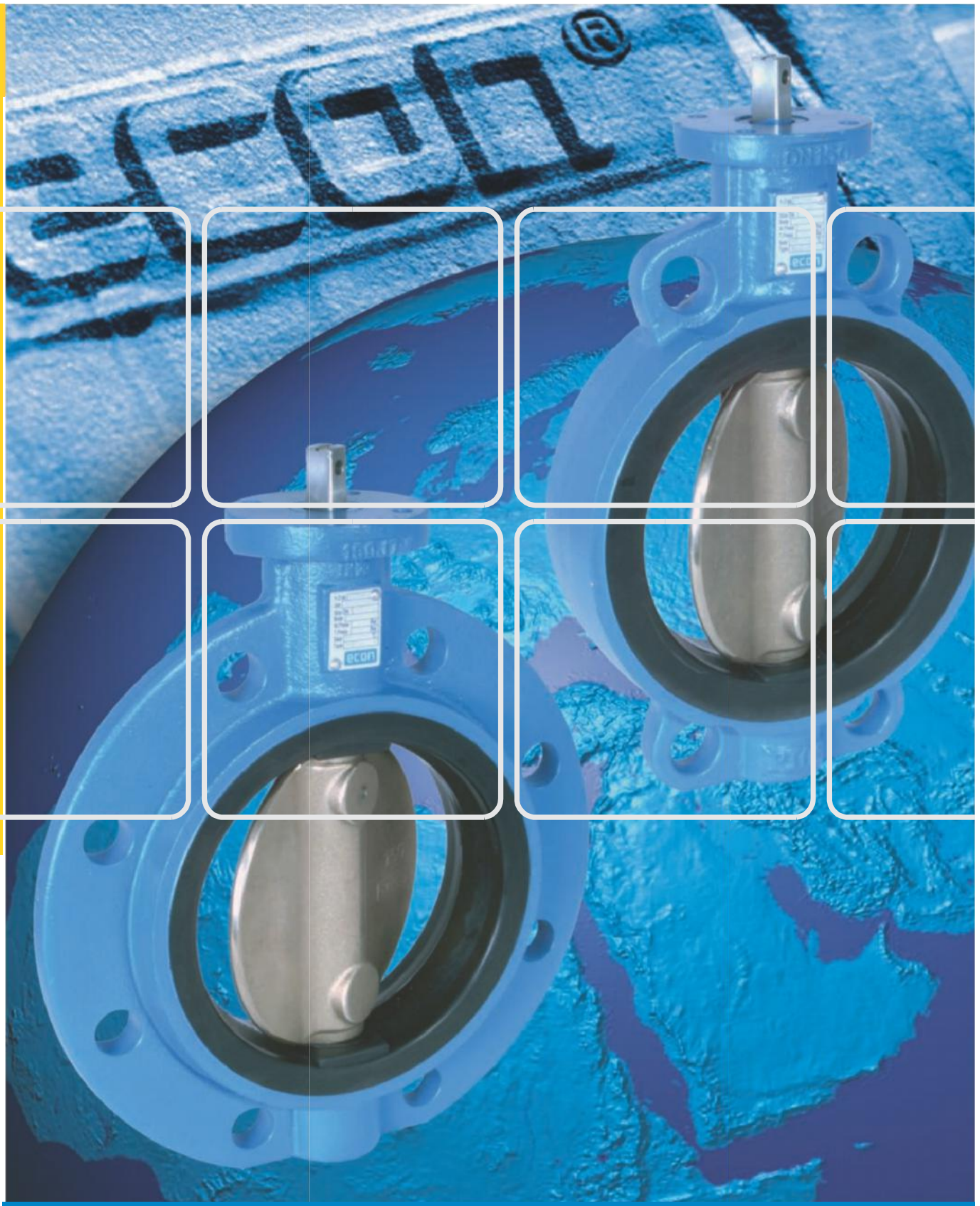


econ® Butterfly valves, Check valves, Globe valves, Strainers

econ®

econosto
ROYAL ECONOSTO GROUP

Butterfly valves
Index

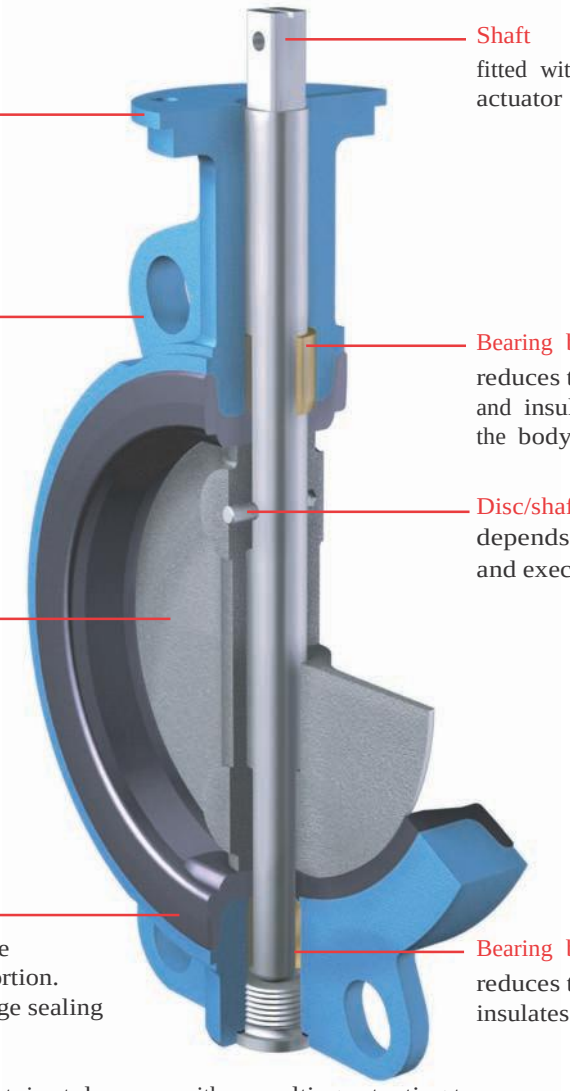
General information

Product information

20060808

A Index and product compare

Econosto has a wide range of butterfly valves for various applications in its program.
The compact construction of butterfly valves makes them lightweight, and the streamlined shape of the butterfly gives them a large capacity. Moreover, the standard fittings can be fitted with controls and/or accessories to match your specification, in our well-equipped workshop. Because of the limited number of parts, butterfly valves are maintenance-friendly and easy to use.



Top flange
as per ISO 5211, suitable for easy installation of various manual controls and actuators

Body
illustrated here as ring type.
The Econosto butterfly valve range also includes a mono-flange, lug type and double-flange execution.
The body is available in various qualities.

Butterfly
illustrated here as a centric disc.
The Econosto also includes options with excentric and double excentric discs.
Available in various materials.

Lining
the bonded liner forms one complete whole with the body, so preventing excessive distortion.
The lining continues unbroken over the flange sealing faces and is also fully enclosed.
This avoids the need to use flange gaskets.
The vulcanisation principle enables excellent size tolerances with a resulting actuating torque.
The Econosto butterfly valves are with bonded liner with various qualities of rubber.

Shaft
fitted with square cap for easy actuator installation

Bearing bush
reduces the actuation torque and insulates the shaft from the body

Disc/shaft connection
depends on materials and execution

Bearing bush
reduces the actuation torque and insulates the shaft from the body

The Econosto programme also includes rubber-lined butterfly valves with a replaceable (non) liner, PTFE-lined and High-Performance butterfly valves with PTFE or metal seal.





Through the simple construction and the great variation in materials, butterfly valves are broadly applied for various media such as water and air, but also chemical and aggressive media. Butterfly valves are used for open/close purposes, but are also suitable for simple regulating purposes,especially designed for the use in following markets:

- Maritime sector
- Heating and air treatment
- Chemical and Petrochemical industries
- Machinery manufacturing
- General industry
- Potable water piping systems
- Water treatment plants

Butterfly valves feature the following four general design options:

Ring type
This type is suitable for mounting between flanges acc. to DIN or ANSI

Monoflange type
This model is suitable for mounting between flanges acc. to DIN, and can also serve as dead-end valve as reduced pressure.

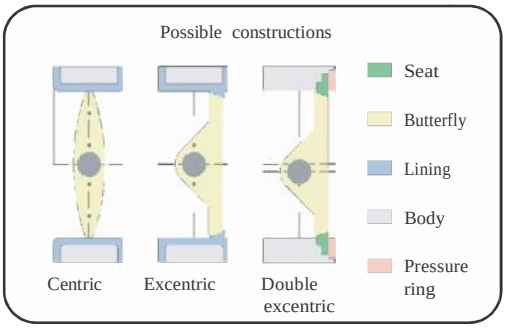
Lug type
This type is suitable for mounting between flanges acc. to DIN or ANSI by means of the tapped holes. Also can serve as a dead-end valve at maximum operating pressure.

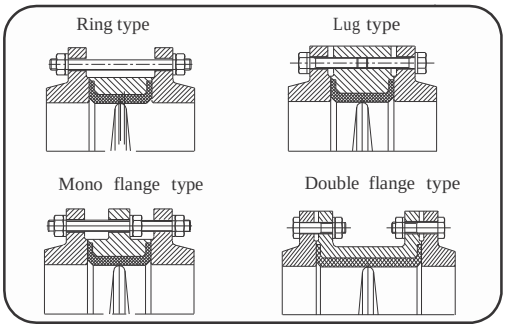
Double-flange type
This type is connected with the counterflanges in the pipe sections by means of the two cast flanges, used as ship side valve according to the rules of various classification bureaus.

An additional characteristic of butterfly valves are the various different types of liner. For example, there are butterfly valves with a bonded or a replaceable rubber liner. In these cases, the medium only comes into contact with the lining and disc of the valve.This means the body vcan b manufactured from a less expensive material such as cast iron.
For corrosive media, the lining can also be manufactured from PTFE.
Rubber-lined butterfly valves and PTFE-lined butterfly valves are in general suitable for operating pressures up to around 16 bar, and temperatures up to a maximum of 120 degrees Celsius (PTFE ± 200 degrees Celsius). For higher pressures and temperatures or media for which normal rubber-lined butterfly valves are not suitable, High Performance butterfly valves can be used. This type of valve can be made with a PTFE seat, optionally in fire safe version, or with a metal sealing ring. Because of the fact that with High Performance butterfly valves the body comes into contact with the medium, a careful choice of suitable body material is needed. The body can be built standard in steel or stainless steel.

For the butterfly valves mentioned above, various constructions have been designed to enable a perfect seal. These are:

- Centric construction, for rubber-lined valves.
- Excentric construction, for rubber-lined butterfly valves, lower torque, less friction.
- Double excentric construction, for High Performance butterfly valves, suitable for harder sealing materials such as PTFE and metal.





page 6

Wafer type

- DN 25-DN40
- PN 10-PN16
- Temperature range
  -10°/+150 °C
- Short Face To Face
- Body
  - Aluminum
- Liner material
  - EPDM
- Centric disc
  -CF8M SS316L
- Actuation
  -Lever

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Wafer type

- DN 50-DN600
- PN 10-16
- Temperature range
  -10°/+150 °C
- Short Face To Face
- Liner material
  -EPDM
- Centric disc
  - CF8M SS316L
- Actuation
  -Lever
  -Worm gearbox
  - Pneumatic actuator

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Wafer Type

- DN 50-DN600
- PN 10-16
- Temperature range
  -10°/+150 °C
- Short Face To Face dimensions
- Liner material
  -EPDM
- Centric disc
  -Ductile Iron(Chromium plated)
- Actuation
  -Lever
  -Worm gearbox
  - Pneumatic actuator

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Wafer type

- DN 50-DN300
- PN 10-16
- Temperature range
  -10°/+160 °C
- Short Face To Face
- Liner material
  -PTFE
- Centric disc
  -St. Steel
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator

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Wafer type

- DN 50-DN200
- PN 10-16
- Temperature range
  -10°/+160 °C
- Short Face To Face
- Liner material
  - PTFE
- Centric disc
  -PTFE
- Actuation
  -Worm gearbox
  -Pneumatic actuator

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Flange type

- DN 50-DN600
- Body
  -A216 WCB
- ANSI 150#
- Temperature range
  -10°/+200 °C
- Short Face To Face
- Centric disc
  -SS316
- Actuation
  -Worm gearbox

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Mono-flange type
Series 61
Bonded liner
Excentric disc

- DN 50-DN400
- PN 10
- Temperature range
  -10°/+120 °C
- Long Face To Face
- Liner material
  -NBR and EPDM
- Excentric disc
  -Ductile cast iron/Rilsan
  Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Semi-monoflange type
Series 63
Non-replaceable liner

- DN 25-DN300
- PN 10-PN16
- Temperature range
  -10°/+120 °C
- Short Face To Face
- Liner material
  -NBR and EPDM
- Centric disc
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Lug type series 64
Replaceable liner

- DN 25-DN400
- PN 10-PN16
- Temperature range
  -10°/+120 °C
- Short Face To Face
- Liner material
  -NBR and EPDM
- Centric disc
  -Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Lug type series 67LUG
Non-replaceable liner

- DN 40-DN300
- PN 10-PN16
- Temperature range
  -10°/+120 °C
- Short Face To Face dimensions
- Liner material
  -EPDM
- Centric disc
  -St. Steel
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Flange type series 46
Bonded liner

- DN 50-DN600
- PN 10-PN16
- Temperature range
  -10°/+120 °C
- Short Face To Face
- Liner material
  -NBR and EPDM
- Centric disc
  -Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Flange type series 66
Bonded liner
Excentric disc

- DN 65-DN600
- PN 10
- Temperature range
  -10°/+120 °C
- Long Face To Face
- Liner material
  -NBR and EPDM
- Eccentric disc
  -Ductile cast iron/Rilsan
  -Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

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Disc type check valve

- DN 15-DN100
- PN 40
- Temperature range -10°/+300 °C
- Short Face To Face
- Excentric disc -SS
- Spring -SS

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Dual plate check valve

- DN 50-DN600
- PN 10-PN16
- Temperature range -10°/+150 °C
- Short Face To Face
- Liner material -NBR and EPDM
- Centric disc -SS

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angle valve

- DN 40-DN200
- PN 40
- Temperature range -29°/+425 °C
- disc -A 105
- Body -GSC-25
- Trim -Steel

page 33

Bellow sealed globe valve

- DN 15-DN200
- PN16
- Temperature range -29°/+330 °C
- disc -St. Steel
- Body -GSC-25
- Trim -St. Steel

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globe valve

- DN 15-DN200
- PN40
- Temperature range -29°/+425 °C
- disc -A 105
- Body -GSC-25
- Trim - Steel

page 35-36

Strainer

- DN 15-DN200
- PN 16/40
- Temperature range -29°/+425 °C
- Filter -SS 304
- Body -GSC-25

econosto®

Econ® lightweight aluminium body butterfly valve, wafer type with centric disc, two piece shaft supported by bronze radial bearings for smooth operation, rubber lined body. The rubber liner is vulcanized integrally to body and bearings ensuring reduced torque and a long lifetime. This liner extends along the valve faces, eliminating the use of gaskets. The body with centering holes for easy pipe alignment is suitable for mounting between flanges according to DIN PN 10/16 and ASME 150#. Face to face dimensions are according to ISO5752/EN558 basic series 20, API 609, DIN 3202 K1 and BS 5155.
For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Applications of series 57 butterfly valves can be found amongst others in general industrial and maritime systems for media such as (ballast) water, gases, hydrocarbons and light corrosive media up to a maximum of 16 bar (PN 16 execution).

Pressure and temperature range

Size	Lining	Pressure rating	Temperature range	Max. operating pressure	
DN 25-40	EPDM	PN 16	-10°/+150 °C	16	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Aluminium		
Disc	CF8M		
Stem	Stainless steel		
Liner	EPDM		

Options

- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
	1)	EPDM	PN 16	PN 10, PN 16 and 150#	2)	25-40

1) Disc
- CF8M • Stainless steel 316-316L

2) Operation
- None • Squeeze-type lever • Tilting lever • Aluminium worm gearbox
- Cast iron worm gearbox

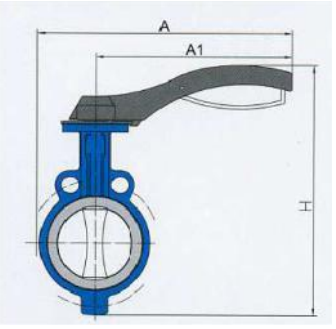
3) Operation
- None • Aluminium worm gearbox• Cast iron worm gearbox

4) Operation
- None • Cast iron worm gearbox

Pneumatic, electric and hydraulic actuators, see actuators section

Wafer type

- DN 25-DN40
- PN 10-16
- Temperature range
  -10°/+150 °C
- Short Face To Face
- Liner material
  - EPDM
- Centric disc
  -CF8M SS316L
- Actuation
  -Lever



Dimensions

Size	A	A1	H	Total weight(KG)
DN25-32	150	115	180	0.68
DN40	160	115	190	0.78

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Econ® cast iron butterfly valve, ring type with centric disc, through-going shaft and replaceable rubber liner. Body fitted with four centering holes and suitable for installation between flanges rated DIN PN 10/50 and ANSI 150#. Short Face To Face acc. to ISO 5752 table 5 short, API 609, DIN 3202 K1 and BS 5155. The body is fitted with a top flange rated ISO 5211 as required for mounting of various manual controls or automatic controls. This type of butterfly valve is general used in systems for water, gases, hydrocarbons and light corrosive media up to a maximum of 50 bar (PN 50 model).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN600	EPDM	PN 10-16	-10°/+150 °C	16	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile cast iron	(GGG-40)-GG25	
Disc	CF8M	SS316L	
Stem	Stainless steel		
Liner	EPDM		

Ordering information

Ordering code	Disc	Lining materia	Rating	Fitting between flanges	Operation	DN [mm]
		EPDM	PN 10-16	PN 10, PN 16,PN50 and 150#	2)	50 - 600
		NBR				
		PTFE				

1) Disc
• Cast iron/Rilsan • Aluminium bronze • Stainless steel

2) Operation
• None • Squeeze-type lever • Aluminium worm gearbox • Cast iron worm gearbox

3) Operation
• None • Aluminium worm gearbox • Cast iron worm gearbox

4) Operation
• None • Cast iron worm gearbox

Pneumatic, electric and hydraulic actuators, see actuators section

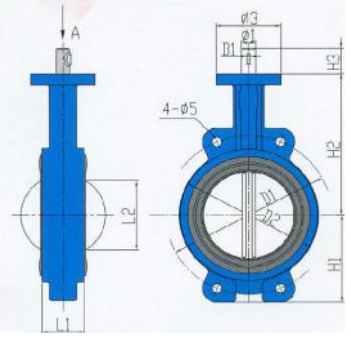
Dimensions

Size	H1	H2	H3	D1	D2	Ø1	Ø3	Ø5	L1	L2	B1	Total weight
DN50	70	130	30	125	92	12.6	65	18	42	32	3	2.1
DN65	76	143	30	145	106	12.6	65	18	45	47	3	2.4
DN80	89	155	30	160	122	12.6	65	18	45	65	3	2.6
DN100	104	170	30	180	150	15.8	90	18	52	91	5	4.5
DN125	120	190	30	210	177	19	90	18	55	112	5	6.8
DN150	132	210	30	240	204	19	90	23	56	146	5	8.3
DN200	167	243	39	295	260	22.1	125	23	61	194	5	13
DN250	202	282	39	350 355	314	28.5	125	23 26	66	242	8	18.8
DN300	239	310	39	400 410	370	31.7	150	23 26	77	292	8	29
DN350	265	368	39	460 470	422	31.7	150	23 26	77	325	8	39
DN400	297	400	72	515 525	473	33.2	175	26 30	86.5	380	10	58
DN450	331	422	72	565 585	526	38	175	36 30	105.6	428	10	72
DN500	361	480	72	620 650	577	41.2	210	26 30	132	474	10	128
DN600	459	562	72	725 770	693	50.7	210	30 36	152	573	16	178

econosto®

Wafer type

- DN 50-DN600
- PN 10-16
- Temperature range -10°/+150 °C
- Short Face To Face
- Liner material -EPDM/NBR/PTFE
- Centric disc -CF8M SS316L
- Actuation -Lever -Worm gearbox -Pneumatic Actuator



Econ® cast iron butterfly valve, wafer type with centric disc, one piece shaft supported by bronze radial bearings for smooth operation, rubber lined body. The rubber liner is vulcanized on a phenolic ring which forms a cartridge inserted in the body ensuring reduced torque and a long lifetime. This liner extends along the valve faces, eliminating the use of gaskets. The body with centering holes for easy pipe alignment is suitable for mounting between flanges according to DIN PN 6/10/16 /50 and ASME 150#. Face To Face dimensions are according to ISO5752/EN558 basic series 20, API 609, DIN 3202 K1 and BS 5155. For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Furthermore, this valve has an extended neck for isolation purposes and an external Epoxy coating for environmental protection of the body. Applications of these type of butterfly valves can be found amongst others in heating, ventilation and air conditioning systems (HVAC), cooling water systems, general industrial and maritime systems with pressures up to 16 bar (PN 16 execution).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN600	NBR – EPDM-PTFE	PN 16	-10°/+150 °C	16	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile cast iron	(GGG-40)-GG25	
Disc	Ductile Iron		
Stem	Stainless steel		
Liner	EPDM/NBR/PTFE		

.

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
	Ductile Iron (Chromium plated)	NBR-EPDM-PTFE	PN 10-16	PN 6, PN 10, PN 16 and 150#.	2)	50 - 600

1) Operation
• None • Squeeze-type lever • Aluminium worm gearbox

2) Operation
• None • Aluminium worm gearbox

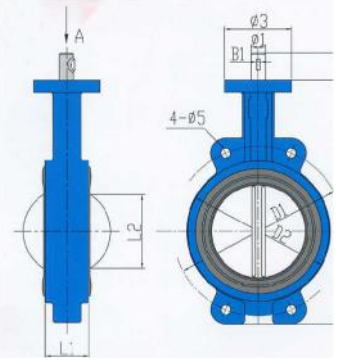
Pneumatic, electric and hydraulic actuators, see actuators section

Dimensions

Size	H1	H2	H3	D1	D2	Ø1	Ø3	Ø5	L1	L2	B1	Total weight
DN50	70	130	30	125	92	12.6	65	18	42	32	3	2.1
DN65	76	143	30	145	106	12.6	65	18	45	47	3	2.4
DN80	89	155	30	160	122	12.6	65	18	45	65	3	2.6
DN100	104	170	30	180	150	15.8	90	18	52	91	5	4.5
DN125	120	190	30	210	177	19	90	18	55	112	5	6.8
DN150	132	210	30	240	204	19	90	23	56	146	5	8.3
DN200	167	243	39	295	260	22.1	125	23	61	194	5	13
DN250	202	282	39	350 355	314	28.5	125	23 26	66	242	8	18.8
DN300	239	310	39	400 410	370	31.7	150	23 26	77	292	8	29
DN350	265	368	39	460 470	422	31.7	150	23 26	77	325	8	39
DN400	297	400	72	515 525	473	33.2	175	26 30	86.5	380	10	58
DN450	331	422	72	565 585	526	38	175	36 30	105.6	428	10	72
DN500	361	480	72	620 650	577	41.2	210	26 30	132	474	10	128
DN600	459	562	72	725 770	693	50.7	210	30 36	152	573	16	178

Wafer type

- DN 50-DN600
- PN 10-16
- Temperature range
  -10°/+150 °C
- Short Face To Face dimensions
- Liner material
  -EPDM/NBR/PTFE
- Centric disc
  -Ductile Iron(Chromium plated)
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator



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Econ® Stainless butterfly valve, wafer type with centric disc, one piece shaft supported by bronze radial bearings for smooth operation, PTFE lined body. The PTFE liner is vulcanized on a phenolic ring which forms a cartridge inserted in the body ensuring reduced torque and a long lifetime. This liner extends along the valve faces, eliminating the use of gaskets. The body with centering holes for easy pipe alignment is suitable for mounting between flanges according to DIN PN 6/10/16 and ASME 150#. Face To Face dimensions are according to ISO5752/EN558 basic series 20, API 609, DIN 3202 K1 and BS 5155. The butterfly valve is provided with a handlever or gearbox for manual operation. Applications of these type of butterfly valves can be found amongst others in general industrial and maritime systems for example in corrosive media, gases, steam and hot water up to a maximum of 16 bar (ASME class 150 execution)

Wafer type

- DN 50-DN300
- PN 10-16
- Temperature range -10°/+160 °C
- Short Face To Face
- Liner material -PTFE
- Centric disc -St. Steel
- Actuation -Lever -Worm gearbox -Pneumatic actuator

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Maximum operating pressure
DN 50-DN300	PTFE	PN 16	-10°/+160 °C	16 [bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body 1)	Stainless steel	SS316	
Disc	Stainless steel	SS316	
Stem	Stainless steel		
Liner	PTFE		

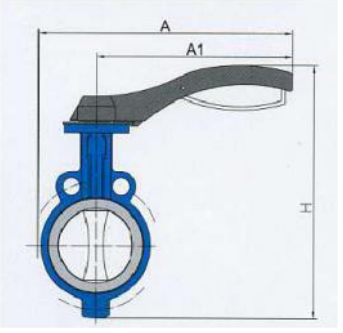
Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
	Stainless Steel	PTFE	PN 16	PN 10, PN 16 and 150#	2)	50 - 300

1) Operation
- Squeeze-type lever

2) Operation
- None • Aluminium worm gearbox

Pneumatic, electric and hydraulic actuators, see actuators section



Dimensions

Size	A	A1	H	Total weight(kg)
DN25-32	150	115	180	0.68
DN40	160	115	190	0.78
DN50	216	170	260	2.4
DN65	223	170	280	2.67
DN80	231	170	304	2.87
DN100	335	170	340	5.00
DN125	349	200	375	7.3
DN150	362	260	407	8.8

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econosto®

Econ® full PTFE lined butterfly valve, ring type with centric disc, one piece shaft and PTFE rubber liner, and disc. Body fitted with four centring holes and suitable for installation between flanges rated DIN PN 6/10/16 and ANSI 150#. Short Face To Face acc. to ISO 5752 table 5 short, API 609, DIN 3202 K1 and BS 5155. The body is fitted with a top flange acc. to ISO 5211 as required for mounting of various manual controls or automatic controls. Furthermore, this valve is built standard with a long neck for insulation. Applications of these type of butterfly valves can be found amongst others in general industrial and maritime systems for example in corrosive media, gases, steam and hot water up to a maximum of 16 bar (ASME class 150 execution)

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN200	PTFE	PN 16	-10°/+160 °C	16	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile iron	GGG40	
Disc	PTFE		
Stem	Stainless steel		
Liner	PTFE		

Options

- Pneumatic or electrical actuator, see actuators section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
	1)	PTFE	PN 16	PN 10, PN 16 and 150#	2)	50 – 200

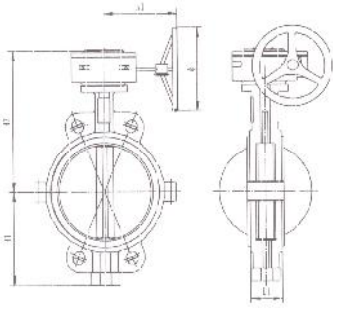
1) Disc
- PTFE

2) Operation
- None • Lever • Aluminium worm gearbox

For pneumatic and electrical actuators, see actuators section

Wafer type

- DN 50-DN200
- PN 10-16
- Temperature range -10°/+160 °C
- Short Face To Face
- Liner material
  - PTFE
- Centric disc
  -PTFE
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator



Dimensions

size	H1	H2	L1	A1	Ø
DN50	73	203	42	193	145
DN65	80	203	45	193	145
DN80	90	206	46	193	145
DN100	116	226	52	193	145
DN125	130	243	55	193	145
DN150	148	256	56	193	145

20060731

econosto®

Econ® Steel body butterfly valve, double-flanged type with centric disc, one piece shaft supported by bronze radial bearings for smooth operation.The double flanged body is suitable for mounting between flanges according to DIN PN 16 or ANSI 150#. Face to face dimensions are according to ISO5752/EN558 basic series 13, DIN 3202 F16 and BS 5155. For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Applications of series type of butterfly valves can be found amongst others in general industrial and maritime systems for media such as (ballast) water, gases, hydrocarbons and light corrosive media up to a maximum of 25 bar (PN 25 execution).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN600		150#	-10°/+200 °C	25	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	CS-CARBON STEEL	A216 WCB	
Disc	Stainless steel		
Stem	Stainless steel		

Options

- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
	1)		150#	150#	2)	50 - 600

1) Disc
- bronze-brass
- Stainless steel

2) Operation
- Aluminium worm gearbox
- Cast iron worm gearbox

3) Operation
- Cast iron worm gearbox

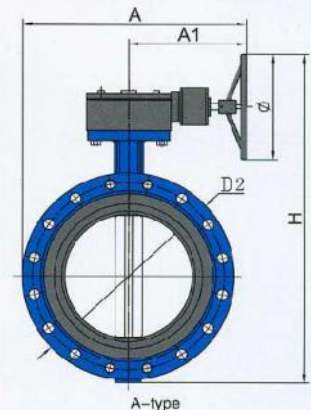
Pneumatic, electric and hydraulic actuators, see actuators section

Dimensions

Size	A	A1	H	Ø	Weight(kg)
DN50	174	128	306	145	6.3
DN65	181	128	325	145	6.6
DN80	189	128	350	145	6.8
DN100	203	128	380	145	8.7
DN125	217	128	416	145	11
DN150	230	128	448	145	12.5
DN200	354	224	590	280	23.8
DN250	381	224	664	280	29.6
DN300	403	218	744	310	43
DN350	429	218	805	310	55
DN400	538	301	935	400	89.5
DN450	564	301	1004	400	107.5
DN500	614	317	1057	300	176
DN600	742	334	1264	300	238

flange type

- DN 50-DN400
- ANSI 150#
- Temperature range -10°/+200 °C
- Short Face To Face
- Centric disc -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator



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econosto®

Econ® cast iron butterfly valve, monoflange type with excentric disc, through-going shaft and bonded rubber liner. Body fitted with central flange and suitable for installation between flanges rated DIN PN 10; also suitable as dead-end valve. Long Face To Face acc. to ISO 5752 table 5 long, API 609, DIN 3202 K3 and BS 5155. The body is fitted with a top flange acc. to ISO 5211 as required for mounting of various manual controls or automatic controls. This type of butterfly valve is general used in systems for water, gases, hydrocarbons and light corrosive media up to a maximum of 10 bar.

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN400	NBR or EPDM	PN 10	NBR -10°/+80 °C, EPDM -10°/+120 °C	10	[bar]
Remark: Maximum operating pressure as dead-end valve, 6 bar					

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Cast iron	GJL-250 (GG-25)	0.6025
Disc 6110 (Rilsan coating)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 6120	Aluminium bronze	CuAl10Fe5Ni5-C (G-CuAl10Ni)	2.0975.01
Disc 6130	Stainless steel	GX5CrNiMo19-11-2 (G-X6CrNiMo18 10)	1.4408
Stem 6110, 6120	Stainless steel	X39CrMo17-1 (X35CrMo17)	1.4122
Stem 6130	Stainless steel	X5CrNiMo17-12-2	1.4401
Liner	NBR		
Liner	EPDM		

Options

- Other materials and flange connection
- Available with EN 10204.3.1B certificate (body minimum ductile cast iron)
- Set of flanges with long bolts, see figure 184SVLIN
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 61	1)	NBR or EPDM	PN 10	PN 10	2)	50 - 200
Serie 61	1)	NBR or EPDM	PN 10	PN 10	3)	250 - 400

1) Disc
• Cast iron/Rilsan (fig. 6110) • Aluminium bronze (fig. 6120) • Stainless steel (fig. 6130)

2) Operation
• None • Squeeze-type lever (fig. 4001A) • Tilting lever (fig. 4001B) • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

3) Operation
• None • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

Pneumatic, electric and hydraulic actuators, see actuators section

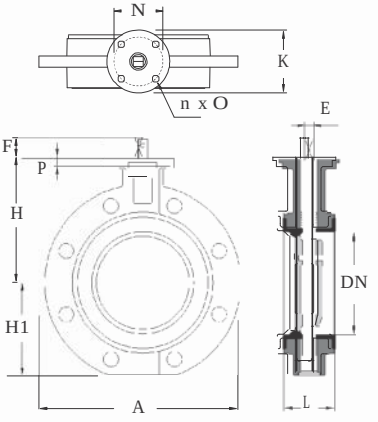
Dimensions

DN	A	E	F	H	H1	K	L	N	nxO	P	Weight excl. actuator[kg]	Kv value
					[mm]							
50	165	11	25	118	67	90	43	70	4x9	12	3.1	100
65	185	11	25	126	74	90	46	70	4x9	12	4.2	180
80	200	11	25	133	82	90	64	70	4x9	14	5.2	310
100	228	11	25	147	100	90	64	70	4x9	14	7	610
125	254	14	28	160	112	90	70	70	4x9	14	11	941
150	285	14	28	180	134	90	76	70	4x9	14	14	1350
200	340	17	28	204	159	90	89	70	4x9	14	23	2585
250	405	22	30	245	195	125	114	102	4x11	15	44	4000
300	460	22	30	270	220	125	114	102	4x11	15	54	6580
350	533	27	29	315	282	150	127	125	4x14	20	76	8800
400	585	27	29	350	307	150	140	125	4x14	20	100	11000

Mono-flange type series 61
Bonded liner
Excentric disc

- fig. 6110
- fig. 6120
- fig. 6130

- DN 50-DN400
- PN 10
- Temperature range -10°/+120 °C
- Long Face To Face
- Liner material
  -NBR and EPDM
- Excentric disc
  -Ductile cast iron/Rilsan
  Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator



20060731

econosto®

Econ® ductile cast iron butterfly valve, semi-monoflange type with centric disc, split shafts and rubber non replaceable liner. Body fitted with bolt holes and suitable for installation between flanges rated DIN PN 6/10/16; also suitable as dead-end valve. Short Face To Face acc. to ISO 5752 table 5 short, API 609, DIN 3202 K1 and BS 5155. The body is fitted with a top flange acc. to ISO 5211 as required for fitting of various manual controls or automatic controls. Furthermore, this valve is built standard with a long neck for insulation and a plastic insulation cap, and carries DIN DVGW approval for gas (NBR) and water (NBR and EPDM). . This type of butterfly valve is general used for water, heating, AC, cooling water, gas and swimming pool systems up to a maximum of 16 bar (PN 16 model).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 25-DN200	NBR or EPDM	PN 16	NBR -10°/+80 °C, EPDM -10°/+120 °C	16	[bar]
DN 250-DN300	NBR or EPDM	PN 10	NBR -10°/+80 °C, EPDM -10°/+120 °C	10	[bar]
Remark: Maximum operating pressure as dead-end valve, 6 bar (always use a counterflange)					

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc (DN 25 - DN 80)	Stainless steel	GX5CrNiMoNb19-11-2 (G-X5CrNiMoNb18 10)	1.4581
Disc (DN 100 - DN 300)	Stainless steel	X5CrNiMo17-12-2	1.4401
Stem	Stainless steel	X20Cr13	1.4021
Liner	NBR		
Liner	EPDM		

Options

- Other materials, pressure rating and flange connection
- Set of flanges with long bolts, see figure 184SVLIN
- Pneumatic, electric or hydraulic actuator, see actuators section
- Also available as lug type (figure 6430C)
- Variant with lever and integrated thermometer

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 63	Stainless steel	NBR or EPDM	PN 16	PN 6, PN 10 and PN 16	1)	25 - 200
Serie 63	Stainless steel	NBR or EPDM	PN 10	PN 6, PN 10 and PN 16	2)	250 -
1) Operation • None • Squeeze-type lever (fig. 4001C) • Control lever (fig. 4001H) • Cast iron worm gearbox						
2) Operation • None • Cast iron worm gearbox						
Pneumatic, electric and hydraulic actuators, see actuators section						

Dimensions

DN	E	E1	F	H	H1	L	N	nxO	R	Weight excl. actuator[kg]	Kv value
[mm]											
25	11	12.9	15	128	58	33	50	4x7	35	1.8	28
32	11	12.9	15	128	58	33	50	4x7	35	1.8	29
40	11	12.9	15	134	66	33	50	4x7	35	2	58
50	11	12.9	15	140	69	43	50	4x7	35	2.5	107
65	11	12.9	15	150	81	46	50	4x7	35	2.9	201
80	11	12.9	15	158	100	46	50	4x7	35	3.4	336
100	11	12.9	15	179	109	52	50	4x7	35	4.6	576
125	17	19.7	18	196	124	56	70	4x9	55	7.6	840
150	17	19.7	18	212	140	56	70	4x9	55	9.3	1295
200	17	19.7	18	246	167	60	70	4x9	55	12.8	247
250	22	--	24	273	203	68	102	4x11	70	21	3600
300	22	--	24	302	232	78	102	4x11	70	30	5520

Semi-monoflange type series 63
Non-replaceable liner

- fig. 6330

- DN 25-DN300
- PN 10-PN16
- Temperature range -10°/+120 °C
- Short Face To Face
- Liner material
  -NBR and EPDM
- Centric disc
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

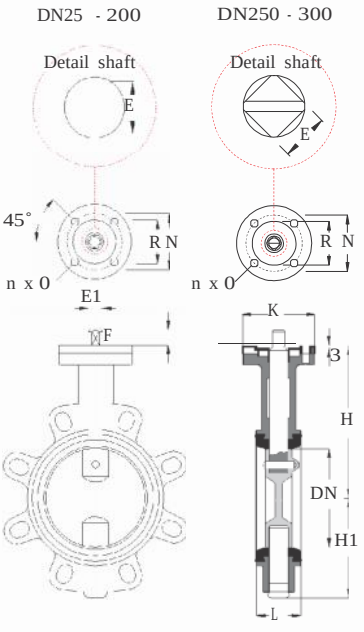


Fig. 6330

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econosto®

Econ® ductile cast iron butterfly valve, lug type with centric disc, through-going shaft and replaceable rubber liner. Body fitted with tapped holes and suitable for installation between flanges rated DIN PN 10 or PN 16, or ANSI 150#; also suitable as dead-end valve. Short Face To Face acc. to ISO 5752 table 5 short, API 609, DIN 3202 K1 and BS 5155. The body is fitted with a top flange acc. to ISO 5211 as required for fitting of various manual controls or automatic controls. This type of butterfly valve is general used in systems for water, gases, hydrocarbons and light corrosive media up to a maximum of 16 bar (PN 16 model).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 25-DN300	NBR or EPDM	PN 16	NBR -10°/+80 °C, EPDM -10°/+120 °C	16	[bar]
DN 350-DN400	NBR or EPDM	PN 10	NBR -10°/+80 °C, EPDM -10°/+120 °C	10	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body 1)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 6410 (Rilsan coating)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 6420	Aluminium bronze	CuAl10Fe5Ni5-C (G-CuAl10Ni)	2.0975.01
Disc 6430	Stainless steel	GX5CrNiMo19-11-2 (G-X6CrNiMo18 10)	1.4408
Stem	Stainless steel	X30Cr13	1.4028
Liner	NBR		
Liner	EPDM		
1) DN 25 - 400 finished with rilsan coating 250µM			

Options

- Other materials, pressure rating, flange connection and larger sizes up to DN 1200
- Available with EN 10204.3.1B certificate
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 64	1)	NBR or EPDM	PN 16	PN 16	2)	25 - 200
Serie 64	1)	NBR or EPDM	PN 16	PN 16	3)	250 - 300
Serie 64	1)	NBR or EPDM	PN 10	PN 10	3)	350 - 400
1) Disc • Cast iron/Rilsan (fig. 6410) • Aluminium bronze (fig. 6420) • Stainless steel (fig. 6430)						
2) Operation • None • Squeeze-type lever (fig. 4001D) • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)						
3) Operation • None • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)						
Pneumatic, electric and hydraulic actuators, see actuators section						

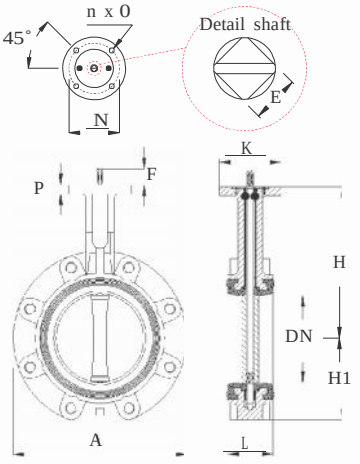
Dimensions

DN	A	E	F	H	H1	L	N	nxO	P	Weight excl. actuator[kg]	Kv value
[mm]											
25/32	72	8	19	110	50	30	70	4x9	12	1.4	52
40	86	8	19	130	60	33	70	4x9	12	2	120
50	117	11	19	135	72	43	70	4x9	12	3.2	189
65	130	11	19	150	82	46	70	4x9	12	4	311
80	188	11	19	160	88	46	70	4x9	12	6.1	433
100	219	11	19	180	102	52	70	4x9	12	8.5	745
125	248	14	19	195	116	56	70	4x9	12	10	1219
150	274	14	19	210	128	56	70	4x9	12	11	1805
200	332	17	25	240	161	60	70	4x9	12	19.6	3093
250	402	22	32	280	199	68	125	4x13	18	28.7	4825
300	472	22	32	315	234	78	125	4x13	18	41.2	6946
350	520	22	40	330	258	78	125	4x13	18	55	8269
400	584	27	40	365	290	102	125	4x13	18	75	11036

Lug type series 64
Replaceable liner

- fig. 6410
- fig. 6420
- fig. 6430

- DN 25-DN400
- PN 10-PN16
- Temperature range -10°/+120 °C
- Short Face To Face
- Liner material
  -NBR and EPDM
- Centric disc
  -Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator



20060731

econosto®

Econ® ductile cast iron butterfly valve, lug type with centric disc, one piece shaft supported by bronze radial bearings for smooth operation, rubber lined body. The rubber liner is vulcanized on a phenolic ring which forms a cartridge inserted in the body ensuring reduced torque and a long lifetime. This liner extends along the valve faces, eliminating the use of gaskets. The body with threaded holes is suitable for mounting between flanges according to DIN PN 10 or PN 16. Face To Face dimensions are according to ISO5752/EN558 basic series 20, API 609, DIN 3202 K1 and BS 5155. For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Furthermore, this valve has an extended neck for isolation purposes and an external Epoxy coating for environmental protection of the body. Applications of series 67LUG butterfly valves can be found amongst others in heating, ventilation and air conditioning systems (HVAC), cooling water systems, general industrial and maritime systems with pressures up to 16 bar (PN 16 execution).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 40-DN150	EPDM	PN 16	-10°/+120 °C	16	[bar]
DN 200-DN300	EPDM	PN 10	-10°/+120 °C	10	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body 1)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc	Stainless steel	GX5CrNiMo19-11-2 (G-X6CrNiMo18 10)	1.4408
Stem	Stainless steel	X12Cr13 (X10Cr13)	1.4006
Liner	EPDM		

1) Finished with epoxy coating 200µm.

Options

- Other materials such as NBR liner or aluminium bronze disc.
- Other flange connection
- Available with EN 10204.3.1 certificate
- Lockable handlever
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 67	Stainless Steel (fig. 6730LUG)	EPDM	PN 16	PN 16	1)	40 - 150
Serie 67	Stainless Steel (fig. 6730LUG)	EPDM	PN 10	PN 10	2)	200 - 300

1) Operation
• None • Squeeze-type lever • Aluminium worm gearbox (fig. 4012)

2) Operation
• None • Aluminium worm gearbox (fig. 4012)

Pneumatic, electric and hydraulic actuators, see actuators section

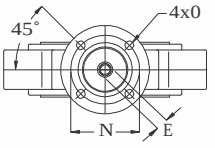
Dimensions

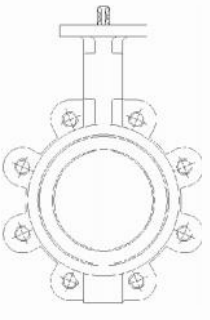
DN	E	F	H	H1	K	L	N	O	P	Weight excl. actuator[kg]	Kv value
[mm]											
40	8	19	110	65	90	33	70	9	12	2.0	120
50	11	19	143	72	90	43	70	9	12	3.2	189
65	11	19	156	78	90	46	70	9	12	4.0	311
80	11	19	162	89	90	46	70	9	12	6.1	433
100	11	19	186	102	90	52	70	9	12	8.5	745
125	14	19	191	118	90	56	70	9	12	10.0	1219
150	14	19	206	133	90	56	70	9	12	11.0	1805
200	17	25	237	163	90	60	70	9	12	19.6	3093
250	22	32	270	200	125	68	102	11	18	28.7	4825
300	22	32	310	234	125	78	102	11	18	41.2	6946

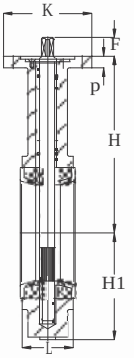
Lug type series 67LUG
Non-replaceable liner

- fig. 6730LUG

- DN 40-DN300
- PN 10-PN16
- Temperature range
  -10°/+120 °C
- Short Face To Face dimensions
- Liner material
  -EPDM
- Centric disc
  -St. Steel
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator







20060731

Econ® ductile iron butterfly valve, double-flanged type with centric disc, one piece shaft supported by bronze radial bearings for smooth operation, rubber lined body. The rubber liner is vulcanized integrally to body and bearings ensuring reduced torque and a long lifetime. This liner extends along the valve faces, eliminating the use of gaskets. The double flanged body is suitable for mounting between flanges according to DIN PN 10 or PN 16. Face to face dimensions are according to ISO5752/EN558 basic series 13, DIN 3202 F16 and BS 5155. For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Applications of series 46 butterfly valves can be found amongst others in general industrial and maritime systems for media such as (ballast) water, gases, hydrocarbons and light corrosive media up to a maximum of 16 bar (PN 16 execution).

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 50-DN600	NBR orEPDM	PN 16	NBR -10°/+80 °C, EPDM -10°/+120 °C	16	[bar]
DN 50-DN600	NBR orEPDM	PN10	NBR -10°/+80 °C, EPDM -10°/+120	10	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 4620	Aluminium bronze	CuAl10Fe5Ni5-C (G-CuAl10Ni)	2.0975.01
Disc 4630	Stainless steel	GX5CrNiMo19-11-2 (G-X6CrNiMo18 10)	1.4408
Stem	Stainless steel	X39CrMo17-1 (X35CrMo17)	1.4122
Liner	NBR		
Liner	EPDM		

Options

- Other materials, pressure rating, flange connection and larger sizes up to DN 1200
- Available with EN 10204.3.1 or -.3.2 certificate
- Light metal version, see section: valves and fittings for marine service
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 46	1)	NBR or EPDM	PN 16	PN 16	2)	50 - 200
Serie 46	1)	NBR or EPDM	PN 10	PN 10	2)	200
Serie 46	1)	NBR or EPDM	PN 10 or PN 16	PN 10 or PN 16	3)	250 - 400
Serie 46	1)	NBR or EPDM	PN 10 or PN 16	PN 10 or PN 16	4)	450 - 600

1) Disc
• Aluminium bronze (fig. 4620) • Stainless steel (fig. 4630)

2) Operation
• None • Squeeze-type lever (fig. 4001A) • Tilting lever (fig. 4001B) • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

3) Operation
• None • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

4) Operation
• None • Cast iron worm gearbox (fig. 4013)

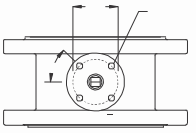
Pneumatic, electric and hydraulic actuators, see actuators section

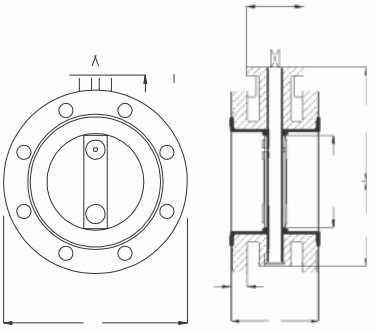
DN	A	E	F	H	H1	K	L	N	nxO	P	T	Weight excl. actuator[kg]	Kv value
	[mm]												
50	165	11	25	118	67	90	108	70	4x9	12	22	10	170
65	185	11	25	126	74	90	112	70	4x9	12	22	12	280
80	200	11	25	133	82	90	114	70	4x9	14	22	14	385
100	228	11	25	147	100	90	127	70	4x9	14	23	16	685
125	254	14	28	160	112	90	140	70	4x9	14	26	20	1070
150	285	14	28	180	134	90	140	70	4x9	14	26	27	1540
200	343	17	28	204	159	90	152	70	4x9	14	29	35	2740
250	405	22	30	245	195	125	165	102	4x11	15	32	51	4280
300	445	22	30	270	220	125	178	102	4x11	15	32	62	6165
350	505	27	29	315	282	150	190	125	4x14	20	32	90	7510
400	565	27	29	350	307	150	216	125	4x14	20	33	124	9950
450	615	36	38	375	352	175	222	140	4x18	20	33	180	12735
500	670	36	38	415	387	175	229	140	4x18	20	35	210	15860
600	780	46	48	465	452	210	267	165	4x22	25	36	302	23135

Flange type series 46
Bonded liner

- fig. 4620
- fig. 4630

- DN 50-DN600
- PN 10-PN16
- Temperature range -10°/+120 °C
- Short Face To Face
- Liner material -NBR and EPDM
- Centric disc -Aluminium bronze -SS
- Actuation -Lever





20060731

econosto®

Econ® ductile cast iron butterfly valve, double-flange type with excentric disc, through-going shaft and bonded rubber liner. Body fitted with two flanges and suitable for installation between flanges rated DIN PN 10. Face-to-face length acc. to ISO 5752 table 4 long, DIN 3202 F4 and BS 5155. The body is fitted with a top flange acc. to ISO 5211 as required for fitting of various manual controls or automatic controls. This type of butterfly valve is generally used in systems for water, gases, hydrocarbons and light corrosive media up to a maximum of 10 bar.

Pressure and temperature range

Size	Liner	Pressure rating	Temperature range	Max. operating pressure	
DN 65-DN600	NBR or EPDM	PN 10	NBR -10°/+80 °C, EPDM -10°/+120 °C	10	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 6610 (Rilsan coating)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Disc 6620	Aluminium bronze	CuAl10Fe5Ni5-C (G-CuAl10Ni)	2.0975.01
Disc 6630	Stainless steel	GX5CrNiMo19-11-2 (G-X6CrNiMo18 10)	1.4408
Stem 6610.6620	Stainless steel	X39CrMo17-1 (X35CrMo17)	1.4122
Stem 6630	Stainless steel	X5CrNiMo17-12-2	1.4401
Liner	NBR		
Liner	EPDM		

Options

- Other materials, pressure rating, flange connection and larger sizes up to DN 600
- Available with EN 10204.3.1B certificate
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Operation	DN [mm]
Serie 66	1)	NBR or EPDM	PN 10	PN 10	2)	50 - 200
Serie 66	1)	NBR or EPDM	PN 10	PN 10	3)	250 - 400
Serie 66	1)	NBR or EPDM	PN 10	PN 10	4)	450 - 600

1) Disc
• Cast iron/Rilsan (fig. 6610) • Aluminium bronze (fig. 6620) • Stainless steel (fig. 6630)

2) Operation
• None • Squeeze-type lever (fig. 4001A) • Tilting lever (fig. 4001B) • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

3) Operation
• None • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)

4) Operation
• None • Cast iron worm gearbox (fig. 4013)

Pneumatic, electric and hydraulic actuators, see actuators section

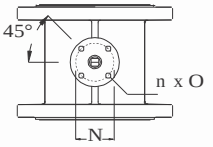
Dimensions

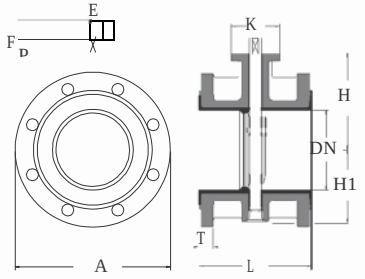
DN	A	E	F	H	H1	K	L	N	nxO	P	T	Weight excl. actuator[kg]	Kv value
[mm]													
65	185	11	25	126	74	90	170	70	4x9	12	22	11	180
80	200	11	25	133	82	90	180	70	4x9	14	22	13	310
100	220	11	25	147	100	90	190	70	4x9	14	23	15	610
125	250	14	28	160	112	90	200	70	4x9	14	26	19	941
150	285	14	28	180	134	90	210	70	4x9	14	26	23	1350
200	340	17	28	204	159	90	230	70	4x9	14	29	34	2585
250	395	22	30	245	195	125	250	102	4x11	15	32	49	4000
300	445	22	30	270	220	125	270	102	4x11	15	32	70	6580
350	505	27	29	315	282	150	290	125	4x14	20	32	87	8800
400	565	27	29	350	307	150	310	125	4x14	20	33	111	11000
450	615	36	38	375	352	175	330	140	4x18	20	33	160	14400
500	670	36	38	415	387	175	350	140	4x18	20	35	193	16300
600	780	46	48	465	452	210	390	165	4x22	25	36	325	24700

Flange type series 66
Bonded liner
Excentric disc

- fig. 6610
- fig. 6620
- fig. 6630

- DN 65-DN600
- PN 10
- Temperature range -10°/+120 °C
- Long Face To Face
- Liner material
  -NBR and EPDM
- Eccentric disc
  -Ductile cast iron/Rilsan
  -Aluminium bronze
  -SS
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator





20060731

econosto®

Econ® PTFE-lined butterfly valve, ring type with centric disc. Disc and shaft are manufactured as a one piece unit. The PTFE lining extends to over the flange sealing surfaces and is pressed against the disc by means of cup springs to guarantee a perfect stem seal. The two-piece body of ductile cast iron features four centring holes and is suitable for installation between flanges rated DIN PN 10/16 and ANSI 150#. Short Face To Face acc. to ISO 5752-20 and DIN 3202/3 K1. The body is fitted with a top flange acc. to ISO 5211 as required for fitting of various manual controls or automatic controls. This type of butterfly valve is generally used in systems for corrosive and hazardous liquids, and gases up to a maximum of 16 bar (PN 16 model). Designed for use on chemical tankers, this valve carries a type approval by Bureau Veritas.

Pressure and temperature range

Size	Lining	Pressure rating	Temp. range	-20 °C	+90 °C	+150 °C	+180 °C	+200 °C	
DN 32-DN150	PTFE	PN 16	-20°/+200 °C	16	16	10	4	2	[bar]
DN 200-DN300	PTFE	PN 10	-20°/+200 °C	10	10	10	4	2	[bar]
DN 350-DN400	PTFE	PN 6	-20°/+200 °C	6	6	6	4	2	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body 1)	Ductile cast iron	GJS-400-18-LT (GGG-40.3)	0.7043
Disc 4930	Stainless steel	X2CrNiMo18-14-3 (X2CrNiMo18 12)	1.4435
Disc 4990 (PFA lined)	Stainless steel	X2CrNiMo18-14-3 (X2CrNiMo18 12)	1.4435
Stem	Stainless steel	X2CrNiMo18-14-3 (X2CrNiMo18 12)	1.4435
Liner	PTFE		
Back up	MQ (Silicone)		
1) Finished with 80 µM epoxy coating			

Options

- Other materials, flange connection and larger sizes up to DN 800
- Available with EN 10204.3.1B certificate
- Set of flanges with long bolts, see figure 184SVLIN
- Pneumatic, electric or hydraulic actuator, see actuator section
- Lug type and "High purity" execution

Ordering information

Ordering code	Disc	Lining material	Rating	Fitting between flanges	Controls	DN [mm]
Serie 49	1)	PTFE	PN 16	PN 16	2)	32 – 150
Serie 49	1)	PTFE	PN 10	PN 10	2)	200
Serie 49	1)	PTFE	PN 10	PN 10	3)	250 – 300
Serie 49	1)	PTFE	PN 6	PN 6	3)	350 – 400
1) Disc • Stainless steel 316L • Stainless steel 316L PFA lined						
2) Controls • None • Tilting lever (fig. 4001E) • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)						
3) Controls • None • Aluminium worm gearbox (fig. 4012) • Cast iron worm gearbox (fig. 4013)						
Pneumatic, electric and hydraulic actuators, see actuators section						

Dimensions

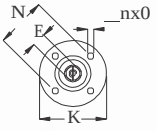
DN	E	F	H	H1	K	L	N	nxO	S	Weight excl. actuator[kg]	Kv value
					[mm]						
32/40	11	19	125	69	90	33	50/70	4x6,5/9	146	2.7	95
50	11	19	134	69	65	43	50	4x6,5	110	2.5	193
65	11	19	144	69	65	46	50	4x6,5	115	3.7	193
80	11	19	159	92	65	46	50	4x6,5	130	4.3	392
100	14	19	174	107	65	52	50	4x6,5	155	6.2	585
125	14	19	194	120	65	56	50	4x6,5	180	7.9	1015
150	17	25	209	132	90	56	70	4x9	210	10.5	1495
200	17	25	239	162	90	60	70	4x9	260	16.2	3050
250	22	32	274	199	125	68	102	4x11	320	25	4510
300	22	32	309	233	125	78	102	4x11	370	34.3	7210
350	27	40	350	257	155	78	125	4x13,5	450	50	8760
400	27	40	380	287	155	102	125	4x13,5	505	68	11350

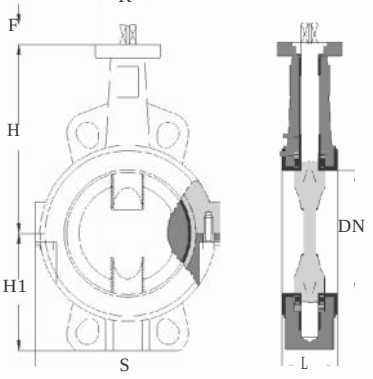
Ring type series 49

- fig. 4930
- fig. 4990

- DN 32-400
- PN 6- 16
- Temperature range -20°/+200 °C
- Short Face To Face
- PTFE liner
- Centric disc
  -SS 316L
  -SS 316L + PFA liner
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

detail of lined disc and stem seal





Index and product compare

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Ring type series 96

- DN 50-DN600
- PN 16/ANSI 150#
- Temperature range
  -45°/+260 °C
  With soft seal
- Short Face To Face
- Seat material
  -PTFE seat
  -Double seat
  -Fire-Safe seat
  -Metal seat
- Double eccentric disc
- Fire-safe
  BS 6755 part 2 and
  API 607
  (only with
  Fire-safe seat)
- Antistatic design
  ATEX guidance 94/9/EC
- BV type approval for
  Chemical tankers

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Ring type series 99

- DN 50-DN300
- PN 16/ANSI 150#
- Temperature range
  -45°/+260 °C
- Short Face To Face
- Seat material
  -PTFE seat
  -Fire-Safe seat
- Double eccentric disc
- Fire-safe
  BS 6755 part 2
  (only with
  Fire-safe seat)
- Antistatic design
  ATEX guidance 94/9/EC
- BV type approval for
  Chemical and gas
  Tankers

20060731

econosto®

Econ® High Performance butterfly valve, wafer type with streamlined double eccentric disc and one-piece anti-blow out shaft, bi-directional sealing, anti-static design. Available in carbon steel and stainless steel. Executed with replaceable seat in PTFE, Fire-safe, metal or double-seat version, for in-line sealing. For sealing to the atmosphere the valve is provided with a self-centering and re-adjustable gland packing of PTFE or graphite material. The body with centering holes for easy pipe alignment is suitable for mounting between flanges according to DIN PN 10/16 and ASME 150#. Face to face dimensions are according to ISO5752/EN558 basic series 20 (DN 350, basic series 25). For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Applications of series 96 butterfly valves can be found amongst others in general industrial and maritime systems for example in corrosive media, gases, steam and hot water up to a maximum of 20 bar (ASME class 150 execution). For application in cargo lines on chemical tankers this valve has a type approval by Bureau Veritas.

Pressure and temperature range

20 bar, -45 °C to +260 °C, depending on choice of material
See pressure/temperature diagrams for precise specifications.

Material specification

Component	Material	US
Main materials, steel version		
Body	Cast steel	ASTM A216-WCB
Disc	Stainless steel	ASTM A351-CF8M
Pressure ring	Forged steel	ASTM A105(N)
Stem, pins	Stainless steel	AISI316
Main materials, stainless steel version		
Body	Stainless steel	ASTM A351-CF8M
Disc	Stainless steel	ASTM A351-CF8M
Pressure ring	Stainless steel	AISI316
Stem, pins	Stainless steel	AISI316
Specification of seats for steel and SS version		
Version with PTFE seat		
Seat and shaft seal	PTFE	PTFE
Version with double seat		
Primary seat and shaft seal	PTFE	PTFE
Secondary seat	Stainless steel	AISI316
Version with fire-safe seat		
Primary seat	PTFE	PTFE
Secondary seat	Stainless steel	AISI316
Shaft seal	Graphite	
Version with metal seat		
Seat	Alloyed steel	Inconel
Shaft seal	Graphite	

Options

- Other materials, flange connection and larger sizes up to DN 1200
- Lug type and flange type
- Higher pressure rating up to PN 100, 600#
- Low temperature version down to -196 °C, only for SS model and in combination with extended bonnet
- High temperature version up to +650 °C, depending on material and in combination with extended bonnet
- TA luft gland packing
- Regulating version
- PSA version for high switching frequencies
- Available with EN 10204.3.1B certificates
- Set of flanges with long bolts, see figure 184SVLIN
- Pneumatic, electric or hydraulic actuator, see actuator section

Ring type series 96

- fig. 9630

- DN 50-DN600
- PN 16/ANSI 150#
- Temperature range
  -45°/+260 °C
  With soft seal
- Short Face To Face
- Seat material
  -PTFE seat
  -Double seat
  -Fire-Safe seat
  -Metal seat
- Double eccentric disc
- Fire-safe
  BS 6755 part 2 and
  API 607
  (only with
  Fire-safe seat)
- Antistatic design
  ATEX guidance 94/9/EC
- BV type approval for
  Chemical tankers
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

20060731

Ordering information

Ordering code	Case	Disc	Seat type	Rating	Fitting between flanges	Controls	DN [mm]
Serie 96	1)	Stainless steel (ASTM A351 CF8M)	2)	150#	PN 10,PN 16 and 150#	3)	50 – 200
Serie 96	1)	Stainless steel (ASTM A351 CF8M)	2)	150#	PN 10,PN 16 and 150#	4)	250 – 600

1) Case
• Steel (ASTM A216 WCB) • Stainless steel (ASTM A351 CF8M)

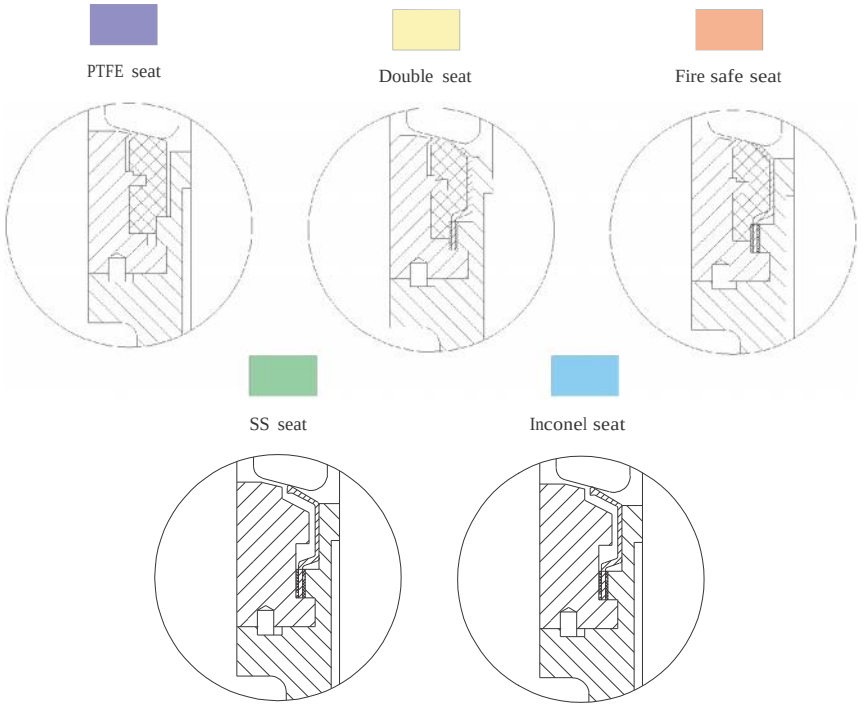
2) Seat type
• PTFE seat • Double seat (PTFE with secondary stainless steel seat) • Fire safe seat (PTFE with secondary stainless steel seat) • Metal seated • stainless steel • Metal seated • inconel

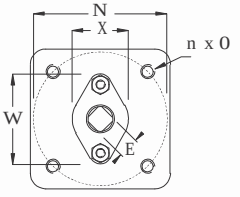
3) Controls
• None • Control lever (fig. 4001G) • Cast iron worm gearbox (fig. 4015)

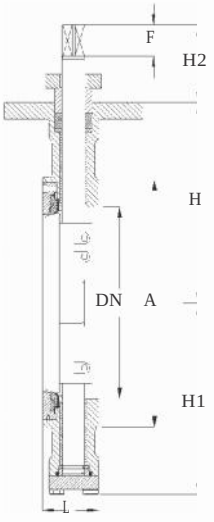
4) Controls
• None • Cast iron worm gearbox (fig. 4015)

Pneumatic, electric and hydraulic actuators, see actuators section

Seat excecutions for 96 series butterfly valves







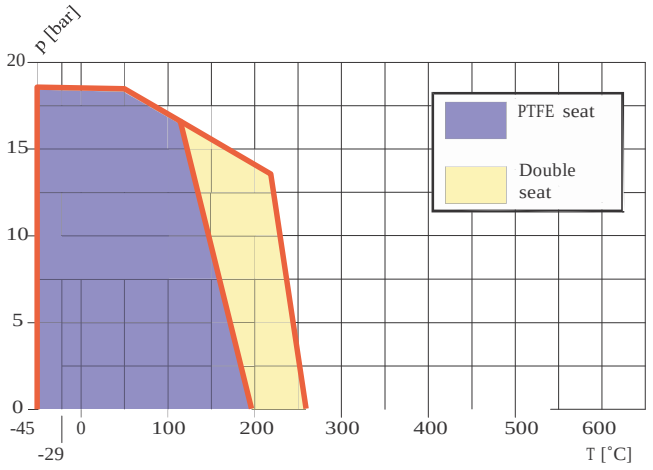
Dimensions

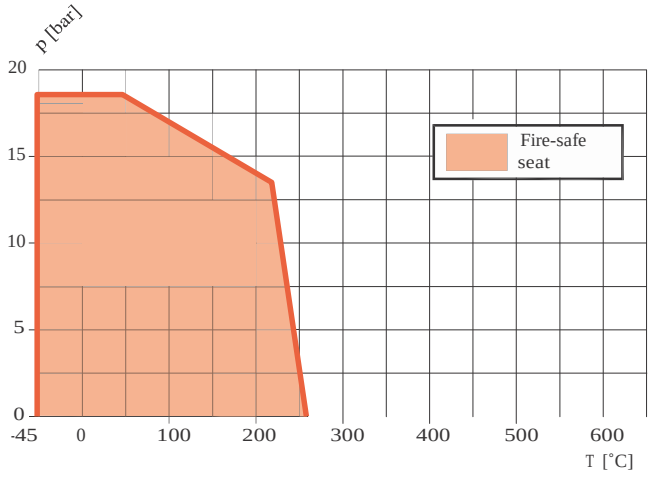
DN	A	E	F	H	H1	H2	L	N	nxO	W	X	Weight excl. actuator[kg]	Kv value
[mm]													
50	102	12	23	108	99	62	43	70	4xM8	58	40	6	60
65	122	12	23	123	112	62	46	70	4xM8	58	40	6	110
80	132	12	23	133	120	62	46	70	4xM8	58	40	7	155
100	156	12	23	155	131	62	52	70	4xM8	58	40	8	350
125	188	17	26	173	159	65	56	102	4xM10	72	55	12	525
150	216	17	26	183	170	65	56	102	4xM10	72	55	15	985
200	268	19	35	218	210	82	60	125	4xM12	96	70	22	1800
250	326	22	35	253	237	82	68	125	4xM12	96	70	32	2740
300	375	27	45	278	278	92	78	140	4xM16	96	70	43	4025
350	420	30	45	318	316	92	92	140	4xM16	96	70	54	4965
400	482	36	62	363	362	124	102	165	4xM20	124	80	86	6850
450	538	41	62	388	387	124	114	165	4xM20	124	80	114	9000
500	592	46	70	418	432	132	127	165	4xM20	142	110	145	12000
600	694	50	75	478	506	182	154	254	8xM16	142	110	219	18000

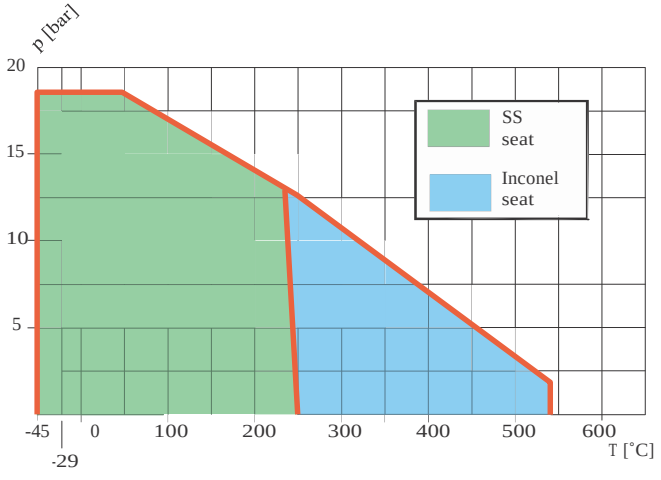
20060731

Pressure and temperature range 96-series butterfly

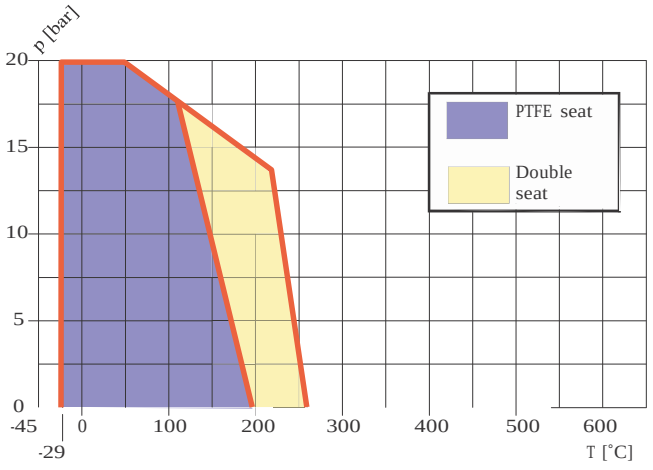
Stainless steel body

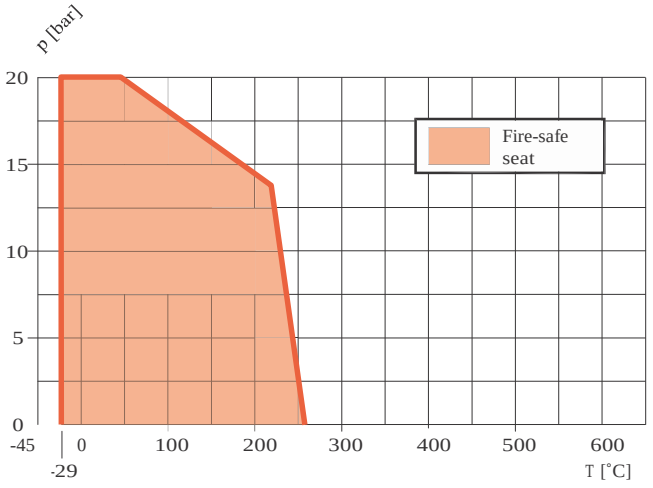


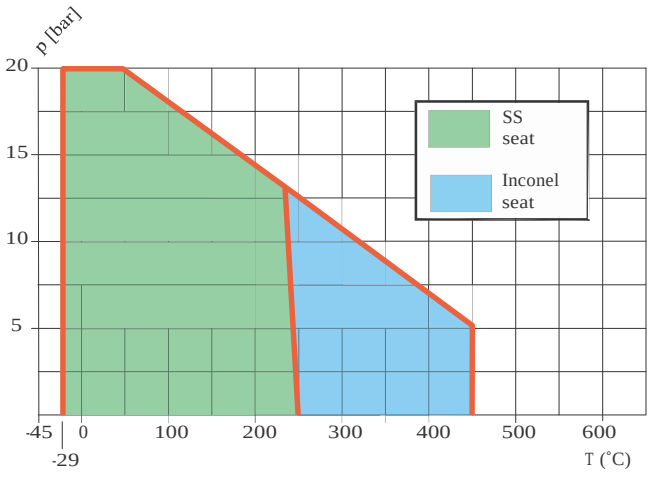




Steel body







20060731

econosto®

Econ® High Performance butterfly valve, wafer type with double eccentric disc and one-piece anti-blow out shaft, bi-directional sealing, anti-static design. Available in carbon steel and stainless steel. Executed with replaceable seat in PTFE or Fire-safe version for in-line sealing. For sealing to the atmosphere the valve is provided with a self-centering and re-adjustable gland packing of PTFE or graphite material. The body with centering holes for easy pipe alignment is suitable for mounting between flanges according to DIN PN 10/16 and ASME 150#. Face to face dimensions are according to ISO5752/EN558 basic series 20 (DN 350, basic series 25). For easy adaption of both manual and automatic actuators the valve is executed with a topflange according to the ISO 5211 standard. Applications of series 99 butterfly valves can be found amongst others in general industrial and maritime systems for example in corrosive media, gases, steam and hot water up to a maximum of 20 bar (ASME class 150 execution).
For application in cargo lines on chemical tankers this valve has a type approval by Bureau Veritas.

Pressure and temperature range

19.65 bar, -45 °C to +260 °C, depending on choice of materials
See pressure/temperature diagrams for precise specifications.

Material specification

Component	Material	US
Main materials, steel version		
Body	Cast steel	ASTM A216-WCB
Disc	Stainless steel	ASTM A351-CF8M
Pressure ring	Forged steel	ASTM A105(N)
Stem, pins	Stainless steel	AISI316
Main materials, stainless steel version		
Body	Stainless steel	ASTM A351-CF8M
Disc	Stainless steel	ASTM A351-CF8M
Pressure ring	Stainless steel	AISI316
Stem, pins	Stainless steel	AISI316
Specification of seats for carbon steel and SS version		
Version with PTFE seat		
Seat and shaft seal	PTFE	PTFE
Version with fire-safe seat		
Primary seat	PTFE	PTFE
Secondary seat	Stainless steel	AISI316
Shaft seal	Graphite	

Options

- Optionally with Ductile Iron body (maximum working pressure 10 bar)
- Other materials, flange connection and larger sizes up to DN 1800
- Lug type and flanged type
- Higher pressure rating up to PN 100, 600#
- TA luft execution
- Ship classification certificates
- Set of flanges with long bolts, see figure 184SVLIN
- Pneumatic, electric or hydraulic actuator, see actuator section

Ordering information

Ordering code	Case	Disc	Seat type	Rating	Fitting between flanges	Controls	DN [mm]
Serie 99	1)	Stainless steel (ASTM A351 CF8M)	2)	150#	PN 10,PN 16 and 150#	3)	50 – 200
Serie 99	1)	Stainless steel (ASTM A351 CF8M)	2)	150#	PN 10,PN 16 and 150#	4)	250 – 300

1) Case
• Steel (ASTM A216 WCB) • Stainless steel (ASTM A351 CF8M)

2) Seat type
• PTFE seat • Fire safe seat (PTFE with secondary stainless steel seat)

3) Controls
• None • Control lever • Cast iron worm gearbox (fig. 4015)

4) Controls
• None • Cast iron worm gearbox (fig. 4015)

Pneumatic, electric and hydraulic actuators, see actuators section

Ring type series 99

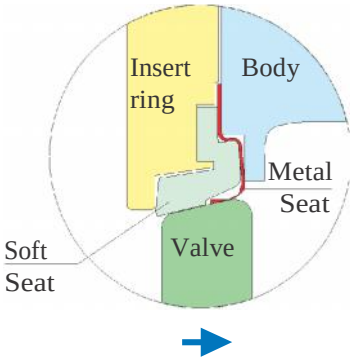
- fig. 9930

- DN 50-DN300
- PN 16/ANSI 150#
- Temperature range
  -45°/+260 °C
- Short Face To Face
- Seat material
  -PTFE seat
  -Fire-Safe seat
- Double eccentric disc
- Fire-safe
  BS 6755 part 2
  (only with
  Fire-safe seat)
- Antistatic design
  ATEX guidance 94/9/EC
- BV type approval for
  Chemical and gas
  Tankers
- Actuation
  -Lever
  -Worm gearbox
  -Pneumatic actuator
  -Electric actuator
  -Hydraulic actuator

20060731

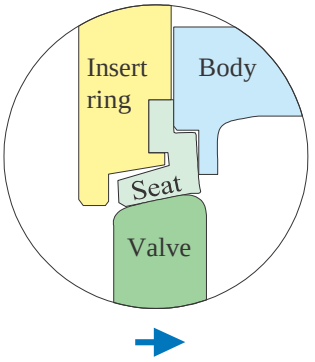
Seat excecutions for 96 series butterfly valves

Stainless Steel or Steel body
with Fire Safe seat



Flow direction

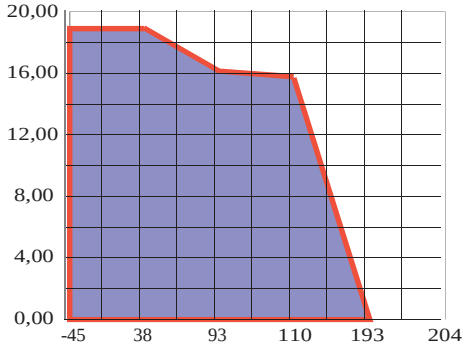
Stainless Steel or Steel body
witht PTFE seat



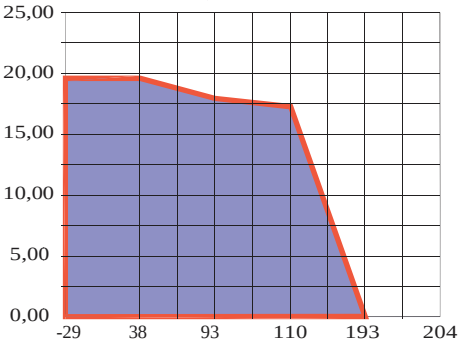
Flow direction

Pressure and temperature range

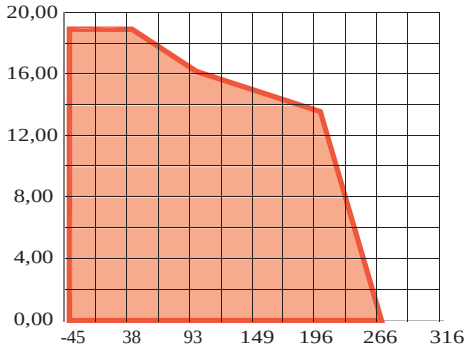
Stainless Steel body (CF8M) with PTFE seat



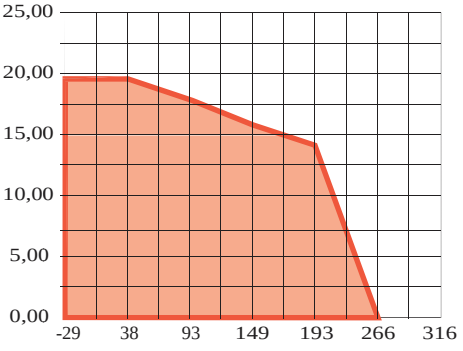
Carbon steel body (WCB) met PTFE seat

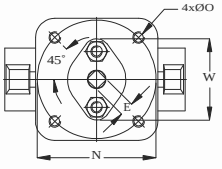


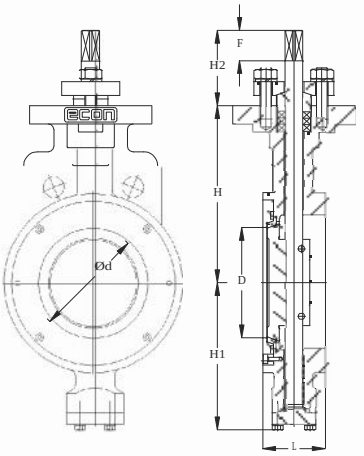
Stainless Steel body (CF8M) with Fire Safe seat



Carbon steel body (WCB) with Fire Safe seat







Dimensions

DN	E	F	H	H1	H2	L	N	nxO	W	Weight excl. actuator[kg]	Kv value
[mm]											
50	11	26	105	100	65	43	102	4xM10	70	5	60
65	12	26	123	103	65	46	102	4xM10	70	5	110
80	12	26	130	111	65	46	102	4xM10	70	6	155
100	12	26	152	122	65	52	102	4xM10	70	8	350
125	16	26	172	162	65	56	102	4xM10	70	10	525
150	16	26	180	170	65	56	102	4xM10	70	13	985
200	19	36	215	197	85	60	140	4xM16	96	20	1800
250	22	36	250	229	85	68	140	4xM16	96	32	2740
300	27	41	275	270	90	78	140	4xM16	96	42	4025

20060731

econosto®

Econ® ductile cast iron butterfly valve, "Grooved end" type with rubber-lined centric disc and split shafts. Body fitted with groove connections and suitable for installation in the pipe system with 3-piece couplings, consisting of two shell clamps and a rubber sealing ring. The use of this grooved connection leads to reduction of installation costs. The valve is supplied including a lever or worm gearbox for manual actuation. Furthermore, this valve is built standard with a long neck for insulation, and the body is finished inside and out with an Epoxy coating. This type of butterfly valve is used in the plumbing sector, for heating - and Air conditioning systems up to a maximum of 16 bar.

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
2"-12"	EPDM	PN 16	-10°/+120 °C	16	[bar]
DN 65/125/150	EPDM	PN 16	-10°/+120 °C	16	[bar]

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body 1)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Butterfly 2)	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Top shaft	Stainless steel	X12Cr13 (X10Cr13)	1.4006
Lower shaft	Stainless steel	X12Cr13 (X10Cr13)	1.4006

1) Finished inside and out with epoxy coating
2) EPDM lined

Ordering information

Ordering code	Type	Disc	Lining	Rating	Type	DN [mm]
Serie 48	Grooved end for ASME pipe	EPDM Rubber-coated	None	PN 16	1)	2" - 12"
Serie 48	Grooved end for ASME pipe	EPDM Rubber-coated	None	PN 16	2)	2" - 12"
Serie 48	Grooved end for DIN pipe	EPDM Rubber-coated	None	PN 16	1)	DN 65, 125 en 150

1) Type
• With lever (fig. 4801) • With worm gearbox (fig. 4802)

2) Type
• With worm gearbox (fig. 4802)

Dimensions

DN	D1	H1	H2	H3	L	L1	M	N	P	Weight	
	[mm]									fig. 4801 [kg]	fig. 4802 [kg]
2 "	60.3	110	71	151	81.0	270	Ø 95	122	127	3.1	4.6
2A"	73.0	125	85	166	96.4	270	Ø 125	122	127	3.3	5.2
3 "	88.9	132	91	173	96.4	270	Ø 125	122	127	3.7	6.0
4 "	114.3	165	109	206	115.4	270	Ø 125	122	127	5.3	7.6
5 "	141.3	194	131	227	132.4	350	Ø 225	162	127	8.0	10.5
6 "	168.3	209	145	240	132.4	350	Ø 225	162	127	10.0	13.0
8 "	219.1	--	170	267	147.4	--	Ø 225	231	167	--	16.2
10 "	273.1	--	195	313	159.0	--	Ø 225	231	167	--	20.1
12 "	323.9	--	241	341	165.0	--	Ø 225	231	167	--	25.4
DN 65	76.1	125	85	166	96.4	270	Ø 125	122	127	3.3	5.2
DN 125	139.7	194	131	227	132.4	350	Ø 225	162	127	8.0	10.5
DN 150	165.1	209	145	240	132.4	350	Ø 225	162	127	10.0	13.0

Series 48

- fig. 4801
- fig. 4802

- Size 2"-12", DN 65/DN125/DN150
- PN 16
- Temperature range -10°/+120 °C
- Centric disc, rubber-lined -Ductile cast iron + EPDM
- Actuation -Lever -Worm gearbox

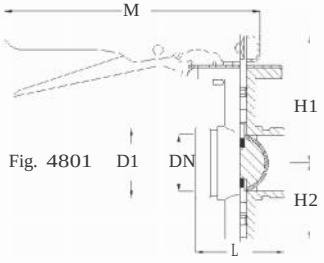
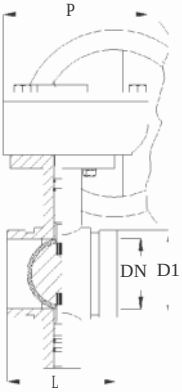


Fig. 4801



Cross section A - A

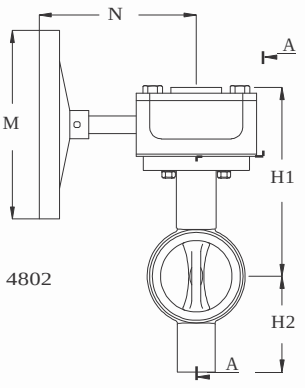


Fig. 4802

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Levers

- Squeeze-lever
- Tilting lever
- Control lever

page 28

Aluminium worm gearbox

- Output torque up to 1000 Nm
- Lightweight
- Protection class IP65
- Self-braking
- Including handwheel
- Position indicator

page 29

Cast iron worm gearbox

- Output torque up to 8000 Nm
- Protection class IP68
- Self-braking
- Including handwheel
- Position indicator

Levers

- fig. 4001A
- fig. 4001B
- fig. 4001C
- fig. 4001D
- fig. 4001E
- fig. 4001F
- fig. 4001G
- fig. 4001H

- Squeeze-lever
- Tilting lever
- Control lever

Figure 4001A
Cast iron squeeze-type lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 57, 60, 61, 46 and 66.

Figure 4001B
Cast iron tilting lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 57, 60, 61, 46 and 66.

Figure 4001C
Steel squeeze-type lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 63.

Figure 4001D
Aluminium squeeze-type lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 58 and 64.

Figure 4001E
Cast iron tilting lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 49.

Figure 4001F
Cast iron tilting lever, locks automatically in open and closed position and five intermediate positions. Suitable for mounting on butterfly valves from the series 69.

Figure 4001G
Ductile cast iron control lever, epoxy coated, with locking device by means of rotary knob. Continuously fixable in all positions. Suitable for mounting on butterfly valves from the series 96.

Figure 4001H
Steel control lever, with locking device by means of rotary knob. Continuously fixable in all positions. Suitable for fitting on butterfly valves from the series 63.

Ordering information

Ordering code	Suitable for series	Operation	Use
4001A	S57 - S60 - S61 - S46 - S66	Squeeze-type lever	DN 50 - 300
4001B	S57 - S60 - S61 - S46 - S66	Tilting lever	DN 50 - 300
4001C	S63	Squeeze-type lever	DN 25 - 200
4001D	S58 - S64	Squeeze-type lever	DN 25 - 300
4001E	S49	Tilting lever	DN 25 - 300
4001F	S69	Tilting lever	DN 50 - 200
4001G	S96	Control lever	DN 50 - 200
4001H	S63	Control lever	DN 25 - 200

Fig. 4001A

Fig. 4001B

Fig. 4001C

Fig. 4001D

Fig. 4001E

Fig. 4001F

Fig. 4001G

Fig. 4001H

20060731

econosto®

Econ® figure 4012 aluminium worm gearbox complete with handwheel and position indication. The compact form and the use of aluminium body makes this wormgear very lightweight. The worm transmission is self-braking and has a optimal reduction ratio. By means of the ISO 5211 standardised mounting flange and replaceable inserts, this worm gearbox is suitable for direct mounting on butterfly valves as well as other quarter-turn valves. The body is externally finished with a polyurethane coating, and is sealed according protection class IP65, so that water and dust cannot penetrate. Different handwheels can be mounted on the stainless steel drive shaft, depending on the size of the butterfly valve. The gearbox can be adjusted to the stroke of the valve by means of the end stops. This type of worm gearbox is suitable for all rubber-lined and PTFE-lined butterfly valves up to and including DN 400, and is recommended for indoor installation.

Specifications

Ambient temperature:	-20 °C -/- +120 °C
Protection class:	IP65
Rotation:	-5° -/- 95°
Stroke:	adjustable by means of end stops

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Aluminium		
Cover	Aluminium		
Worm gear Segment	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Worm	Carbon steel	C45	1.0503
Worm shaft	Stainless steel	X8CrNiS18-9 (X12CrNiS18 8)	1.4305

Options

- Electrical position indicator by means of microswitches
- Padlock flanges
- Actuation by means of chain wheel

Ordering information

Ordering code	Suitable for series
4012	S57 - S60 - S61 - S46 - S66 - S58 - S64 - S63 - S67 - S69

When ordering, specify ordering code + butterfly valve series + butterfly valve DN
Remark:
1) See size table for type of worm gearbox
2) The worm gearbox is depending on the butterfly valve series and butterfly valve DN

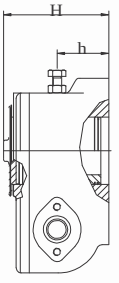
Dimensions

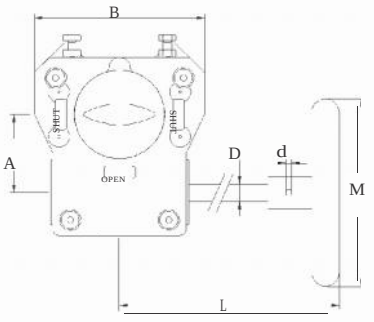
Type	Output Torque	A	B	D	d	L	M	H	h
		[mm]							
232-05	125 Nm	42.5	80	ø12	ø4	112	ø100	49	27
232-07	250 Nm	50	100	ø12	ø4	170	ø160	54	28
232-10	500 Nm	60	146	ø15	ø5	198	ø200	71	38.5
232-12	1000 Nm	80	175	ø20	ø6	304	ø315	80	39.5

Aluminium worm gearbox

- fig. 4012

- Output torque up to 1000 Nm
- Lightweight
- Protection class IP65
- Self-braking
- Including handwheel
- Position indicator





20060731

econosto®

Econ® figure 4013 and 4015 cast iron worm gearboxes complete with handwheel and position indication, compact form, self-braking worm transmission with a optimal reduction ratio. By means of the ISO 5211 standardised mounting flange and replaceable inserts, these worm gearboxes are suitable for direct mounting on butterfly valves as well as other quarter-turn valves. The body is extrenally finished with a powder coating, and is sealed compliant with protection class IP68, so that water and dust cannot penetrate.The worm gearboxes are suitable for temporary submersion in water. Different handwheels can be mounted on the stainless steel drive shaft, depending on the size of the butterfly valve. The worm gearboxes can be adjusted to the stroke of the valve by means of the end stops. The worm gearbox as per figure 4013 is suitable for all rubber-lined and PTFE-lined butterfly valves. The worm gearbox figure 4015 is specially suitable for High Performance butterfly valves and is fitted standard with a grease nipple and vane indicator. Both types are recommended for indoor as well as outdoor installation.

Cast iron worm gearbox

- fig. 4013
- fig. 4015

- Output torque up to 8000 Nm
- Protection class IP68
- Self-braking
- Including handwheel
- Position indicator

Specifications

Ambient temperature:	-25 °C -/- +110 °C
Protection class:	IP68
Rotation:	-5° -/- 95°
Stroke:	adjustable by means of end stops

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	Cast iron	GJL-250 (GG-25)	0.6025
Cover	Cast iron	GJL-250 (GG-25)	0.6025
Position indicator (fig. 4013)	Cast iron	GJL-250 (GG-25)	0.6025
Vane indicator (fig. 4015)	Steel	- (St.37-1)	1.0065
Worm gear segment	Ductile cast iron	GJS-400-15 (GGG-40)	0.7040
Worm	Carbon steel	C45	1.0503
Worm shaft	Stainless steel	X8CrNiS18-9 (X12CrNiS18 8)	1.4305

Options

- Padlock flanges
- Actuation by means of chain wheel
- Grease nipple for figure 4013
- Vane indicator for figure 4013
- Electrical position indicator by means of microswitches

Ordering information

Ordering code	Suitable for series
4013	S57 - S60 - S61 - S46 - S66 - S58 - S64 - S49
4015	S96

When ordering, specify ordering code + butterfly valve series + butterfly valve DN
Remark:
1) See size table for type of worm gearbox
2) The worm gearbox is depending on the butterfly valve series and butterfly valve DN

Fig. 4013 Fig. 4015

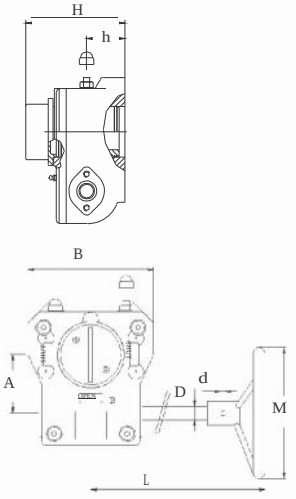


Fig. 4015

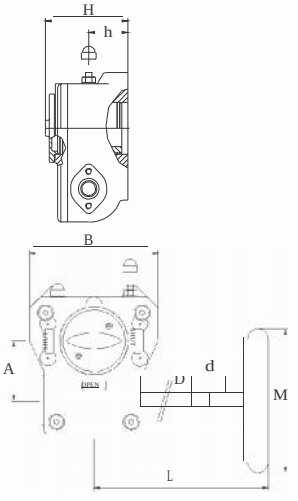


Fig. 4013

Dimensions

Fig.	Type	Output Torque	A	B	D	d	L	M	H	h
			[mm]							
4013	QS200	200 Nm	43.5	84	ø12	ø4	see 1)	see 1)	64	28.5
4013	QS400	400 Nm	52.5	112	ø12	ø4	see 1)	see 1)	74.75	34
4013	QS800	800 Nm	68.75	135	ø15	ø5	see 1)	see 1)	90.5	42.5
4013	QS2000	2000 Nm	96.5	180	ø20	ø6	see 1)	see 1)	100	50
4013	QS4000	4000 Nm	137.5	282	ø20	ø6	see 1)	see 1)	128	54.5
4013	QS8000	8000 Nm	180	366	ø25	ø6	see 1)	see 1)	135	63.5
4015	QS200	200 Nm	43.5	84	ø12	ø4	see 1)	see 1)	89	28.5
4015	QS400	400 Nm	52.5	112	ø12	ø4	see 1)	see 1)	99.75	34
4015	QS800	800 Nm	68.75	135	ø15	ø5	see 1)	see 1)	115.5	42.5
4015	QS2000	2000 Nm	96.5	180	ø20	ø6	see 1)	see 1)	125	50
4015	QS4000	4000 Nm	137.5	282	ø20	ø6	see 1)	see 1)	153	54.5
4015	QS8000	8000 Nm	180	366	ø25	ø6	see 1)	see 1)	160	63.5

1) The sizes depend on the type of butterfly valve and the DN.

20060731

Econ® The DCV2 and DCV3 disc check valves are of the water pattern designed to be sandwiched between flanges. They are suitable for use on a wide range of fluid applications in process lines, hot water systems, Steam, and condensate systems etc. Face-to-face dimensions conform to EN 558 part part.1.

Disc check valve

- Size
  -1/2" – 4"
- Body
  -Stainless steel 316L
- Pressure rating
  -PN 40
- Disc
  - Stainless steel 316L

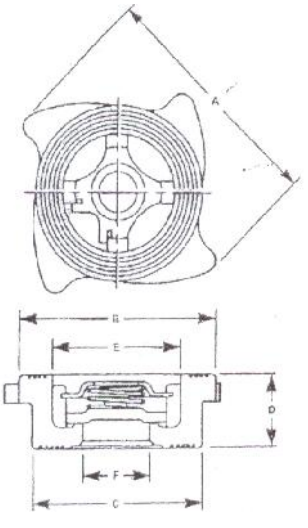
Specifications

Material specification

Component	Material	EN and/or (DIN)	W.nr.
Body	CF8M	Stainless steel 316L	
Spring	CF8M	Stainless steel 316L	
Disc	CF8M	Stainless steel 316L	

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1/2"-4"		PN 40	-10°/+300 °C	40	[bar]
DN 15-100		PN 40	-10°/+300 °C	40	[bar]



Dimensions

Size	A	B	C	D	E	F	Weight
DN15	60.0	43	38	16.0	29.0	15	0.11
DN20	69.5	53	45	19.0	35.7	20	0.17
DN25	80.5	63	55	22.0	44.0	25	0.28
DN32	90.5	75	68	28.0	54.5	32	0.47
DN40	101.0	85	79	31.5	65.5	40	0.64
DN50	115.0	95	93	40.0	77.0	50	1.11
DN65	142.0	115	113	46.0	97.5	65	1.64
DN80	154.0	133	128	50.0	115.5	80	2.21
DN100	184.0	154	148	60.0	130.0	100	3.31

These valves don’t need the Gasket, and using the Gasket of sealing will derange the valve's operation .
Advantages of the product:
1- LESS THICKNESS which is as per ISO 5752, 20 SERIES OR EN 558 SERIES 20. PROVIDES THE valves with low weight, and dimensions which minimize the problems of Insulating, storing and transportation.
2- Insulting the valves is usable in all cases like vertical, horizontal and slant.
3- The sealing operation is in two sides.
4- They are useful for insulating of cutting, connecting and also controlling the flow along with the lowest pressure drop.

Dual plate check valve

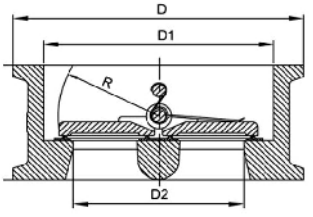
- Size:
  -2" – 24"
- Temperature range
  -10°/+150 °C
- Pressure rating
  -PN 16
- Disc
  - Stainless steel 316L

Material specification

No.	Description	Using Cases
1	body	CAST IRON, DOCTIL,GGG40
2	SEAT	EPDM
3	DISC	S.S 316
4	PROTECTOR SHAFT	S.S 316
5	SPRING	S.S 416
6	upwards shaft	S.S 316
7	short shaft of downwards	S.S 316
8	gasket	PTFE

Dimensions

size	Class125				Class150				
	L	D	D1	D2	L	D	D1	D2	R
DN50	54	105	60	38	60	107	65	46	27
DN65	54	124	73	48	67	127	78	60	35
DN80	57	137	89	64	73	137	94	70	42
DN100	54	177	114	87	73	175	117	88	50
DN125	70	197	140	102		187	145	115	64
DN150	76	222	168	130	98	222	171	134	77
DN200	65	279	219	177	127	279	222	182	102.5
DN250	108	340	273	216	146	340	276	220	125
DN300	143	410	324	260	181	410	328	260	146
DN350	184	451	356	308	184	451	375	298	170
DN400	191	514	406	359	191	511	410	350	200
DN450	203	549	457	400	203	546	450	385	220
DN500	213	606	508	440	219	603	505	438	241
DN600	222	718	610	536	222	714	624	538	294



Econ® Steel globe valves, C.S trim, pressure rating PN 40, angle pattern, flanged ends acc. to DIN PN 40, outside screwed stem and non-rising handwheel.

Application: industry, power stations, flue gas scrubbing, steam installations, ammonia installations, heating systems, vacuum installations.

Fig 431

Angle valve

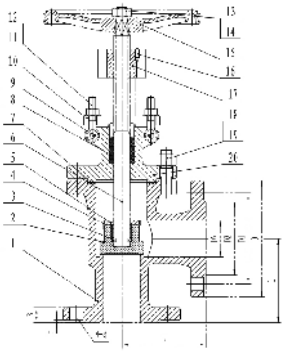
- DN 40-DN200
- PN 40
- Temperature range
  -10°/+200 °C
- disc
  -A 105
- Body
  -GSC-25
- Trim
  -Steel

Material specification

Component	Material	EN, ANSI and/or (DIN)	W.no.
Body	Steel	GCS-25	
Cover	Steel	GCS-25	
Disc 1)	Carbon steel	A 105	
Seat, stem	steel	2Cr13	
Safety gland packing	Graphite		
Bonnet gasket (SS insert)	Graphite		
Handwheel	Carbon steel	A216 WCB	

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1 1/2"- 8"		PN 40	-29°/+425 °C	40	[bar]
DN 40-200		PN 40	-29°/+425 °C	40	[bar]



Dimensions

DN	D	L	D1	D2	f	B	Weight FiG 431		Kv Value FiG 431	
			[mm]				[kg]			
40	150	115	110	88	3	18	8,8		35.4	
50	165	125	125	102	3	20	12,2		56.7	
65	185	145	145	122	3	22	16,1		94	
80	200	155	160	138	3	24	21,4		146	
100	235	175	190	162	3	24	33		229	
125	270	200	220	188	3	26	51		351	
150	300	225	250	218	3	28	69		513	
200	375	275	320	285	3	34	105		906	

Econ® Steel bellow sealed globe valves, SS trim, pressure rating PN 16, straight pattern, flanged ends acc. to DIN PN 16, outside screwed stem and non-rising handwheel.

Application: industry, power stations, flue gas scrubbing, steam installations, ammonia installations, heating systems, vacuum installations.

Fig 430

Material specification

Component	Material	EN, ANSI and/or (DIN)	W.no.
Body	Steel	GCS-25	
Bonnet	Steel	GCS-25	
Disc 1)	Stainless steel	304	
Seat, stem	Stainless steel	A182 F6A	
Bellow	Stainless steel	304	
Safety gland packing	Graphite		
Bonnet gasket	Graphite+SS 304		
Handwheel	Steel	A197	

1) DN > 200 : Steel disc (1.0425) with welded-on SS seal (1.4551)

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1/2"-8"		PN 16	-29°/+330 °C	16	[bar]
DN 15-200		PN 16	-29°/+330 °C	16	[bar]

Pressure and temperature range							
PN 16	10/120°C	200	250	300			
	16	12.8	11.2	9.6	-	-	-

Dimensions

DN	D	L	Do	H	H1	M	Weight FiG 430		Kv Value FiG 430	
			[mm]				[kg]			
15	95	130	130	191	166	126	3,7		4,7	
20	105	150	130	191	166	126	4,4		7,4	
25	115	160	130	197	172	126	5,1		11,2	
32	140	180	130	200	175	126	7,5		18,3	
40	150	200	150	218	193	150	8,8		29,3	
50	165	230	150	220	195	150	12,2		44,2	
65	185	290	180	238	213	175	16,1		73,2	
80	200	310	180	257	227	175	21,4		112,2	
100	220	350	200	340	294	225	33		173	
125	250	400	200	360	325	300	51		288	
150	285	480	400	390	355	400	69		410	
200	340	600	400	530	440	520	105		725	

Bellow sealed globe valve

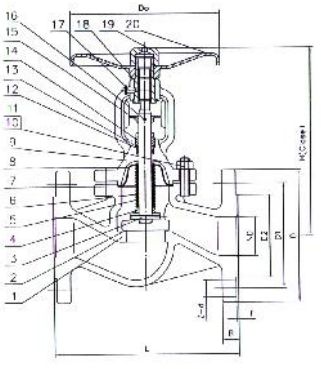
- DN 40-DN200
- PN 16
- Temperature range

  -29°/+330 °C
- disc

  -SS
- Body

  -GSC-25
- Trim

  -SS



Econ® Steel globe valves, C.S trim, pressure rating PN 40, straight pattern, flanged ends acc. to DIN PN 40, outside screwed stem and non-rising handwheel.

Application: industry, power stations, flue gas scrubbing, steam installations, ammonia installations, heating systems, vacuum installations.

Fig 430

Material specification

Component	Material	EN, ANSI and/or (DIN)	W.no.
Body	Steel	GCS-25	
Bonnet	Steel	GCS-25	
Disc 1)	Carbon steel	A 105	
Seat, stem	Stainless steel	A182 F6A	
Safety gland packing	Graphite		
Bonnet gasket	Graphite+SS 304		
Handwheel	Steel	A536	

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1/2"-8"		PN 40	-29°/+425 °C	40	[bar]
DN 15-200		PN 40	-29°/+425 °C	40	[bar]

Dimensions

DN	D	L	Do	H	H1	M
			[mm]			
15	95	130	130	191	166	126
20	105	150	130	191	166	126
25	115	160	130	197	172	126
32	140	180	130	200	175	126
40	150	200	150	218	193	150
50	165	230	150	220	195	150
65	185	290	180	238	213	175
80	200	310	180	257	227	175
100	220	350	200	340	294	225
125	250	400	200	360	325	300
150	285	480	400	390	355	400
200	340	600	400	530	440	520

globe valve

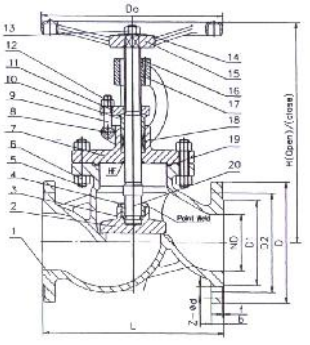
- DN 40-DN200
- PN 40
- Temperature range

  -29°/+425 °C
- disc

  -A 105
- Body

  -GSC-25
- Trim

  -Steel



Econ® C.S strainers for general use. Suitable for use in horizontal & vertical pipelines with downward flow.

Material specification

Component	Material	EN, ANSI and/or (DIN)	W.no.
Body	Steel	GCS-25	
Cap	Steel	GCS-25	
Filter	St. steel	304	
Frame work	Stainless steel	304	
Safety gland packing	Graphite		

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1/2"-8"		PN 40	-29°/+425 °C	40	[bar]
DN 15-200		PN 40	-29°/+425 °C	40	[bar]

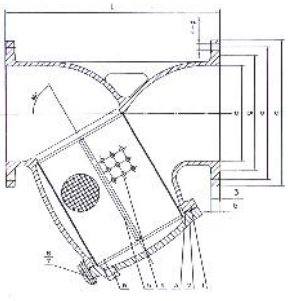
Strainer

- DN 15-DN200
- PN 40
- Temperature range

  -29°/+425 °C
- Filter

  -SS 304
- Body

  -GSC-25



Dimensions

DN	L	O	C	g	b	f
			[mm]			
15	130	95	65	45	16	2
20	150	105	75	58	18	2
25	160	115	85	65	18	2
32	180	140	100	78	18	2
40	200	150	110	88	18	3
50	230	165	125	102	20	3
65	290	185	145	122	22	3
80	310	200	160	138	24	3
100	350	235	190	162	24	3
125	400	270	220	188	26	3
150	480	300	250	218	28	3
200	600	375	320	285	34	3

Econ® C.S strainers for general use. Suitable for use in horizontal & vertical pipelines with downward flow.

Material specification

Component	Material	EN, ANSI and/or (DIN)	W.no.
Body	Steel	GCS-25	
Cap	Steel	GCS-25	
Filter	St. steel	304	
Frame work	Stainless steel	304	
Safety gland packing	Graphite		

Pressure and temperature range

Size	Disc liner	Pressure rating	Temperature range	Max. operating pressure	
1 1/2"-8"		PN 16	-29°/+425 °C	16	[bar]
DN 40-200		PN 16	-29°/+425 °C	16	[bar]

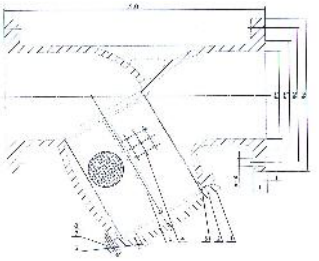
Strainer

- DN 40-DN200
- PN 16
- Temperature range

  -29°/+425 °C
- Filter

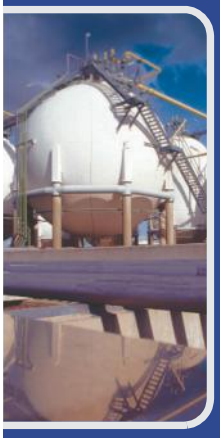
  -SS 304
- Body

  -GSC-25



Dimensions

DN	L	O	C	g	t	f
			[mm]			
40	200	150	110	88	18	3
50	230	165	125	102	18	3
65	290	185	145	122	18	3
80	310	200	160	138	20	3
100	350	220	180	158	20	3
125	400	250	210	188	22	3
150	480	285	240	212	22	3
200	600	340	295	268	24	3



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