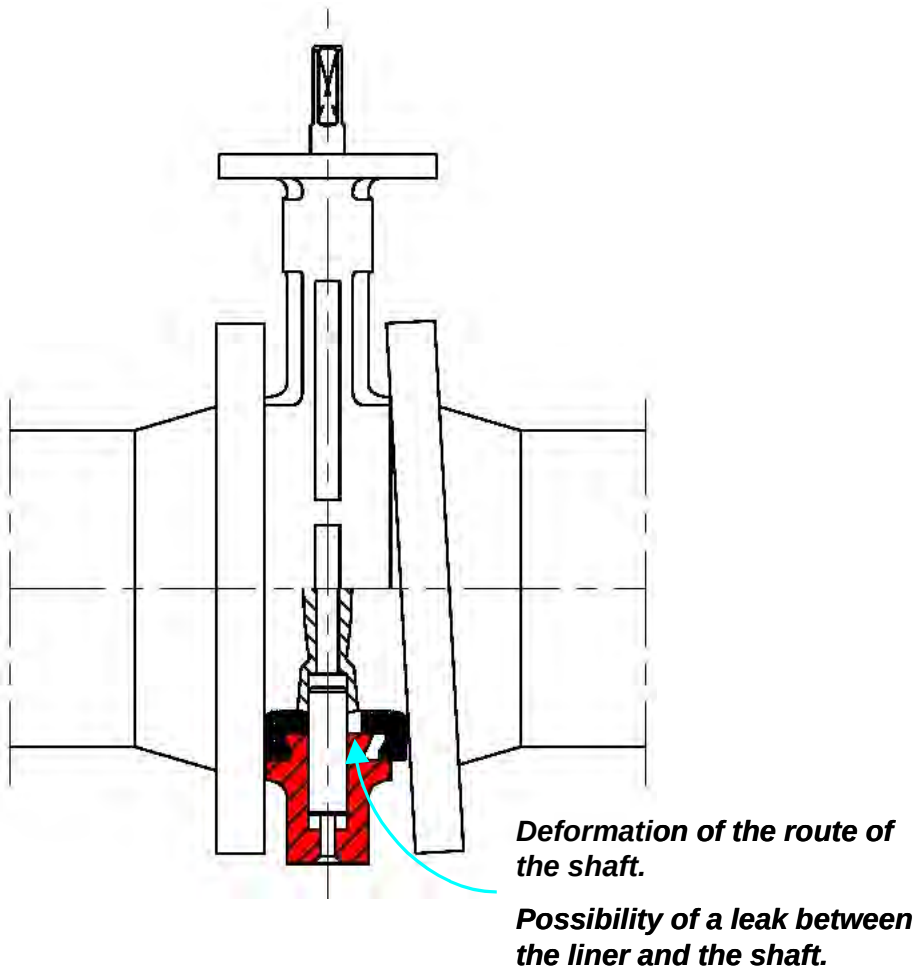
2. If, as a result of bad assembly, there is leakage via the shaft (flanges not parallel), the pressure from the fluid is transmitted into the interior of the liner, causing swelling. This results in excessive tightening between the disc and the liner, which prevents the valve from functioning.



**Pressure from
the Fluid**

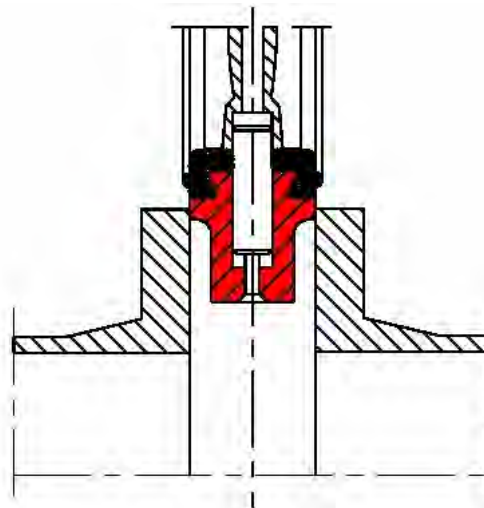
THE MOST COMMON DEFECTS IN ASSEMBLY

Lack of parallelism of the counter flanges :



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 elastomer liner.

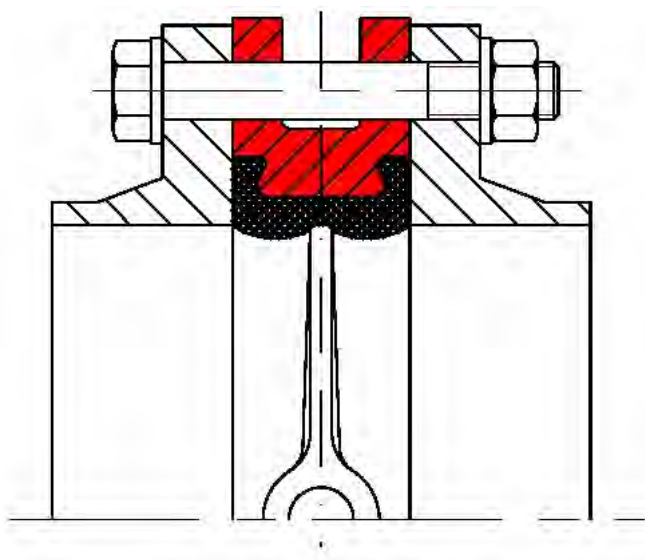


THE MOST COMMON DEFECTS IN ASSEMBLY

Deformation of the liner caused by assembling the valve in open position :

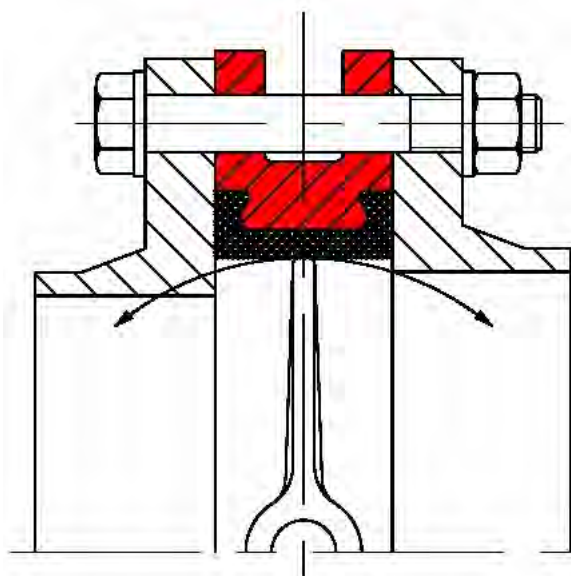
If the rules of assembly are not followed exactly and the flange bolts tightened with the valve in the closed position, an incorrect deformation is produced in the liner.

This deformation prevents normal opening and closing of the valve and permanent deformation of the disc seating area.



Use of incorrect flanges (too small internal diameter):

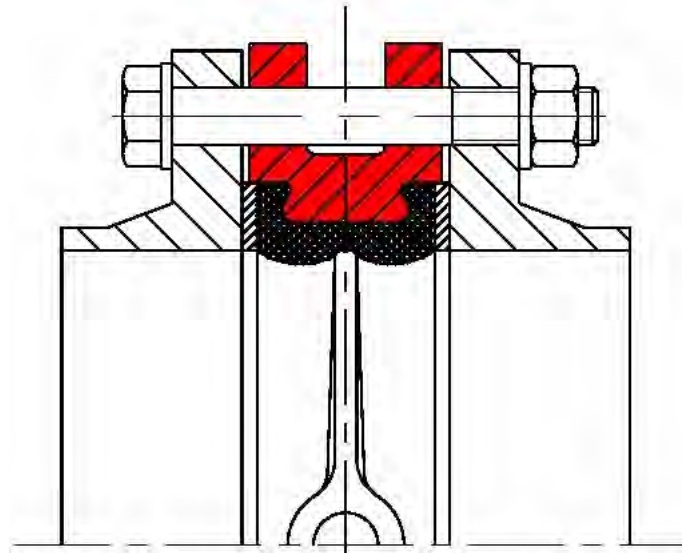
If the diameter of the counter flange is too small (see table of diameters recommended **pag.15**).



THE MOST COMMON DEFECTS IN ASSEMBLY

Use of joints between the liner and the flanges:

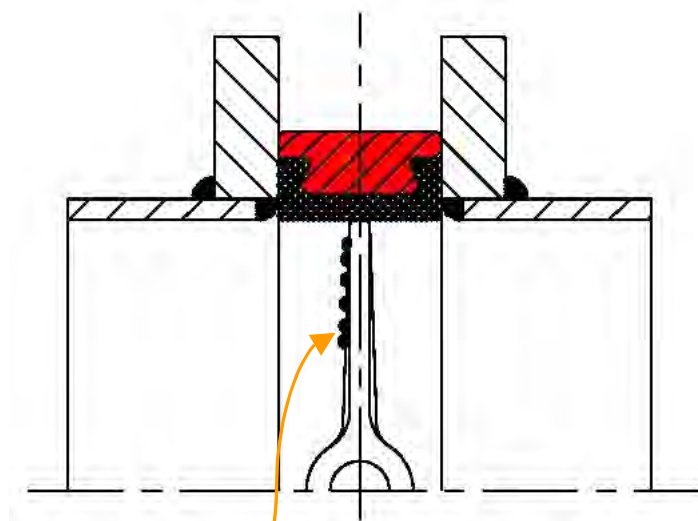
The joints push the elastomer inwards creating excessive over-pressure between the disc and the liner, thus preventing the correct opening and closing of the valve.



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 (through excessive heat) and to the disc.

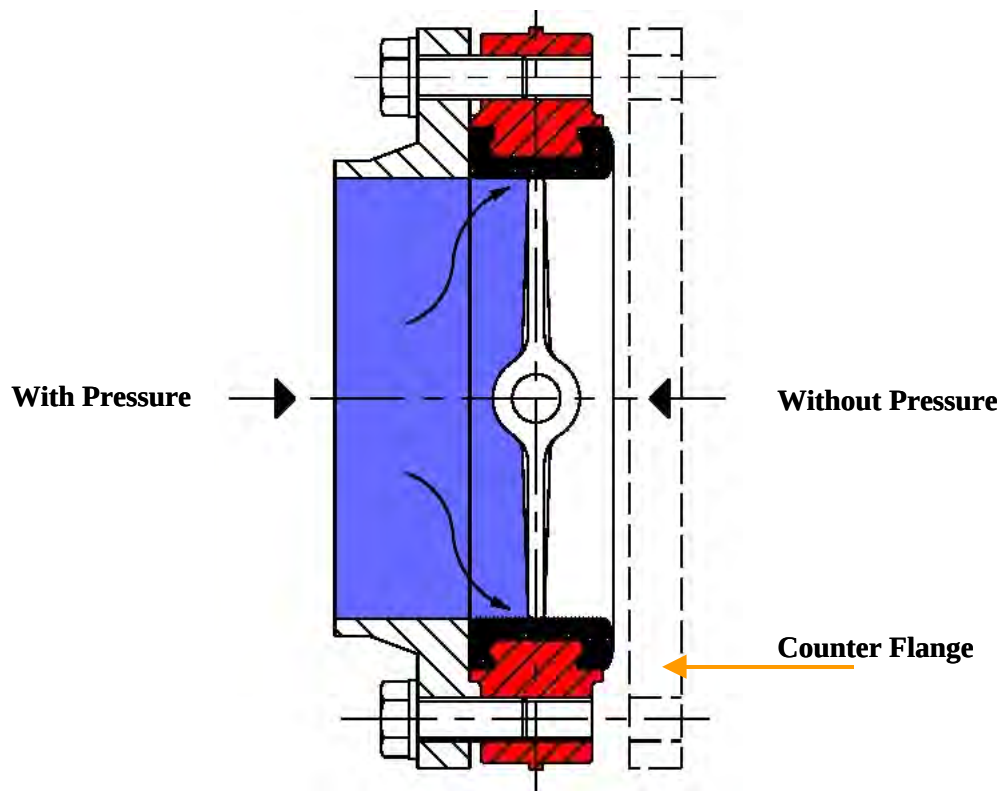


**Scraps of
Welding**

THE MOST COMMON DEFECTS IN ASSEMBLY

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.





SIGEVAL, S.A.

BUTTERFLY VALVES

Type “FL”



UNE-EN-ISO 9001



0 0 9 9

Technical Information

Technical Catalogue
2004 (Ed.02)



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** Specifications are subject to change without notice.



SIGEVAL, S.A.

BUTTERFLY VALVES

Type “FL”



UNE-EN-ISO 9001



0 0 9 9

Technical Information

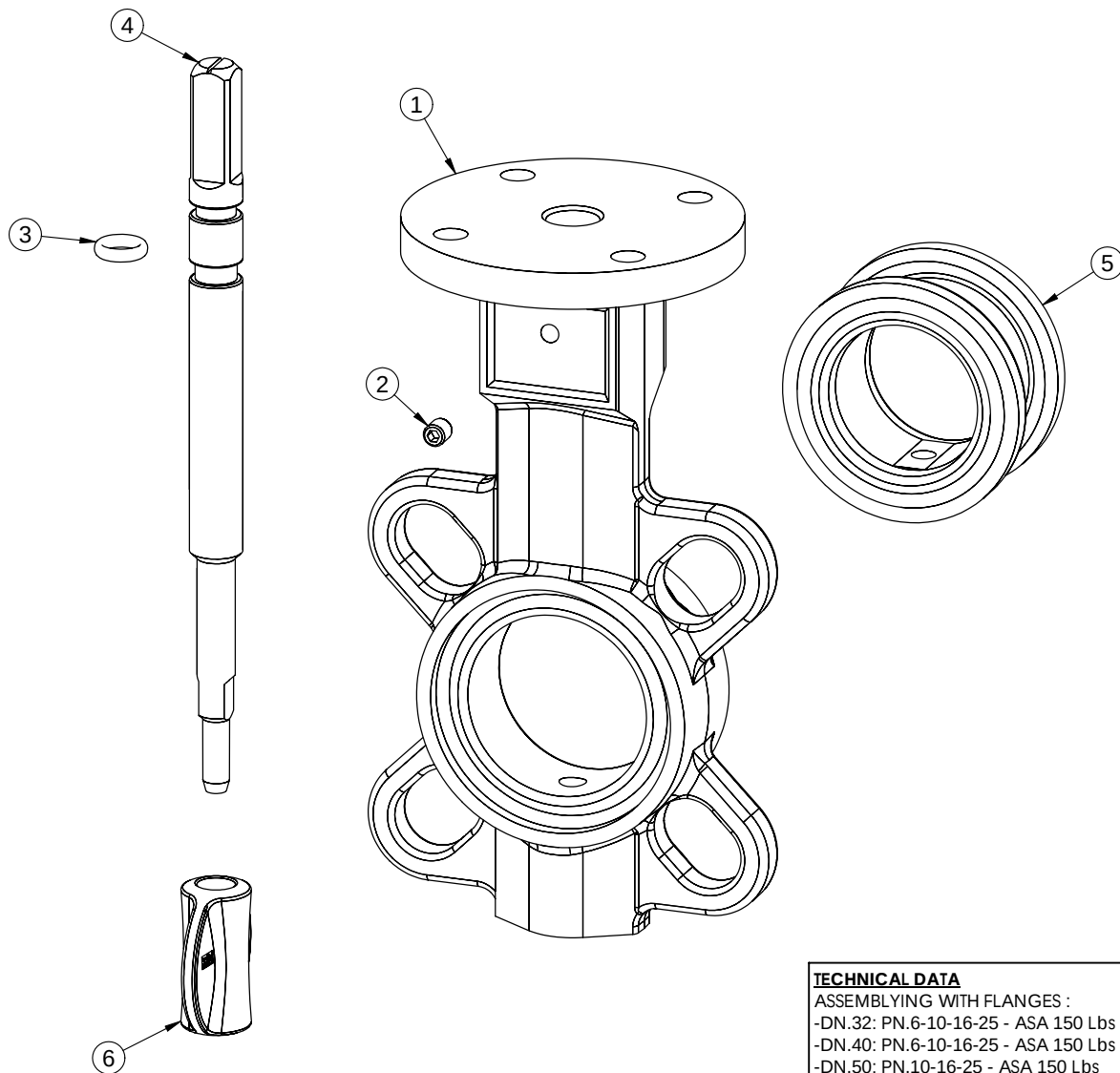
Technical Catalogue
2004 (Ed.02)

INDEX

Designation:

Technical sheet N°:

- | | |
|--|-------------|
| • “FL” Type Materials Detail DN 32-50. | FL -001- DT |
| • “FL” Type Materials Detail DN 65-200. | FL -002- DT |
| • “FL” Type Materials Detail DN 250-400. | FL -003- DT |
| • “FL” Type Materials Detail DN 450-700. | FL -004- DT |
| • “FL” Type Materials Detail DN 800. | FL -005- DT |
| • “FL” Type Bare Shaft Top Flanged. | FL -006- DT |
| • “FL” Type Free Shaft General Dimensions. | FL -007- DT |
| • “FL” Type Operation by Manuals Actuators. | FL -008- DT |
| • “FL” Type Operation by Automatics Actuators. | FL -009- DT |
| • “FL” Type Assembling Screwing. | FL -010- DT |



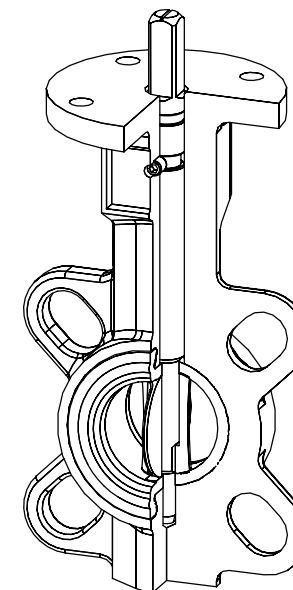
TECHNICAL DATA

ASSEMBLYING WITH FLANGES :

-DN.32: PN.6-10-16-25 - ASA 150 Lbs
 -DN.40: PN.6-10-16-25 - ASA 150 Lbs
 -DN.50: PN.10-16-25 - ASA 150 Lbs
 MAX. SERVICE PRESSURE: 16Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE: 24Kg/cm²
 CLOSED VALVE: 17.6 Kg/cm²



6	DISC	ACC. SHEET M-0001		1
5	SEAT	ACC. SHEET A-0001		1
4	SHAFT	ACC. SHEET E-0001		1
3	"O" RING	NITRILE		1
2	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	1
1	VALVE BODY	ACC. SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL,S.A

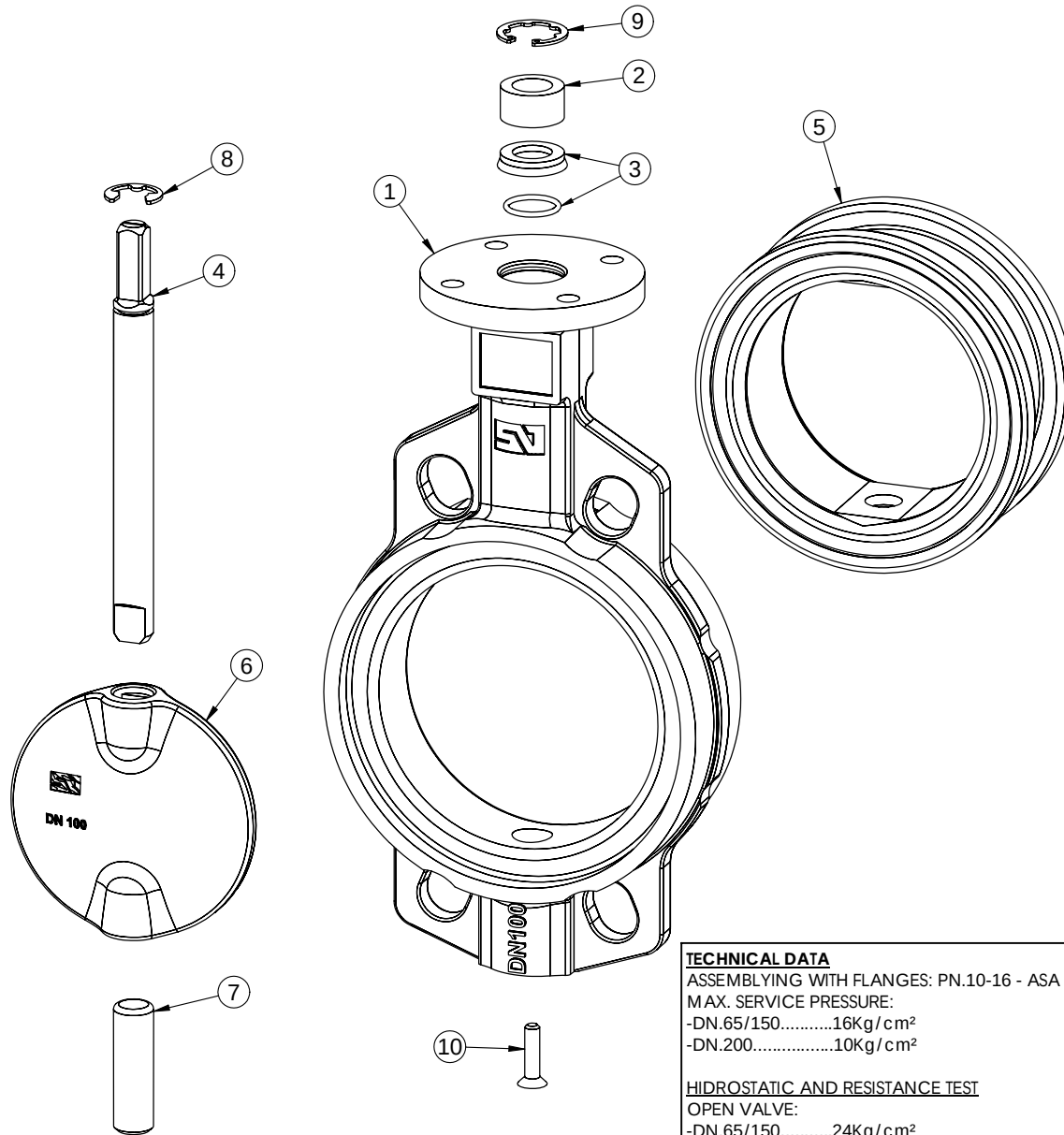
BUTTERFLY VALVE "FL" TYPE DN.32/50. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FL-001-DT



10	LOWER BOLT	ZINC PLATED STEEL	DIN 7991	1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A

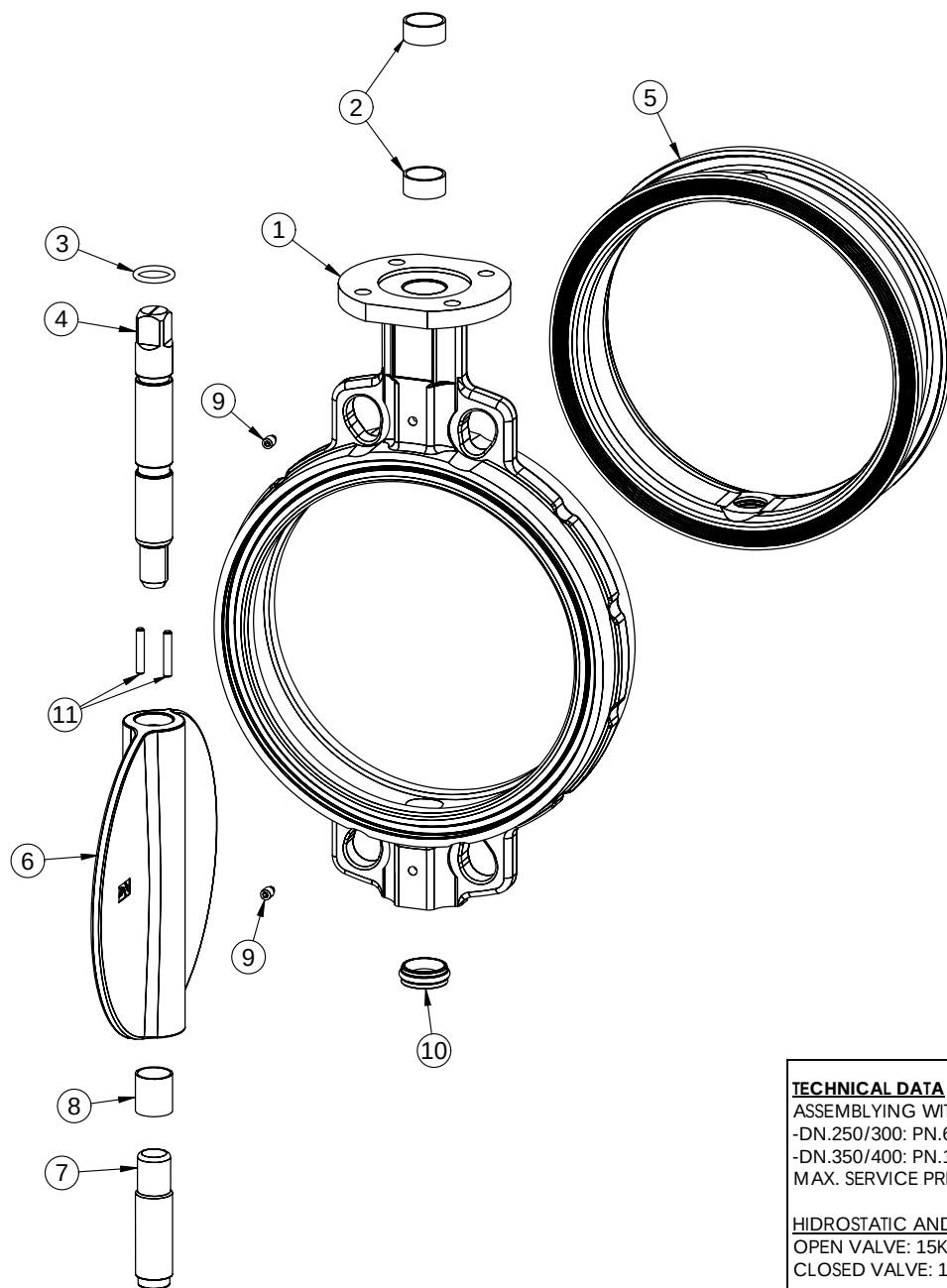
BUTTERFLY VALVE "FL" TYPE DN.65/200. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FL-002-DT



TECHNICAL DATA

ASSEMBLYING WITH FLANGES:

-DN.250/300: PN.6-10-16 - ASA 150 Lbs

-DN.350/400: PN.10-16 - ASA 150 Lbs

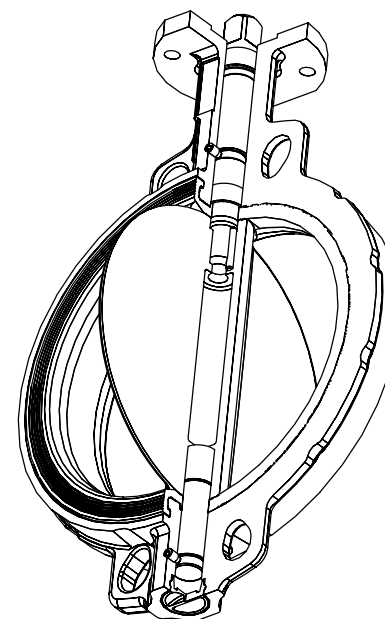
MAX. SERVICE PRESSURE: 10Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

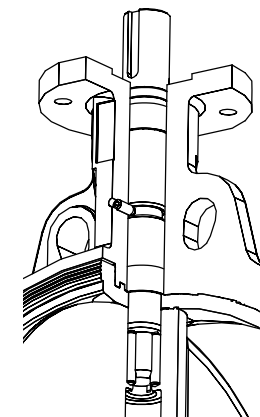
OPEN VALVE: 15Kg/cm²

CLOSED VALVE: 11 Kg/cm²

DN.250/350



DN.400



ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN
11	KEYWAY	CARBON STEEL F-131	DN.250-300	2
			DN.350-400	4
10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1



SIGEVAL S.A.

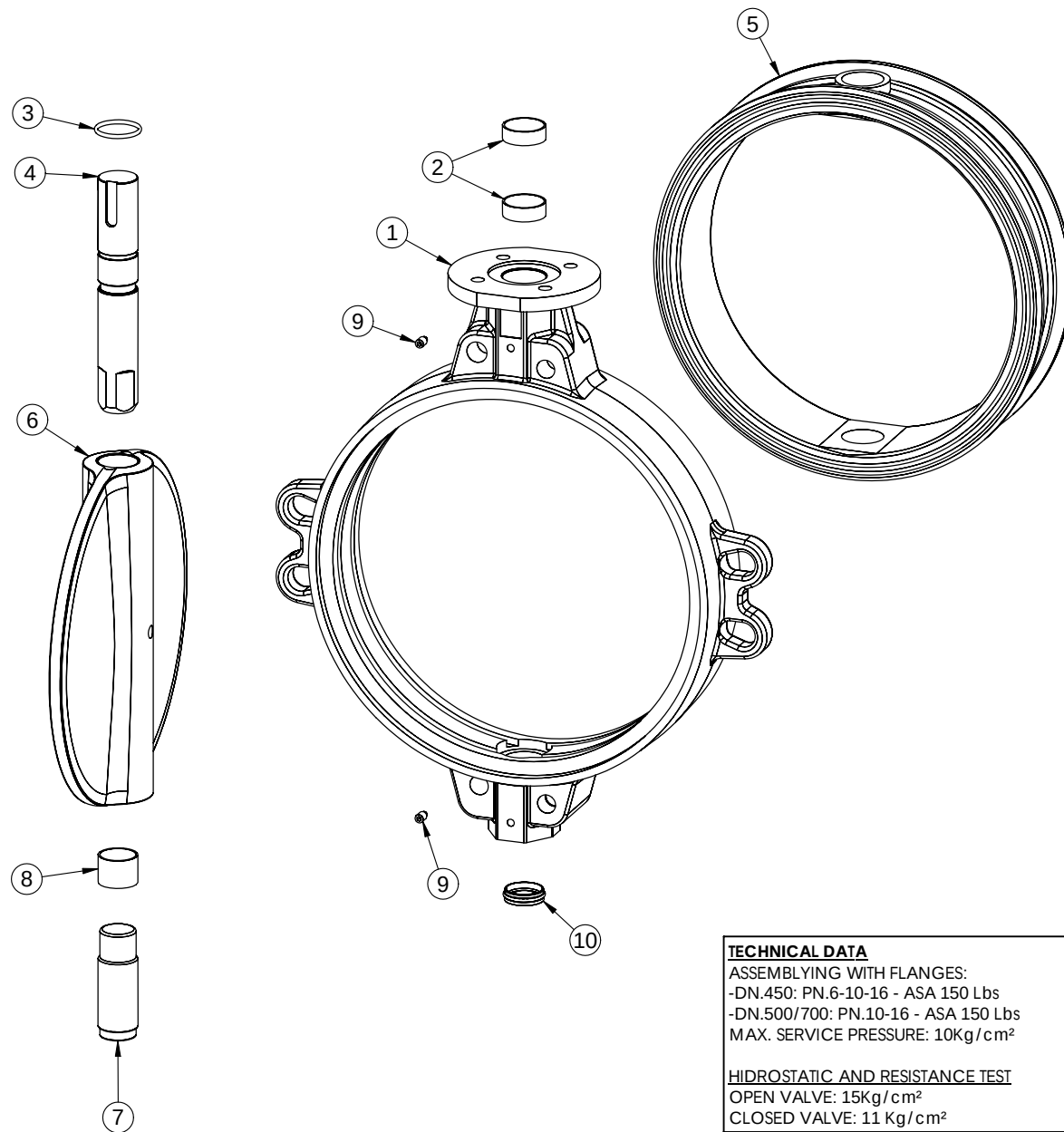
BUTTERFLY VALVE "FL" TYPE DN.250/400. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FL-003-DT



TECHNICAL DATA	
ASSEMBLYING WITH FLANGES:	
-DN.450: PN.6-10-16 - ASA 150 Lbs	
-DN.500/700: PN.10-16 - ASA 150 Lbs	
MAX. SERVICE PRESSURE: 10Kg/cm ²	
HIDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 15Kg/cm ²	
CLOSED VALVE: 11 Kg/cm ²	

10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAF	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAF	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN

BUTTERFLY VALVE "FL" TYPE
DN.450/700. MATERIALS DETAIL



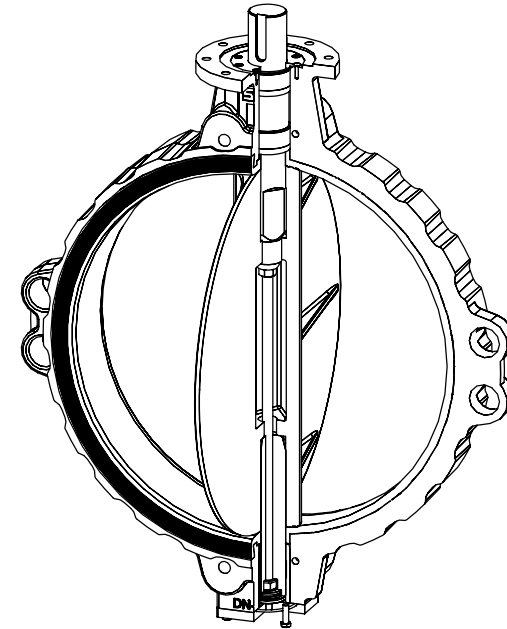
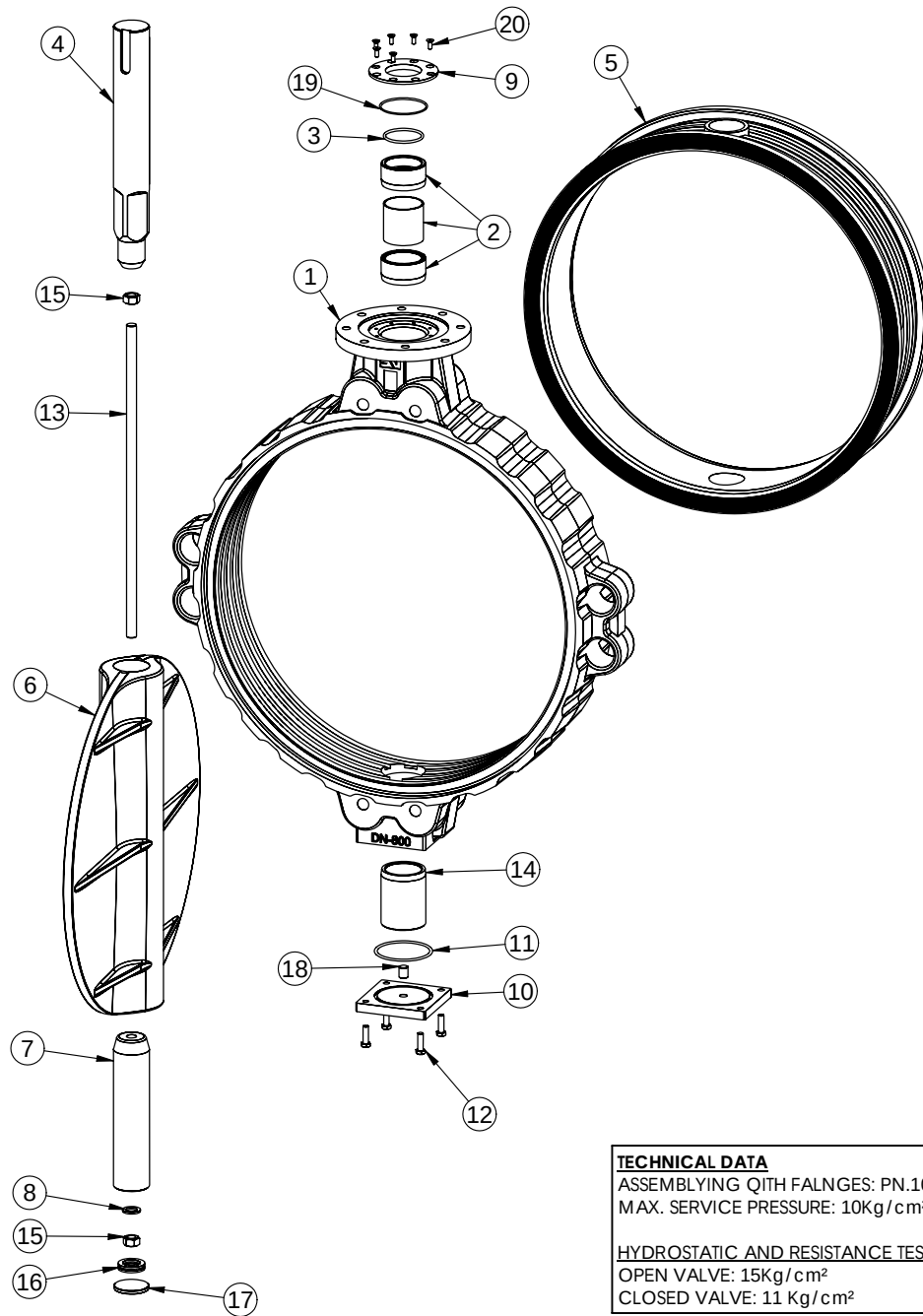
SIGEVAL,S.A

REVISION

01

TECHNICAL SHEET:

FL-004-DT



TECHNICAL DATA

ASSEMBLYING WITH FLANGES: PN.10-16 - ASA 150 Lbs
MAX. SERVICE PRESSURE: 10Kg/cm²

HYDROSTATIC AND RESISTANCE TEST

OPEN VALVE: 15Kg/cm²
CLOSED VALVE: 11 Kg/cm²

20	BOLT OF UPPER COVER	ZINC PLATED STEEL	DIN 7991	8
19	UPPER COVER'S "O" RING	NITRILE		1
18	SCREW	STAINLESS STEEL AISI 304	DIN 916	1
17	DISC FOR BEARING	STAINLESS STEEL AISI 304		1
16	AXIAL BEARING		DIN 711	1
15	NUT	ZINC PLATED STEEL	DIN 934	2
14	LOWER BUSHING	BRONZE/BRASS		1
13	STRUT	STAINLESS STEEL AISI 304		1
12	EXAGONAL SCREW	ZINC PLATED STEEL	DIN 931	1
11	"O" RING	NICKEL PLATED STEEL	DIN 472	2
10	TIGHTNESS COVER	CARBON STEEL	COATING EPOXY	1
9	UPPER COVER	CARBON STEEL	COATING EPOXY	1
8	SAFETY WASHER	COPPER		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	STAINLESS STEEL AISI 420		1
3	"O" RING	NITRILE		1
2	UPPER BUSHING	BRONZE/BRASS-STAIN. STEEL		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A.

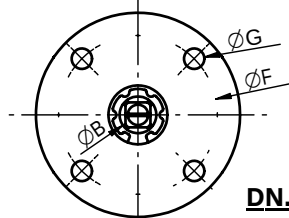
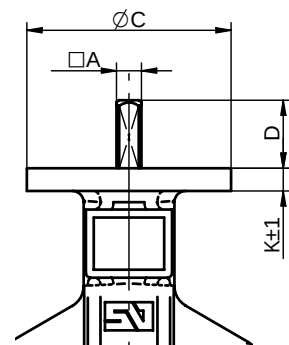
BUTTERFLY VALVE "FL" TYPE DN.800. MATERIALS DETAIL

REVISION

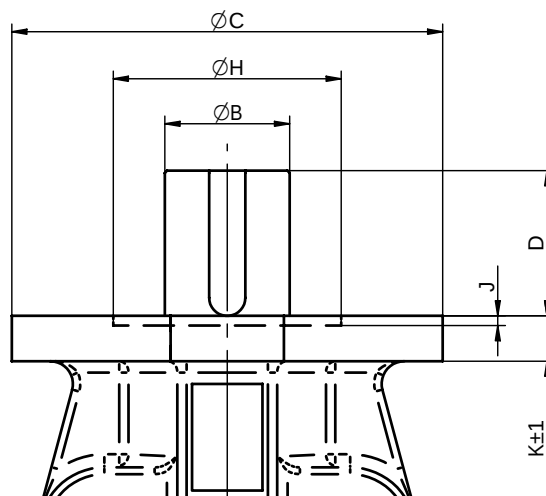
01

TECHNICAL SHEET:

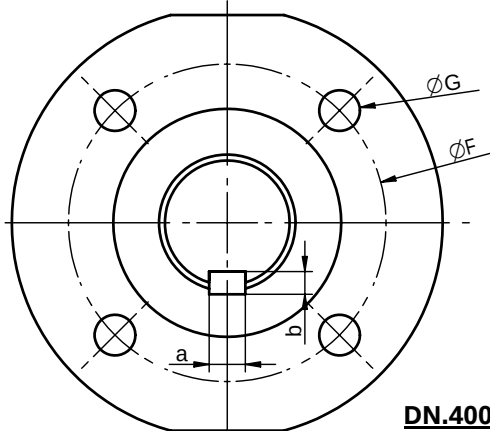
FL-005-DT



DN.32 / 200

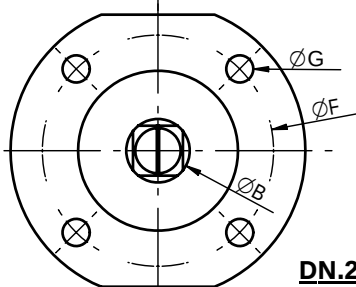
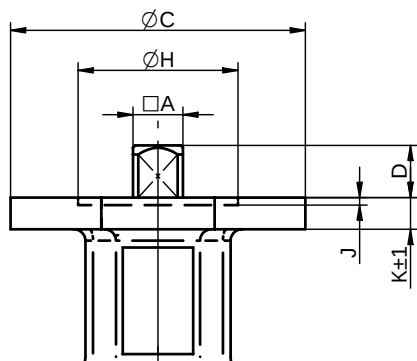


POSICION
CERRADO
CLOSED
POSITION



DN.400 / 800

POSICION ABIERTO
OPEN POSITION



DN.250 / 350

DN	A	B	C	D	F	G	H	J	K	CHAVETA KEYWAY a x b	h	ISO
32	11	14	90	30	70	4x9			8			F-07
40	11	14	90	30	70	4x9			10			F-07
50	11	14	90	30	70	4x9			10			F-07
65	11	14	90	30	70	4x9			10			F-07
80	11	14	90	30	70	4x9			10			F-07
100	11	14	90	30	70	4x9			10			F-07
125	14	18	90	33	70	4x9			11			F-07
150	14	18	90	33	70	4x9			11			F-07
200	14	18	90	33	70	4x9			11			F-07
250	22	28	130	23	102	4x12	70	4	14			F-10
300	22	28	130	23	102	4x12	70	4	14			F-10
350	22	28	130	31	102	4x12	70	4	15			F-10
400		35	160	54	125	4x14	85	4	18	10x8	5	F-12
450		55	190	64	140	4x18	100	4	20	16x10	6	F-14
500		55	210	64	140	4x18	100	4	20	16x10	6	F-14
600		60	220	79	165	4x22	130	5	24	18x11	7	F-16
700		65	300	106	254	8x18	200	5	30	18x11	7	F-25
800		80	300	106	254	8x18	200	5	28	22x14	9	F-25



SIGEVAL, S.A

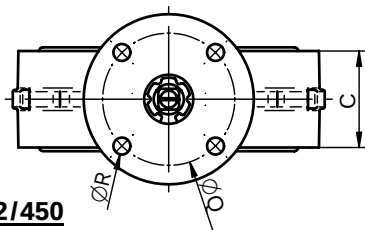
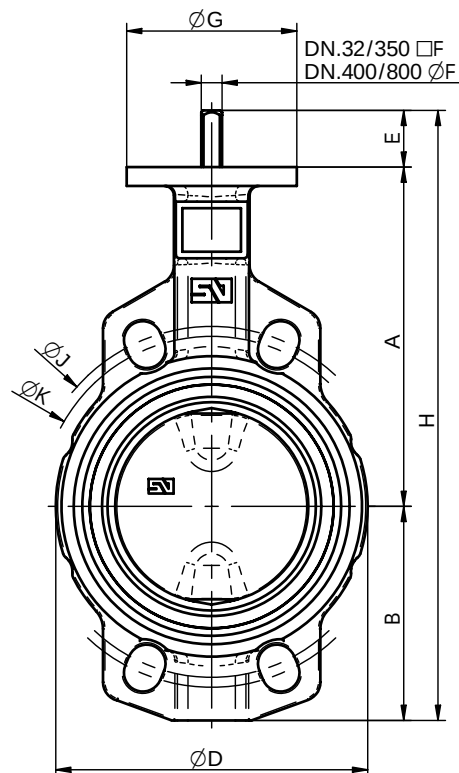
VALVULA DE MARIPOSA "FL" / BUTTERFLY VALVE "FL"
EJE ISO 5211 ESTANDARD / SHAFT ISO 5211 STANDARD

REVISION

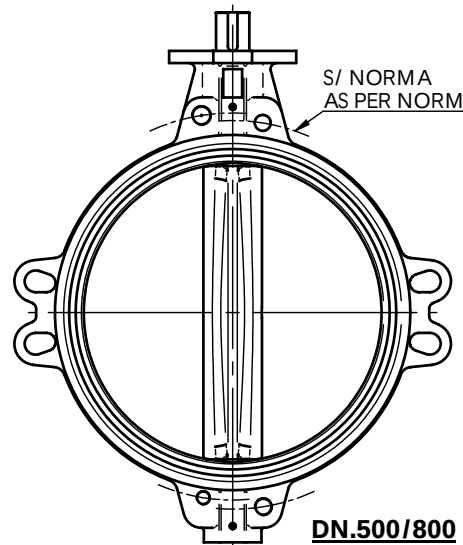
01

FICHA TECNICA N:

FL-006-DT



DN.32/450



DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS											CABEZA/ HEAD		
mm	Pulg	A	B	C	D	E	F	G	H	J	K	Kg	ISO	Q	R
32	1 ¼"	102.5	60.2	33	68	30	11	90	192.7	100	85	154	F-07	70	4x9
40	1 ½"	132	63	33	76	30	11	90	225	110	94	2.12	F-07	70	4x9
50	2"	140	80	43	108	30	11	90	250	125	120.7	3.25	F-07	70	4x9
65	2 ½"	154	90.5	46	123	30	11	90	274.5	145	139.7	3.5	F-07	70	4x9
80	3"	160	100	46	137	30	11	90	290	160	152.4	3.8	F-07	70	4x9
100	4"	180	113	52	165	30	11	90	323	190.5	180	4.8	F-07	70	4x9
125	5"	197	129	56	191	33	14	90	359	215.9	210	6.1	F-07	70	4x9
150	6"	210	144.5	56	218	33	14	90	387.5	241.3	240	7.4	F-07	70	4x9
200	8"	240	172	60	265	33	14	90	445	298.5	295	10.5	F-07	70	4x9
250	10"	282.5	210	68	324	23	22	130	515.5	362	335	20	F-10	102	4x12
300	12"	308	240	78	383	23	22	130	571	431.8	394	31.2	F-10	102	4x12
350	14"	338.5	263	78	430	31	22	160	632.5	476.3	460	36	F-10	102	4x12
400	16"	380	308	102	485	54	35	160	742	539.8	515	55.4	F-12	125	4x14
450	18"	380.5	340	114	536	64	55	190	784.5	585	565	81	F-14	140	4x18
500	20"	432.5	417	127	610	64	55	210	913.5	650	620	131	F-14	140	4x18
600	24"	494	479	154	725	79	60	220	1052	770	725	184	F-16	165	4x22
700	28"	590	502	165	830	106	65	300	1198	840	840	248	F-25	254	8x18
800	32"	630	585	190	926	106	80	300	1321	978	950	408	F-25	254	8x18



SIGEVAL,S.A

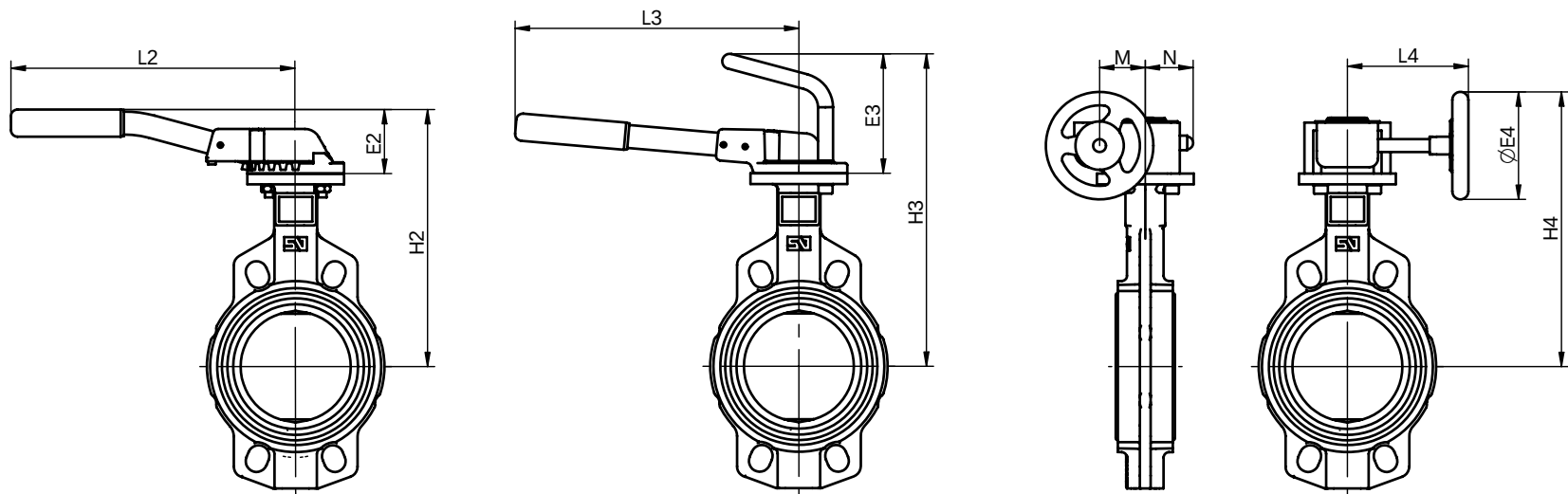
VALVULA DE MARIPOSA TIPO "FL"
BUTTERFLY VALVE "FL" TYPE

REVISION

01

FICHA TECNICA N:

FL-007-DT



"MN"

"MR"

"MDV"

DN		MN				MR				MDV						
mm	Pulg	E2	H2	L2	Kg	E3	H3	L3	Kg	ACT	E4	H4	L4	M	N	Kg
32	1 1/4"	52	155	220	19	110	213	260	2.1	0	125	186	106	42	44	2.3
40	1 1/2"	52	184	220	2.5	110	242	260	2.7	0	125	215	106	42	44	2.9
50	2"	52	192	220	3.6	110	250	260	3.8	0	125	223	106	42	44	4
65	2 1/2"	52	206	220	3.9	110	264	260	4.1	0	125	237	106	42	44	4.3
80	3"	63	223	260	4.3	110	270	260	4.4	0	125	243	106	42	44	4.6
100	4"	63	243	260	5.3	110	290	260	5.5	0	125	263	106	42	44	5.6
125	5"	78	275	310	6.7	110	307	310	6.8	1	160	306	131	50	58	7.9
150	6"	78	288	310	8	110	320	310	8.1	1	160	319	131	50	58	9.2
200	8"	78	318	310	11.1	110	350	310	11.2	1	160	349	131	50	58	12.3
250	10"					120	403	500	217	2	250	444	204	60	82.5	23.3
300	12"					120	428	500	32.9	2	250	469	204	60	82.5	34.5
350	14"					120	458	500	37.7	2	250	500	204	60	82.5	39.3
400	16"									2A	315	577	230	80	91	62.4
450	18"									3	400	632	241	86	101	95
500	20"									3	400	675	241	86	101	145
600	24"									4	500	799	387	130	142	216
700	28"									5	600	945	387	130	142	280
800	32"									6	600	985	447	130	142	453



SIGEVAL,S.A

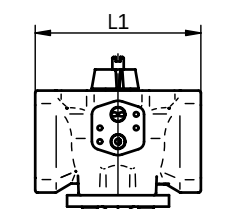
VALVULA DE MARIPOSA "FL" / BUTTERFLY VALVE "FL"
ACT. MANUAL / MANUAL ACT.

REVISION

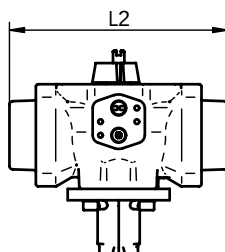
01

FICHA TECNICA N:

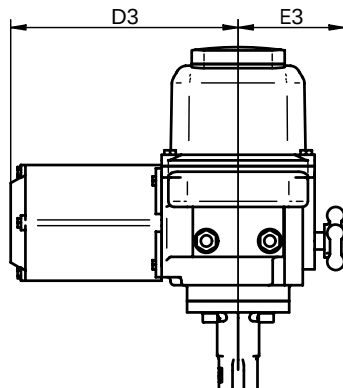
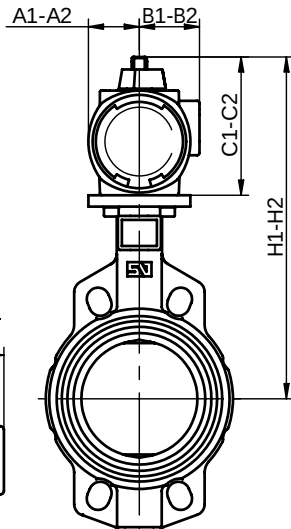
FL-008-DT



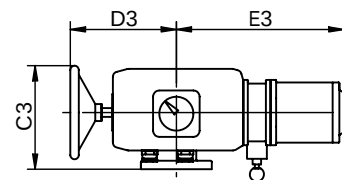
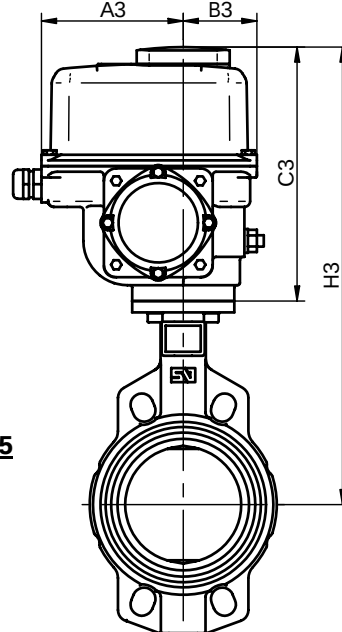
DOBLE EFECTO
DOUBLE ACTING



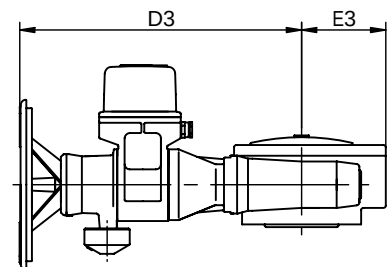
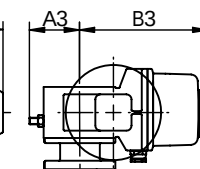
SIMPLE EFECTO
SPRING RETURN



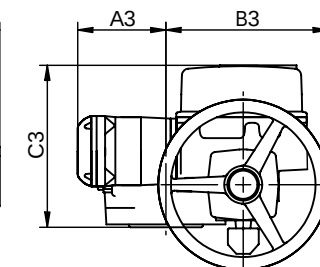
OA6-OA8-OA15



ASP-AS50-AS80



AS100-AS200-AS400
ASM1 RS600-ASM2 RS1825



DN		DOBLE EFECTO-DOUBLE ACTING / SIMPLE EFECTO-SPRING RETURN														ACT. ELECTRICO / ELECTRIC ACT.							
mm	Pulg	ACT	A1	B1	C1	H1	L1	Kg1	ACT	A2	B2	C2	H2	L2	Kg2	ACT	A3	B3	C3	D3	E3	H3	Kg3
32	1 1/4"	P00	36	44	128.5	231	125	2.5	P00S	36	44	128.5	231	160	2.8	OA6	125	65	224	202	90	326.5	7.5
40	1 1/2"	P00	36	44	128.5	260.5	125	3.1	P00S	36	44	128.5	260	160	3.4	OA6	125	65	224	202	90	356	8.1
50	2"	P00	36	44	128.5	268.5	125	4.2	P00S	36	44	128.5	268	160	4.5	OA6	125	65	224	202	90	364	9.2
65	2 1/2"	P05	45	53	122	276	146	5	P05S	45	53	122	276	194	5.8	OA6	125	65	224	202	90	378	9.5
80	3"	P05	45	53	122	282	146	5.3	P10S	47	55	127	287	236	6.4	OA6	125	65	224	202	90	384	9.8
100	4"	P05	45	53	122	302	146	6.3	P15S	55	60	148	328	257	8.8	OA6	125	65	224	202	90	404	10.8
125	5"	P10	47	55	127	324	182	7.9	P20S	60	67	161	358	312	11.8	OA8	125	65	224	202	90	421	13.1
150	6"	P15	55	60	148	358	203	10	P25S	74	78	191	401	362	16.6	OA15	125	65	224	260	98	434	14.4
200	8"	P20	60	67	161	401	234	14.2	P30S	82	94	211	451	479	26.5	OA15	125	65	224	260	98	464	17.5
250	10"	P25	74	78	191	473.5	276	25.9	P40S	106	120	342	624.5	598	56.4	ASP	226	89	177	340	167	459.5	38
300	12"	P30	83	94	211	519	349	40.3	P40S	106	120	342	650	598	67.6	AS50	226	89	177	340	169	485	48.2
350	14"	P40	106	120	272	610.5	444	53.6	P40S	106	120	272	610.5	598	72.4	AS80	226	89	208	340	169	546.5	54
400	16"	P40	106	120	272	652	444	73	P50S	122	135	383	763	694	83.4	AS100	114	405	230	236	206	639	91
450	18"	P50	122	135	313	693.5	524	111								AS200	188	475	281	333	109	661	149
500	20"	P50	122	135	313	745.5	524	161								AS200	188	475	281	333	109	713	199
600	24"															AS400	148	497	281	338	154	775	254
700	28"															ASM1	212	567	314	250	192	904	321
800	32"															ASM2	237	712	343	265	197	973	526



SIGEVAL,S.A

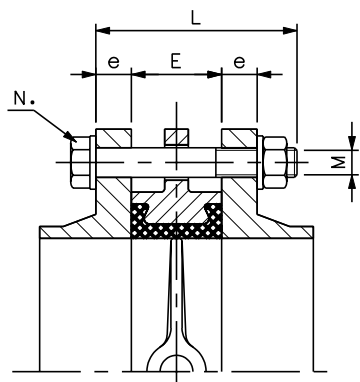
VALVULA DE MARIPOSA "FL" / BUTTERFLY VALVE "FL"
ACTO. AUTOMATICO / AUTOMATIC ACT.

REVISION

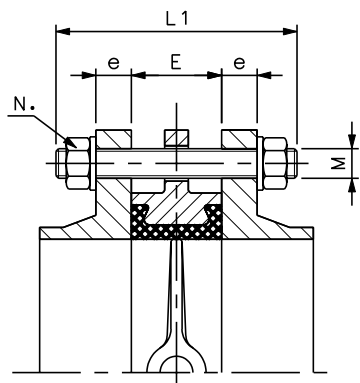
01

FICHA TECNICA N:

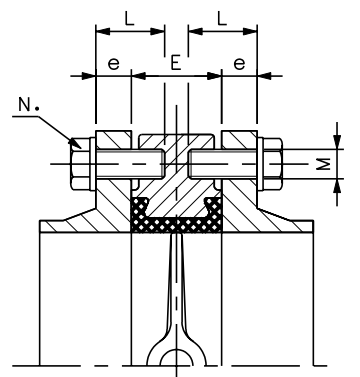
FL-009-DT



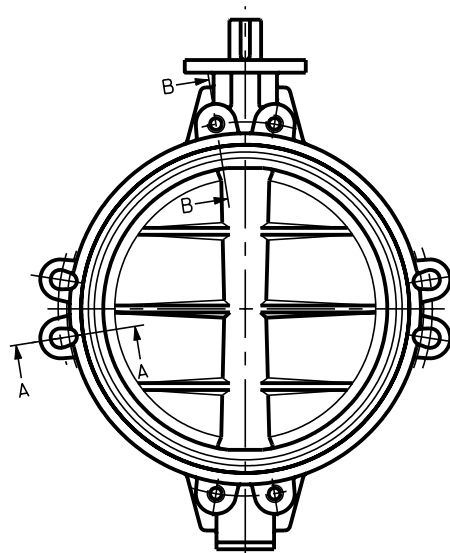
"A-A"
TORNILLO / SCREW



"A-A"
TIRANTE / SCREW



"B-B"
TORNILLO SOLO:
/ SCREW ONLY



DN.450 PN.10 - PN.16
DN.500 PN.16 - ASA 150 Lbs
DN.700 PN.10 - PN.16 - ASA 125 Lbs
DN.800 PN.10 - PN.16 - ASA 125 Lbs

DN	E	PN.10					PN.16					ASA 150 Lbs.				
		e	M	L	L1	N.	e	M	L	L1	N.	e	M	L	L1	N.
32	33	16	M16	90	110	4	16	M16	90	110	4	17.5	W14	90	110	4
40	33	16	M16	90	110	4	16	M16	90	110	4	17.5	W14	90	110	4
50	43	18	M16	100	120	4	18	M16	100	120	4	19	W5/8"	100	120	4
65	46	18	M16	100	120	4	18	M16	100	120	4	22.2	W5/8"	110	130	4
80	46	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	110	130	4
100	52	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	120	140	8
125	56	22	M16	120	140	8	22	M16	120	140	8	23.8	W3/4"	130	150	8
150	56	22	M20	130	150	8	22	M20	130	150	8	25.4	W3/4"	130	150	8
200	60	24	M20	130	160	8	24	M20	130	160	12	28.6	W3/4"	140	160	8
250	68	26	M20	150	170	12	26	M24	150	170	12	30.2	W7/8"	160	180	12
300	78	26	M20	160	180	12	28	M24	160	180	12	31.7	W7/8"	170	190	12
350	78	26	M20	170	180	16	30	M24	170	190	16	34.9	W 1"	180	200	12
400	102	26	M24	180	210	16	32	M27	200	220	16	36.5	W 1"	210	230	16
450	114	26	M24	190	220	16	32	M27	210	240	16	39.7	W1 1/8"	230	250	16
500	127	28	M24	210	230	20	34	M30	230	260	16	46	W1 1/8"	250	280	16
								M30	60		8		W1 1/8"	70		8
600	154	28	M27	240	270	20	36	M33	260	290	20	47.6	W1 1/4"	280	310	20
700	165	30	M27	260	280	20	36	M33	270	300	20	52.5	W1 1/4"	310	340	24
800	193	32	M27	80		8		M33	85		8		W1 1/4"	110		8
			M30	80		8		M36	100		8		W1 1/2"	95		8



SIGEVAL,S.A.

VALVULA DE MARIPOSA "FL" / BUTTERFLY VALVE "FL"
TORNILLERIA DE MONTAJE / ASSEMBLYING SCREWING

REVISION

FICHA TECNICA N:

01

FL-010-DT



SIGEVAL, S.A.

BUTTERFLY VALVES

Type "LUG"



UNE-EN-ISO 9001



0 0 9 9

Technical Information

Technical Catalogue
2004 (Ed.02)



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SIGEVAL, S.A.

BUTTERFLY VALVES

Type "LUG"



UNE-EN-ISO 9001



0 0 9 9

Technical Information

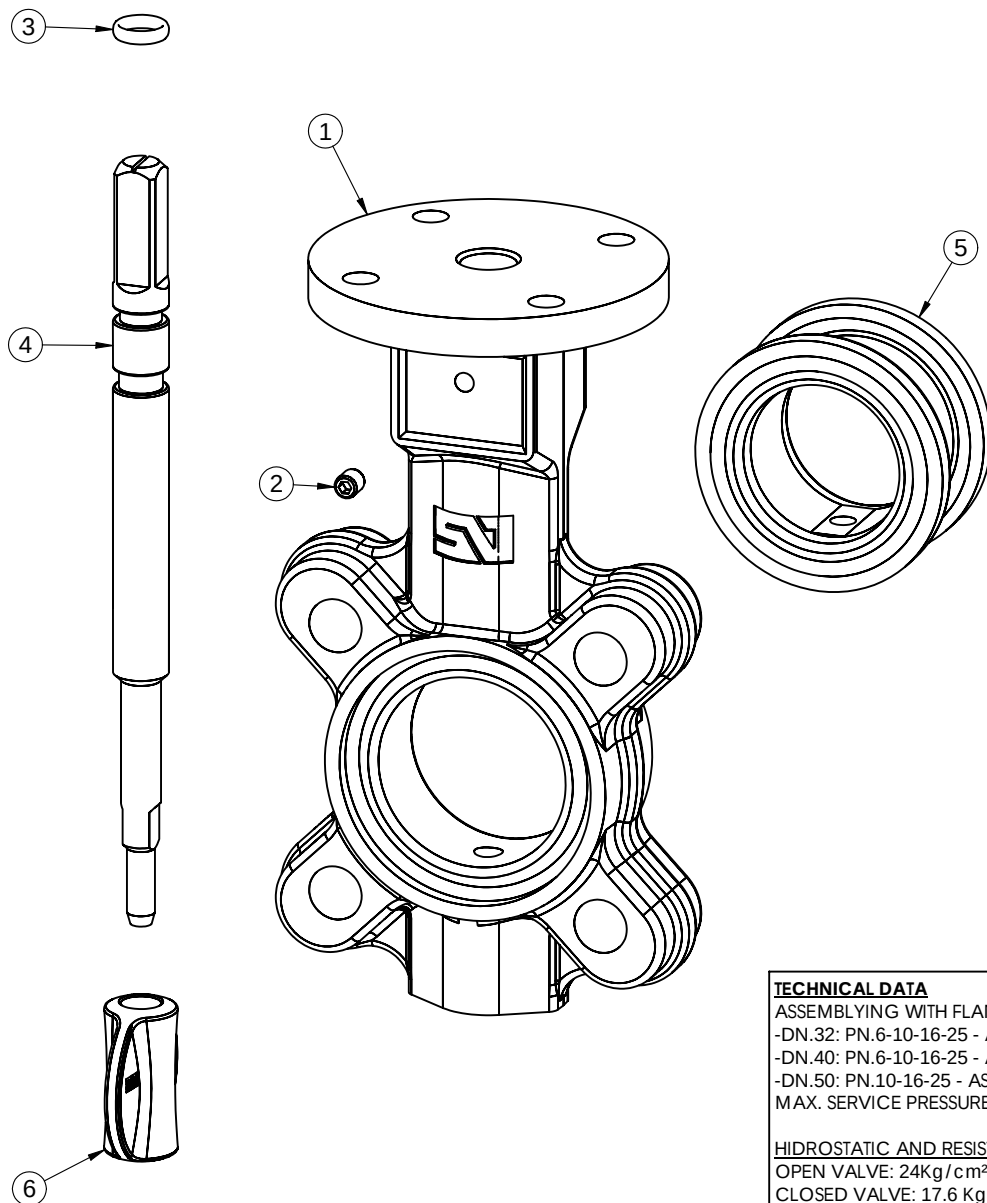
Technical Catalogue
2004 (Ed.02)

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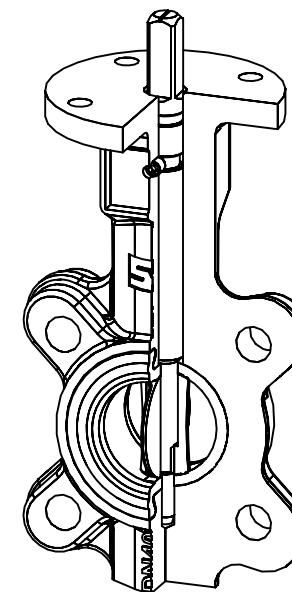
Designation:

Technical sheet N°:

- | | |
|---|--------------|
| • "LUG" Type Materials Detail DN 32-50 | LUG -001- DT |
| • "LUG" Type Materials Detail DN 65-200. | LUG -002- DT |
| • "LUG" Type Materials Detail DN 250-400. | LUG -003- DT |
| • "LUG" Type Materials Detail DN 450-600. | LUG -004- DT |
| • "LUG" Type Free Shaft General Dimensions. | LUG -007- DT |
| • "LUG" Type Operation by Manuals Actuators. | LUG -008- DT |
| • "LUG" Type Operation by Automatics Actuators. | LUG -009- DT |
| • "LUG" Type Assembling Screwing. | LUG -010- DT |



TECHNICAL DATA	
ASSEMBLYING WITH FLANGES :	
-DN.32: PN.6-10-16-25 - ASA 150 Lbs	
-DN.40: PN.6-10-16-25 - ASA 150 Lbs	
-DN.50: PN.10-16-25 - ASA 150 Lbs	
MAX. SERVICE PRESSURE: 16Kg/cm ²	
HIDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 24Kg/cm ²	
CLOSED VALVE: 17.6 Kg/cm ²	



6	DISC	ACC. SHEET M-0001		1
5	SEAT	ACC. SHEER A-0001		1
4	SHAFT	ACC. SHEET E-0001		1
3	"O" RING	NITRILE		1
2	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	1
1	VALVE BODY	ACC. SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL,S.A

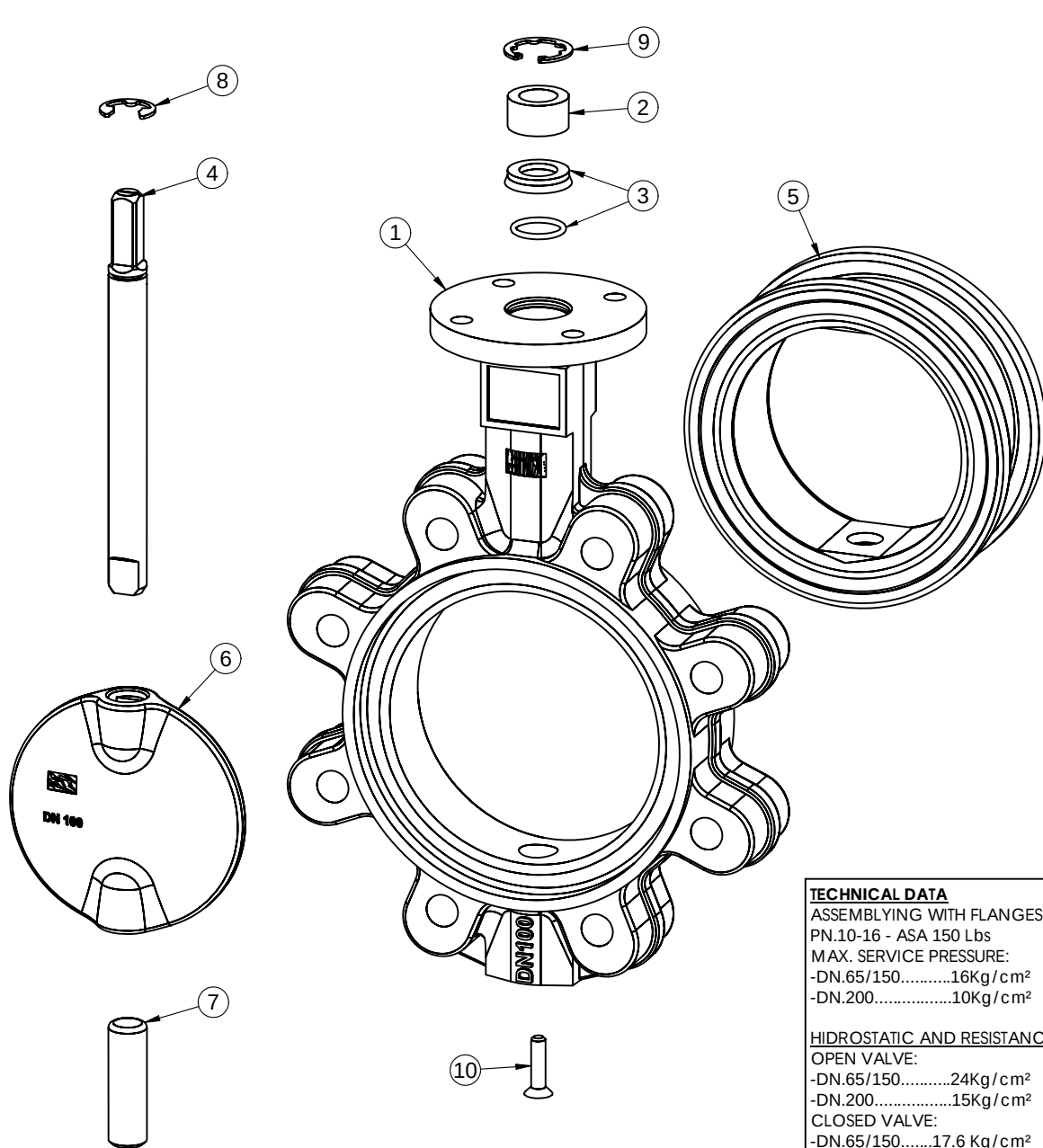
BUTTERFLY VALVE "LUG" TYPE DN.32/50. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

LUG-001-DT



TECHNICAL DATA

ASSEMBLYING WITH FLANGES:

PN.10-16 - ASA 150 Lbs

MAX. SERVICE PRESSURE:

-DN.65/150.....16Kg/cm²

-DN.200.....10Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE:

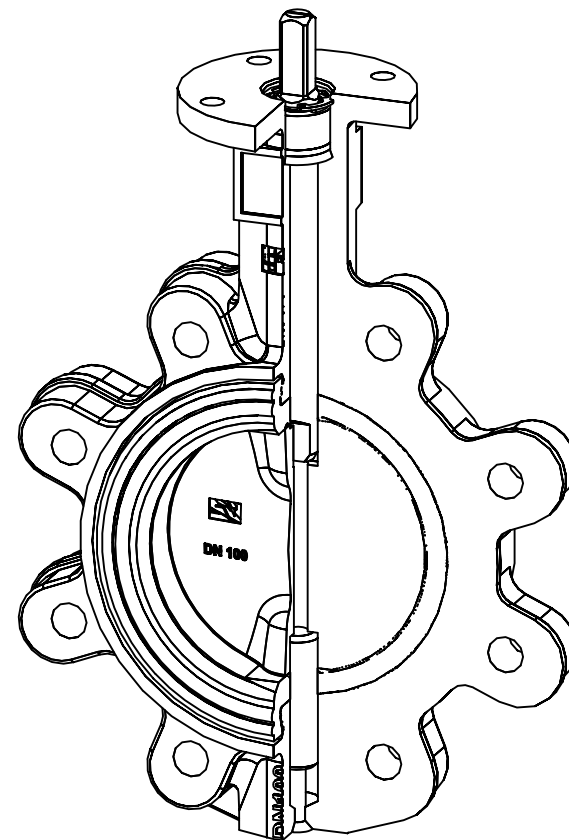
-DN.65/150.....24Kg/cm²

-DN.200.....15Kg/cm²

CLOSED VALVE:

-DN.65/150.....17.6 Kg/cm²

-DN.200.....11 Kg/cm²



10	LOWER BOLT	ZINC PLATED STEEL	DIN 7991	1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A.

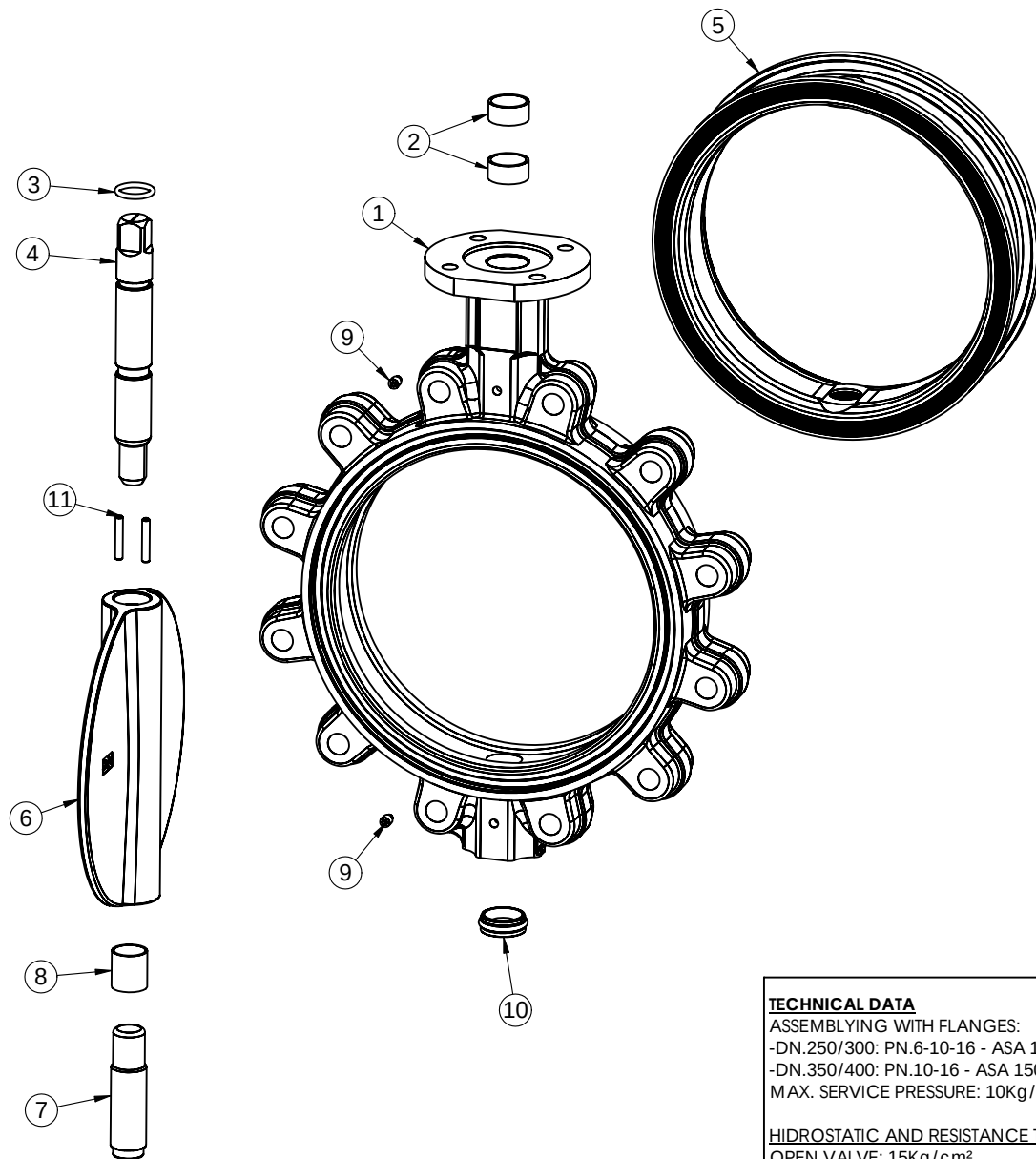
BUTTERFLY VALVE "LUG" TYPE DN.65/200. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

LUG-002-DT



TECHNICAL DATA

ASSEMBLYING WITH FLANGES:

-DN.250/300: PN.6-10-16 - ASA 150 Lbs

-DN.350/400: PN.10-16 - ASA 150 Lbs

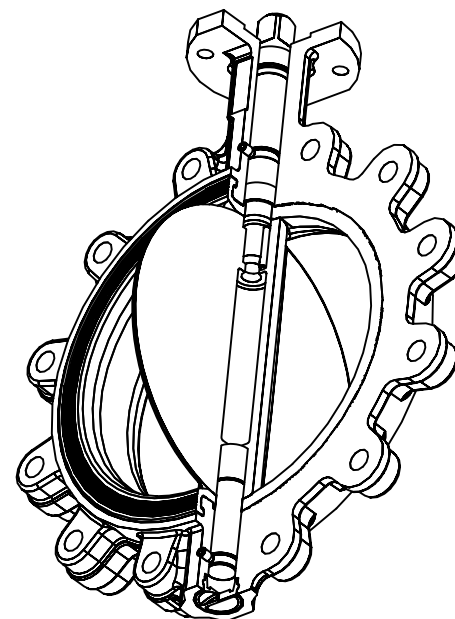
MAX. SERVICE PRESSURE: 10Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

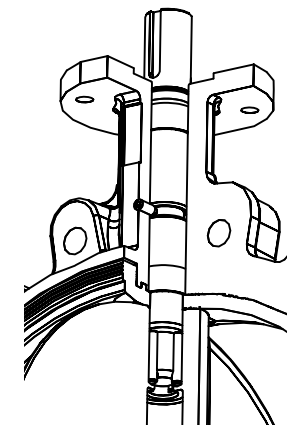
OPEN VALVE: 15Kg/cm²

CLOSED VALVE: 11 Kg/cm²

DN.250/350



DN.400



11	KEYWAY	CARBON STEEL F-131	DN.250-300	2
			DN.350-400	4
10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	“O” RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL,S.A

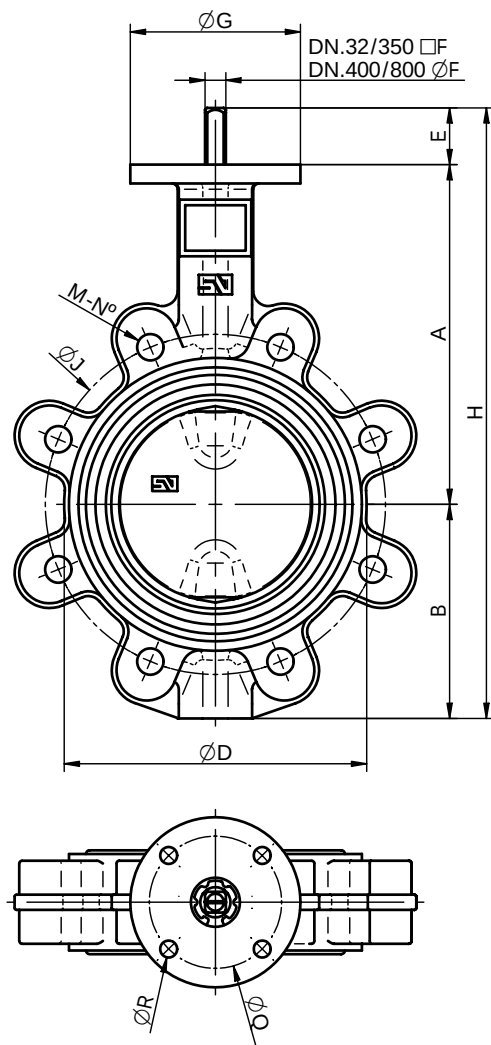
BUTTERFLY VALVE "LUG" TYPE DN.250/400. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

LUG-003-DT



BRIDA DE MONTAJE / ASSEMBLYING FLANGE									
DN	PN.10			PN.16			ASA 150 Lbs.		
mm	J	M	Nº	J	M	Nº	J	M	Nº
32	100	M16	4	100	M16	4	88.9	W1/2"	4
40	110	M16	4	110	M16	4	98.6	W1/2"	4
50	125	M16	4	125	M16	4	120.7	W5/8"	4
65	145	M16	4	145	M16	4	139.7	W5/8"	4
80	160	M16	8	160	M16	8	152.4	W5/8"	4
100	180	M16	8	180	M16	8	190.5	W5/8"	8
125	210	M16	8	210	M16	8	215.9	W3/4"	8
150	240	M20	8	240	M20	8	241.3	W3/4"	8
200	295	M20	8	295	M20	12	298.5	W3/4"	8
250	350	M20	12	355	M24	12	362	W7/8"	12
300	400	M20	12	410	M24	12	431.8	W7/8"	12
350	460	M20	16	470	M24	16	476.3	W1"	12
400	515	M24	16	525	M27	16	539.8	W1"	16
450	565	M24	20	585	M27	20	577.9	W1 1/8"	16
500	620	M24	20	650	M30	20	635	W1 1/8"	20
600	725	M27	20	770	M33	20	749.3	W1 1/4"	20

DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS									CABEZA / HEAD		
mm	Pulg	A	B	C	D	E	F	G	H	Kg	ISO	Q	R
32	1 1/4"	132	63	33	81	30	11	90	225	2.49	F-07	70	4x9
40	1 1/2"	132	63	33	81	30	11	90	225	2.49	F-07	70	4x9
50	2"	140	80	43	103	30	11	90	250	3.59	F-07	70	4x9
65	2 1/2"	154	90.5	46	120	30	11	90	274.5	4.21	F-07	70	4x9
80	3"	160	100	46	135	30	11	90	290	5.38	F-07	70	4x9
100	4"	180	113	52	160	30	11	90	323	6.77	F-07	70	4x9
125	5"	197	129	56	190	33	14	90	359	8.26	F-07	70	4x9
150	6"	210	144.5	56	241	33	14	90	387.5	9.15	F-07	70	4x9
200	8"	240	172	60	270	33	14	90	445	13.2	F-07	70	4x9
250	10"	282.5	210	68	324	23	22	130	515.5	25.9	F-10	102	4x12
300	12"	308	240	78	383	23	22	130	571	39.7	F-10	102	4x12
350	14"	338.5	263	78	440	31	22	160	632.5	56.1	F-10	102	4x12
400	16"	380	308	102	485	54	35	160	742	74.2	F-12	125	4x14
450	18"	380.5	340	114	538	64	55	190	784.5	103	F-14	140	4x18
500	20"	432.5	417	127	610	64	55	210	913.5	165	F-14	140	4x18
600	24"	494	479	154	725	79	60	220	1052	240	F-16	165	4x22



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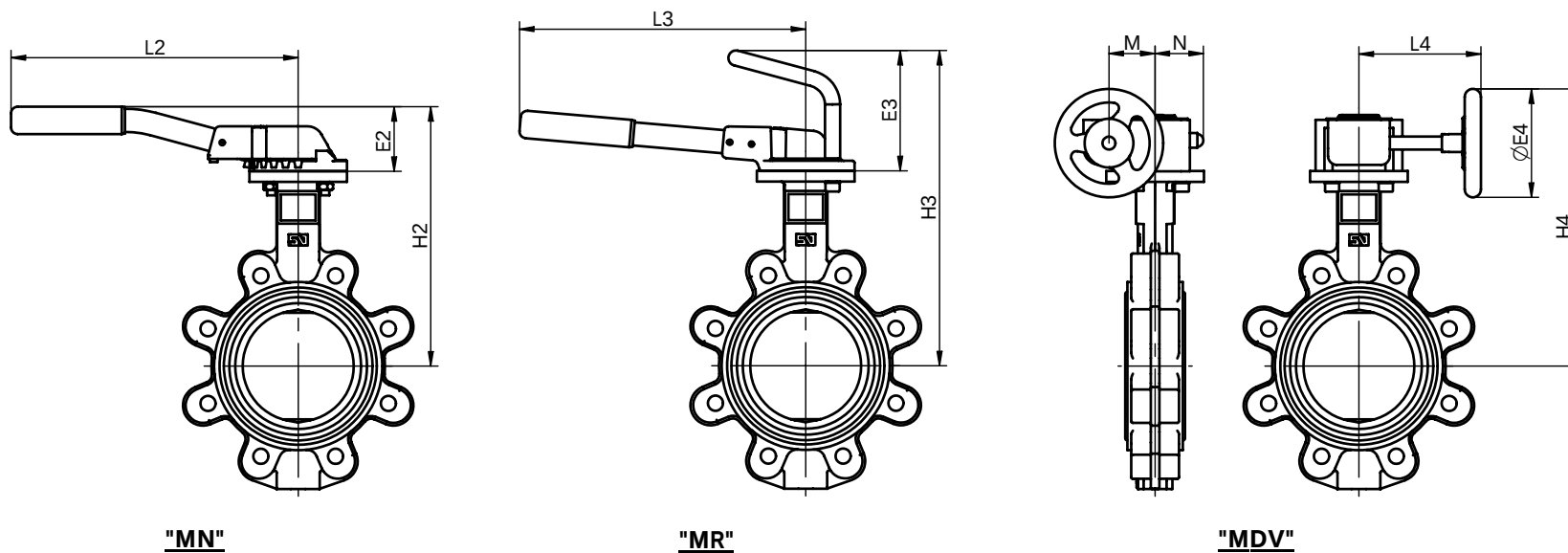
VALVULA DE MARIPOSA TIPO "LUG"
BUTTERFLY VALVE "LUG" TYPE

REVISION

01

FICHA TECNICA N:

LUG-007-DT



DN		MN				MR				MDV						
mm	Pulg	E2	H2	L2	Kg	E3	H3	L3	Kg	ACT	E4	H4	L4	M	N	Kg
32	1 ¼"	52	184	220	3.45	110	242	260	3.65	0	125	215	106	42	44	3.85
40	1 ½"	52	184	220	2.87	110	242	260	3.07	0	125	215	106	42	44	3.27
50	2"	52	192	220	3.94	110	250	260	4.14	0	125	223	106	42	44	4.34
65	2 ½"	52	206	220	4.61	110	264	260	4.81	0	125	237	106	42	44	5.01
80	3"	63	223	260	5.88	110	270	260	5.98	0	125	243	106	42	44	6.18
100	4"	63	243	260	7.27	110	290	260	7.47	0	125	263	106	42	44	7.57
125	5"	78	275	310	8.86	110	307	310	8.96	1	160	306	131	50	58	10.06
150	6"	78	288	310	9.75	110	320	310	9.85	1	160	319	131	50	58	10.95
200	8"	78	318	310	13.8	110	350	310	13.9	1	160	349	131	50	58	15
250	10"					120	403	500	27.6	2	250	444	204	60	82.5	29.2
300	12"					120	428	500	41.4	2	250	469	204	60	82.5	43
350	14"					120	458	500	57.7	2	250	500	204	60	82.5	59.3
400	16"									2A	315	577	230	80	91	812
450	18"									3	400	632	241	86	101	117
500	20"									3	400	675	241	86	101	179
600	24"									4	500	799	387	130	142	272



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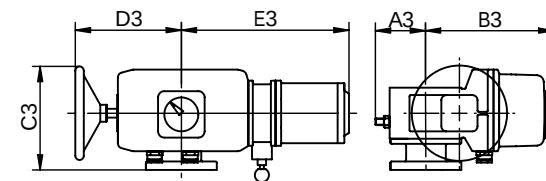
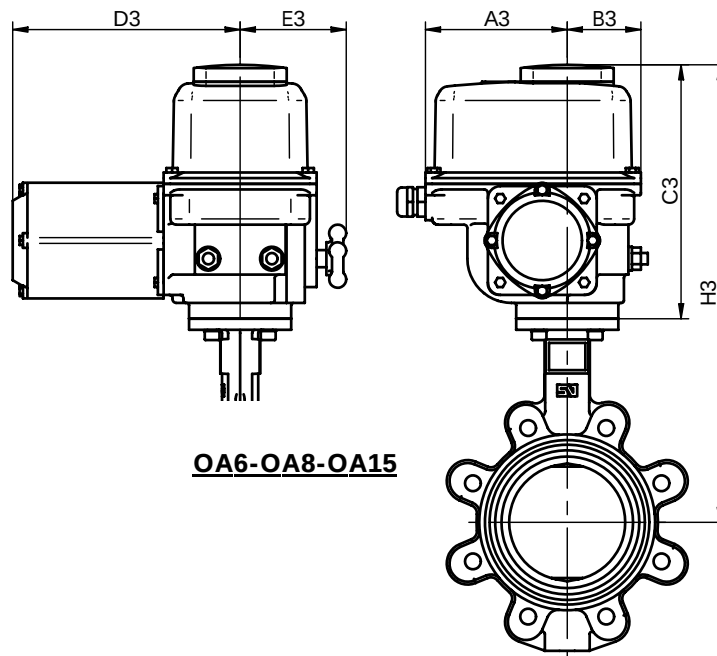
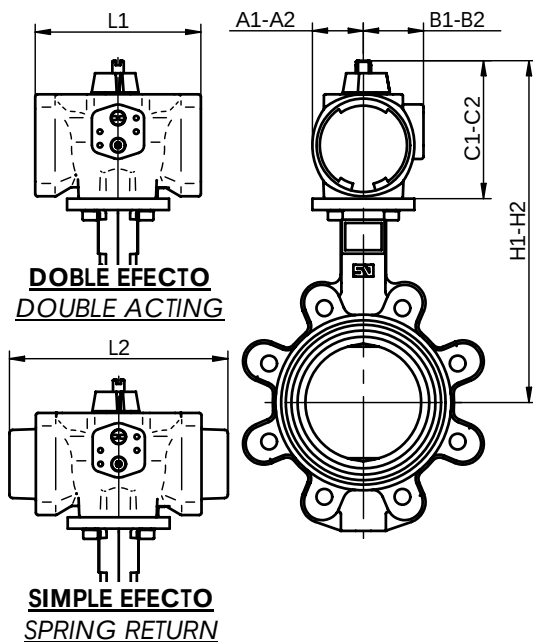
VALVULA DE MARIPOSA "LUG" / BUTTERFLY VALVE "LUG"
ACT. MANUAL / MANUAL ACT.

REVISION

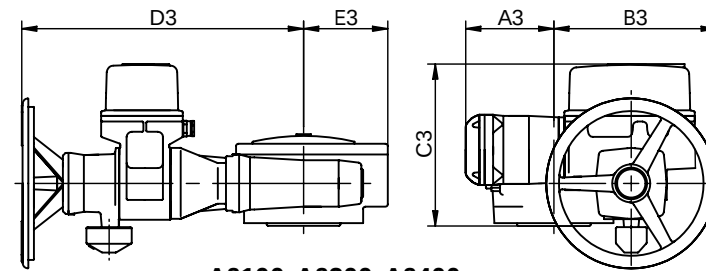
01

FICHA TECNICA N:

LUG-008-DT



ASP-AS50-AS80



AS100-AS200-AS400
ASM1 RS600-ASM2 RS1825

DN		DOBLE EFECTO-DOUBLE ACTING / SIMPLE EFECTO-SPRING RETURN														ACT. ELECTRICICO / ELECTRIC ACT.							
mm	Pulg	ACT	A1	B1	C1	H1	L1	Kg1	ACT	A2	B2	C2	H2	L2	Kg2	ACT	A3	B3	C3	D3	E3	H3	Kg3
32	1 1/4"	P00	36	44	128.5	260.5	125	4.05	P00S	36	44	128.5	260	160	4.35	OA6	125	65	224	202	90	356	9.05
40	1 1/2"	P00	36	44	128.5	260.5	125	3.47	P00S	36	44	128.5	260	160	3.77	OA6	125	65	224	202	90	356	8.47
50	2"	P00	36	44	128.5	268.5	125	4.54	P00S	36	44	128.5	268	160	4.84	OA6	125	65	224	202	90	364	9.54
65	2 1/2"	P05	45	53	122	276	146	5.71	P05S	45	53	122	276	194	6.51	OA6	125	65	224	202	90	378	10.21
80	3"	P05	45	53	122	282	146	6.88	P10S	47	55	127	287	236	7.98	OA6	125	65	224	202	90	384	11.38
100	4"	P05	45	53	122	302	146	8.27	P15S	55	60	148	328	257	10.77	OA6	125	65	224	202	90	404	12.77
125	5"	P10	47	55	127	324	182	10.06	P20S	60	67	161	358	312	13.96	OA8	125	65	224	202	90	421	15.26
150	6"	P15	55	60	148	358	203	11.75	P25S	74	78	191	401	362	18.35	OA15	125	65	224	260	98	434	16.15
200	8"	P20	60	67	161	401	234	16.9	P30S	82	94	211	451	479	29.2	OA15	125	65	224	260	98	464	20.2
250	10"	P25	74	78	191	473.5	276	31.8	P40S	106	120	342	624.5	598	62.3	ASP	226	89	177	340	167	459.5	43.9
300	12"	P30	83	94	211	519	349	48.8	P40S	106	120	342	650	598	76.1	AS50	226	89	177	340	169	485	56.7
350	14"	P40	106	120	272	610.5	444	73.6	P40S	106	120	272	610.5	598	92.4	AS80	226	89	208	340	169	546.5	74
400	16"	P40	106	120	272	652	444	91.8	P50S	122	135	383	763	694	102.2	AS100	114	405	230	236	206	639	109.8
450	18"	P50	122	135	313	693.5	524	133								AS200	188	475	281	333	109	661	171



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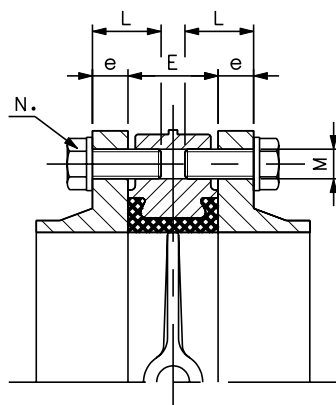
VALVULA DE MARIPOSA "LUG" / BUTTERFLY VALVE "LUG"
ACTO. AUTOMATICO / AUTOMATIC ACT.

REVISION

01

FICHA TECNICA N:

LUG-009-DT



DN	E	PN.10				PN.16				ASA 150 Lbs.			
		e	M	L	N.	e	M	L	N.	e	M	L	N.
32	33	16	M16	30	8	16	M16	30	8	17.5	W1 1/2"	30	8
40	33	16	M16	30	8	16	M16	30	8	17.5	W1 1/2"	30	8
50	43	18	M16	35	8	18	M16	35	8	19	W5/8"	35	8
65	46	18	M16	40	8	18	M16	40	8	22.2	W5/8"	45	8
80	46	20	M16	40	16	20	M16	40	16	23.8	W5/8"	45	8
100	52	20	M16	45	16	20	M16	45	16	23.8	W5/8"	45	16
125	56	22	M16	50	16	22	M16	50	16	23.8	W3/4"	50	16
150	56	22	M20	50	16	22	M20	50	16	25.4	W3/4"	50	16
200	60	24	M20	50	16	24	M20	50	24	28.6	W3/4"	55	16
250	68	26	M20	60	24	26	M24	60	24	30.2	W7/8"	60	24
300	78	26	M20	65	24	28	M24	65	24	31.7	W7/8"	70	24
350	78	26	M20	65	32	30	M24	65	32	34.9	W 1"	70	24
400	102	26	M24	75	32	32	M27	80	32	36.5	W 1"	85	32
450	114	26	M24	75	40	32	M27	80	40	39.5	W1 1/8"	85	32
500	127	28	M24	90	40	34	M30	95	40	46	W1 1/8"	105	40
600	154	28	M27	100	40	36	M33	110	40	47.6	W1 1/4"	120	40





SIGEVAL, S.A.

BUTTERFLY VALVES

Type “KL”



UNE-EN-ISO 9001



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Technical Information

Technical Catalogue
2004 (Ed.02)



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BUTTERFLY VALVES

Type “KL”



UNE-EN-ISO 9001



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Technical Information

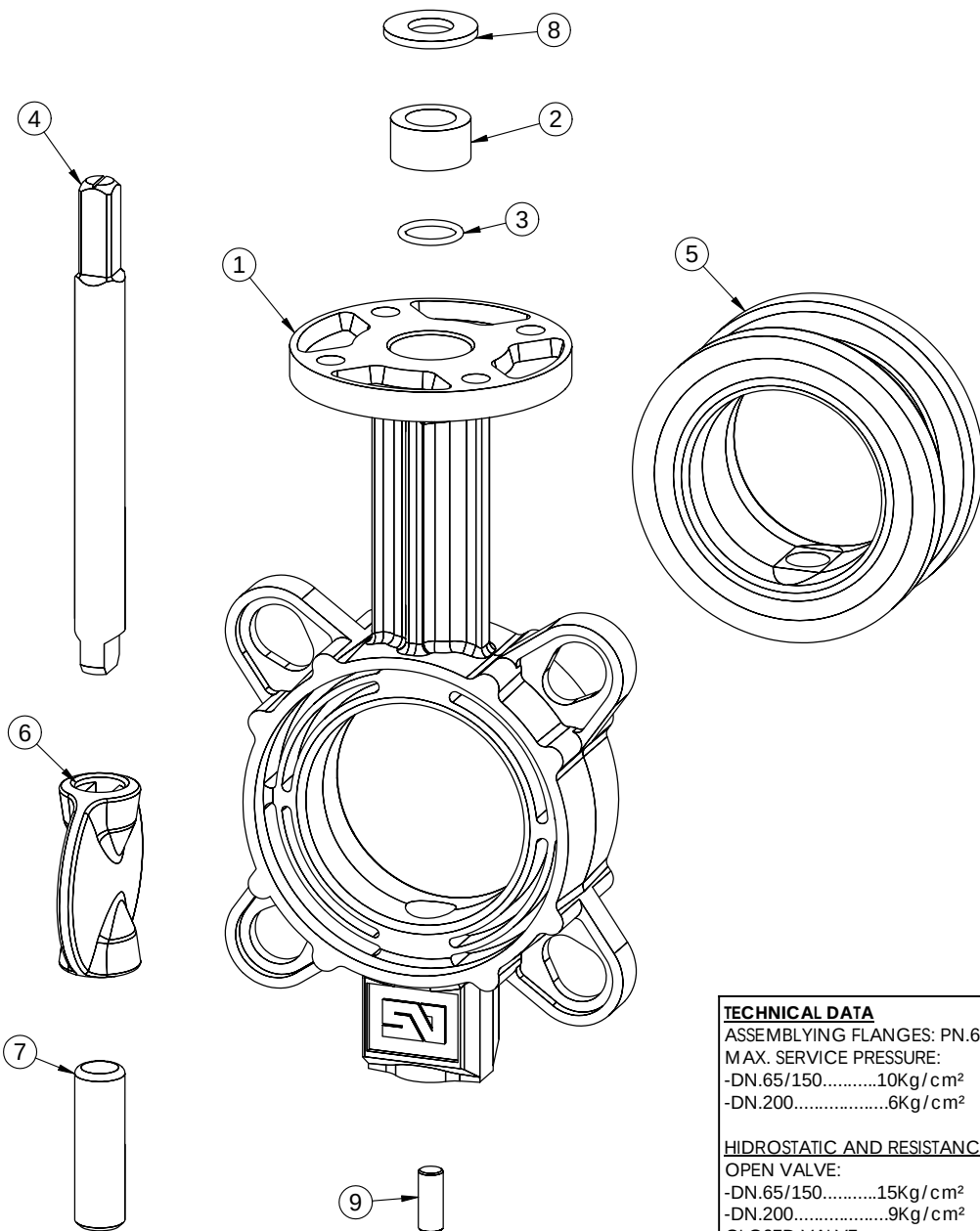
Technical Catalogue
2004 (Ed.02)

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Designation:

Technical sheet N°:

- | | |
|--|-------------|
| • “KL” Type Materials Detail DN 50-200. | KL -001- DT |
| • “KL” Type Free Shaft General Dimensions. | KL -007- DT |
| • “KL” Type Operation by Manuals Actuators.. | KL -008- DT |
| • “KL” Type Operation by Automatics Actuators. | KL -009- DT |
| • “KL” Type Assembling Screwing. | KL -010- DT |



TECHNICAL DATA

ASSEMBLYING FLANGES: PN.6-10-16 - ASA 150 Lbs

MAX. SERVICE PRESSURE:

-DN.65/150.....10Kg/cm²

-DN.200.....6Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE:

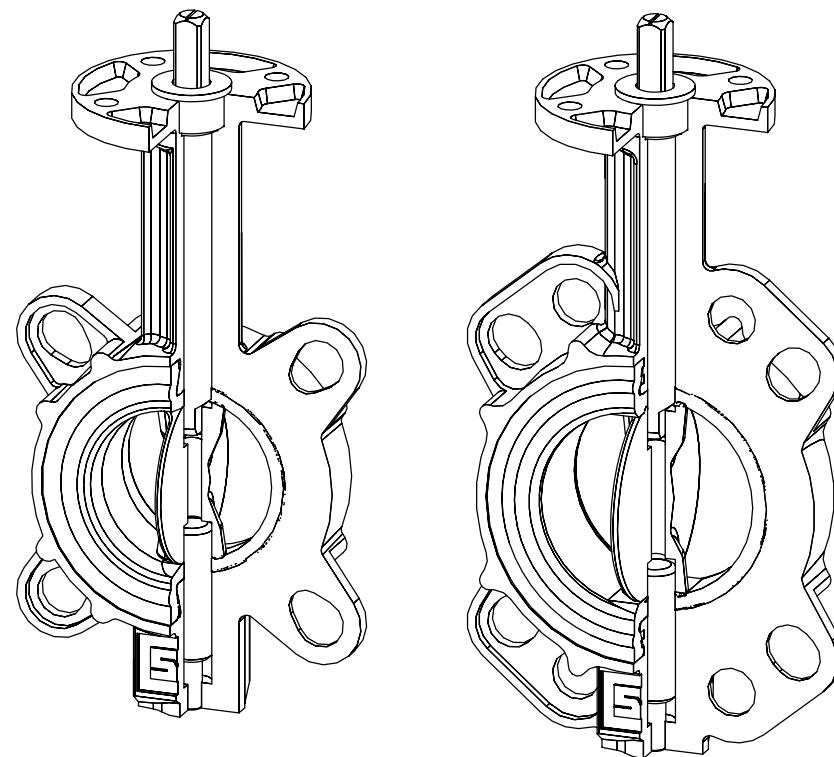
-DN.65/150.....15Kg/cm²

-DN.200.....9Kg/cm²

CLOSED VALVE:

-DN.65/150.....11Kg/cm²

-DN.200.....7 Kg/cm²



9	LOWER BOLT	ZINC PLATED STEEL	DIN 916	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL,S.A

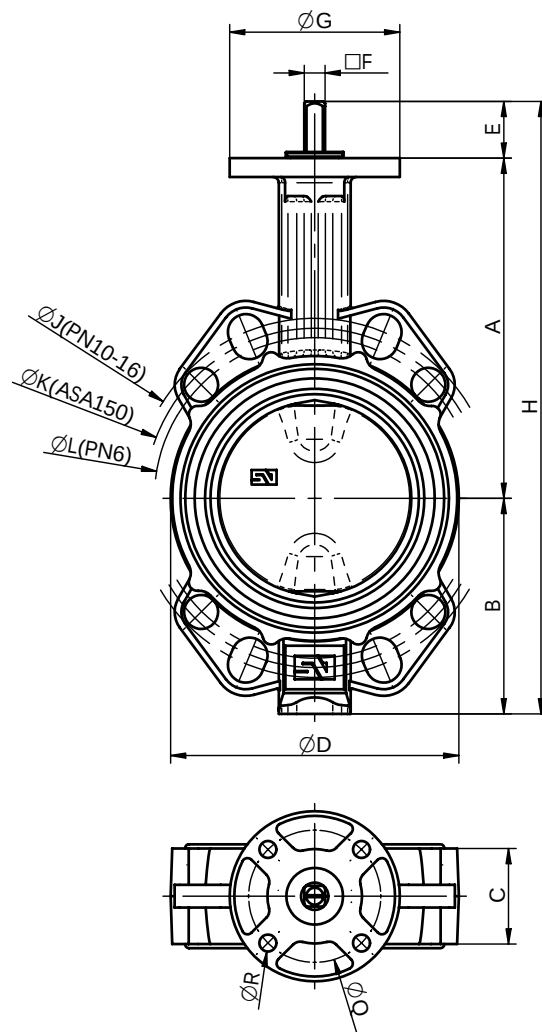
BUTTERFLY VALVE "KL" TYPE DN.50/200. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

KL-001-DT



DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS												CABEZA / HEAD		
mm	Pulg	A	B	C	D	E	F	G	H	J	K	L	Kg	ISO	Q	R
50	2"	140	80	43	96.5	30	11	90	250	125	120.7	110	12	F-07	70	4x9
65	2 1/2"	154	91	46	112.5	30	11	90	275	145	139.7	130	16	F-07	70	4x9
80	3"	160	100	46	127.5	30	11	90	290	160	152.4	150	18	F-07	70	4x9
100	4"	180	114	52	152.5	30	11	90	324	180	190.5	170	2.3	F-07	70	4x9
125	5"	197	130	56	180	33	14	90	360	210	215.9	200	3.4	F-07	70	4x9
150	6"	210	144.5	56	207	33	14	90	387.5	240	241.3	225	4.3	F-07	70	4x9
200	8"	240	175	60	265	33	14	90	448	295	298.5	280	6.6	F-07	70	4x9



SIGEVAL,S.A

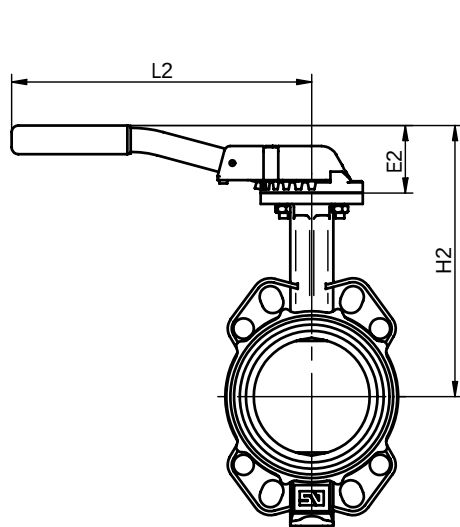
VALVULA DE MARIPOSA TIPO "KL"
BUTTERFLY VALVE "KL" TYPE

REVISION

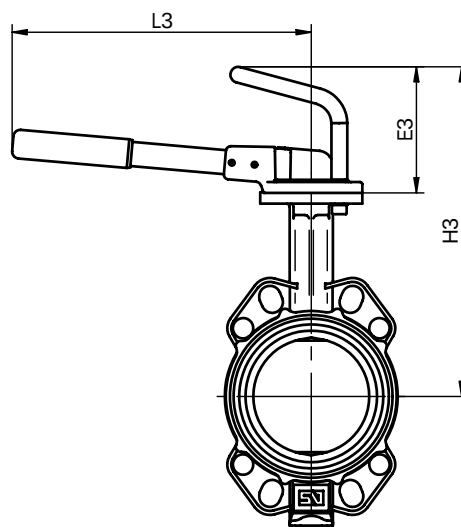
01

FICHA TECNICA N:

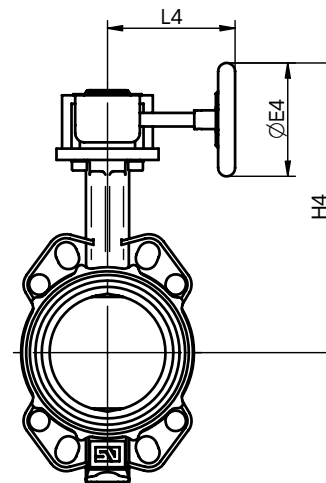
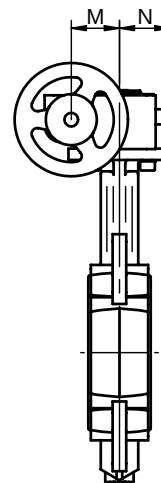
KL-007-DT



"MN"



"MR"



"MDV"

DN		MN				MR				MDV						
mm	Pulg	E2	H2	L2	Kg	E3	H3	L3	Kg	ACT	E4	H4	L4	M	N	Kg
50	2"	52	192	220	16	110	250	260	18	0	125	223	106	42	44	19
65	2 ½"	52	206	220	2	110	264	260	2.2	0	125	237	106	42	44	2.4
80	3"	63	223	260	2.3	110	270	260	2.4	0	125	243	106	42	44	2.6
100	4"	63	243	260	2.8	110	290	260	3	0	125	263	106	42	44	3.1
125	5"	78	275	310	4	110	307	310	4.1	1	160	306	131	50	58	5.2
150	6"	78	288	310	4.9	110	320	310	5	1	160	319	131	50	58	6.1
200	8"	78	318	310	7.2	110	350	310	7.3	1	160	349	131	50	58	8.4



SIGEVAL, S.A

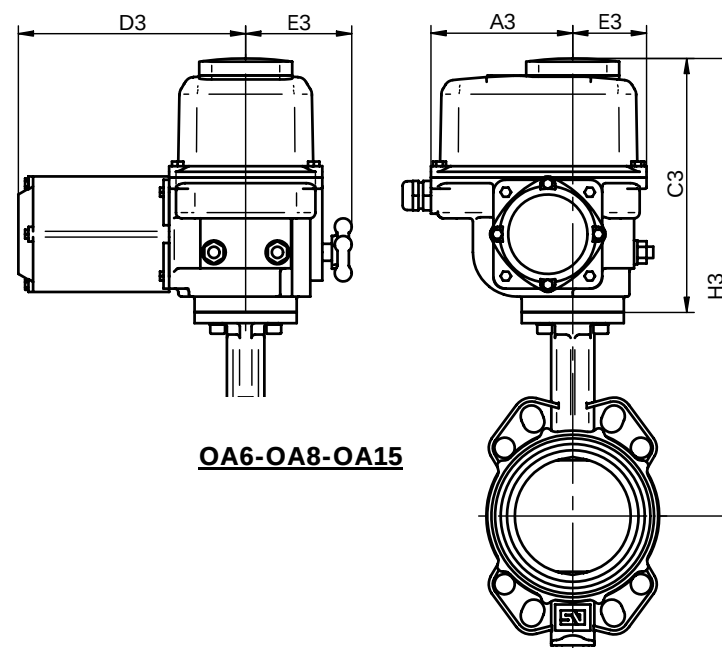
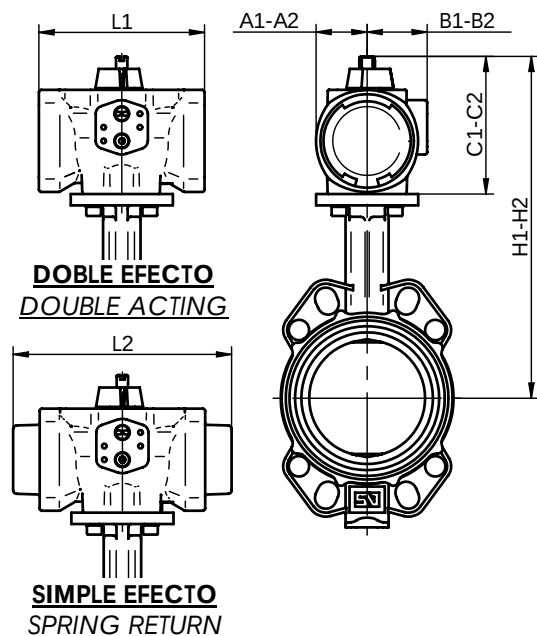
VALVULA DE MARIPOSA "KL" / BUTTERFLY VALVE "KL"
ACT. MANUAL / MANUAL ACT.

REVISION

01

FICHA TECNICA N:

KL-008-DT



DN		DOBLE EFECTO-DOUBLE ACTING / SIMPLE EFECTO-SPRING RETURN														ACT. ELECTRICICO / ELECTRIC ACT.							
mm	Pulg	ACT	A1	B1	C1	H1	L1	Kg1	ACT	A2	B2	C2	H2	L2	Kg2	ACT	A3	B3	C3	D3	E3	H3	Kg3
50	2"	P00	36	44	128.5	268.5	125	2.11	P00S	36	44	128.5	268	160	2.41	OA6	125	65	224	202	90	364	7.15
65	2 1/2"	P05	45	53	122	276	146	3.1	P05S	45	53	122	276	194	3.9	OA6	125	65	224	202	90	378	7.6
80	3"	P05	45	53	122	282	146	3.3	P10S	47	55	127	287	236	4.4	OA6	125	65	224	202	90	384	7.8
100	4"	P05	45	53	122	302	146	3.8	P15S	55	60	148	328	257	6.3	OA6	125	65	224	202	90	404	8.3
125	5"	P10	47	55	127	324	182	5.2	P20S	60	67	161	358	312	9.1	OA8	125	65	224	202	90	421	10.4
150	6"	P15	55	60	148	358	203	6.9	P25S	74	78	191	401	362	13.5	OA15	125	65	224	260	98	434	11.3
200	8"	P20	60	67	161	401	234	10.3	P30S	82	94	211	451	479	22.6	OA15	125	65	224	260	98	464	13.6



SIGEVAL, S.A

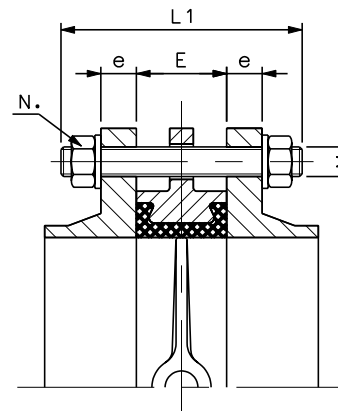
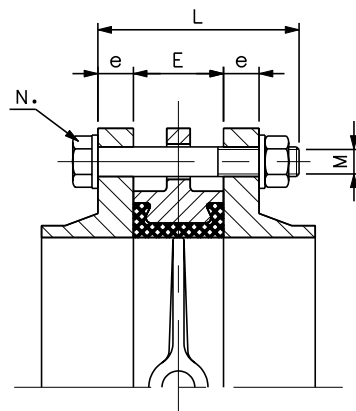
VALVULA DE MARIPOSA "KL" / BUTTERFLY VALVE "KL"
ACTO. AUTOMATICO / AUTOMATIC ACT.

REVISION

01

FICHA TECNICA N:

KL-009-DT



DN	E	PN.6					PN.10					PN.16					ASA 150 Lbs.				
		e	M	L	L1	N.	e	M	L	L1	N.	e	M	L	L1	N.	e	M	L	L1	N.
50	43	14	M12	90	100	4	18	M16	100	120	4	18	M16	100	120	4	19	W5/8"	100	120	4
65	46	14	M12	90	100	4	18	M16	100	120	4	18	M16	100	120	4	22.2	W5/8"	110	130	4
80	46	16	M16	95	115	4	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	110	130	4
100	52	16	M16	105	120	4	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	120	140	8
125	56	18	M16	110	130	8	22	M16	120	140	8	22	M16	120	140	8	23.8	W3/4"	130	150	8
150	56	18	M16	110	130	8	22	M20	130	150	8	22	M20	130	150	8	25.4	W3/4"	130	150	8
200	60	20	M16	120	140	8	24	M20	130	160	8	24	M20	130	160	12	28.6	W3/4"	140	160	8



SIGEVAL,S.A.

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

REVISION

FICHA TECNICA N:

01

KL-010-DT



SIGEVAL, S.A.

BUTTERFLY VALVES

Type "FA(M)" - FI(M)



UNE-EN-ISO 9001



0 0 9 9

Technical Information

Technical Catalogue
2004 (Ed.02)



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** Specifications are subject to change without notice.



SIGEVAL, S.A.

BUTTERFLY VALVES

Type “FA(M)” - FI(M)



UNE-EN-ISO 9001



0 0 9 9

Technical Information

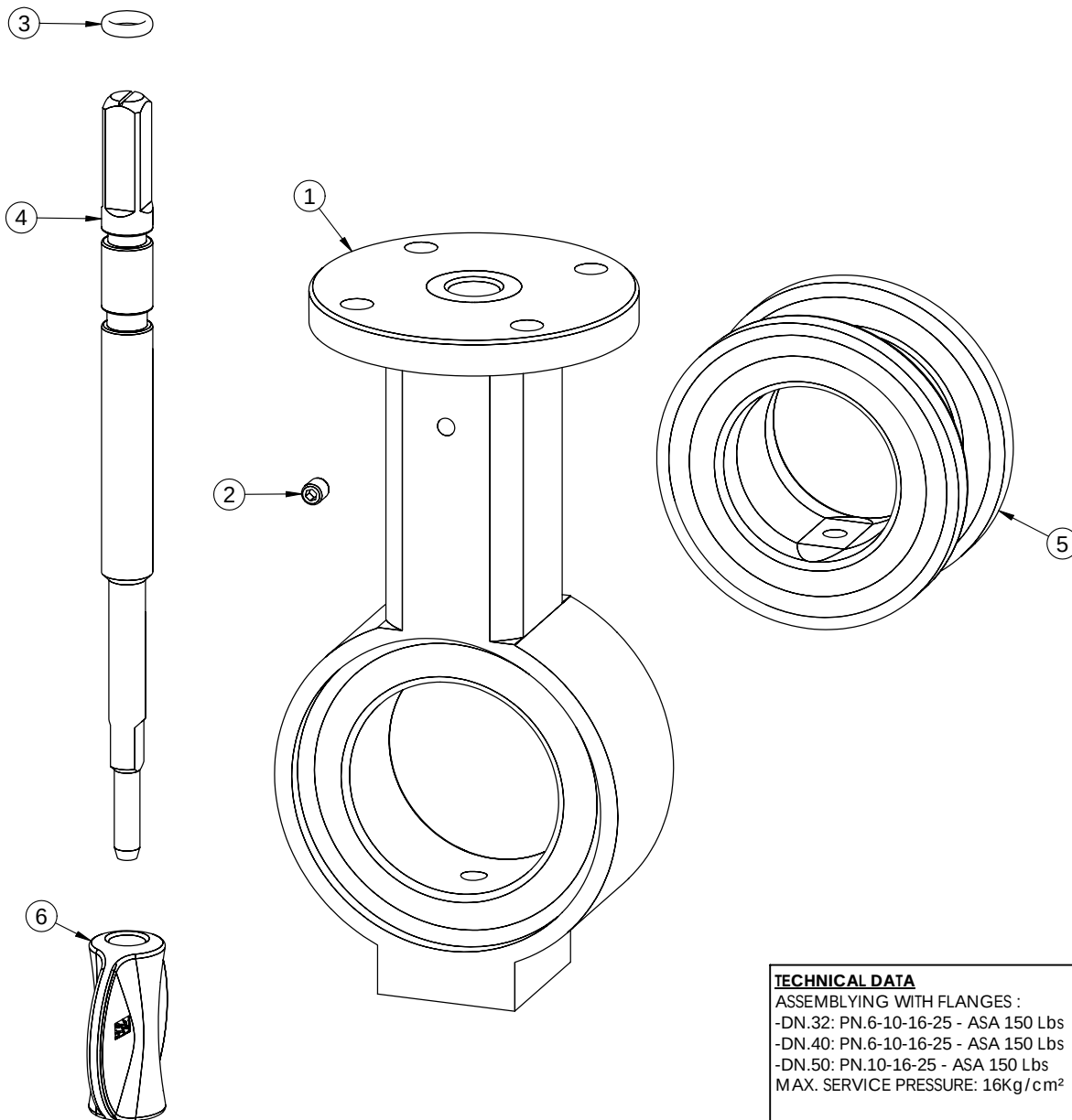
Technical Catalogue
2004 (Ed.02)

INDEX

Designation:

Technical sheet N°:

- | | |
|---|--------------------|
| • “FA (M)” Type Materials Detail DN 32-50. | FA(M) -001- DT |
| • “FA (M)” Type Materials Detail DN 65-200. | FA(M) -002- DT |
| • “FA (M)” Type Materials Detail DN 250-300. | FA(M) -003- DT |
| • “FI (M)” Type Materials Detail DN 32-50. | FI(M) -001- DT |
| • “FI (M)” Type Materials Detail DN 65-200. | FI(M) -002- DT |
| • “FI (M)” Type Materials Detail DN 250-300. | FI(M) -003- DT |
| • “FA (M)” - “FI (M)” Type Free Shaft General Dimensions. | FA(M)-FI(M)-007-DT |
| • “FA (M)” - “FI (M)” Type Operation by Manuals Actuators. | FA(M)-FI(M)-008-DT |
| • “FA (M)” - “FI (M)” Type Operation by Automatics Actuators. | FA(M)-FI(M)-009-DT |
| • “FA (M)” - “FI (M)” Type Assembling Screwing. | FA(M)-FI(M)-010-DT |



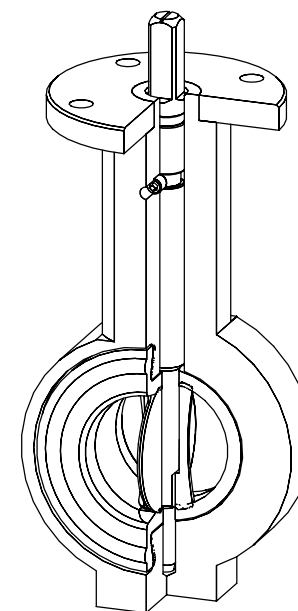
TECHNICAL DATA

ASSEMBLYING WITH FLANGES :

-DN.32: PN.6-10-16-25 - ASA 150 Lbs
 -DN.40: PN.6-10-16-25 - ASA 150 Lbs
 -DN.50: PN.10-16-25 - ASA 150 Lbs
 MAX. SERVICE PRESSURE: 16Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE: 24Kg/cm²
 CLOSED VALVE: 17.6 Kg/cm²



6	DISC	ACC. SHEET M-0001		1
5	SEAT	ACC. SHEER A-0001		1
4	SHAFT	ACC. SHEET E-0001		1
3	"O" RING	NITRILE		1
2	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	1
1	VALVE BODY	ACC. SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A

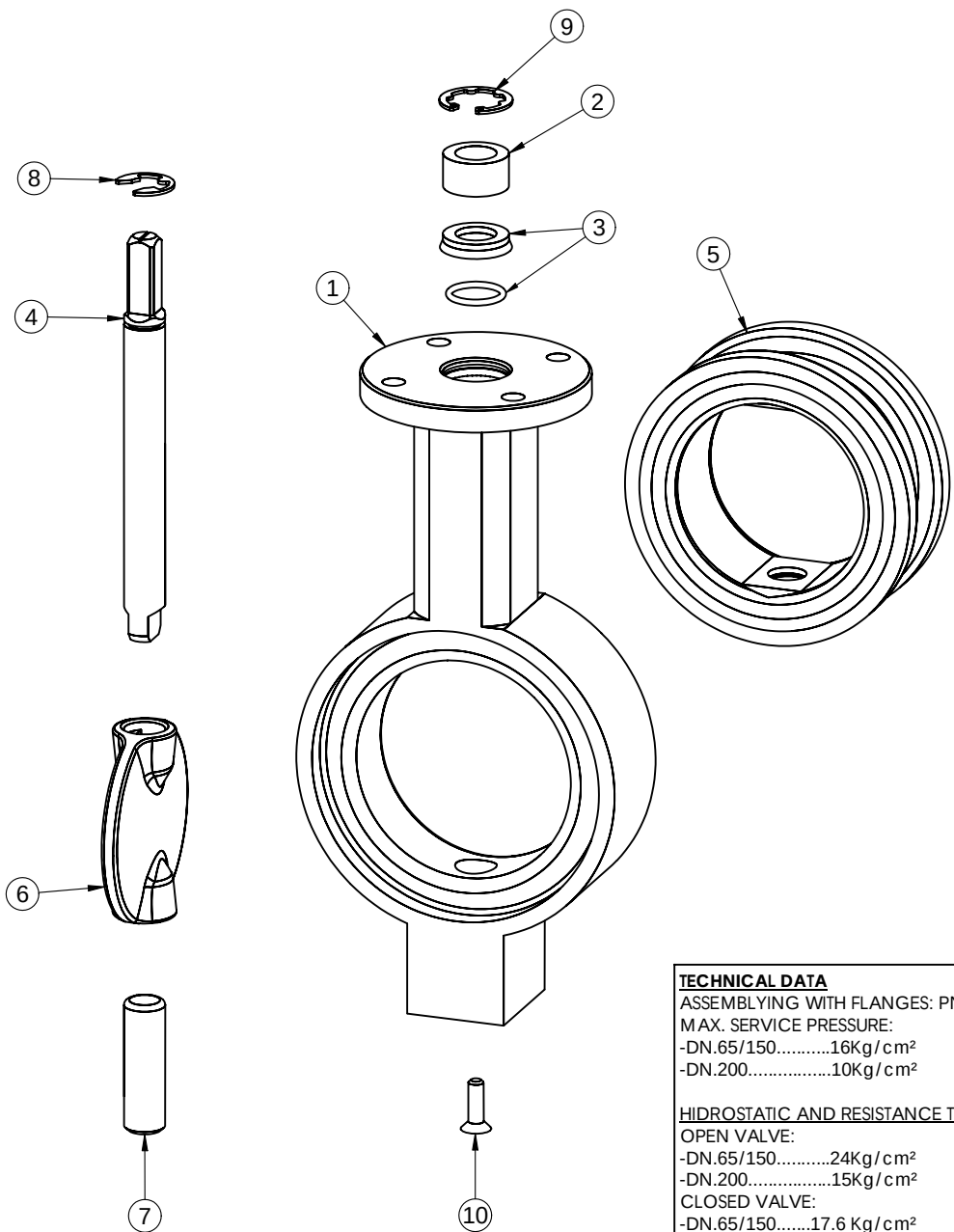
BUTTERFLY VALVE "FA(M)" TYPE DN.32/50. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FA(M)-001-DT



TECHNICAL DATA

ASSEMBLYING WITH FLANGES: PN.10-16 - ASA 150 Lbs

MAX. SERVICE PRESSURE:

-DN.65/150.....16Kg/cm²

-DN.200.....10Kg/cm²

HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE:

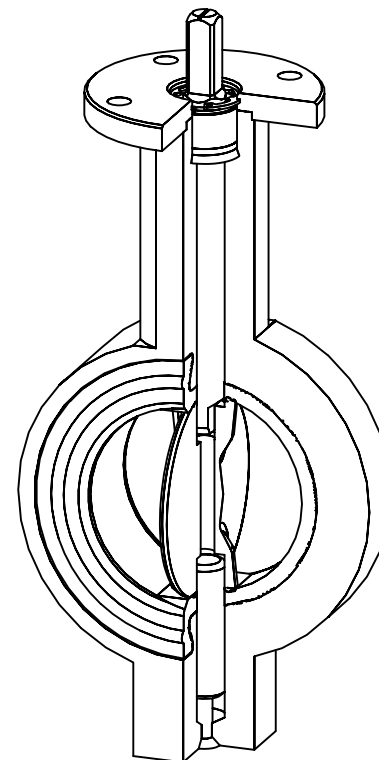
-DN.65/150.....24Kg/cm²

-DN.200.....15Kg/cm²

CLOSED VALVE:

-DN.65/150.....17.6 Kg/cm²

-DN.200.....11 Kg/cm²



10	LOWER BOLT	ZINC PLATED STEEL	DIN 7991	1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A

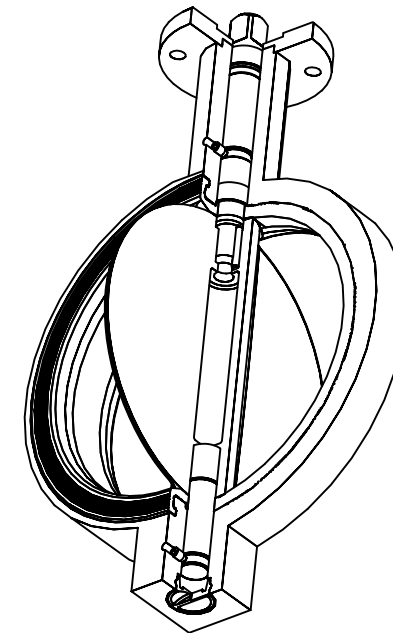
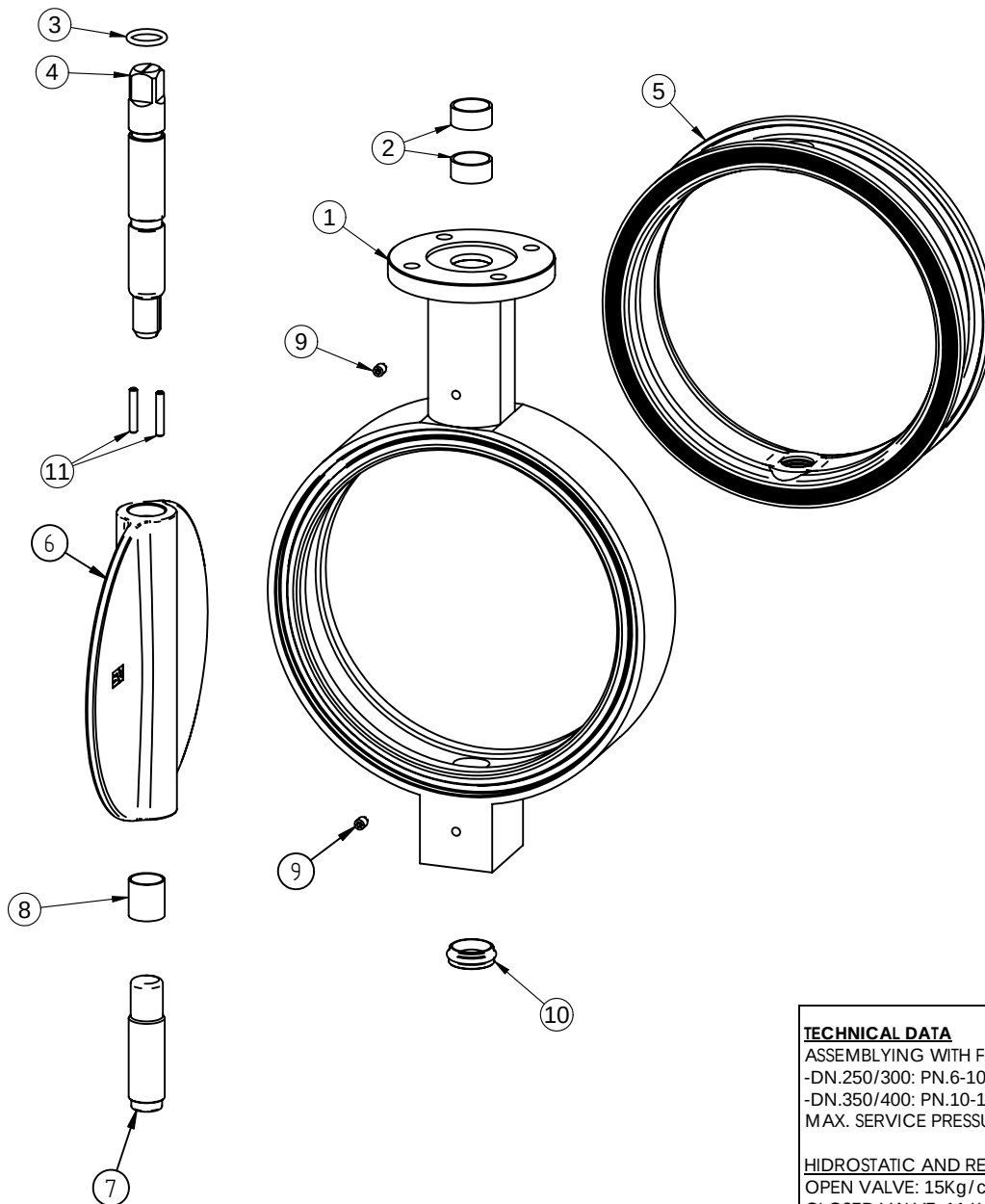
BUTTERFLY VALVE "FA(M)" TYPE DN.65/200. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FA(M)-002-DT



11	KEYWAY	CARBON STEEL F-131	DN.250-300	2
			DN.350-400	4
10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A.

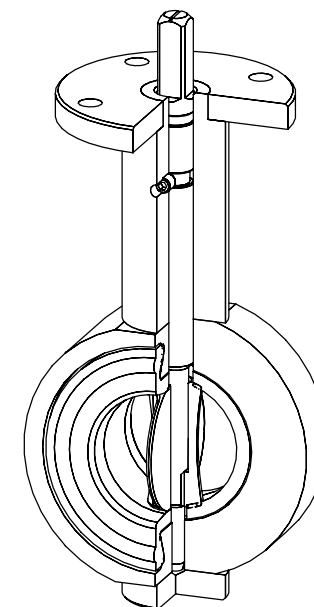
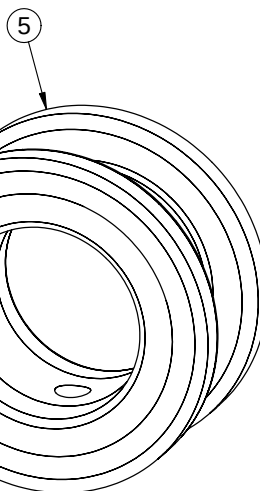
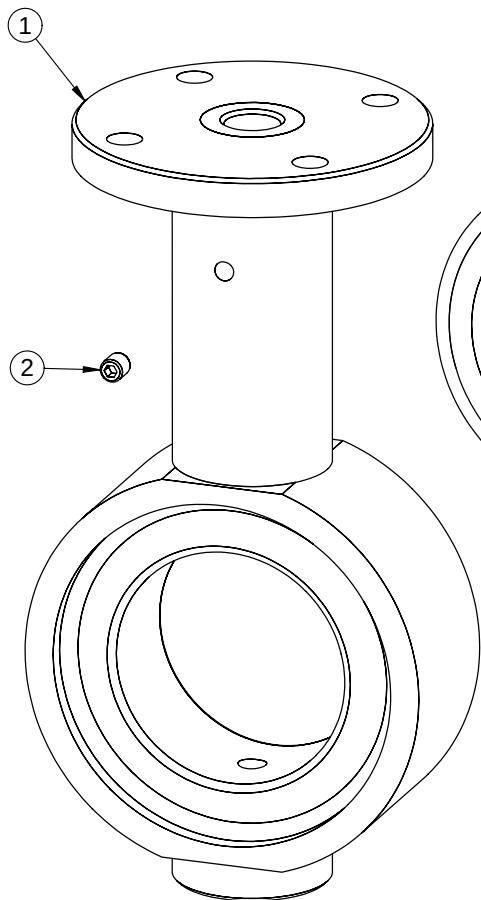
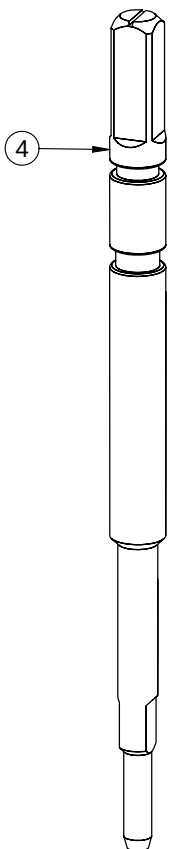
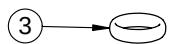
BUTTERFLY VALVE "FA(M)" TYPE DN.250/300. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FA(M)-003-DT



TECHNICAL DATA	
ASSEMBLYING WITH FLANGES :	
-DN.32: PN.6-10-16-25 - ASA 150 Lbs	
-DN.40: PN.6-10-16-25 - ASA 150 Lbs	
-DN.50: PN.10-16-25 - ASA 150 Lbs	
MAX. SERVICE PRESSURE: 16Kg/cm ²	
HIDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 24Kg/cm ²	
CLOSED VALVE: 17.6 Kg/cm ²	

6	DISC	ACC. SHEET M-0001		1
5	SEAT	ACC. SHEER A-0001		1
4	SHAFT	ACC. SHEET E-0001		1
3	"O" RING	NITRILE		1
2	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	1
1	VALVE BODY	ACC. SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL		QUAN



SIGEVAL,S.A

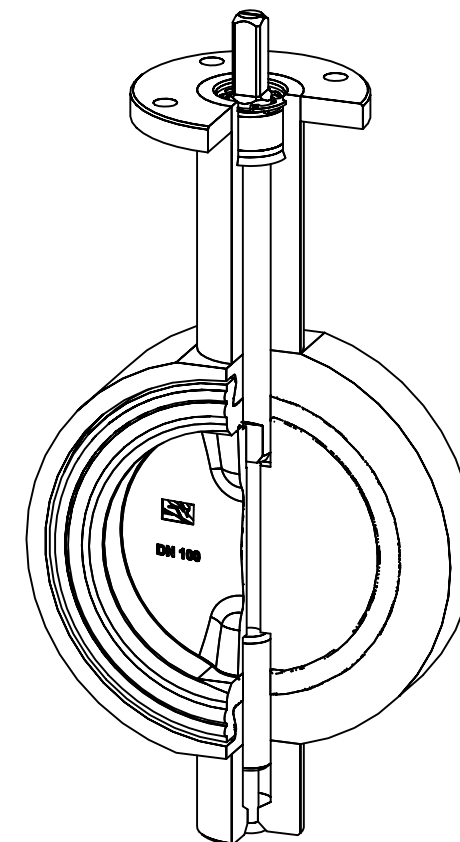
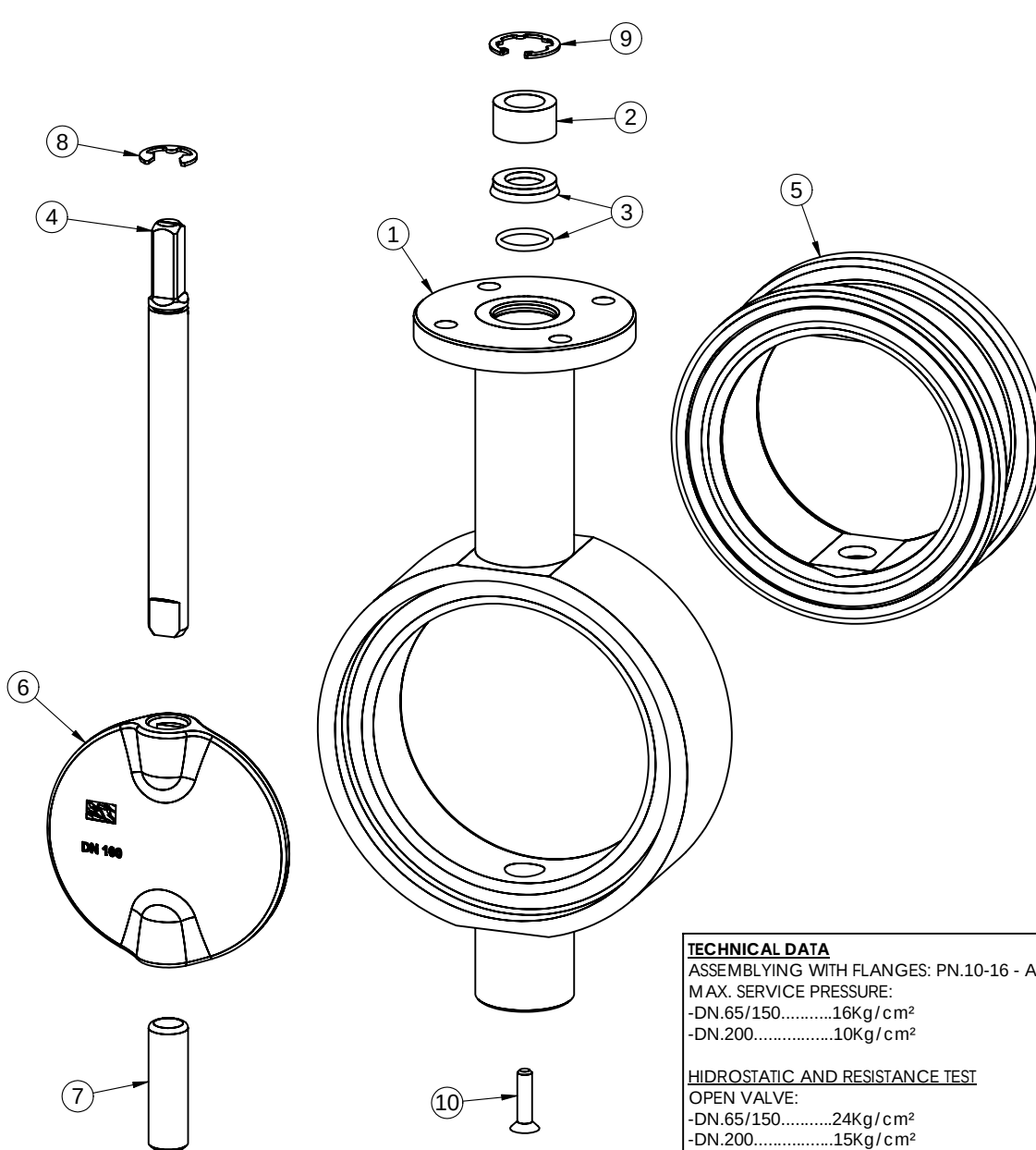
**BUTTERFLY VALVE "FI(M)" TYPE
DN.32/50. MATERIALS DETAIL**

REVISION

01

TECHNICAL SHEET:

FI(M)-001-DT



10	LOWER BOLT	ZINC PLATED STEEL	DIN 7991	1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL, S.A

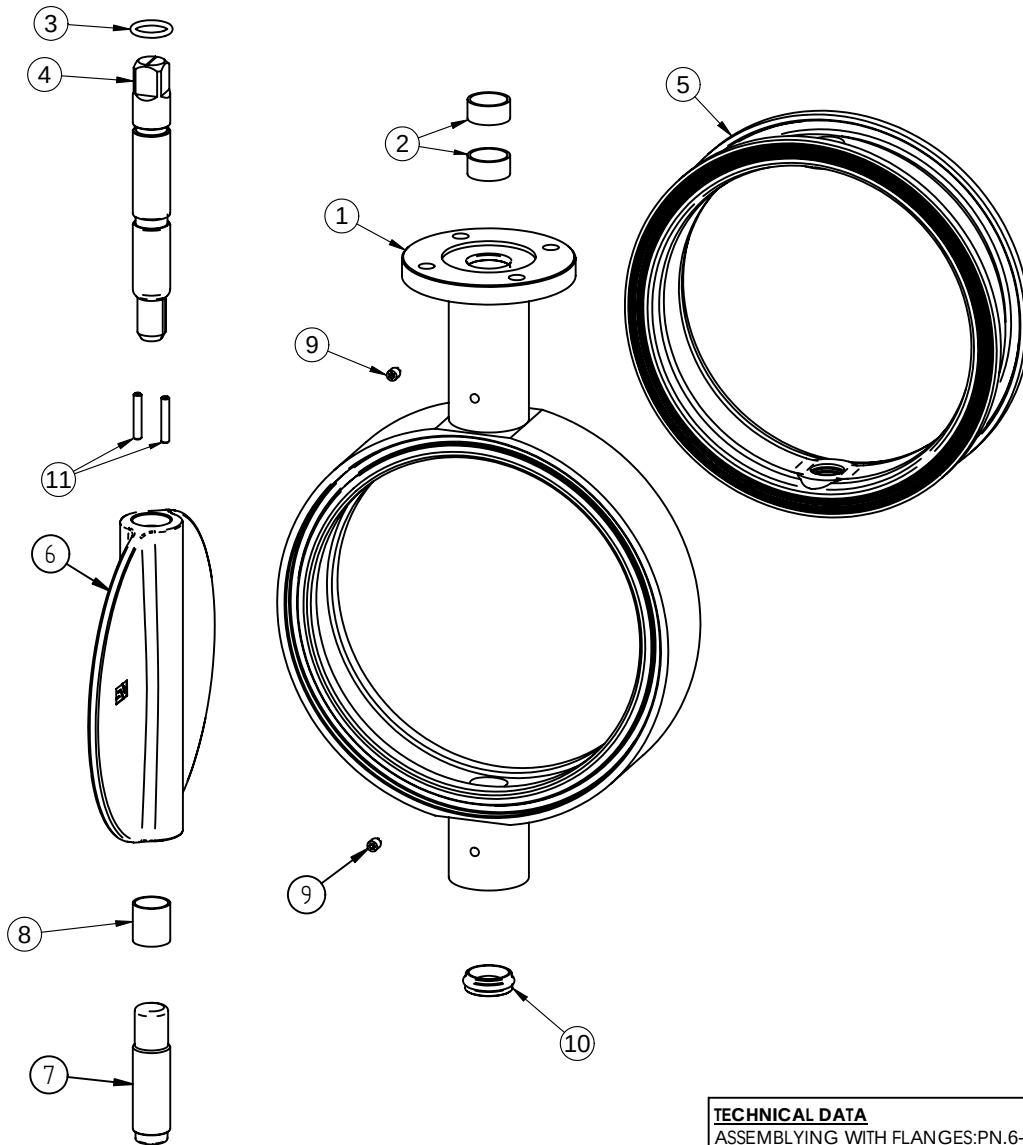
BUTTERFLY VALVE "FI(M)" TYPE DN.65/200. MATERIALS DETAIL

REVISION

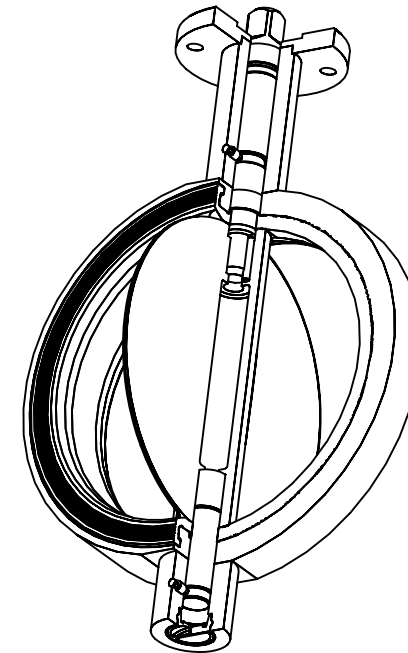
01

TECHNICAL SHEET:

FI(M)-002-DT



TECHNICAL DATA
 ASSEMBLYING WITH FLANGES: PN.6-10-16 - ASA 150 Lbs
 MAX. SERVICE PRESSURE: 10Kg/cm²
HIDROSTATIC AND RESISTANCE TEST
 OPEN VALVE: 15Kg/cm²
 CLOSED VALVE: 11 Kg/cm²



11	KEYWAY	CARBON STEEL F-131		2
10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL, S.A

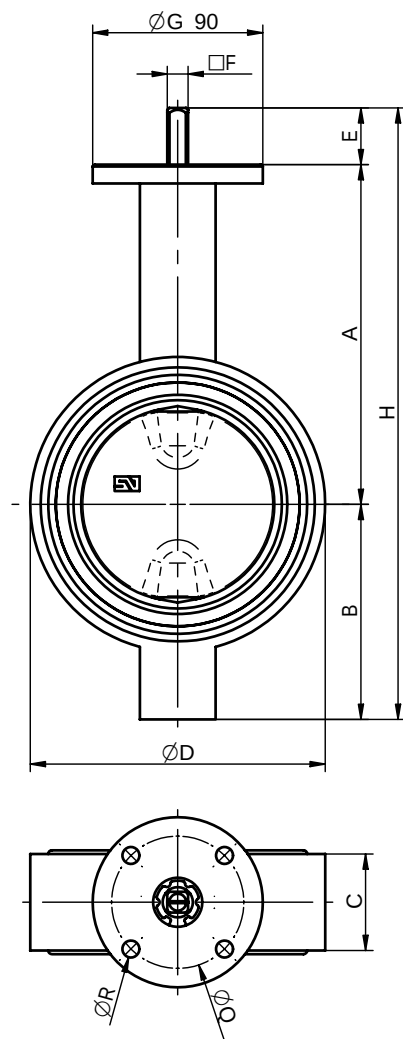
BUTTERFLY VALVE "FI(M)" TYPE DN.250/300. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FI(M)-003-DT



DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS									CABEZA/ HEAD		
mm	Pulg	A	B	C	D	E	F	G	H	Kg	ISO	Q	R
32	1 ¼"	102.5	60.2	33	70	30	11	90	192.7	142	F-07	70	4x9
40	1 ½"	132	63	33	78	30	11	90	225	187	F-07	70	4x9
50	2"	140	80	43	100	30	11	90	250	3	F-07	70	4x9
65	2 ½"	154	90.5	46	120	30	11	90	274.5	3.72	F-07	70	4x9
80	3"	160	100	46	132	30	11	90	290	4.1	F-07	70	4x9
100	4"	180	113	52	156	30	11	90	323	5.1	F-07	70	4x9
125	5"	197	129	56	187	33	14	90	359	7.36	F-07	70	4x9
150	6"	210	145	56	216	33	14	90	388	8.85	F-07	70	4x9
200	8"	240	175	60	270	33	14	90	448	12.5	F-07	70	4x9
250	10"	282.5	210	68	325	23	22	130	515.5	19.8	F-10	102	4x12
300	12"	308	240	78	375	23	22	130	571	30.8	F-10	102	4x12



SIGEVAL,S.A

VALVULA DE MARIPOSA TIPO "FA(M)-FI(M)"

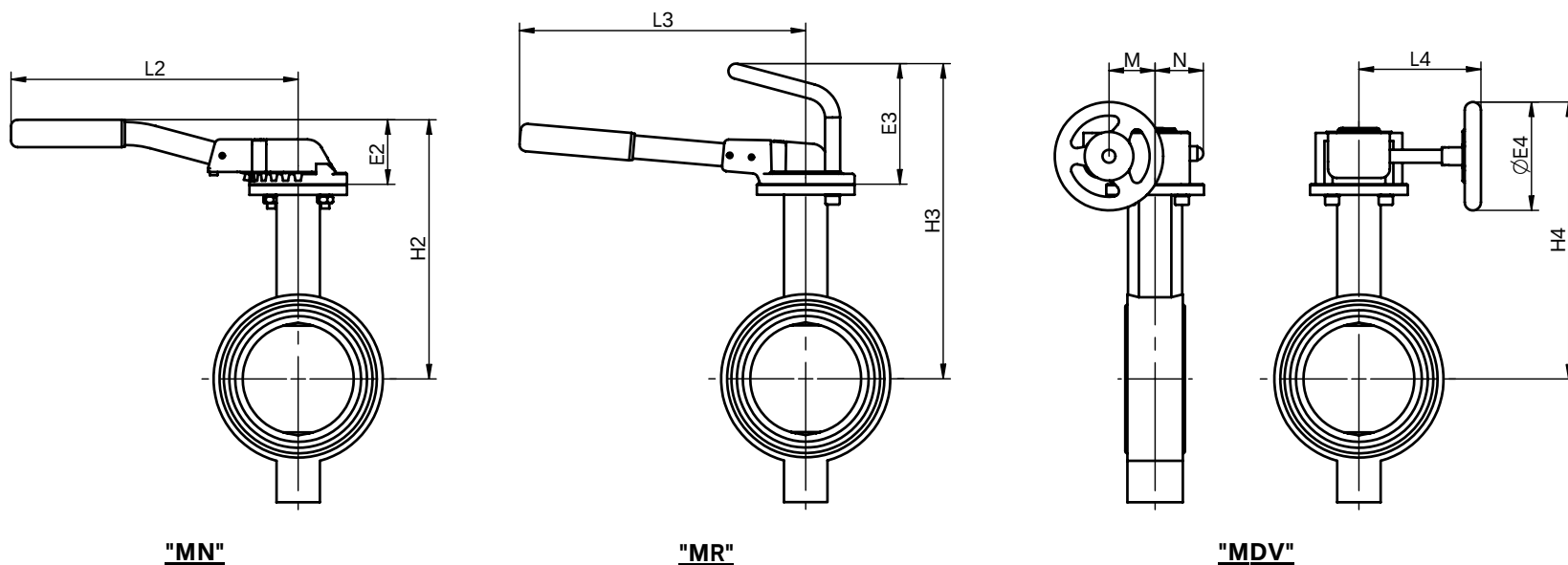
BUTTERFLY VALVE "FA(M)-FI(M)" TYPE

REVISION

01

FICHA TECNICA N: FA(M)-007-DT

FI(M)-007-DT



DN		MN				MR				MDV						
mm	Pulg	E2	H2	L2	Kg	E3	H3	L3	Kg	ACT	E4	H4	L4	M	N	Kg
32	1 ¼"	52	184	220	2.4	110	242	260	2.6	0	125	215	106	42	44	2.8
40	1 ½"	52	184	220	2.3	110	242	260	2.5	0	125	215	106	42	44	2.7
50	2"	52	192	220	3.5	110	250	260	3.6	0	125	223	106	42	44	3.8
65	2 ½"	52	206	220	4.1	110	264	260	4.3	0	125	237	106	42	44	4.5
80	3"	63	223	260	4.6	110	270	260	4.7	0	125	243	106	42	44	4.9
100	4"	63	243	260	5.6	110	290	260	5.8	0	125	263	106	42	44	5.9
125	5"	78	275	310	7.9	110	307	310	8	1	160	306	131	50	58	9.1
150	6"	78	288	310	9.4	110	320	310	9.5	1	160	319	131	50	58	10.6
200	8"	78	318	310	13.1	110	350	310	13.2	1	160	349	131	50	58	14.3
250	10"					120	403	500	219	2	250	444	204	60	82.5	23.5
300	12"					120	428	500	33.3	2	250	469	204	60	82.5	34.9

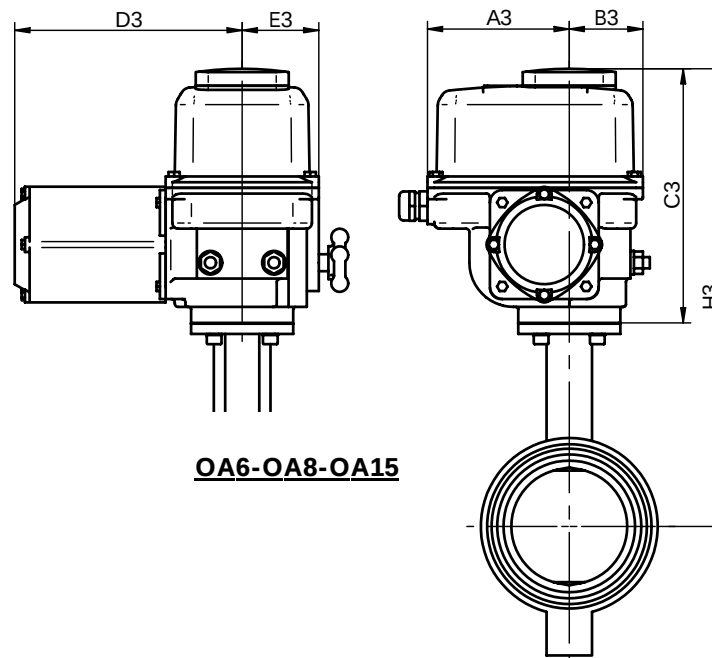
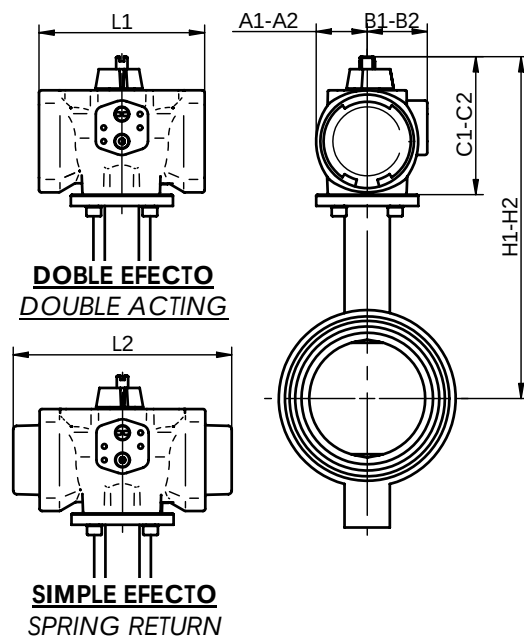


SIGEVAL,S.A

VALVULA DE MARIPOSA "FA(M)-FI(M)" / BUTTERFLY VALVE "FA(M)-FI(M)"
ACT. MANUAL / MANUAL ACT.

REVISION
 01

FICHA TECNICA N: FA(M)-008-DT
FI(M)-008-DT



DN		DOBLE EFECTO-DOUBLE ACTING / SIMPLE EFECTO-SPRING RETURN														ACT. ELECTRICICO / ELECTRIC ACT.							
mm	Pulg	ACT	A1	B1	C1	H1	L1	Kg1	ACT	A2	B2	C2	H2	L2	Kg2	ACT	A3	B3	C3	D3	E3	H3	Kg3
32	1 ¼"	P00	36	44	128.5	231	125	2.4	P00S	36	44	128.5	231	160	2.7	OA6	125	65	224	202	90	326.5	7.4
40	1 ½"	P00	36	44	128.5	260.5	125	2.9	P00S	36	44	128.5	260	160	3.2	OA6	125	65	224	202	90	356	7.9
50	2"	P00	36	44	128.5	268.5	125	4	P00S	36	44	128.5	268	160	4.3	OA6	125	65	224	202	90	364	9
65	2 ½"	P05	45	53	122	276	146	5.2	P05S	45	53	122	276	194	6	OA6	125	65	224	202	90	378	9.7
80	3"	P05	45	53	122	282	146	5.6	P10S	47	55	127	287	236	6.7	OA6	125	65	224	202	90	384	10.1
100	4"	P05	45	53	122	302	146	6.6	P15S	55	60	148	328	257	9.1	OA6	125	65	224	202	90	404	11.1
125	5"	P10	47	55	127	324	182	9.1	P20S	60	67	161	358	312	13.1	OA8	125	65	224	202	90	421	14.3
150	6"	P15	55	60	148	358	203	11.4	P25S	74	78	191	401	362	18	OA15	125	65	224	260	98	434	15.8
200	8"	P20	60	67	161	401	234	16.2	P30S	82	94	211	451	479	28.5	OA15	125	65	224	260	98	464	19.5
250	10"	P25	74	78	191	473.5	276	26.1	P40S	106	120	342	624.5	598	56.6	ASP	226	89	177	340	167	459.5	38.2
300	12"	P30	83	94	211	519	349	40.7	P40S	106	120	342	650	598	68	AS50	226	89	177	340	169	485	48.6



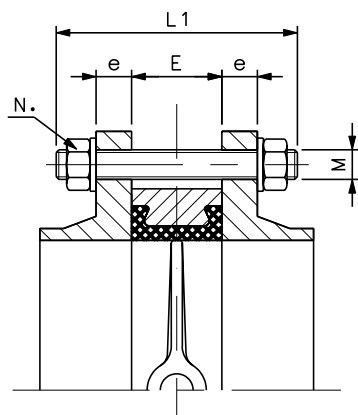
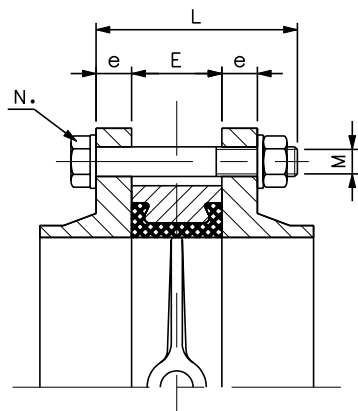
SIGEVAL,S.A

VALVULA DE MARIPOSA "FA(M)-FI(M)" / BUTTERFLY VALVE "FA(M)-FI(M)"
ACTO. AUTOMATICO / AUTOMATIC ACT.

REVISION

01

FICHA TECNICA N: **FA(M)-009-DT**
FI(M)-009-DT



DN	E	PN.10					PN.16					ASA 150 Lbs.				
		e	M	L	L1	N.	e	M	L	L1	N.	e	M	L	L1	N.
32	33	16	M16	90	110	4	16	M16	90	110	4	17.5	W14	90	110	4
40	33	16	M16	90	110	4	16	M16	90	110	4	17.5	W14	90	110	4
50	43	18	M16	100	120	4	18	M16	100	120	4	19	W5/8"	100	120	4
65	46	18	M16	100	120	4	18	M16	100	120	4	22.2	W5/8"	110	130	4
80	46	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	110	130	4
100	52	20	M16	110	130	8	20	M16	110	130	8	23.8	W5/8"	120	140	8
125	56	22	M16	120	140	8	22	M16	120	140	8	23.8	W3/4"	130	150	8
150	56	22	M20	130	150	8	22	M20	130	150	8	25.4	W3/4"	130	150	8
200	60	24	M20	130	160	8	24	M20	130	160	12	28.6	W3/4"	140	160	8
250	68	26	M20	150	170	12	26	M24	150	170	12	30.2	W7/8"	160	180	12
300	78	26	M20	160	180	12	28	M24	160	180	12	31.7	W7/8"	170	190	12



SIGEVAL,S.A.

VALVULA DE MARIPOSA "FA(M)-FI(M)" / BUTTERFLY VALVE "FA(M)-FI(M)"
TORNILLERIA DE MONTAJE / ASSEMBLYING SCREWING

REVISION

FICHA TECNICA N: FA(M)-010-DT

01

FI(M)-010-DT



SIGEVAL, S.A.

BUTTERFLY VALVES

Type “FG(F)”



UNE-EN-ISO 9001



0 0 9 9

Technical Information

Technical Catalogue
2004 (Ed.02)



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** Specifications are subject to change without notice.



SIGEVAL, S.A.

BUTTERFLY VALVES

Type “FG(F)”



UNE-EN-ISO 9001



0 0 9 9

Technical Information

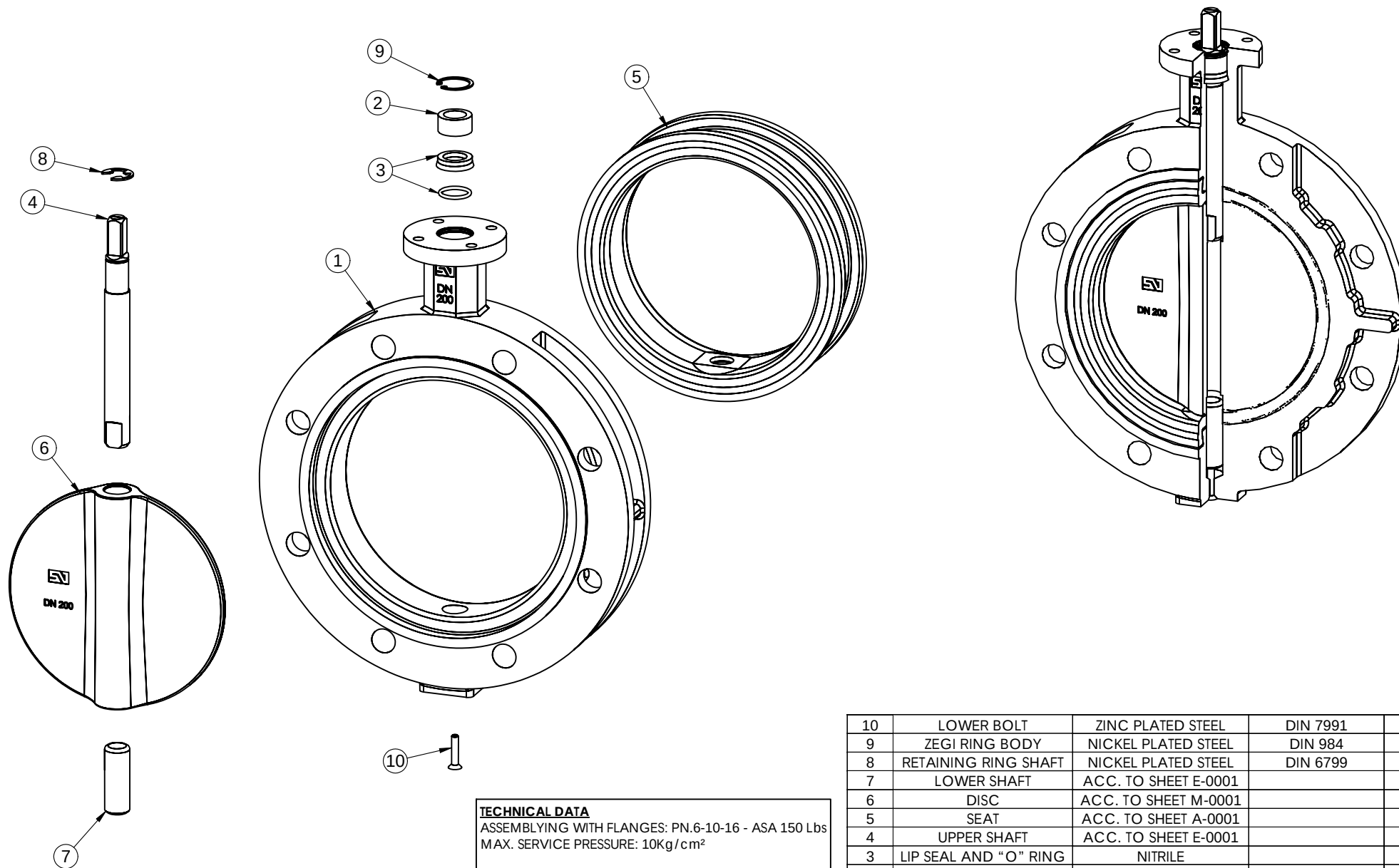
Technical Catalogue
2004 (Ed.02)

INDEX

Designation:

Technical sheet N°:

- | | |
|---|----------------|
| • “FG(F)” Type Materials Detail DN 65-200. | FG(F) -002- DT |
| • “FG(F)” Type Materials Detail DN 250-400. | FG(F) -003- DT |
| • “FG(F)” Type Materials Detail DN 450-600 | FG(F) -004- DT |
| • “FG(F)” Type Materials Detail DN 800. | FG(F) -005- DT |
| • “FG(F)” Type Free Shaft General Dimensions. | FG(F) -007- DT |
| • “FG(F)” Type Operation by Manuals Actuators. | FG(F) -008- DT |
| • “FG(F)” Type Operation by Automatics Actuators. | FG(F) -009- DT |
| • “FG(F)” Type Assembling Screwing. | FG(F) -010- DT |



10	LOWER BOLT	ZINC PLATED STEEL	DIN 7991	1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	1
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	LIP SEAL AND "O" RING	NITRILE		1
2	BUSHING	ACETAL DELRIN		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



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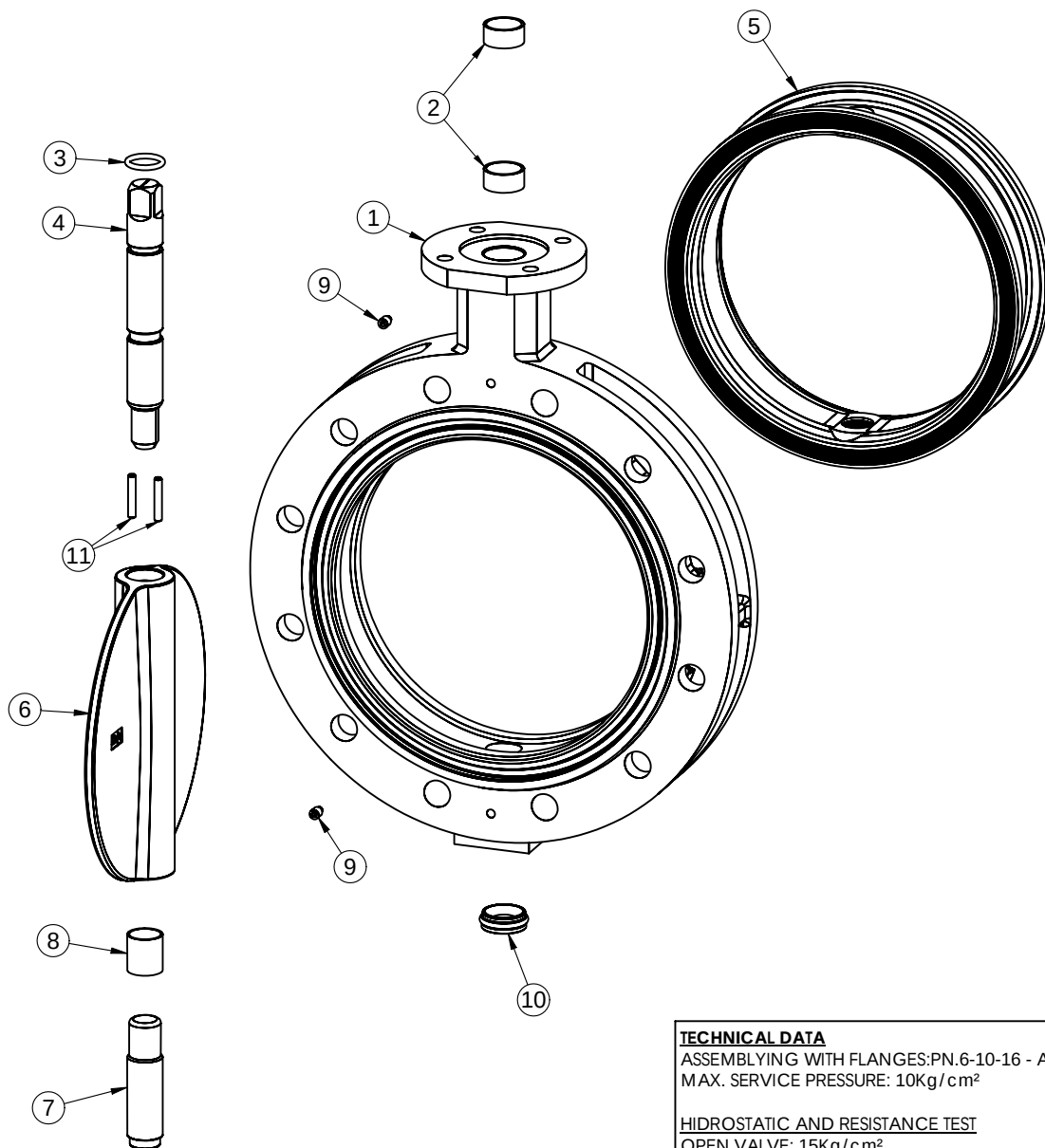
BUTTERFLY VALVE "FG(F)" TYPE DN.200. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FG(F)-002-DT



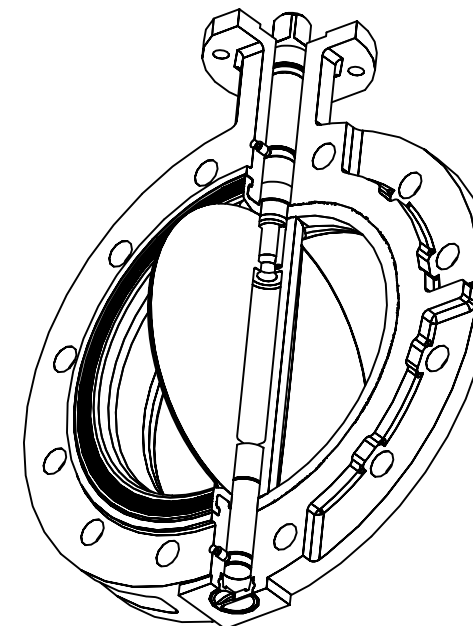
TECHNICAL DATA

ASSEMBLYING WITH FLANGES:PN.6-10-16 - ASA 150 Lbs
MAX. SERVICE PRESSURE: 10Kg/cm²

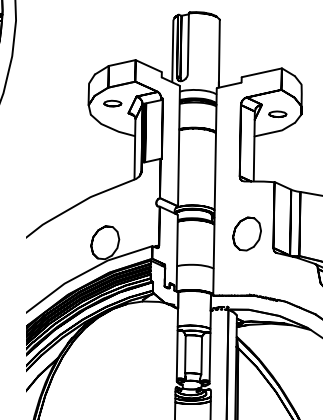
HIDROSTATIC AND RESISTANCE TEST

OPEN VALVE: 15Kg/cm²
CLOSED VALVE: 11 Kg/cm²

DN.250/350



DN.400



ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN
11	KEYWAY	CARBON STEEL F-131	DN.250-300	2
			DN.350-400	4
10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI 304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1



SIGEVAL S.A.

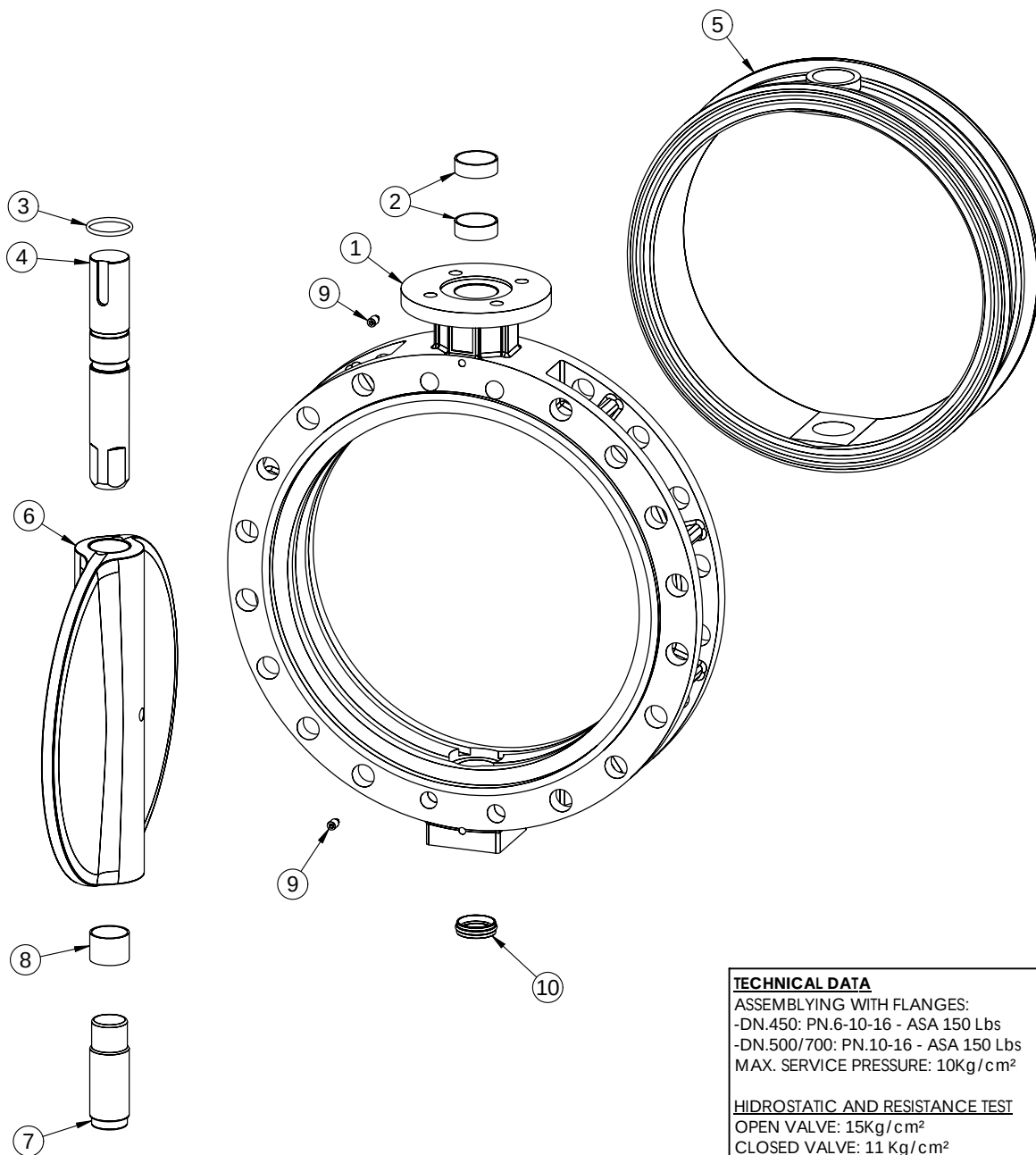
BUTTERFLY VALVE "FG(F)" TYPE DN.250/400. MATERIALS DETAIL

REVISION

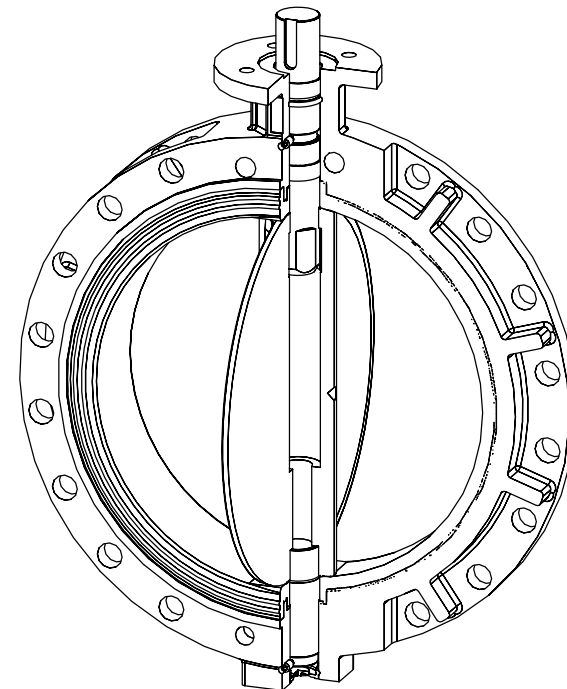
01

TECHNICAL SHEET:

FG(F)-003-DT



TECHNICAL DATA	
ASSEMBLYING WITH FLANGES:	
-DN.450: PN.6-10-16 - ASA 150 Lbs	
-DN.500/700: PN.10-16 - ASA 150 Lbs	
MAX. SERVICE PRESSURE: 10Kg/cm ²	
HIDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 15Kg/cm ²	
CLOSED VALVE: 11 Kg/cm ²	



10	LOWER PLUG	E.P.D.M.		1
9	DOG POINT SET SCREW	STAINLESS STEEL AISI304	DIN 915	2
8	BUSHING	STEEL-BZ-PTFE		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAF	ACC. TO SHEET E-0001		1
3	"O" RING	NITRILE		1
2	BUSHING	STEEL-BZ-PTFE		2
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL,S.A

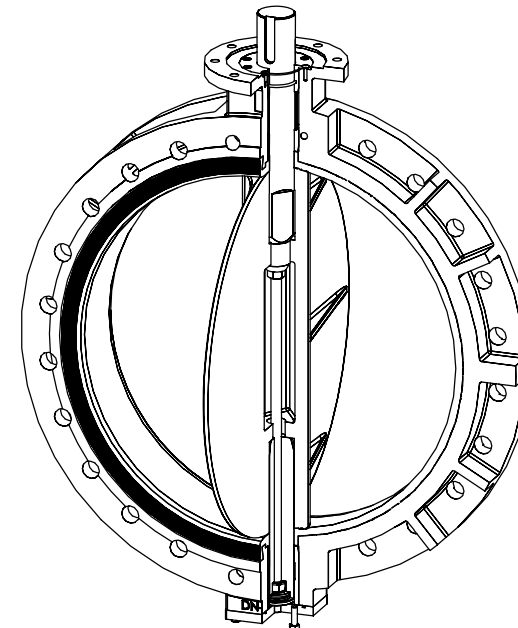
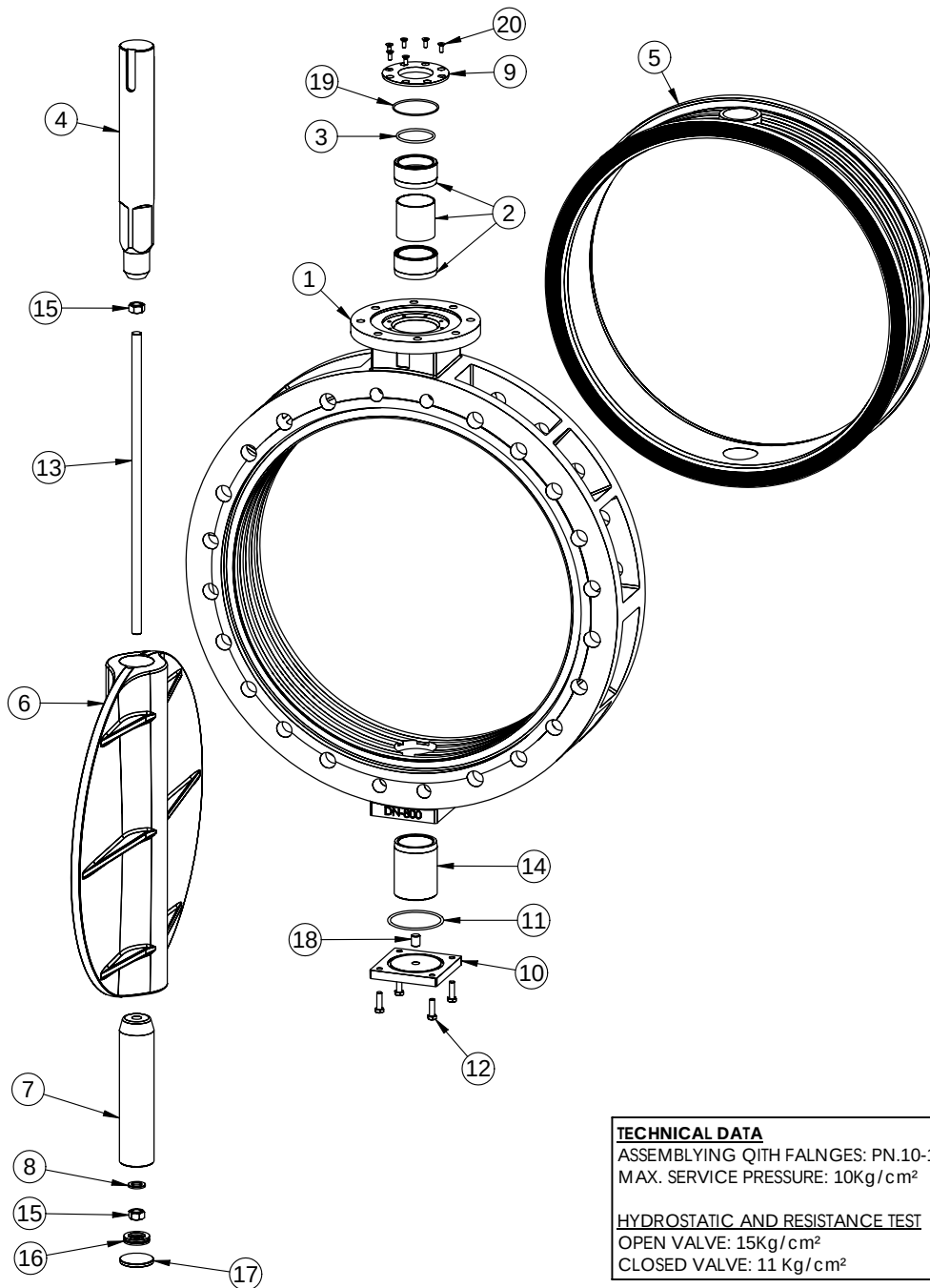
BUTTERFLY VALVE "FG(F)" TYPE DN.450/700. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

FG(F)-004-DT



TECHNICAL DATA	
ASSEMBLYING WITH FLANGES: PN.10-16 - ASA 150 Lbs	
MAX. SERVICE PRESSURE: 10Kg/cm ²	
HYDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 15Kg/cm ²	
CLOSED VALVE: 11 Kg/cm ²	

20	BOLT OF UPPER COVER	ZINC PLATED STEEL	DIN 7991	8
19	UPPER COVER'S "O" RING	NITRILE		1
18	SCREW	STAINLESS STEEL AISI 304	DIN 916	1
17	DISC FOR BEARING	STAINLESS STEEL AISI 304		1
16	AXIAL BEARING		DIN 711	1
15	NUT	ZINC PLATED STEEL	DIN 934	2
14	LOWER BUSHING	BRONZE/BRASS		1
13	STRUT	STAINLESS STEEL AISI 304		1
12	EXAGONAL SCREW	ZINC PLATED STEEL	DIN 931	1
11	"O" RING	NICKEL PLATED STEEL	DIN 472	2
10	TIGHTNESS COVER	CARBON STEEL	COATING EPOXY	1
9	UPPER COVER	CARBON STEEL	COATING EPOXY	1
8	SAFETY WASHER	COPPER		1
7	LOWER SHAFT	ACC. TO SHEET E-0001		1
6	DISC	ACC. TO SHEET M-0001		1
5	SEAT	ACC. TO SHEET A-0001		1
4	UPPER SHAFT	STAINLESS STEEL AISI 420		1
3	"O" RING	NITRILE		1
2	UPPER BUSHING	BRONZE/BRASS-STAIN. STEEL		1
1	VALVE BODY	ACC. TO SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A

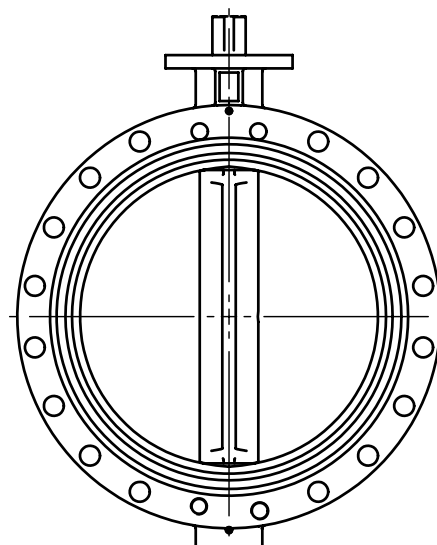
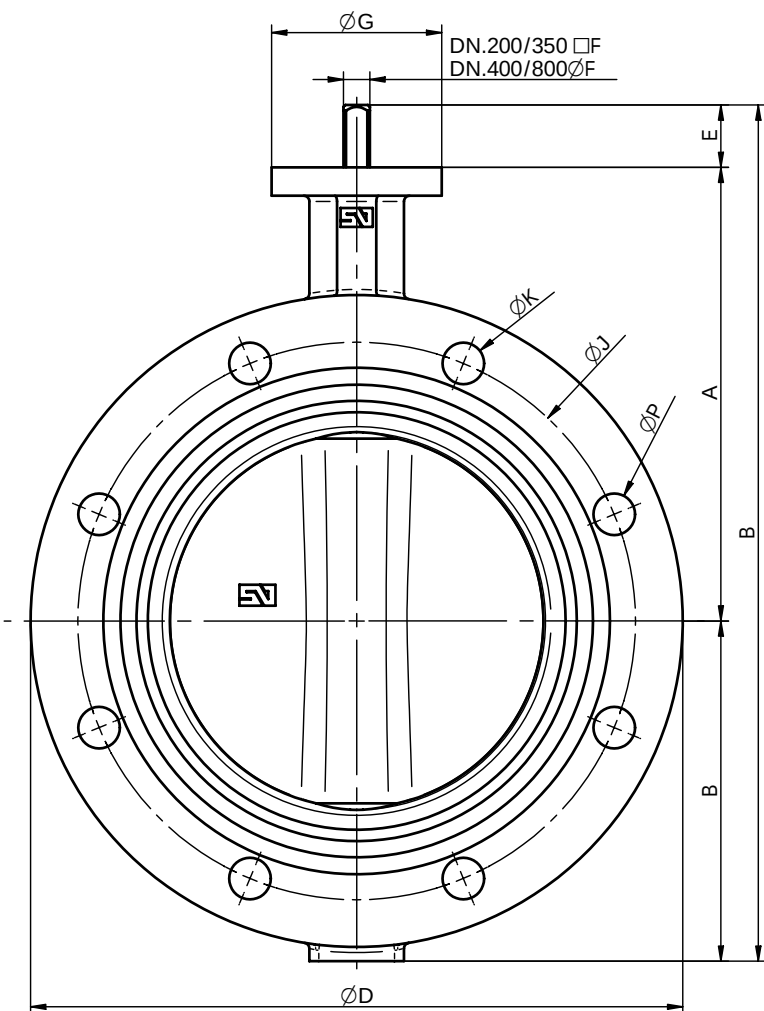
BUTTERFLY VALVE "FG(F)" TYPE DN.800. MATERIALS DETAIL

REVISION

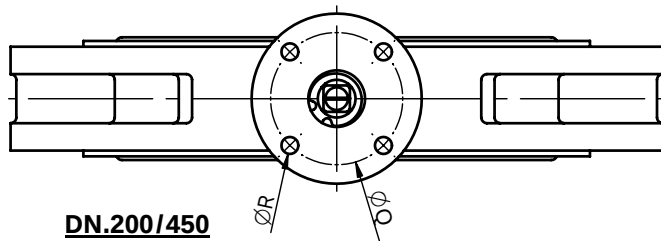
01

TECHNICAL SHEET:

FG(F)-005-DT



DN.500/800



DN.200/450

BRIDA DE MONTAJE / ASSEMBLYING FLANGE									
DN	PN.10			PN.16			ASA 150 Lbs		
mm	J	P	K	J	P	K	J	P	K
200	295	8xØ22		295	12xØ22		298.5	8xØ23	
250	350	12xØ22		355	12xØ26		362	12xØ25	
300	400	12xØ22		410	12xØ26		431.8	12xØ25	
350	460	16xØ22		470	16xØ26		476.3	12xØ30	
400	515	16xØ26		525	16xØ30		539.8	16xØ30	
450	565	16xØ26	4xM24	585	16xØ30	4xM27	577.9	16xØ32	
500	620	20xØ26		650	16xØ33	4xM30	635	16xØ32	4xWL-1/8"
600	725	20xØ30		770	20xØ36		749.3	20xØ35	
700	840	20xØ30	4xM27	840	20xØ36	4xM33	863.5	24xØ35	4xWL-1/4"
800	950	20xØ33	4xM30	950	20xØ39	4xM36	978	24xØ42	4xWL-1/2"

DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS									CABEZA / HEAD		
mm	Pulg	A	B	C	D	E	F	G	H	Kg	ISO	Q	R
200	8"	240	172	60	265	33	14	90	445	10.5	F-07	70	4x9
250	10"	282.5	210	68	324	23	22	130	515.5	20	F-10	102	4x12
300	12"	308	243	78	383	23	22	130	574	312	F-10	102	4x12
350	14"	338.5	263	78	430	31	22	160	632.5	36	F-10	102	4x12
400	16"	380	308	102	485	54	35	160	742	55.4	F-12	125	4x14
450	18"	380.5	340	114	536	64	55	190	784.5	81	F-14	140	4x18
500	20"	432.5	417.5	127	610	64	55	210	914	131	F-14	140	4x18
600	24"	494	479	154	725	79	60	220	1052	184	F-16	165	4x22
700	28"	590	502	165	830	106	65	300	1198	248	F-25	254	8x18
800	32"	630	585	190	926	106	80	300	1321	408	F-25	254	8x18



SIGEVAL, S.A

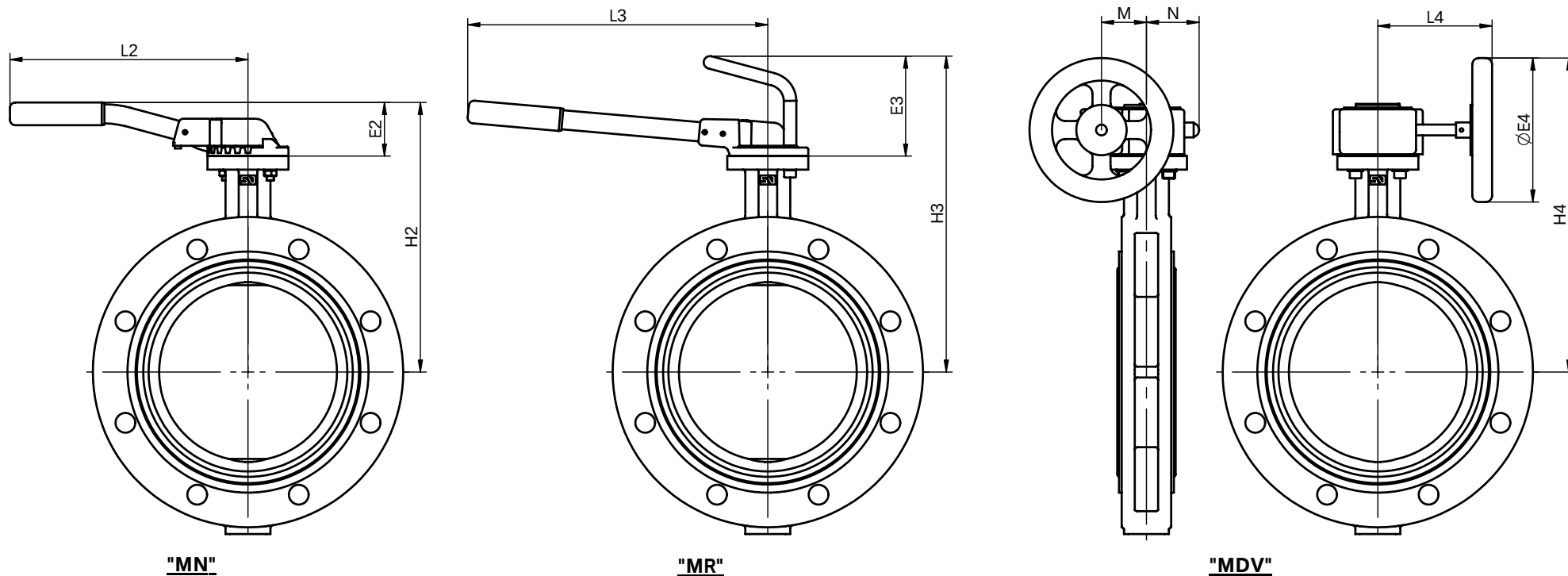
VALVULA DE MARIPOSA TIPO "FG(F)"
BUTTERFLY VALVE "FG(F)" TYPE

REVISION

01

FICHA TECNICA N:

FG(F)-007-DT



DN		MN				MR				MDV						
mm	Pulg	E2	H2	L2	Kg	E3	H3	L3	Kg	ACT	E4	H4	L4	M	N	Kg
200	8"	78	318	310	218	110	350	310	219	1	160	349	131	50	58	23
250	10"					120	403	500	33.3	2	250	444	204	60	82.5	34.9
300	12"					120	428	500	50.6	2	250	469	204	60	82.5	52.2
350	14"					120	458	500	58.2	2	250	500	204	60	82.5	59.8
400	16"									2A	315	577	230	80	91	89.9
450	18"									3	400	632	241	86	101	112.7
500	20"									3	400	675	241	86	101	191.7
600	24"									4	500	799	387	130	142	299.4
700	28"									5	600	945	387	130	142	328
800	32"									6	600	985	447	130	142	526



SIGEVAL, S.A

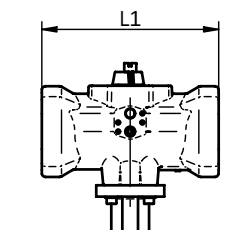
VALVULA DE MARIPOSA "FG(F)" / BUTTERFLY VALVE "FG(F)"
ACT. MANUAL / MANUAL ACT.

REVISION

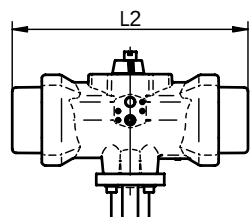
01

FICHA TECNICA N:

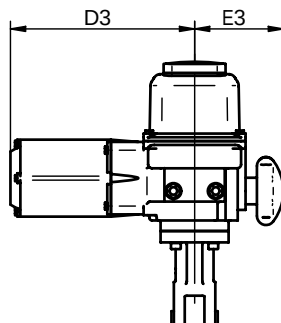
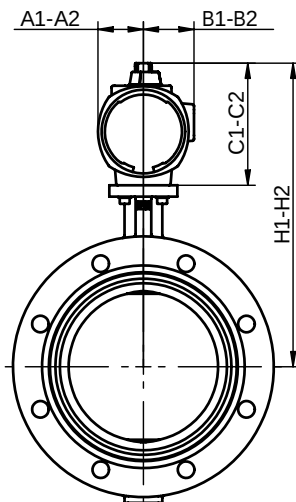
FG(F)-008-DT



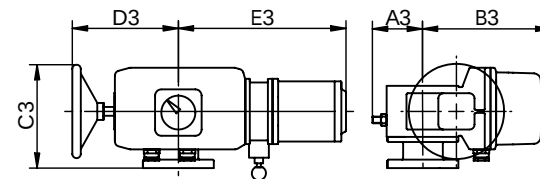
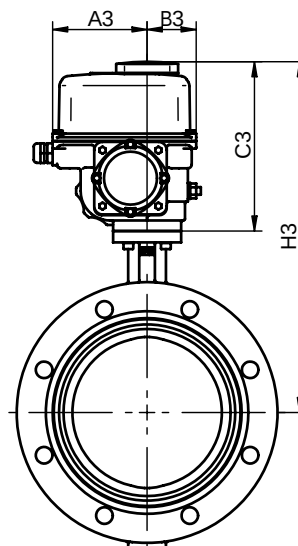
DOBLE EFECTO
DOUBLE ACTING



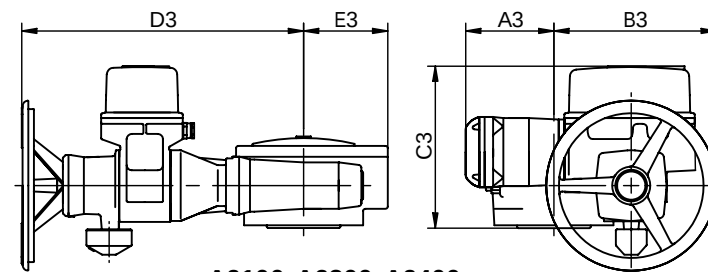
SIMPLE EFECTO
SPRING RETURN



OA15



ASP-AS50-AS80



AS100-AS200-AS400
ASM1 RS600-ASM2 RS1825

DN		DOBLE EFECTO-DOUBLEACTING / SIMPLE EFECTO-SPRINGRETURN														ACT. ELECTRICICO / ELECTRIC ACT.							
mm	Pulg	ACT	A1	B1	C1	H1	L1	Kg1	ACT	A2	B2	C2	H2	L2	Kg2	ACT	A3	B3	C3	D3	E3	H3	Kg3
200	8"	P20	60	67	161	401	234	24.9	P30S	82	94	211	451	479	37.2	OA15	125	65	224	260	98	464	28.2
250	10"	P25	74	78	191	473.5	276	37.5	P40S	106	120	342	624.5	598	68	ASP	226	89	177	340	167	459.5	49.6
300	12"	P30	83	94	211	519	349	58	P40S	106	120	342	650	598	85.3	AS50	226	89	177	340	169	485	65.9
350	14"	P40	106	120	272	610.5	444	74.1	P40S	106	120	272	610.5	598	92.9	AS80	226	89	208	340	169	546.5	74.5
400	16"	P40	106	120	272	652	444	100.5	P50S	122	135	383	763	694	110.9	AS100	114	405	230	236	206	639	118.5
450	18"	P50	122	135	313	693.5	524	128.7								AS200	188	475	281	333	109	661	166.7
500	20"	P50	122	135	313	745.5	524	207.7								AS200	188	475	281	333	109	713	245.7
600	24"															AS400	148	497	281	338	154	775	337.4
700	28"															ASM1	212	567	314	250	192	904	369
800	32"															ASM2	237	712	343	265	197	973	599



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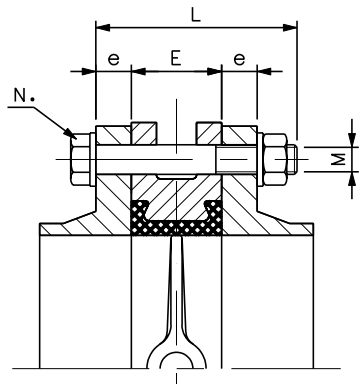
VALVULA DE MARIPOSA "FG(F)" / BUTTERFLY VALVE "FG(F)"
ACTO. AUTOMATICO / AUTOMATIC ACT.

REVISION

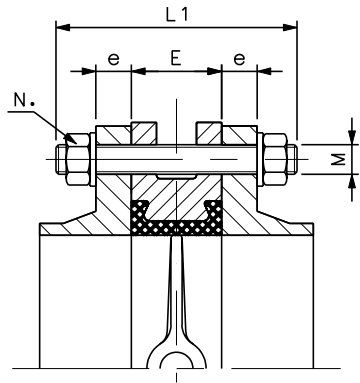
01

FICHA TECNICA N:

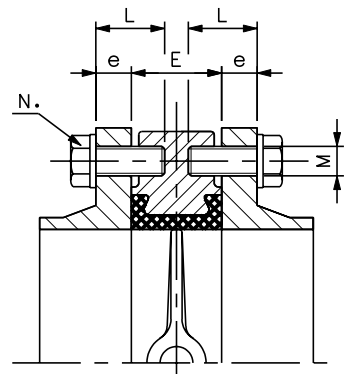
FG(F)-009-DT



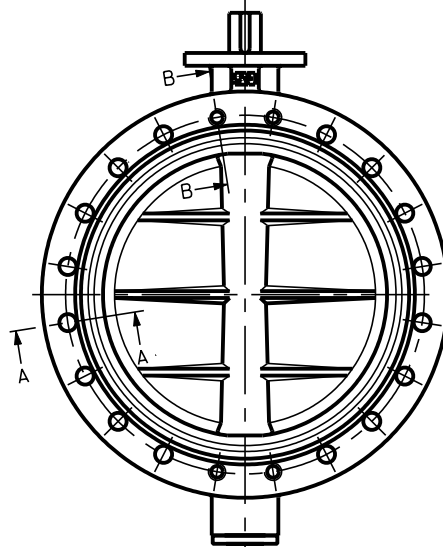
"A-A"
TORNILLO / SCREW



"A-A"
TIRANTE / SCREW



"B-B"
TORNILLO SOLO:
/ SCREW ONLY



DN.450 PN.10 - PN.16
DN.500 PN.16 - ASA 150 Lbs
DN.700 PN.10 - PN.16 - ASA 125 Lbs
DN.800 PN.10 - PN.16 - ASA 125 Lbs

DN	E	PN.10					PN.16					ASA 150 Lbs.				
		e	M	L	L1	N.	e	M	L	L1	N.	e	M	L	L1	N.
200	60	24	M20	130	160	8	24	M20	130	160	12	28.6	W3/4"	140	160	8
250	68	26	M20	150	170	12	26	M24	150	170	12	30.2	W7/8"	160	180	12
300	78	26	M20	160	180	12	28	M24	160	180	12	31.7	W7/8"	170	190	12
350	78	26	M20	160	180	16	30	M24	170	190	16	34.9	W 1"	180	200	12
400	102	26	M24	180	210	16	32	M27	200	220	16	36.5	W 1"	210	230	16
450	114	26	M24	190	220	16	32	M27	210	240	16	39.7	W1 1/8"	230	250	16
			M24	55		8		M27	60		8					
500	127	28	M24	210	230	20	34	M30	230	260	16	46	W1 1/8"	250	280	16
								M30	60		8		W1 1/8"	70		8
600	154	28	M27	240	270	20	36	M33	260	290	20	47.6	W1 1/4"	280	310	20
700	165	30	M27	260	280	20	36	M33	270	300	20	52.5	W1 1/4"	310	340	24
			M27	80		8		M33	85		8		W1 1/4"	110		8
800	193	32	M30	290	320	20	50	M36	330	360	20	57	W1 1/2"	340	380	24
			M30	80		8		M36	100		8		W1 1/2"	95		8



SIGEVAL,S.A.

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

REVISION

FICHA TECNICA N:

01

FG(F)-010-DT



SIGEVAL

BUTTERFLY VALVE TYPE “FLV”

With liner vulcanized to the body



Certification ISO-9001 AENOR



Generalities

Butterfly valve FLV, with liner vulcanized to the body is the result of continuous developments of our company in order to improve both capabilities and performances of our products.

This new type of valve has the same advantages than Sigeval butterfly valves:

- Maintenance is not needed.
- Good behaviour and performance.
- Minimum drop pressure.
- Total tightness.
- Bi-directional flow.

Description and Technical characteristics

This high-quality butterfly valve has replaced the loose liner for a vulcanized version of it. The liner is integrated in one only piece with the body and, consequently, risk of leakages its reduced to minimum.

A long life of the valve is also guaranteed. In several tests prepared by our Quality control team valves have resisted more than 10.000 cycles of opening / closing.

Applications

Because of its design the valve is specially recommended for vacuum and high-speed operations.

According to our experience it is also used with success in naval industry applications.

Material Options

Body

- Cast iron EN GJS 250 (GG-25) plus EPDM or NITRILE vulcanized to the body.
- Nodular cast iron EN GJS400-15 (GGG-40) plus EPDM or NITRILE vulcanized to the body.

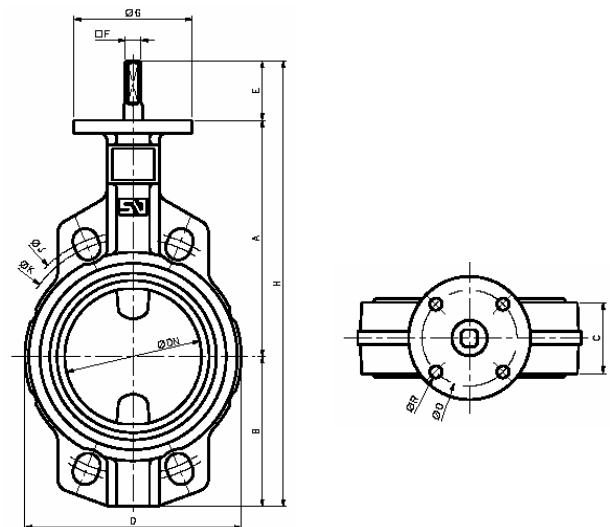
Disc

- Nodular cast iron EN GJS400-15 (GGG-40) plus Epoxy coating.
- Stainless steel CF8M.
- Bronze casting tin DIN 1705 Rg10.

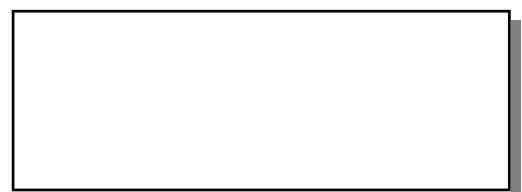
Shafts

- Stainless steel AISI 420, 304, 316.

Technical data



DN		GENERAL DIMENSIONS										
mm	inch	A	B	C	D	E	F	G	H	J	K	WEIG
40	1 1/2"	132	63	33	76	45	12	90	240	110	94	2.0
50	2"	140	80	43	108	45	12	90	265	125	120.7	3.1
65	2 1/2"	154	90.5	46	123	45	12	90	289.5	145	139.7	3.5
80	3"	160	100	46	137	45	12	90	305	160	152.4	3.8
100	4"	180	113	52	165	45	12	90	338	190.5	180	4.8
125	5"	197	129	56	191	45	16	90	371	215.9	210	6.1
150	6"	210	144.5	56	218	45	16	90	399.5	241.3	240	7.4
200	8"	240	172	60	265	45	16	90	457	298.5	295	10.5
250	10"	282.5	220	68	328	45	24	130	547.5	362	350	20.4





SIGEVAL, S.A.

BUTTERFLY VALVES

Type "VV"



UNE-EN-ISO 9001



0 0 9 9

Technical Information

Technical Catalogue
2004 (Ed.02)



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SIGEVAL, S.A.

BUTTERFLY VALVES

Type “VV”



UNE-EN-ISO 9001



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Designation:

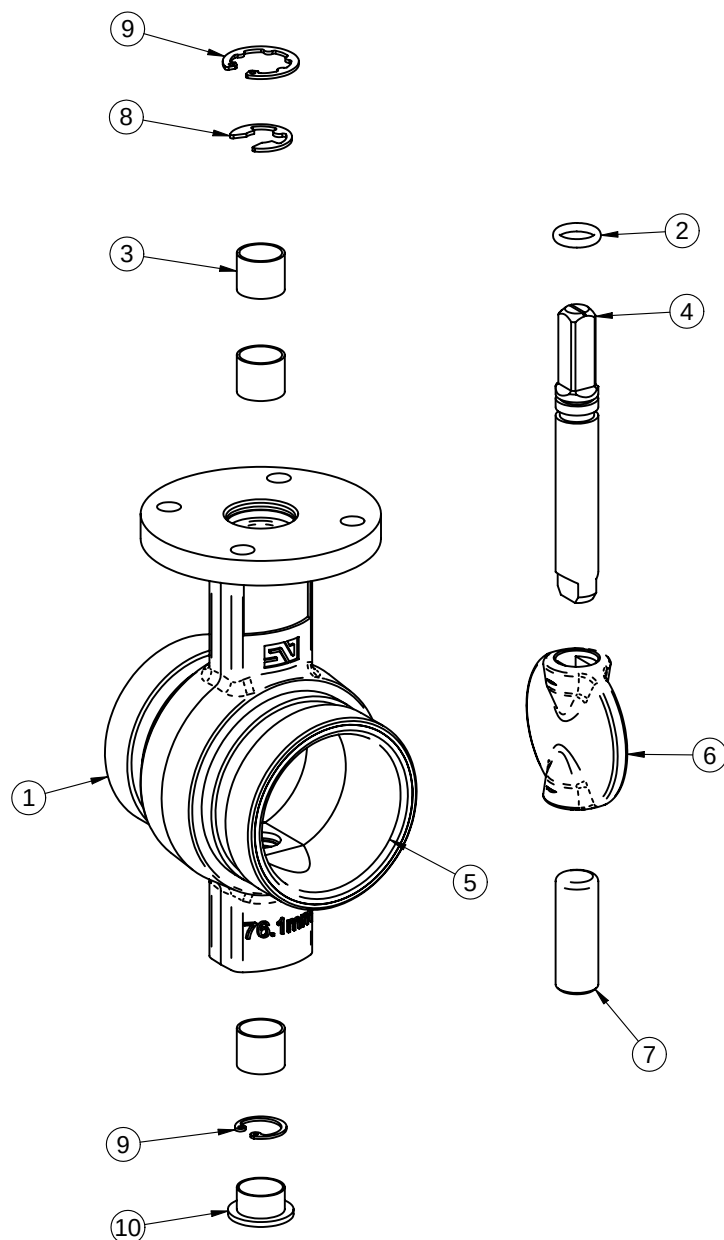
Technical sheet N°:

- “VV” Type Materials Detail DN 65-100.

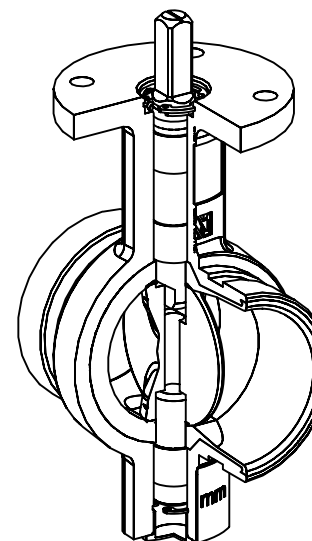
VV -001- DT

- “VV” Type Free Shaft General Dimensions.

VV -007- DT



TECHNICAL DATA	
MAX. SERVICE PRESSURE: 16Kg/cm ²	
HIDROSTATIC AND RESISTANCE TEST	
OPEN VALVE: 24Kg/cm ²	
CLOSED VALVE: 17.6 Kg/cm ²	



10	PLUG	POLIETILENE		1
9	ZEGI RING BODY	NICKEL PLATED STEEL	DIN 984	2
8	RETAINING RING SHAFT	NICKEL PLATED STEEL	DIN 6799	1
7	LOWER SHAFT	ACC. SHEET E-0001		1
6	DISC	ACC. SHEET M-0001		1
5	SEAT VULCANIZED ON BODY	ACC. SHEET A-0001		1
4	UPPER SHAFT	ACC. SHEET E-0001		1
3	BUSHING	ACERO-BZ-PTFE		3
2	"O" RING	NITRILE		1
1	BODY	ACC. SHEET C-0001	COATING EPOXY	1
ITEM	DESIGNATION	MATERIAL	REMARKS	QUAN



SIGEVAL S.A

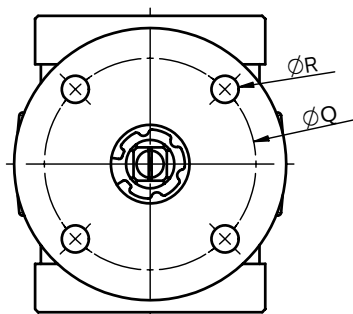
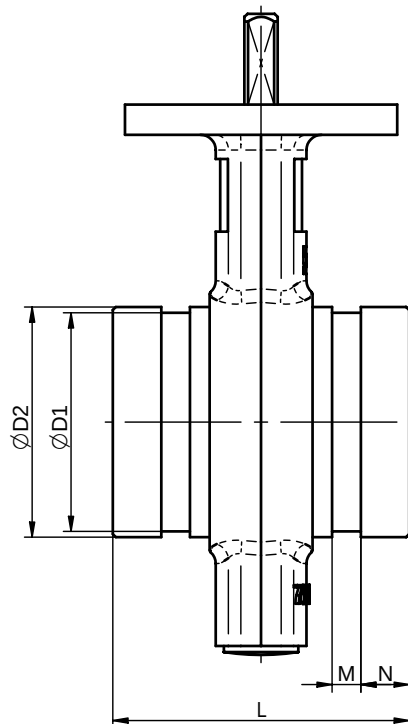
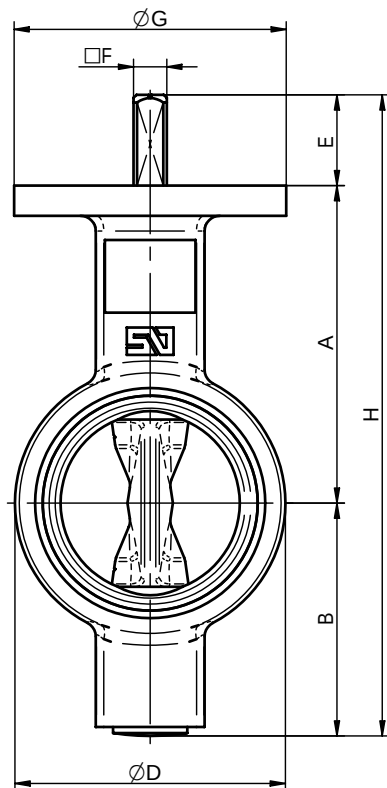
BUTTERFLY VALVE "VV" TYPE DN.65/100. MATERIALS DETAIL

REVISION

01

TECHNICAL SHEET:

VV-001-DT



DN		DIMENSIONES GENERALES / GENERAL DIMENSIONS													CABEZAL HEAD		
mm	Pulg	A	B	D	D1	D2	E	F	G	H	L	M	N	Kg	ISO	Q	R
65	2 ½"	105	77	89.5	72.3	76.1	30	11	90	212	97	9.5	16	2.6	F-07	70	4x9
80	3"	112	85	102	84.9	88.9	30	11	90	227	97	9.5	16	3.3	F-07	70	4x9
100	4"	135	97	128	110.1	114.3	30	11	90	262	116	9.5	16	3.9	F-07	70	4x9



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VALVULA DE MARIPOSA TIPO "VV"
BUTTERFLY VALVE "VV" TYPE

REVISION

01

FICHA TECNICA N:

VV-007-DT



SIGEVAL, S.A.

BUTTERFLY VALVES

“MANUAL CONTROLS”



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“MANUAL CONTROLS”



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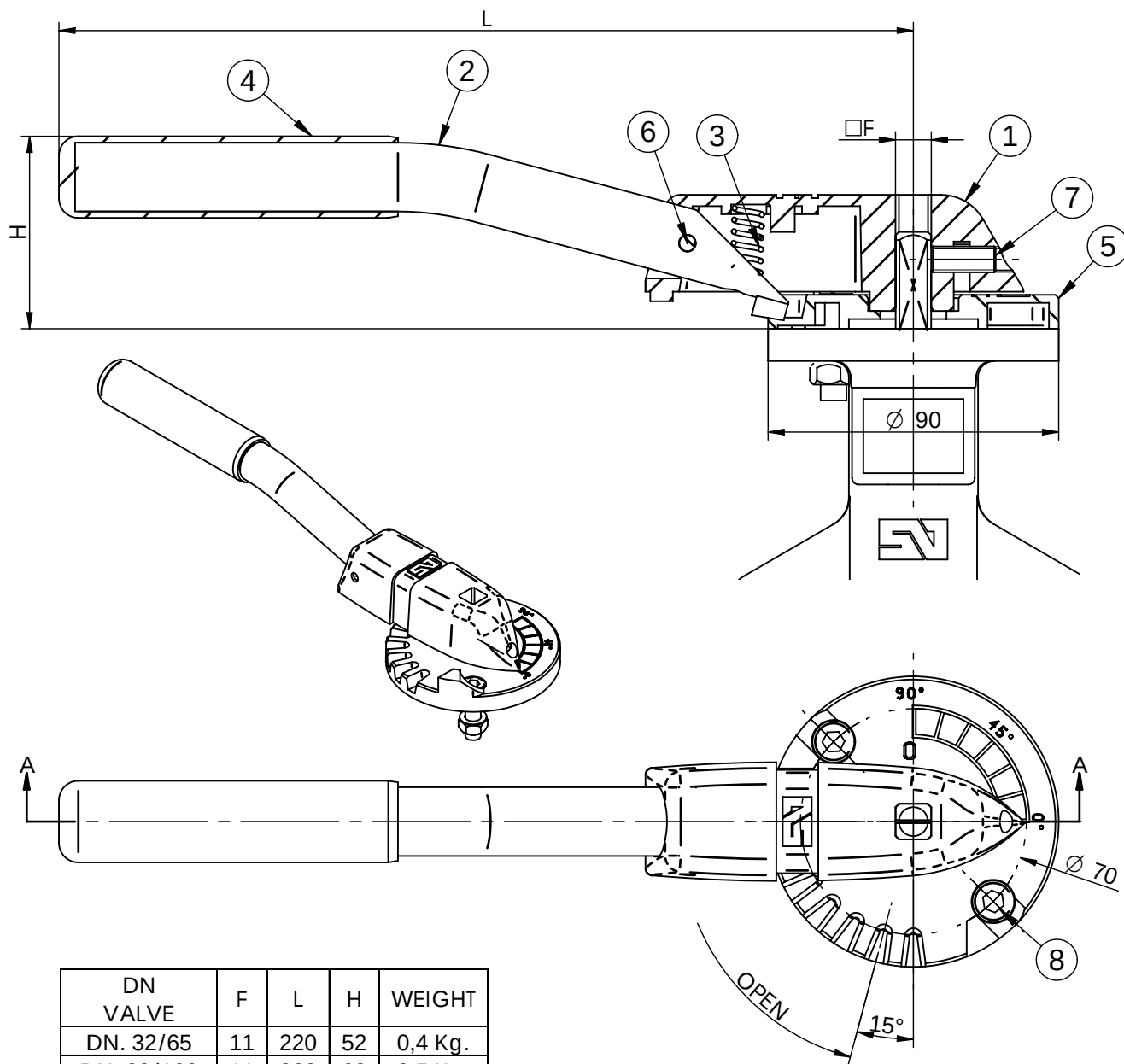
INDEX

Designation:

- Handlever General Dimensions.
- Regulation Handlever general Dimensions. DN 32 - 200.
- Regulation Handlever general Dimensions. DN 250 - 300.
- Handlever Whit Limit Switch End General Dimensions.
- Selection Table Manual GearBox.
- Operation by Gearbox General Dimensions. (Chapt. 1)
- Operation by Gearbox General Dimensions.(Chapt. 2)
- Selection Table Declutchable GearBox.
- Operation by Declutchable GearBox For Pneumatics Actuators General Dimensions.
- Planetary Gear Reducing Operation General Dimensions.
- Operation by Flywheel General Dimensions.



"MN" HANDLEVER DN.32/200 GENERAL DIMENSIONS

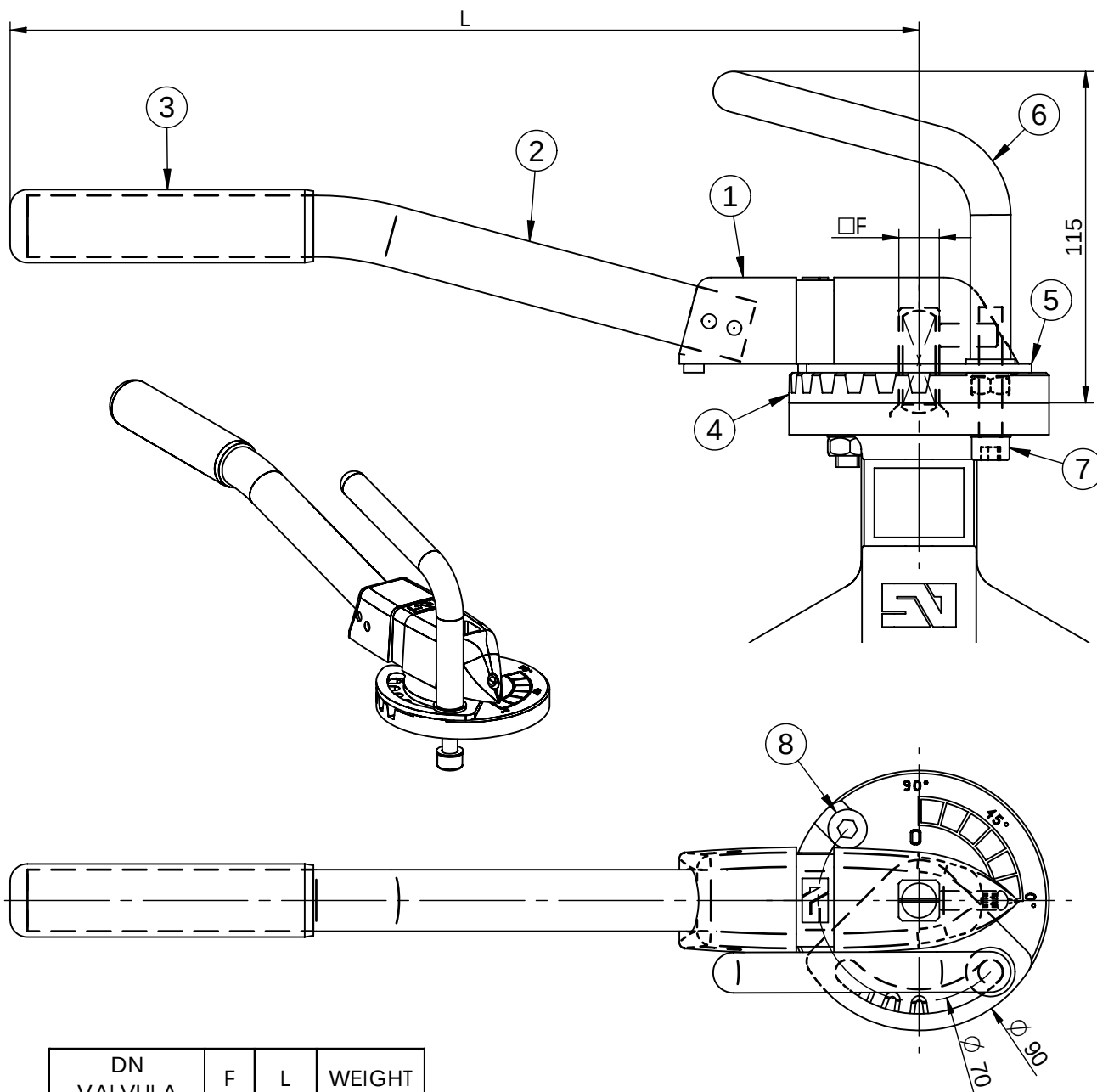


DN VALVE	F	L	H	WEIGHT
DN. 32/65	11	220	52	0,4 Kg.
DN. 80/100	11	260	63	0,5 Kg.
DN. 125/200	14	310	78	0,6 Kg.

8	ALLEN SCREW DIN 912 + NUT DIN 934	ZINC PLATED STEEL	2
7	ALLEN SCREW DIN 916	ZINC PLATED STEEL	1
6	ELASTIC PIN	CARBON STEEL	1
5	END FLANGE	REINFORCE POLYAMIDE	1
4	COVER	VINYL	1
3	SPRING	STAINLESS STEEL AISI 302	1
2	LEVER ARM	STEEL TUBE + EPOXY	1
1	BASIC PIECE	ALUMINIUM CAST + EPOXY	1
POS	DESIGNATION	MATERIAL	QTY



"MR" HANDLEVER DN.32/200 GENERAL DIMENSIONS

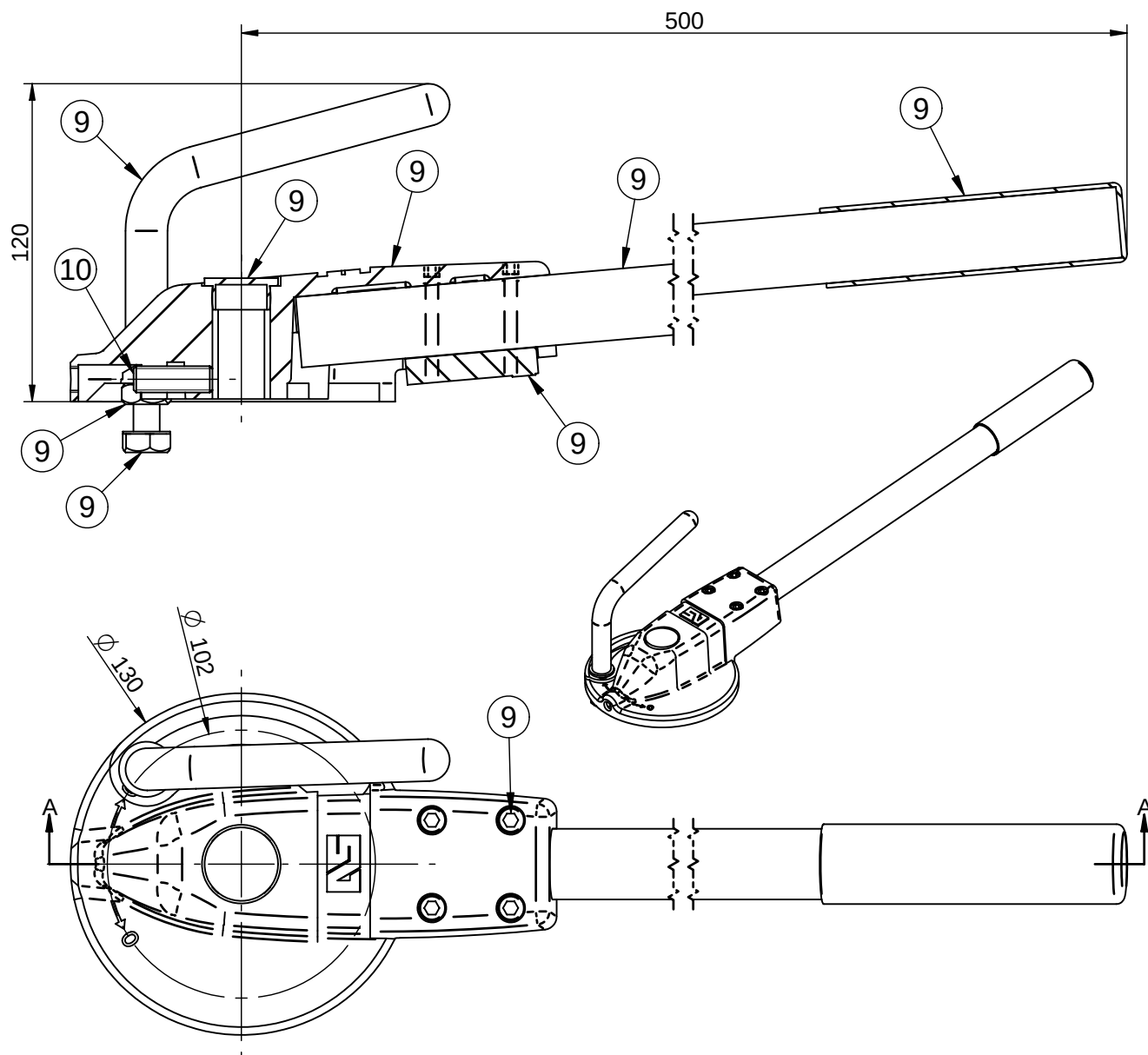


DN VALVULA	F	L	WEIGHT
DN. 32/100	11	260	0,6 Kg.
DN. 125/200	14	310	0,7 Kg.

8	ALLEN SCREW DIN 912 + NUT DIN 934	ZINC PLATED STEEL	1
7	ALLEN SCREW DIN 912 + NUT DIN 934	ZINC PLATED STEEL	1
6	BLOCKING LEVER	STAINLESS STEEL AISI 304	1
5	BLOCKING DISC	STAINLESS STEEL AISI 304	1
4	END FLANGE	REINFORCED POLYAMIDE	1
3	COVER	VINYL	1
2	LEVER ARM	STEEL TUBE + EPOXY	1
1	BASIC PIECE	ALUMINIUM CAST + EPOXY	1
POS	DESIGNATION	MATERIAL	QTY



"MR" HANDLEVER DN.250/300 GENERAL DIMENSIONS

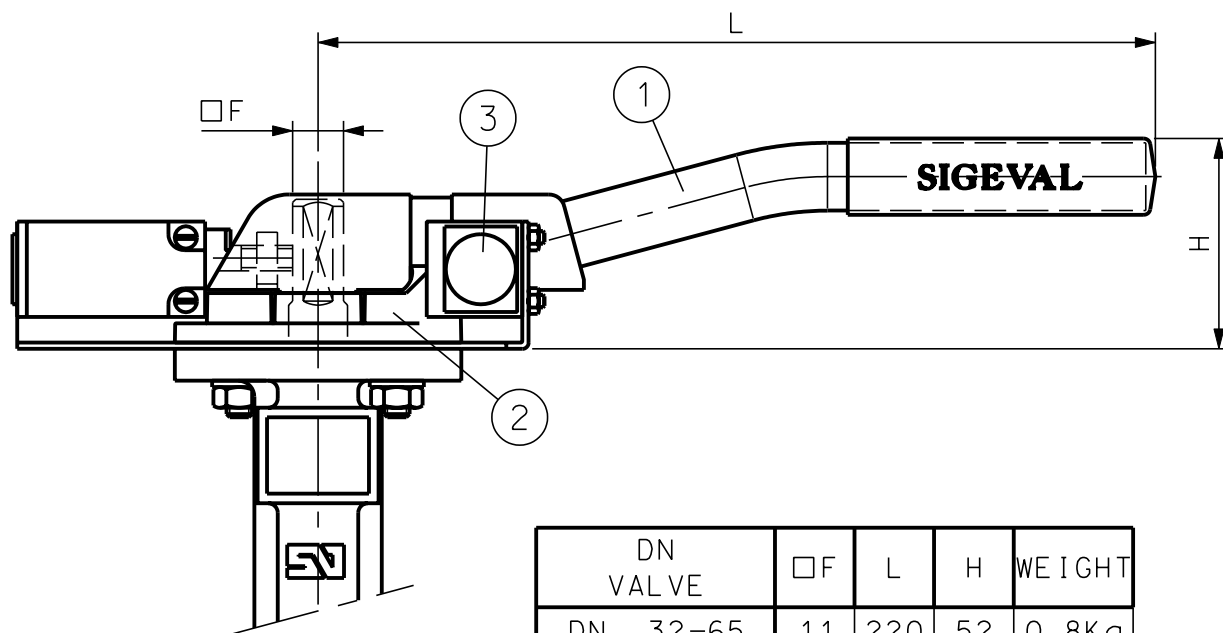


WEIGHT 1.7 Kg

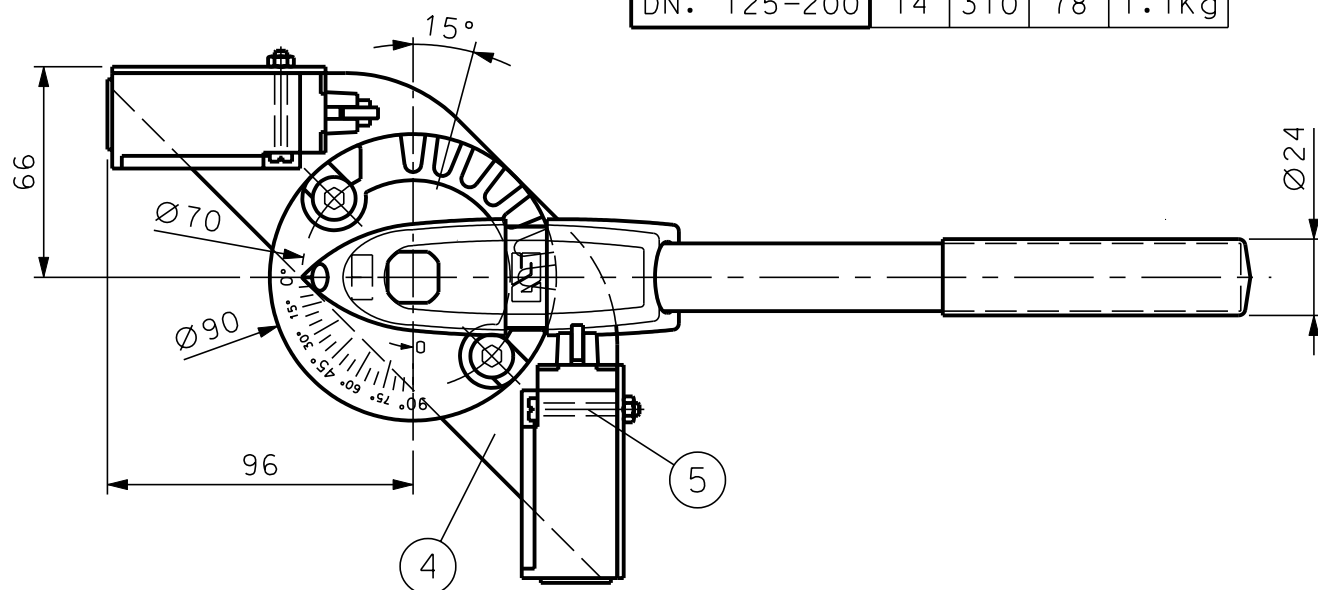
10	ALLEN SCREW DIN 916	ZINC PLATED STEEL	1
9	COVER	POLYETILENE	1
8	NUT DIN 934	ZINC PLATED STEEL	1
7	SCREW DIN 931	ZINC PLATED STEEL	1
6	BLOCKING LEVER	STAINLESS STEEL	1
5	ALLEN SCREW DIN 912 + NUT DIN 934	ZINC PLATED STEEL	4
4	FLANGE	ALUMINIUM CAST + EPOXY	1
3	COVER	VINYL	1
2	LEVER ARM	STEEL TUBE + EPOXY	1
1	BASIC PIECE	ALUMINIUM CAST + EPOXY	1
POS	DESIGNATION	MATERIAL	QTY



"MN" HANDLEVER + LIMIT SWITCH END DN. 32-200 GENERAL DIMENSIONS



DN VALVE	□F	L	H	WEIGHT
DN. 32-65	11	220	52	0.8Kg
DN. 80-100	11	260	63	0.9Kg
DN. 125-200	14	310	78	1.1Kg



5	SCREW + NUT M4x35	ZINC PLATED STEEL	4
4	LIMIT SWITCH BASE PLATE	ZINC PLATED CARBON STEEL	1
3	LIMIT SWITCH END	TELEMECANIQUE XCK-P102	2
2	END FLANGE	REINFORCED POLYAMIDE	1
1	LEVER	ALUMINIUM - STEEL+EPOXY	1
POS	DESIGNATION	MATERIAL	QTY

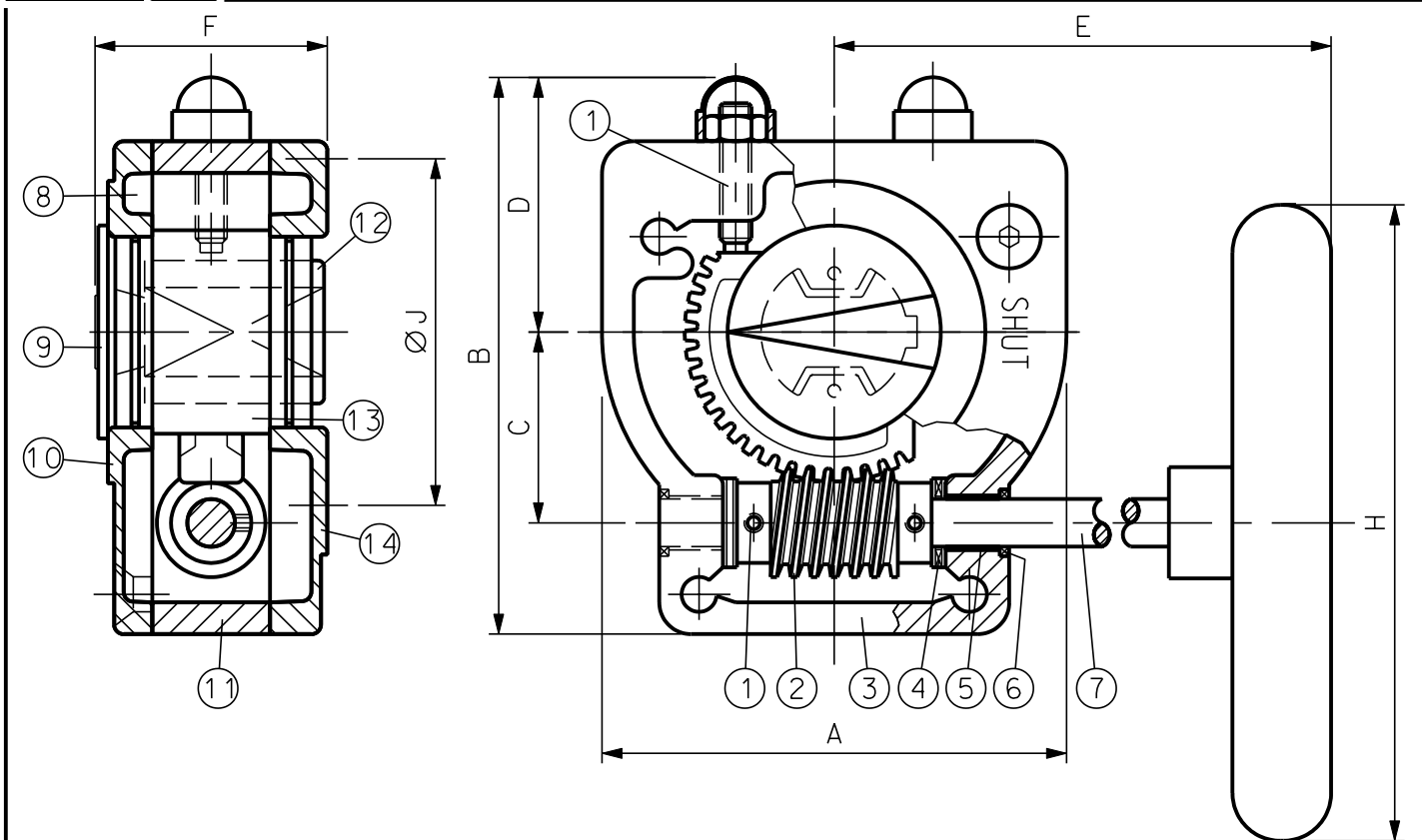


SELECTION TABLE MANUAL GEARBOXES

DN	PN-10	PN-16	DN
32	"MDV-0" (Ø11) Handwheel Ø125		32
40			40
50			50
65			65
80			80
100			100
125	"MDV-1" (Ø14) Handwheel Ø160		125
150			150
200			200
250	"MDV-2" (Ø22) Handwheel Ø250	"MDV-2" (Ø22) Handwheel Ø250	250
300		"MDV-2A" (Ø22) Handwheel Ø315	300
350			350
400	"MDV-2A" (Ø35) Volante Ø315	"MDV-3" (Ø35) Handwheel Ø315	400
450	"MDV-3" (Ø55) Handwheel Ø400		450
500			500
600	"MDV-4" (Ø60) Handwheel Ø500		600
700	"MDV-5" (Ø65) Handwheel Ø600		700
800	"MDV-6" (Ø80) Handwheel Ø600		800



OPERATION BY "MDV" GEARBOX GENERAL DIMENSIONS



THECNICAL NOTE

SIGEVAL REF.	Torque. Output	Torque Input	Ratio	Turns N.	Weight	Mechanical Advantage
MDV-0	125 Nm	13 Nm	40:1	10	0.8 Kg	9.6
MDV-1	250 Nm	21 Nm	37:1	9.25	1.8 Kg	11.9
MDV-2	500 Nm	39 Nm	45:1	11.25	3.3 Kg	12.8
MDV-2A	1000 Nm	100 Nm	40:1	10	7 Kg	10

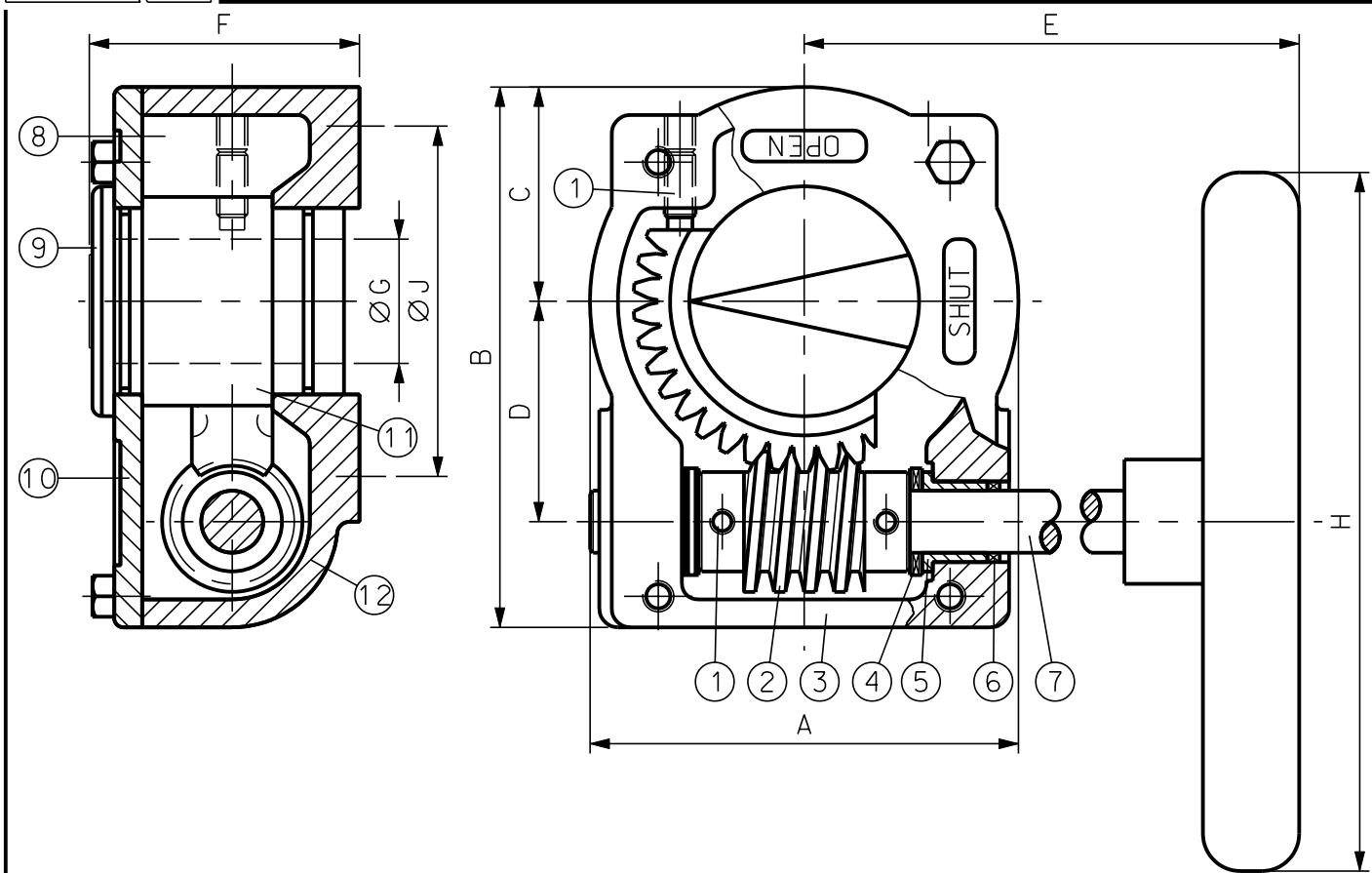
DIMENSIONS

SIGEVAL	A	B	C	D	E	F	H	J
MDV-0	80	110	42.5	44	115	46	100	70(F07)
MDV-1	100	133	50	58	125	58	150	70(F07)
MDV-2	146	178	60	83	200	73	200	102(F10)
MDV-2A	175	218	80	91	236	85.5	300	F10-F12

14	BODY BOTTOM	ALUMINIUM	AL 231	1
13	QUADRANT	DUCTILE IRON	GGG-40/ASTM A356	1
12	INSERTS	SINTERED STEEL		1
11	BODY	ALUMINIUM	6063 T6	1
10	COVERPLATE	ALUMINIUM	AL 231	1
9	POSITION INDICATOR	PP		1
8	GREASE	MI-SETRAL 9M		1
7	WORMSHAFT	CARBON STEEL	C45/AISI 1045	1
6	OIL SEAL	NITRILE		2
5	PLAIN BEARING	PERMAGLIDE	P 10	2
4	NEEDLE BEARING	AXK-AS		2
3	GASKET	OIL PAPER		1
2	WORM	CARBON STEEL	C45/AISI 1045	1
1	SET SCREW	STEEL	45H/DIN 915	2
POS	DESIGNATION	MATERIAL	REMARKS	QTY



OPERATION BY "MDV" GEARBOX GENERAL DIMENSIONS



TECHNICAL NOTES

REF. SIGEVAL	Torque. Output	Torque. Input	Ratio	Turns N.	Mechanical Advantage	Peso
MDV-3	1620 Nm	132 Nm	38:1	9.5	9.5	14 Kg
MDV-4	4160 Nm	242 Nm	52:1	13	13	32 Kg
MDV-5	4160 Nm	147 Nm	84:1	21	28.3	32 Kg
MDV-6	6800 Nm	125 Nm	208:1	52	54.4	45 Kg

DIMENSIONS

REF. SIGEVAL	A	B	C	D	E	F	H	J
MDV-3	200	226	100	86	235	90	300	F12-F14
MDV-4	285	323	143	130	305	125	400	F16-F25
MDV-5	285	323	143	130	305	125	600	F16-F25
MDV-6	285	402.5	143	130	447	155	600	F16-F25

12	BODY	CAST IRON	GG-20/ASTM A48	1
11	QUADRANT	DUCTILE IRON	GGG-40/ASTM A356	1
10	COVERPLATE	CAST IRON	GG-20/ASTM A48	1
9	POSITION INDICATOR	PP		1
8	GREASE	MI-SETRAL 9M		1
7	SHAFT	CARBON STEEL	C45/AISI 1045	1
6	OIL SEAL	NITRILE		2
5	BUSHING	SINTERED STEEL	FP 15	2
4	NEEDLE BEARING	AXK-AS		2
3	GASKET	OIL PAPER		1
2	WORM	CARBON STEEL	C45/AISI 1045	1
1	SET SCREW	STEEL	8.8/DIN 915	2
POS	DESIGNATION	MATERIAL	REMARKS	QTY

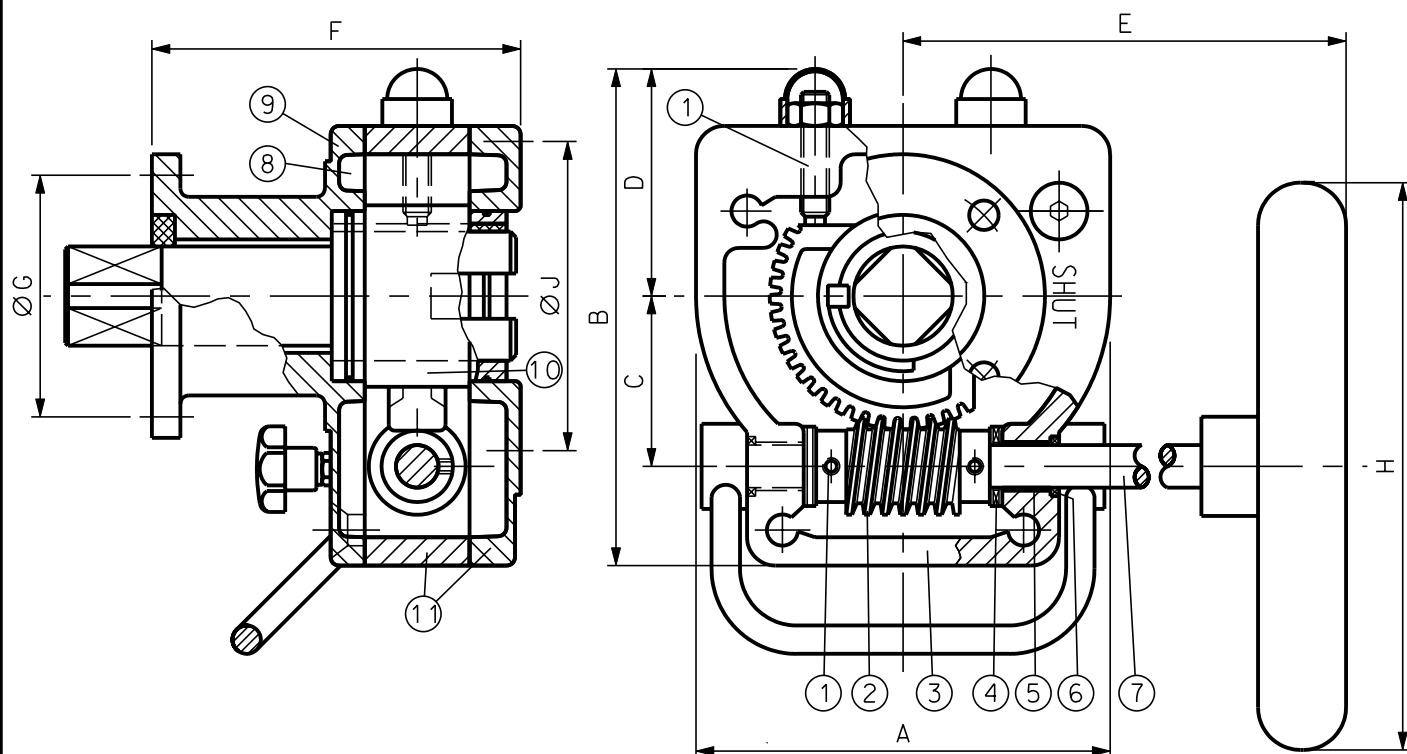


SELECTION TABLE OF DECLUTCHABLE GEARBOXES FOR PNEUMATIC ACTUATORS

TYPE	TORQUE	PN.6	PN.10	PN.16
ILG/D-232-10	250 Nm	DN.32/250	DN.32/200	DN.32/150
ILG/D-550	500 Nm	DN.300/350	DN.250/300	DN.200/250
ILG/D-880	950 Nm	DN.400	DN.350	DN.300
ILG/D-1250	1250 Nm	DN.450	DN.400	DN.350
ILG/D-1950	1800 Nm	DN.500	DN.450	DN.400



OPERATION BY DECLUTCHABLE GEARBOXES FOR PNEUMATIC ACTUATORS



TECHNICAL DATA

ALECTO TYPE	Torque Output	Torque Input	Ratio.	Turns N.	Mechanical Advantage	Weight
ILG/D 232-10	250 Nm	25 Nm	37:1	9.25	10.0	2 Kg
ILG/D 550	500 Nm	45 Nm	56:1	14	11.1	11 Kg
ILG/D 880	950 Nm	75 Nm	42:1	10.5	12.7	15 Kg
ILG/D 1250	1250 Nm	100 Nm	50:1	12.5	12.5	22 Kg
ILG/D 1950	1800 Nm	180 Nm	59:1	14.8	10.0	38 Kg

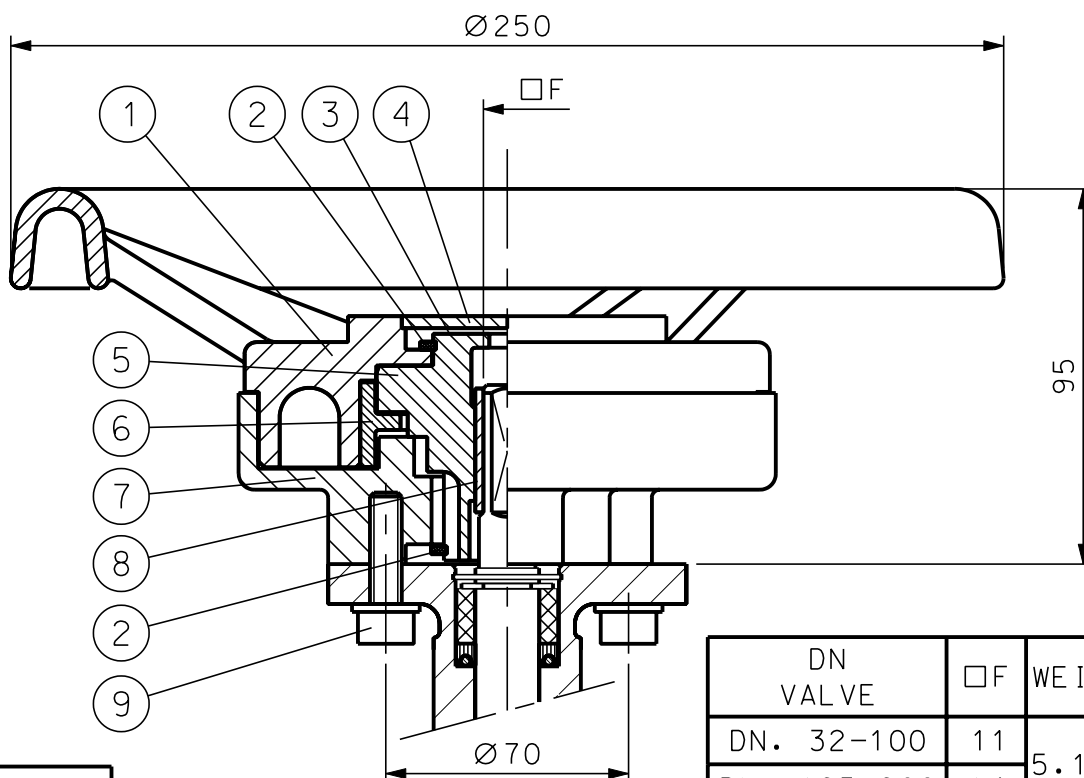
GENERAL DIMENSIONS

ALECTO TYPE	A	B	C	D	E	F	G	H	J
ILG/D 232-10	146	175	61	61	115	130	F07-F10	100	F07-F12
ILG/D 550	140	175	71	71	200	200	F10-F12	200	F07-F14
ILG/D 880	200	226	100	86	235	235	F12-F14	300	F10-F16
ILG/D 1250	220	258	110	104	170	170	F14-F16	400	F10-F16
ILG/D 1950	285	322	142	130	175	175	F16-F25	400	F12-F25

11	BODY	ALUMINIUM	GG-20/ASTM A48	1
10	QUADRANT	DUCTILE IRON	GGG-40/ASTM A356	1
9	COVERPLATE	ALUMINIUM	GG-20/ASTM A48	1
8	GREASE	MI-SETRAL 9M		1
7	WORMSHAFT	CARBON STEEL	C45/AISI 1045	1
6	OIL SEAL	NITRILE		2
5	PLAIN BEARING	PERMAGLIDE	FP 15	2
4	NEEDLE BEARING	AXK-AS		2
3	GASKET	OIL PAPER		1
2	WORM	CARBON STEEL	C45/AISI 1045	1
1	SET SCREW	STEEL	8.8/DIN 915	2
POS	DESIGNATION	MATERIAL	REMARKS	QTY



PLANETARY GEAR – REDUCING OPERATION
TYPE "MDVV" DN. 32-200 GENERAL DIMENSIONS



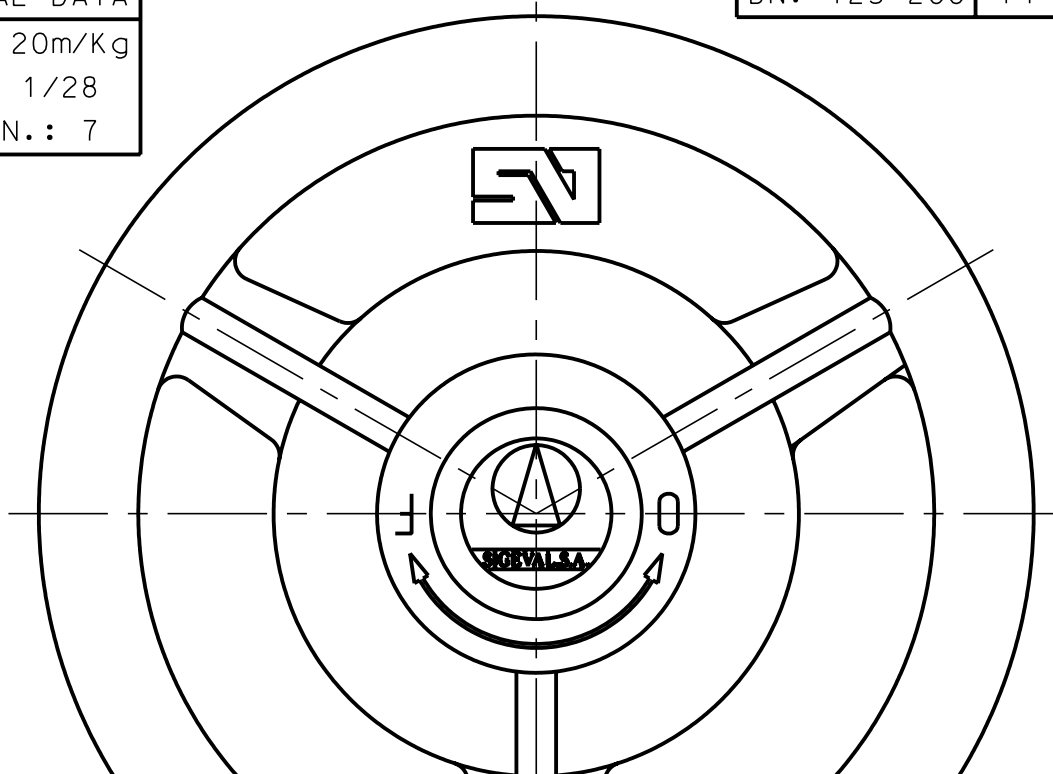
THECNICAL DATA

TORQUE: 20m/Kg

RATIO: 1/28

TURNS N.: 7

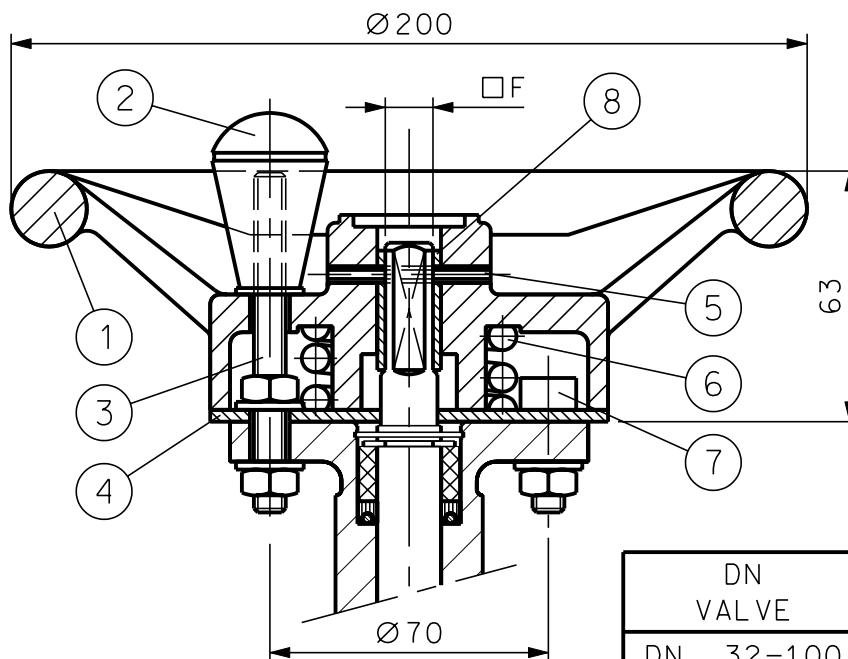
DN VALVE	□F	WEIGHT
DN. 32-100	11	5.10Kg
DN. 125-200	14	



9	ALLEN SCREW DIN 912	CADMIUM STEEL M8x30	4
8	BUHSING DN.32/100	CARBON STEEL	1
7	LID	NOD.CAST IRON DIN GGG-45	1
6	CROWN	NOD.CAST IRON DIN GGG-45	1
5	PINION	NOD.CAST IRON DIN GGG-45	1
4	PRESSURE SEALED LID	COLOURLESS METHACRYLATE	1
3	POSITION INDICATOR		1
2	ZEGI RING	BRONZED STEEL UNE 26074	2
1	FLYWHEEL	CAST IRON DIN GG 25	1
POS	DESIGNATION	MATERIAL	QTY



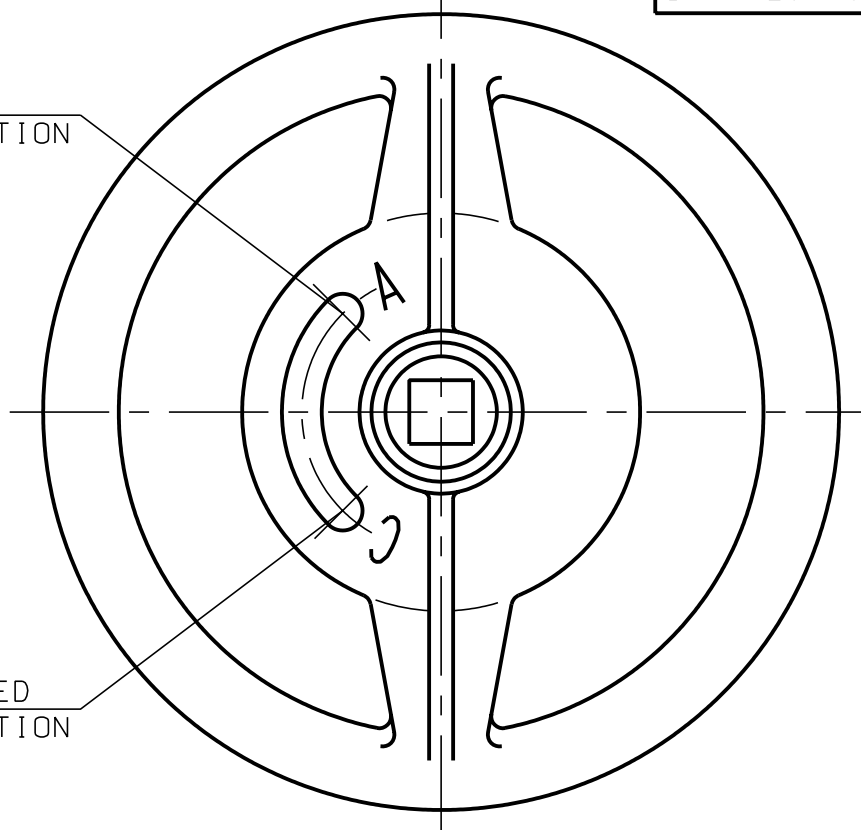
FLYWHEEL OPERATED TYPE "V" DN. 32-150 GENERAL DIMENSIONS



DN VALVE	□F	WEIGHT
DN. 32-100	11	2.50Kg
DN. 125-150	14	

OPEN
POSITION

CLOSED
POSITION



8	BUSHING DN.32/100	CARBON STEEL	1
7	ALLEN SCREW DIN 912	CADMIUM STEEL M8x30	2
6	SPRING	STAINLESS STEEL AISI 304	1
5	ELASTIC PIN D.4.25x40	STEEL	1
4	FRICTION DISC	CADMIUM STEEL	1
3	STUD M8x50 DIN 975	STAINLESS STEEL AISI 304	1
2	TIGHTEN PIECE	BAKELITE	1
1	FLYWHEEL	CAST IRON DIN GG 25	1
POS	DESIGNATION	MATERIAL	QTY



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BUTTERFLY VALVES

"PNEUMATICS CONTROLS"



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BUTTERFLY VALVES

“PNEUMATICS CONTROLS”



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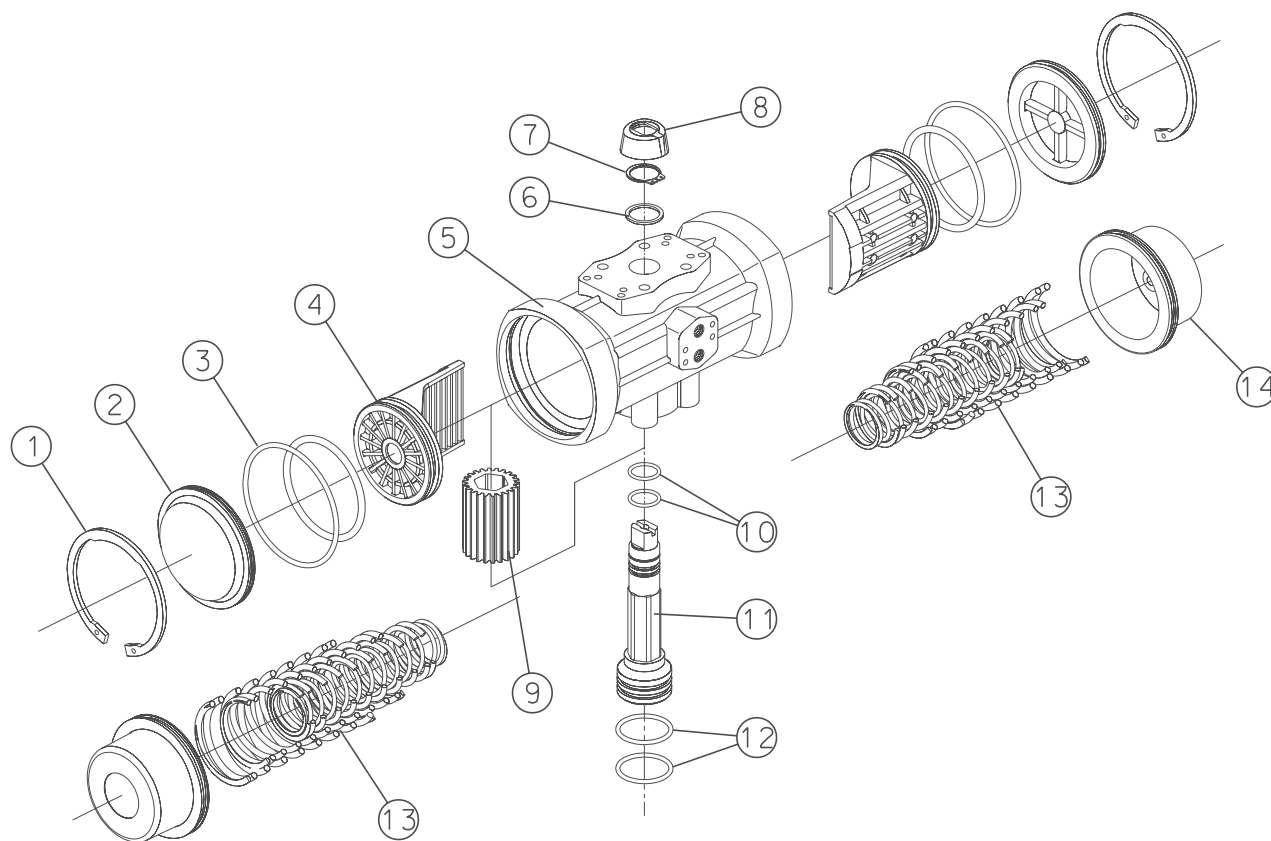
INDEX

Designation:

- Pneumatic Actuator Double Acting and Spring Return Material disassembly.
- Selection Table Pneumatic Actuators.
- Operation by Pneumatic Actuator Double Acting General Dimensions.
- Operation by Pneumatic Actuator Spring Return General Dimensions.
- Operation by Pneumatic Actuator Double Acting and Spring Return Technical Datas.
- Butterfly Valve With Pneumatic Actuator Double Acting and Spring Return Installation Diagram .



PNEUMATIC ACTUATOR MATERIAL DISASSEMBLY



15	PISTON O-RING	NBR	2-4
14	SPRING RETURN CAP	ALUMINIUM ALLOY + RILSAN	2
13	SPRINGS SET	STEEL DIN 17-223-C	-
12	O-RING	NBR	2
11	SHAFT	STAINLESS STEEL AISI 303	1
10	O-RING	NBR	2
9	GEAR	ALUMINIUM + CATAFORESIS	1
8	POSITION INDICATOR	POLYAMIDE	1
7	SEEGER RING	STEEL + NICKEL	1
6	WASHER	POLYAMIDE 6	1
5	CYLINDER	ALUMINIUM ALLOY + RILSAN	1
4	PISTON	POLYARILAMIDE	2
3	CAP O-RING	NBR	2
2	DOUBLE ACTING CAP	ALUMINIUM ALLOY + RILSAN	2
1	SEEGER RING	STEEL + CATAPHORESIS	2
POS	DESIGNATION	MATERIAL	QTY



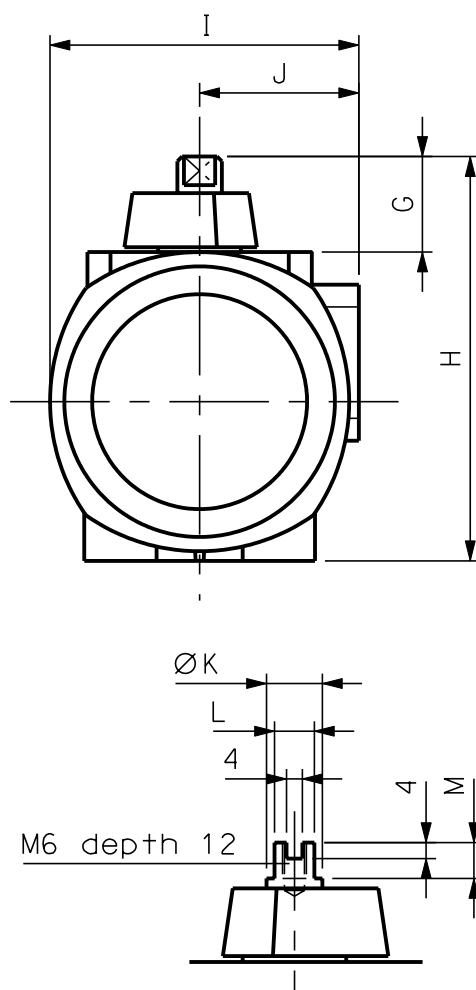
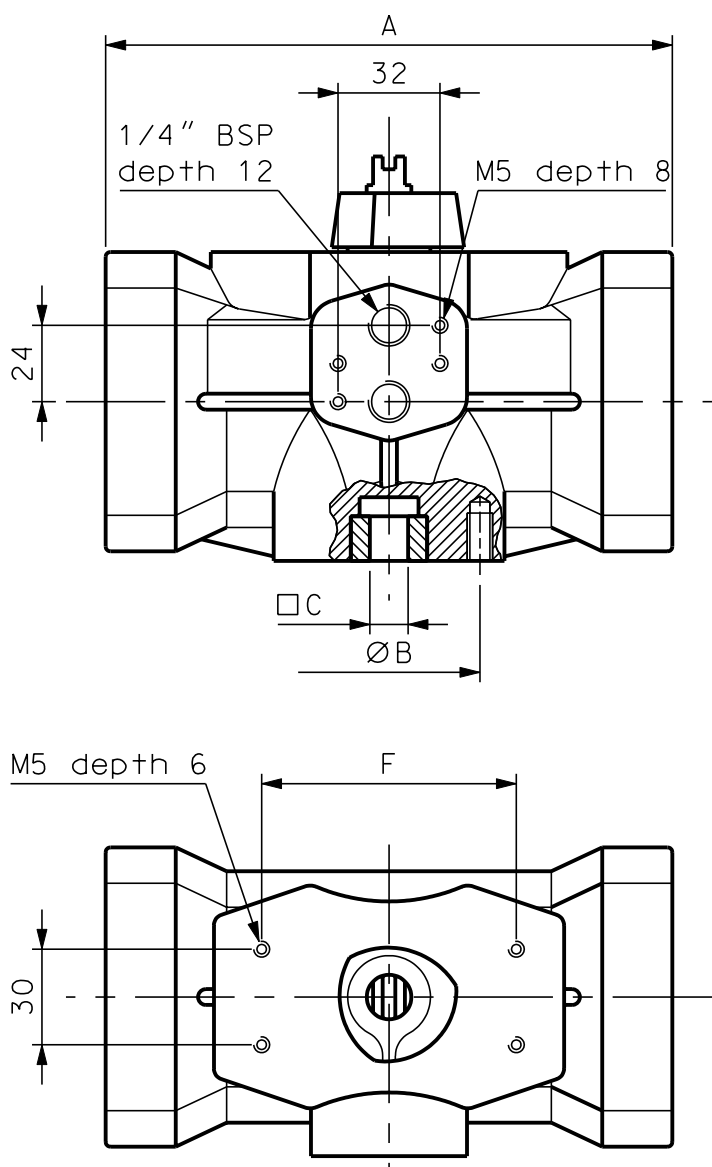
SELECTION TABLE PNEUMATIC ACTUATORS

DOUBLE ACTING TYPE	AIR TORQUE 6 bar	PN.6	PN.10	PN.16
P00	25 Nm	DN.32/65	DN.32/50	DN.32/50
P05	49.7 Nm	DN.80/100	DN.65/100	DN.65/80
P10	71 Nm	DN.125	DN.125	DN.100
P15	116.5 Nm	DN.150	DN.150	DN.125
P20	165.5 Nm	DN.200	DN.200	DN.150
P25	290 Nm	DN.250	DN.250	DN.200
P30	462.1 Nm	DN.300/350	DN.300	DN.250/300
P40	871.4 Nm	DN.400	DN.350/400	DN.350
P50	2187 Nm	DN.450/600	DN.450/500	DN.400/450

SPRING RETURN TYPE	AIR TORQUE 6 bar	PN.6	PN.10	PN.16
P00S	11.3 Nm	DN.32/50	DN.32/50	
P05S	21.8 Nm	DN.65	DN.65	DN.32/50
P10S	32.3 Nm	DN.80/100	DN.80	DN.65
P15S	49 Nm		DN.100	DN.80
P20S	62.9 Nm	DN.125	DN.125	DN.100
P25S	131.4 Nm	DN.150	DN.150	DN.125
P30S	180 Nm	DN.200	DN.200	DN.150
P40S	492 Nm	DN.250/350	DN.250/350	DN.200/300
P50S	758 Nm	DN.400	DN.400	DN.350



PNEUMATIC ACTUATOR DOUBLE ACTING GENERAL DIMENSIONS

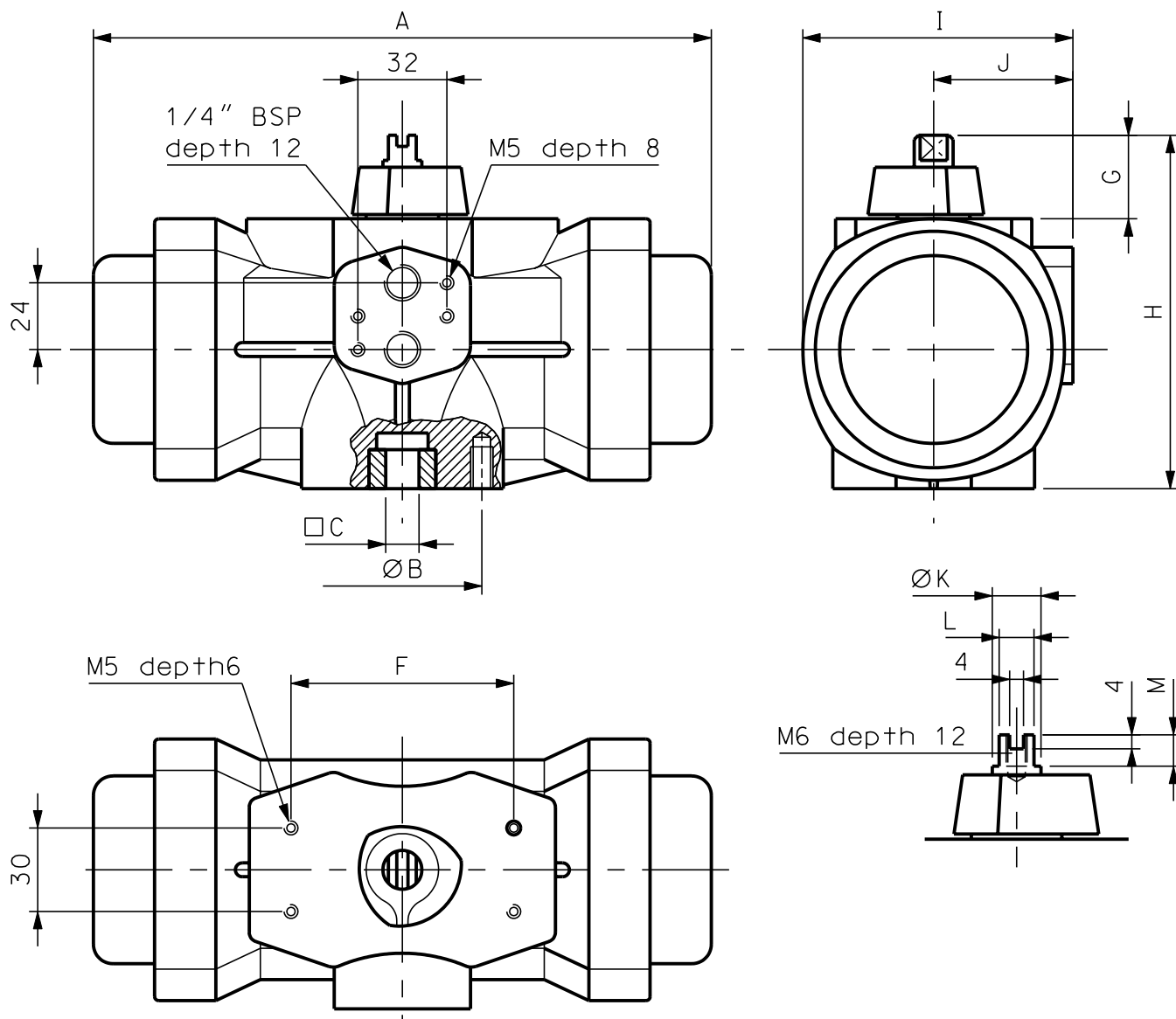


GENERAL DIMENSIONS

MODELS	A	B	C	F	G	H	I	J	K	L	M	Weight
P05	146	F05-F07	12	80	30	122	98	53	13.8	10	11	1.5 K
P10	182	F05-F07	12	80	30	127	102	55	13.8	10	11	1.87 K
P15	204	F05-F07	16	80	30	148	115	60	13.8	10	11	2.6 K
P20	234	F05-F07	16	80	30	161	127	67	21.8	16	11	3.57 K
P25	276	F07-F10	30	80	30	191	152	78	21.8	16	11	5.9 K
P30	349	F07-F10	30	80	30	211	177	94	21.8	16	11	8.8 K
P40	444	F12	36	130	50	272	226	120	42	32	20	17.6 K
P50	524	F14	36	130	50	313	257	135	42	32	20	35 K



PNEUMATIC ACTUATOR SPRING RETURN GENERAL DIMENSIONS



GENERAL DIMENSIONS

MODELS	A	B	C	F	G	H	I	J	K	L	M	Weight
P05S	194	F05-F07	12	80	30	122	98	53	13.8	10	11	2.3 K
P10S	236	F05-F07	12	80	30	127	102	55	13.8	10	11	2.58 K
P15S	256	F05-F07	16	80	30	148	115	60	13.8	10	11	3.95 K
P20S	308	F05-F07	16	80	30	161	127	67	21.8	16	11	5.76 K
P25S	365	F07-F10	30	80	30	191	152	78	21.8	16	11	9.2 K
P30S	479	F07-F10	30	80	30	211	177	94	21.8	16	11	15.9 K
P40S	598	F12	36	130	50	272	226	120	42	32	20	36.4 K
P50S	694	F14	36	130	50	313	257	135	42	32	20	58.4 K



SPRING RETURN ACTUATORS TORQUES. Nm.

MODEL	SPRING NUMBER EACH SIDE	SPRING		AIR TO 6 bar	
		INITIAL	END	INITIAL	END
P05S	4	31.3	21.8	27.9	18.4
P10S	4	46.6	32.2	38.7	24.4
P15S	5	69.5	49	67.4	47
P20S	5	107.3	62.9	102.5	58.1
P25S	5	197.1	131.4	158.6	92.9
P30S	4	273.7	179.9	289.3	145
P40S	4	766.9	491.6	688.3	413
P50S	5	1274.9	758	1309.3	792.5

DOUBLE ACTING ACTS. TORQUES. Nm.

MODEL	AIR TO 6 bar
P05	49.7
P10	71
P15	116.5
P20	165.5
P25	290
P30	469.2
P40	1179.9
P50	2067.4

WEIGHTS

MODEL	WEIGHT Kg
P05S	2.3
P10S	2.58
P15S	4
P20S	5.76
P25S	9.2
P30S	15.9
P40S	36.4
P50S	58.4

MODEL	WEIGHT Kg
P05	1.5
P10	1.87
P15	2.6
P20	3.57
P25	5.9
P30	9.1
P40	17.6
P50	30.7

CAPACITY IN LITRES TO ATMOSPHERIC PRESSURE

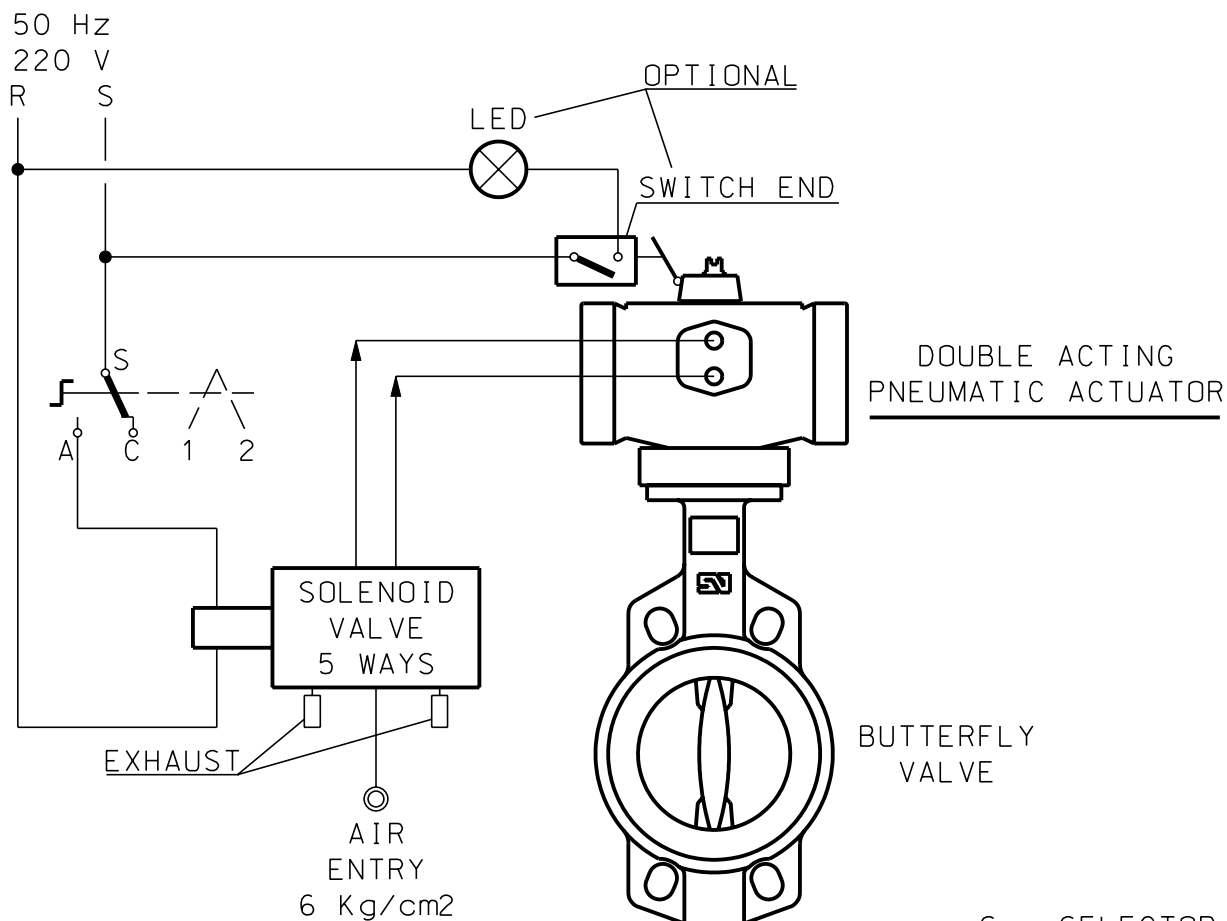
SPRING RETURN	
MODEL	TO OPEN
P05S	0.28
P10S	0.35
P15S	0.65
P20S	0.8
P25S	1.5
P30S	2.05
P40S	5.3
P50S	10.5

DOUBLE ACTING		
MODEL	TO OPEN	TO CLOSE
P00	0.15	0.1
P05	0.28	0.25
P10	0.35	0.32
P15	0.65	0.55
P20	0.8	0.7
P25	1.5	1.2
P30	2.05	1.9
P40	5.3	5.3
P50	10.5	7

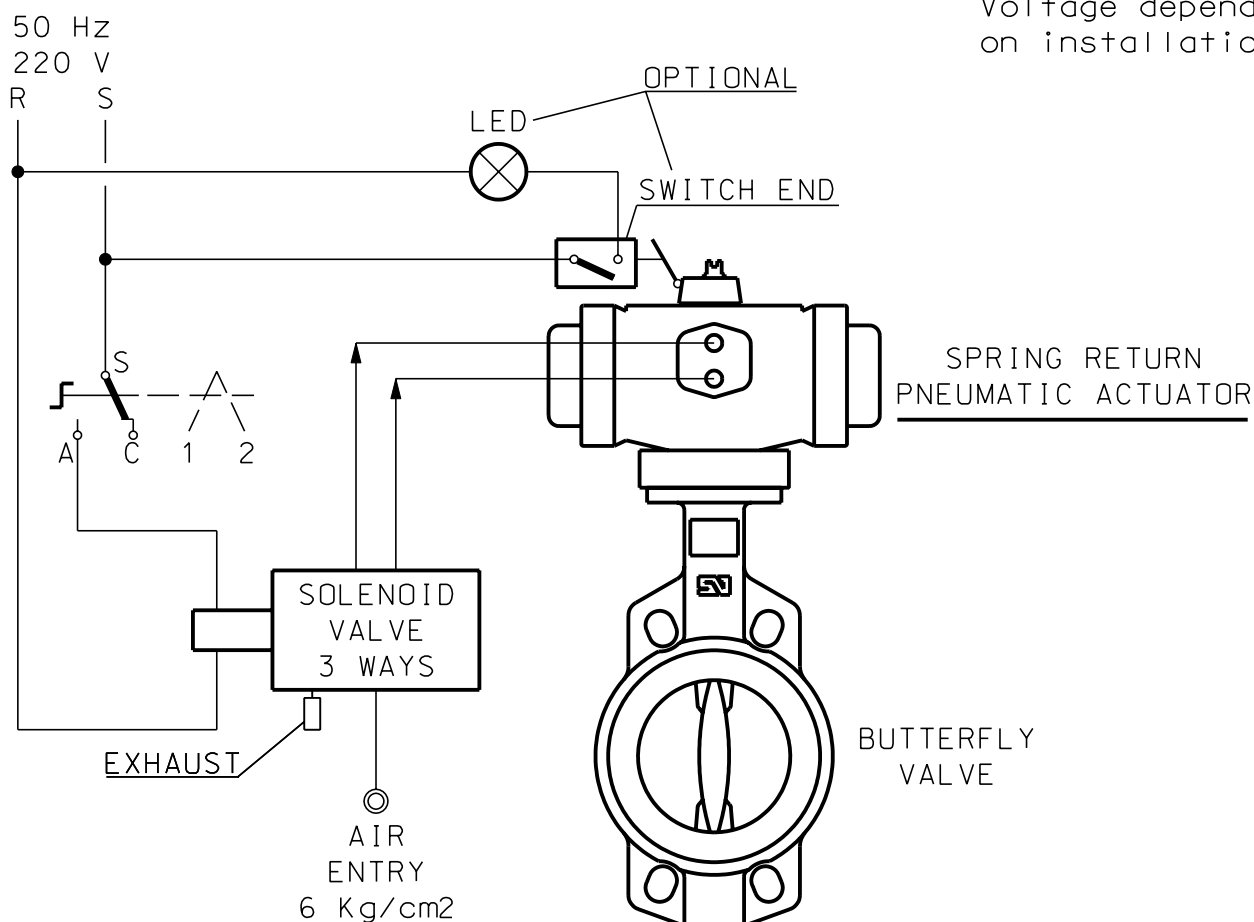
To calculate the consumption of the actuator, it is enough to multiply the corresponding figures of the table by the real working pressure.



BUTTERFLY VALVE WITH PNEUMATIC ACTUATOR DOUBLE AND SPRING RETURN INSTALLATION DIAGRAM



S - SELECTOR
1 - OPENING
2 - SHUTTING
Voltage depending
on installation





SIGEVAL, S.A.

BUTTERFLY VALVES

“ELECTRICAL CONTROLS”



UNE-EN-ISO 9001

Technical Information

Technical Catalogue
2004 (Ed.02)



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** Specifications are subject to change without notice.



SIGEVAL, S.A.

BUTTERFLY VALVES

“ELECTRICAL CONTROLS”



UNE-EN-ISO 9001

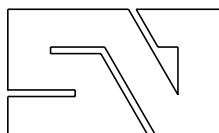
Technical Information

Technical Catalogue
2004 (Ed.02)

INDEX

Designation:

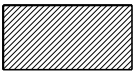
- Selection Table Electric Actuators .
- Operation by Electric Actuators General Dimensions (Chapt.1).
- Operation by Electric Actuators General Dimensions (Chapt.2).
- Operation by Electric Actuators General Dimensions (Chapt.3).
- Electrical Power Scheme for Servomotors type “SD”.
- Electrical Power Scheme for Servomotors type “OA”.



SELECTION TABLE ELECTRIC ACTUATORS

TYPE	OPERATING TIME	TORQUE	PN.6	PN.10	PN.16
** OA3	6 seg.	35 Nm	DN.32/100	DN.32/80	DN.32/65
OA6	6 seg.	60 Nm	DN.125	DN.32/100	DN.80/100
OA8	6 seg.	100 Nm	DN.150	DN.125	–
OAP	30 seg.	100 Nm	DN.150	DN.32/125	–
OA15	15 seg.	150 Nm	DN.200	DN.150/ DN.200*	DN.125
AS18	6 seg.	200 Nm	DN.250*	DN.200	DN.150
AS25	10 seg.	300 Nm	DN.300*	DN.250	DN.200
ASP	30 seg.	250 Nm	DN.300*	DN.250	DN.200
AS50	30 seg.	600 Nm	DN.350	DN.300	DN.250
AS80	30 seg.	800 Nm	DN.400	DN.350	DN.300
AS100	30 seg.	1000 Nm	DN.450*	DN.400	DN.350
AS200	51/180 s.	2500 Nm	DN.500/600	DN.450/500	
AS400	26/186 s.	4000 Nm	DN.700	DN.600	
ASM1-RS600	47/240 s.	6000 Nm	DN.800	DN.700	
ASM2-RS1825	56/382 s.	7500 Nm	–	DN.800	–

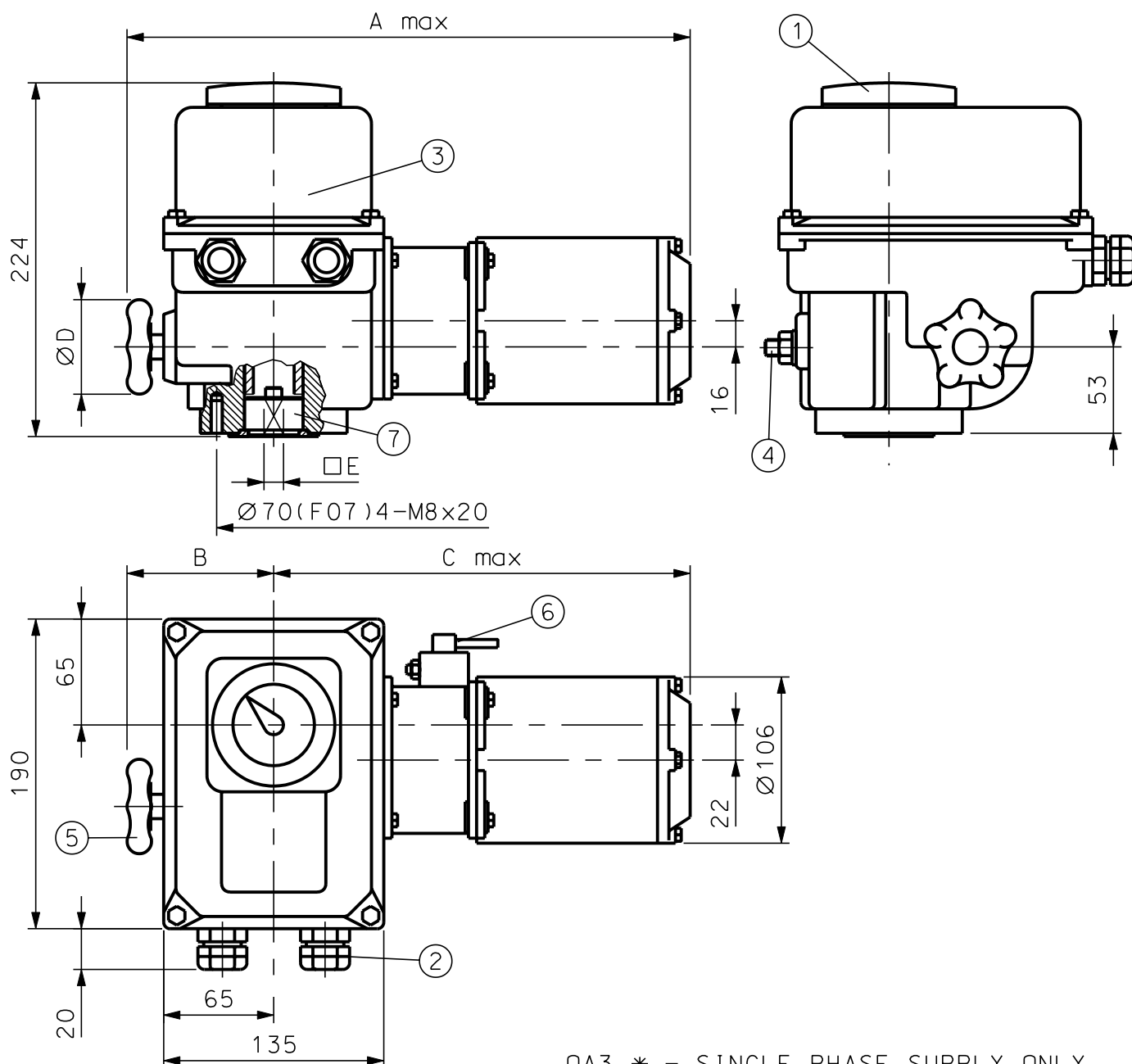
** OA3 ONLY SINGLE PHASE ACTUATOR

 SPECIAL TYPE

* DN. CRITICO



OPERATION BY ELECTRIC ACTUATOR



OA3 * - SINGLE PHASE SUPPLY ONLY

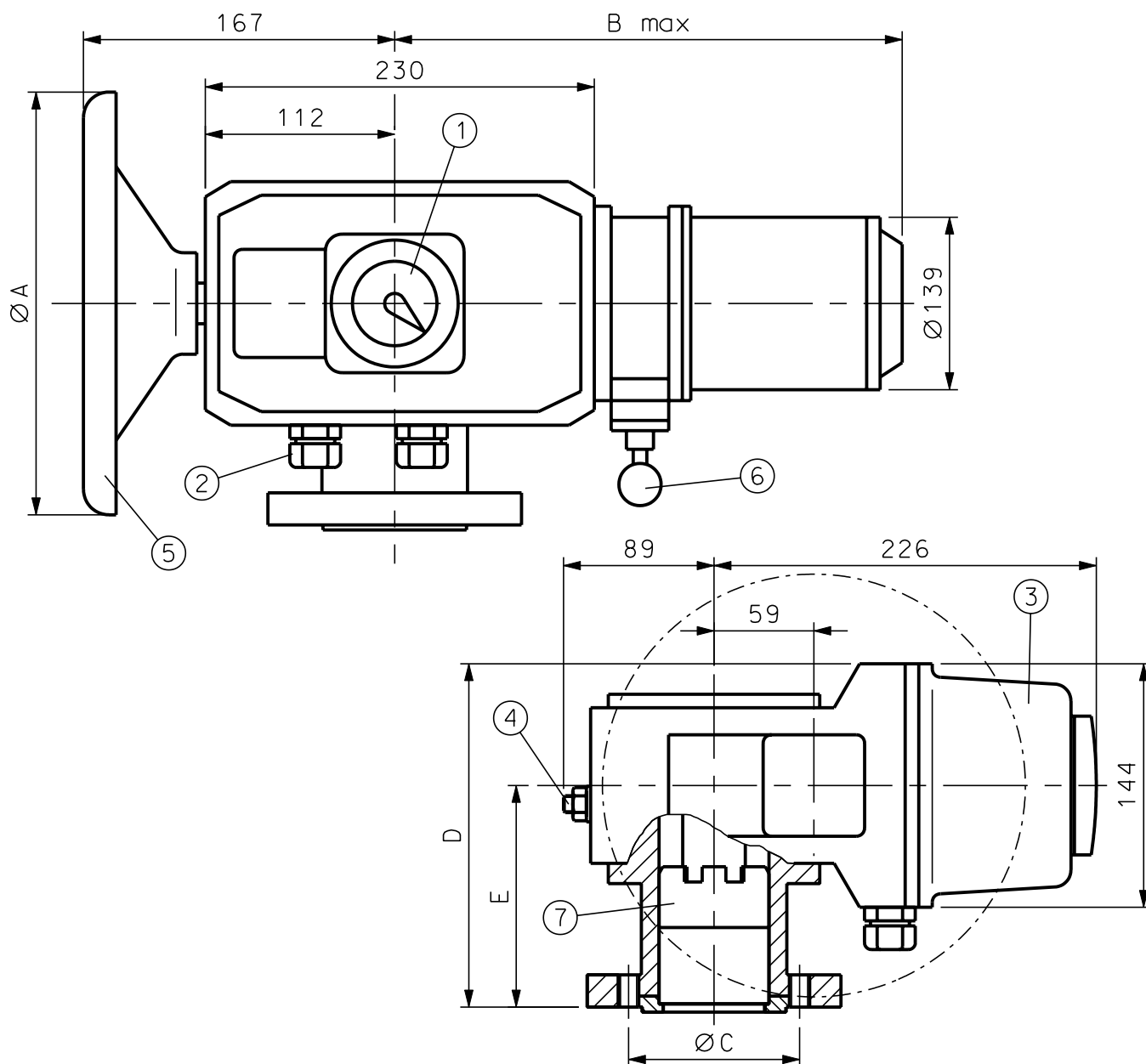
TYPE	A	B	C	D	E	Max. Torque	Operating Time s/90°	Power Kw	Weight
OA3 *	250	90	160	60	12	35 Nm	6 Seg.	0.02	5 Kg
OA6	292	90	202	60	12	60 Nm	6 Seg.	0.03	6 Kg
OA8	292	90	202	60	16	100 Nm	6 Seg.	0.10	7 Kg
OAP	292	90	202	60	16	100 Nm	30-60 Seg.	0.03	7 Kg
OA15	358	98	260	100	16	150 Nm	15 Seg.	0.03	7 Kg

7	DRIVE SOCKET	1
6	MOTOR DECLUTCH (ONLY OAP - OA15)	1
5	EMERGENCY HANDWHEEL	1
4	ADJUSTABLE STOP SCREWS 90°	2
3	END OF TRAVEL SWITCHES ADJUSTABLE	2
2	CABLE ENTRIES PG16	2
1	PROPORTIONAL POSITION INDICATOR	1
POS	DESIGNATION	QTY

THERMAL PROTECTION
CLASS F INSULATED
S4-30% DUTY RATING
SELF LOCKING GEAR
WATERTIGHT BODY TO IP67
QUARTER TURN
SPECIFICATIONS



OPERATION BY ELECTRIC ACTUATOR



TECHNICAL DATA

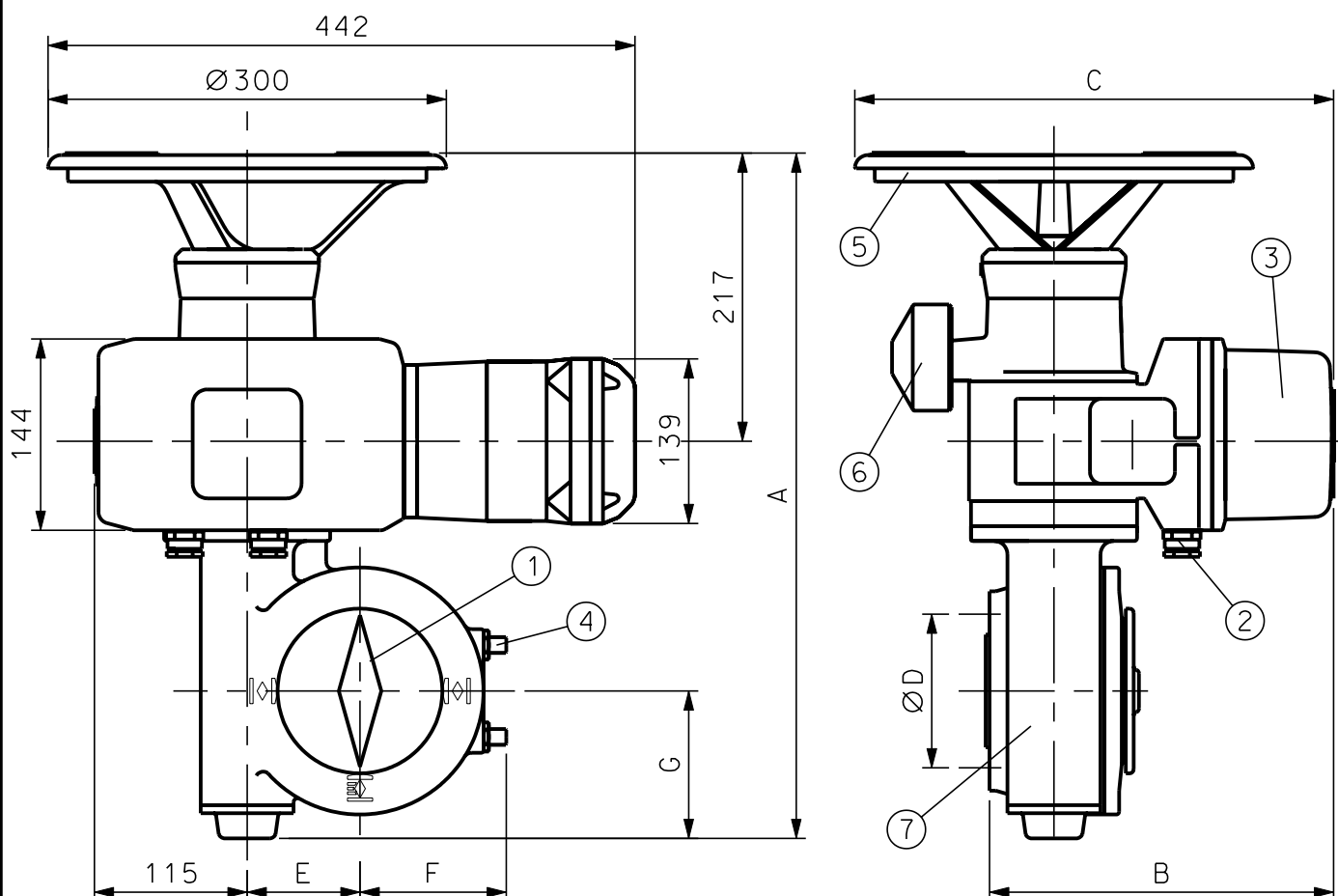
TYPE	A	B	C	D	E	Max. Torque	Operating Time s/90°	Power Kw	Weight
AS18	100	312	F07-F10	177	100	200 Nm	5 Seg.	0.10	16 Kg
AS25	160	312	F07-F10	177	100	300 Nm	10 Seg.	0.10	18 Kg
ASP	160	340	F07-F10	177	100	250 Nm	30-60 Seg.	0.03	18 Kg
AS50	250	340	F07-F10	177	100	600 Nm	30 Seg.	0.06	17 Kg
AS80	250	340	F12	208	131	800 Nm	30 Seg.	0.06	18 Kg

7	DRIVE SOCKET	1
6	MOTOR DECLUTCH (NO AS18-AS25)	1
5	EMERGENCY HANDWHEEL	1
4	ADJUSTABLE STOP SCREWS 90°	2
3	END OF TRAVEL SWITCHES ADJUSTABLE	2
2	CABLE ENTRIES PG16	2
1	PROPORTIONAL POSITION INDICATOR	1
POS	DESIGNATION	QTY

THERMAL PROTECTION
CLASS F INSULATED
S4-30% DUTY RATING
SELF LOCKING GEAR
WATERTIGHT BODY TO IP67
QUARTER TURN
SPECIFICATIONS



OPERATION BY ELECTRIC ACTUATOR



TECHNICAL DATA

TYPE	Max. Torque	Operating Time s/90°	Power Kw
AS100	1000 Nm	15-80 Seg.	0.03-0.14
AS200	2500 Nm	50-185 Seg.	0.03-0.14
AS400	4000 Nm	65-185 Seg.	0.10-0.14
ASM1-RS600	6000 Nm	47-240 Seg.	0.05-0.10
ASM2-RS1825	7500 Nm	56-382 Seg.	0.10-0.25

TYPE	A	B	C	D	E	F	G	Weight
AS100	516	259	361	F12-F14	86	110	111	36 Kg
AS200	663	281	361	F14-F16	183	130	188	68 Kg
AS400	645	281	361	F16	136	110	148	70 Kg
ASM1-RS600	779	314	376	F16	100	192	212	73 Kg
ASM2-RS1825	903	328	301	F25	115	177	237	118 Kg

7	DRIVE SOCKET	1
6	MOTOR DECLUTCH (NO AS18-AS25)	1
5	EMERGENCY HANDWHEEL	1
4	ADJUSTABLE STOP SCREWS 90°	2
3	END OF TRAVEL SWITCHES ADJUSTABLE	2
2	CABLE ENTRIES PG16	2
1	PROPORTIONAL POSITION INDICATOR	1
POS	DESIGNATION	QTY

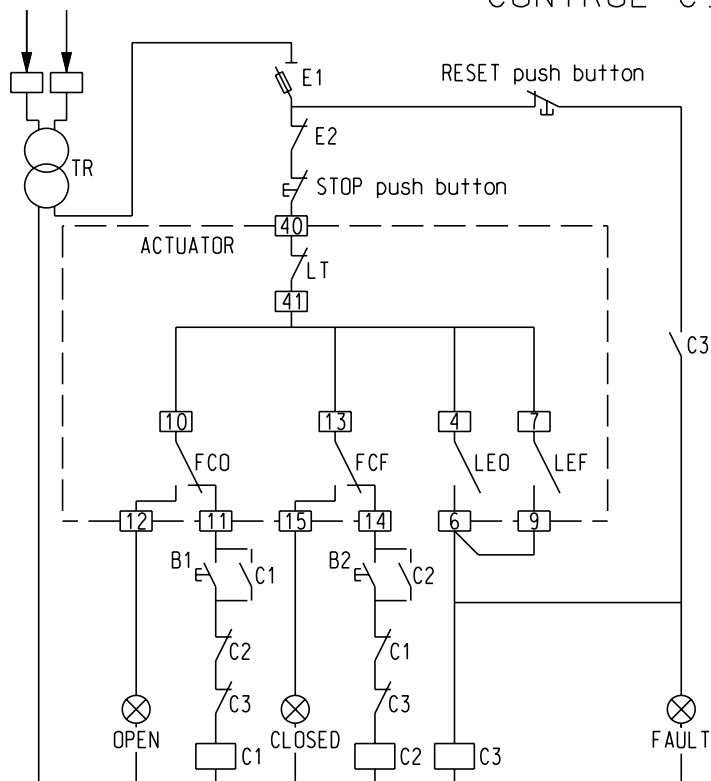
THERMAL PROTECTION
CLASS F INSULATED
S4-30% DUTY RATING
SELF LOCKING GEAR
WATERTIGHT BODY TO IP67
QUARTER TURN
SPECIFICATIONS



WIRING DIAGRAM FOR ACTUATOR SD TYPE

THIS DIAGRAM ILLUSTRATES ACTUATOR IN INTERMEDIATE POSITION

CONTROL CIRCUIT



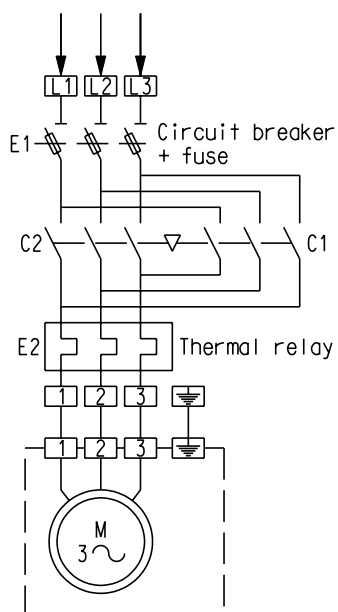
- E1 : Circuit breaker with fuse
- E2 : Thermal relay
- C1 : Contactor OPENING
- C2 : Contactor CLOSING
- C3 : Contactor FAULT
- FCO : Travel limit switch OPENING
- FCF : Travel limit switch CLOSING
- LEO : Torque limit switch OPENING
- LEF : Torque limit switch CLOSING
- LT : Thermal cut-out in motor
- TR : Transformer
- B1 : OPENING push button
- B2 : CLOSING push button

Stop in open and closed position on travel limit switch. Torque limit switch in safety action with manual reset. Wiring diagram for closing on torque limit switch on request.

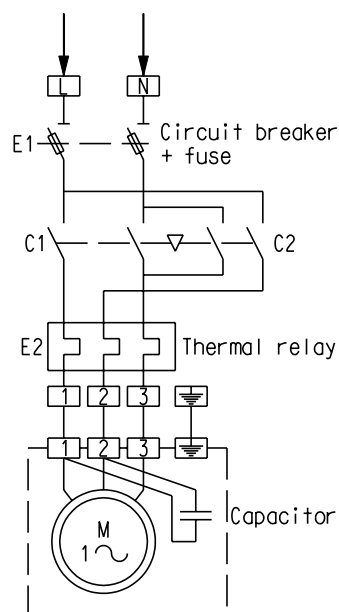
Dotted ligne: for short duration type signal (not maintained)

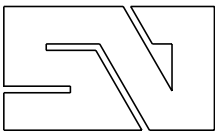
SUPPLY CIRCUIT

THREE-PHASE



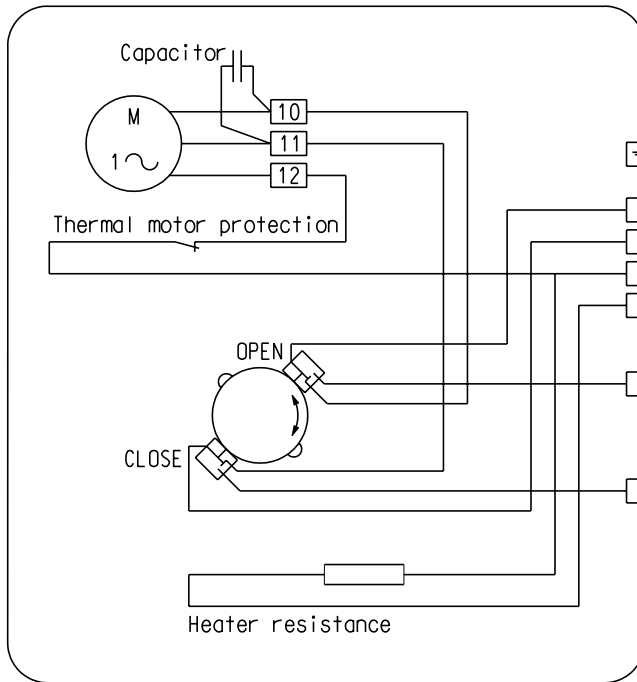
SINGLE-PHASE



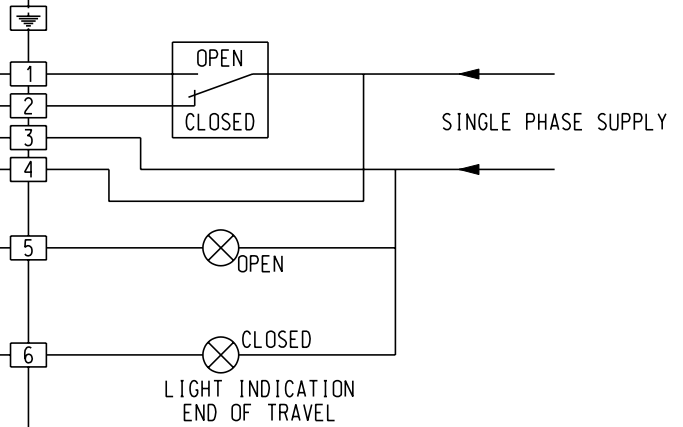


WIRING DIAGRAM PREWIRED VERSION SINGLE PHASE SUPPLY - "OA" TYPE

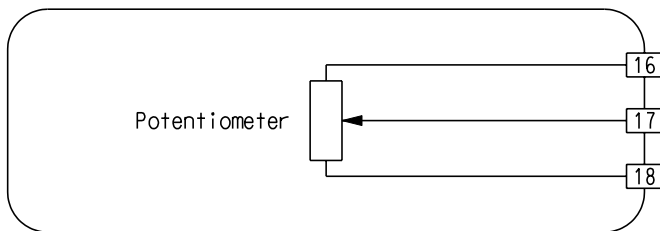
ACTUATOR WIRING



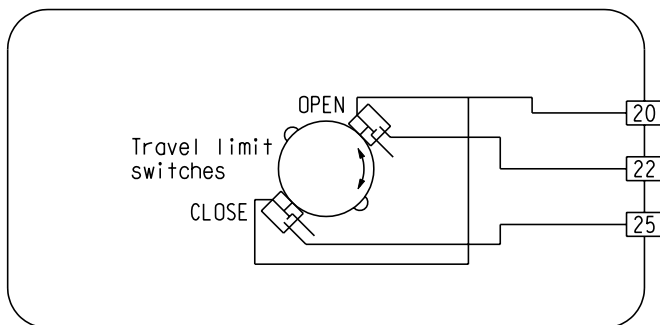
CUSTOMER WIRING



OPTION: POTENTIOMETER



OPTION: EXTRA TRAVEL LIMIT SWITCH



OPTION: POSITION TRANSMITTER

