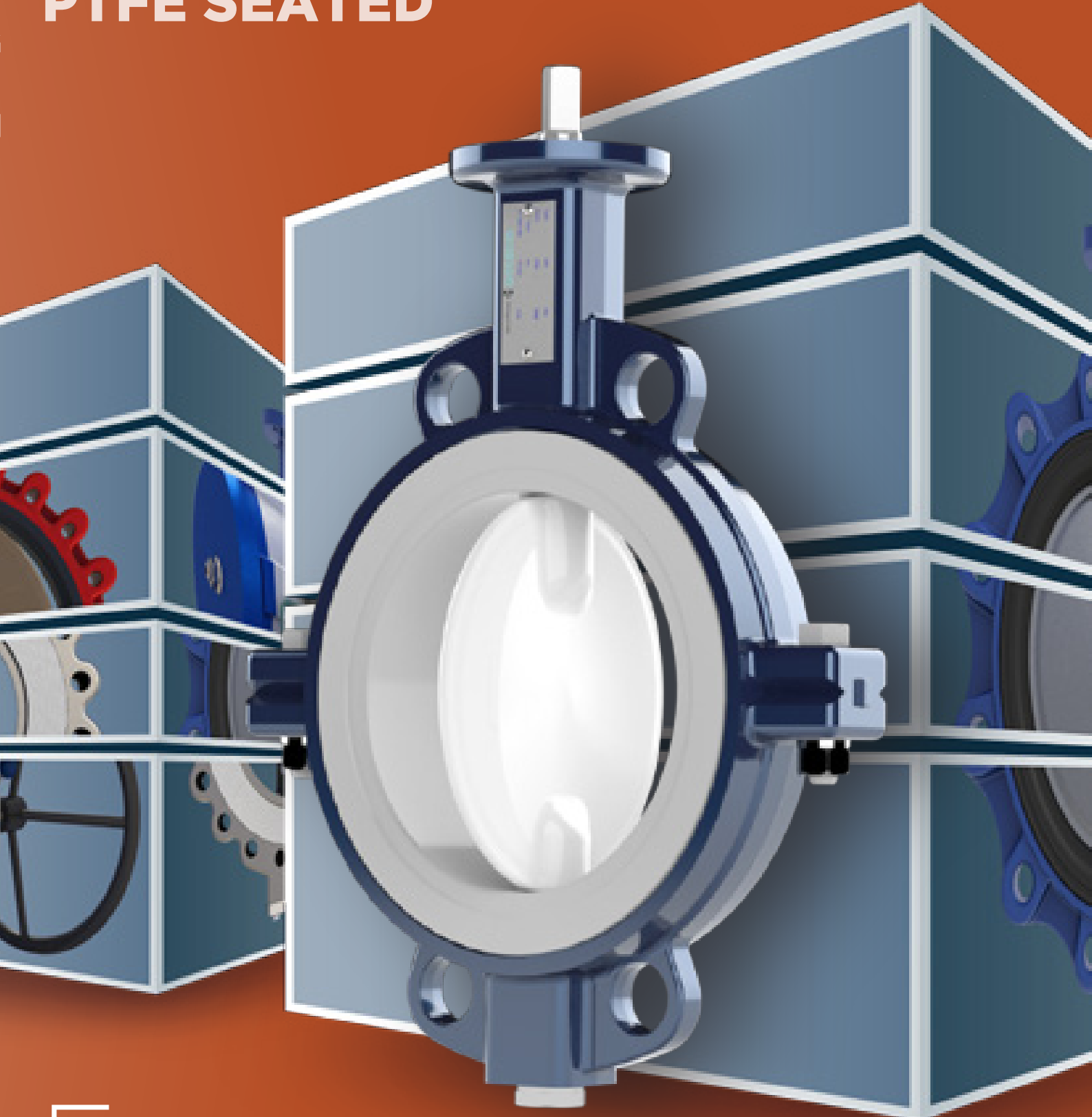




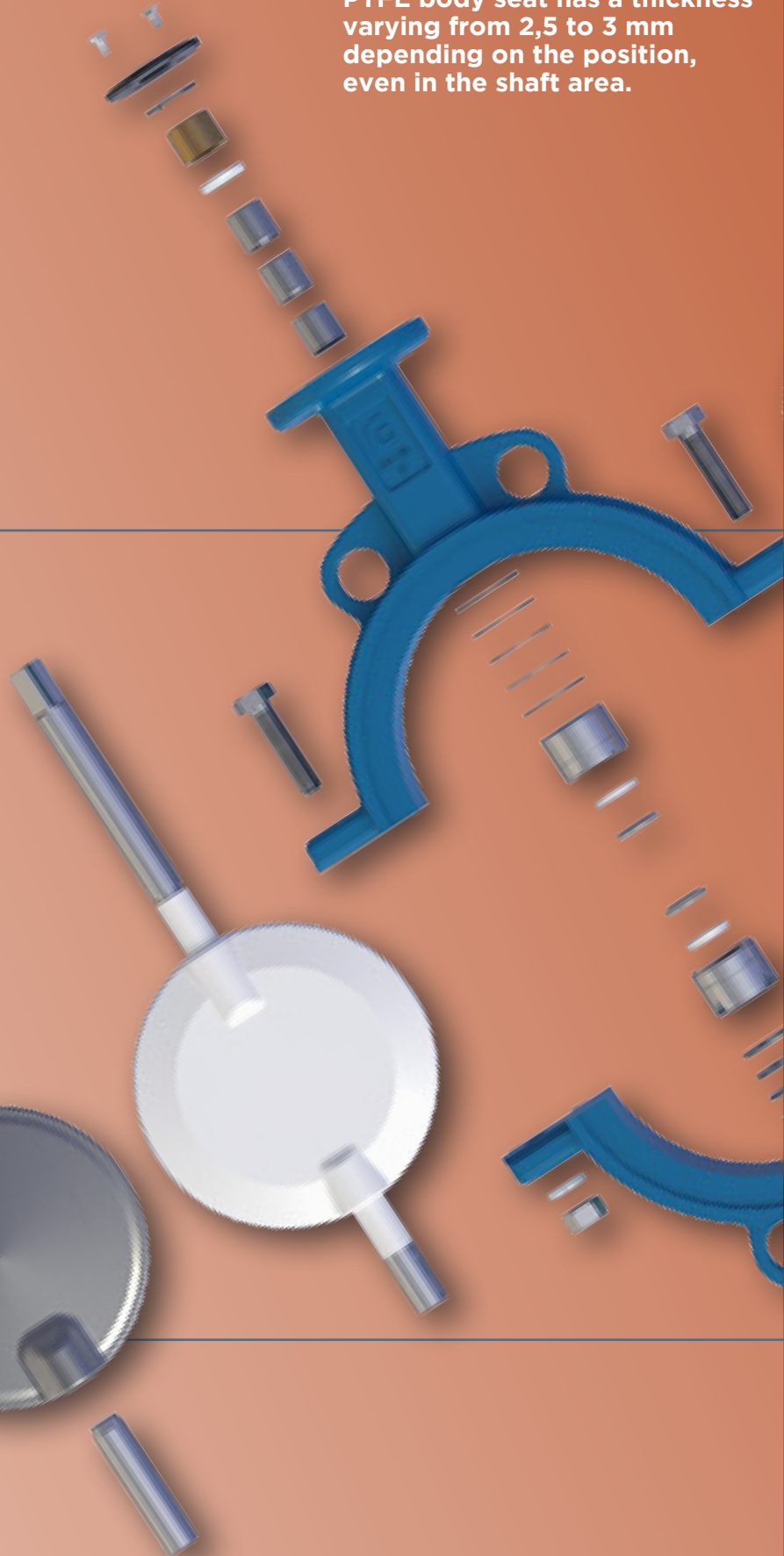
BUTTERFLY VALVES PTFE SEATED





Discs are available in stainless steel (AISI316, HASTELLOY®, DUPLEX®, SUPERDUPLEX®, INCONEL®, etc.), and in stainless steel coated with HALAR® or PTFE. Standard shafts are in AISI316 stainless steel (Monel® or other materials on request).

PTFE body seat has a thickness varying from 2,5 to 3 mm depending on the position, even in the shaft area.

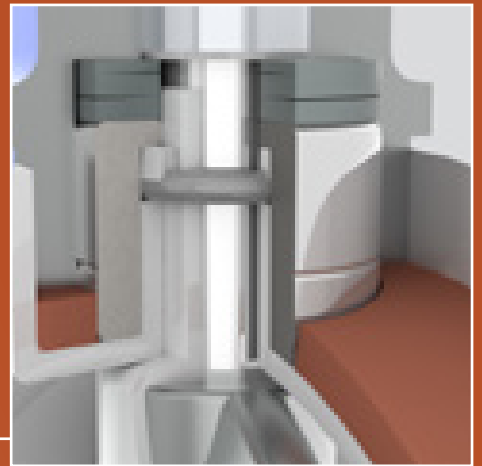


Two silicon half rings increase and ensure elasticity up to highest working temperatures.

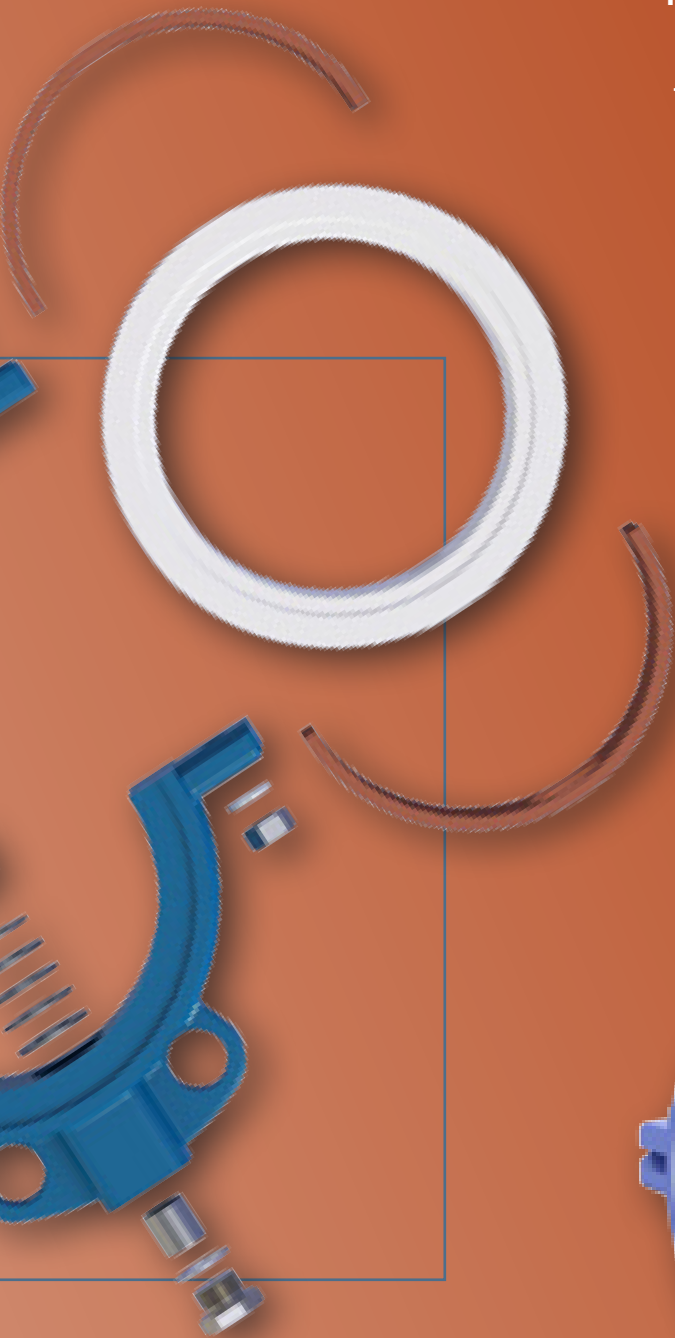


Belleville washers ensure the sealing in the upper plane of the disc.

Furthermore a double packing consisting in a FEP coated FKM O Ring and a PTFE C-ring will avoid any leakage along the shaft.

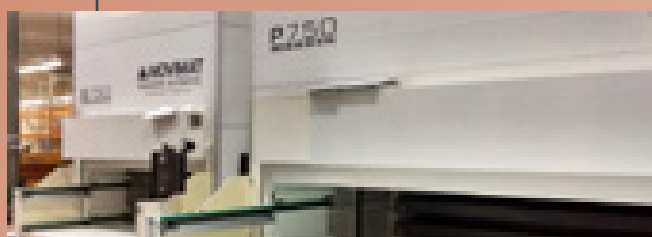
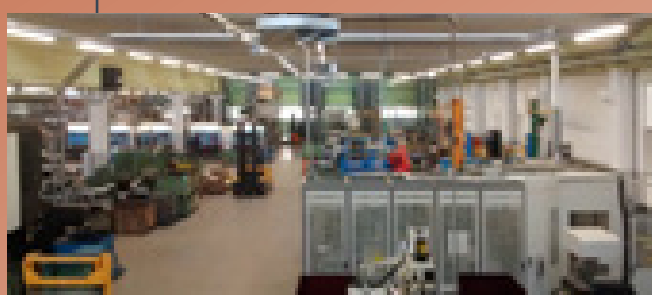
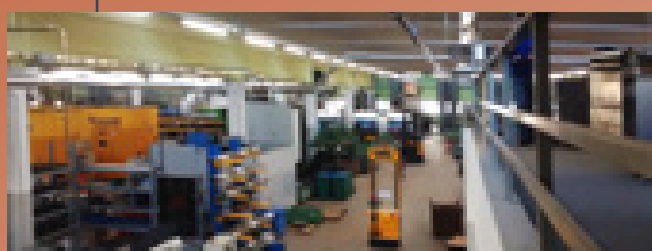


In the TT-valve series the PTFE lining covers the shaft beyond the FEP coated FKM O Ring so that the fluid never contacts the metal core of the disc.



BUTTERFLY VALVES PTFE SEATED

Ghibson PTFE seated butterfly valves TT series are available in a wide range of materials combinations, and specifically designed for the chemical industry and heavy duty applications.



PTFE SEATED

| | |
|-----------------------------|----------|
| TT Series | 1 |
| • technical data | 1 |
| • components DN 50-300 | 2 |
| Stainless steel disc | 2 |
| Stainless steel + PTFE disc | 3 |

tables

| | |
|-------------------------|---|
| • components DN 350-500 | 4 |
| • dimensions | 5 |
| • torque values | 6 |

| | |
|----------------------------------|-----------|
| Installation instructions | 7 |
| Tests | 7 |
| Handlever | 9 |
| Gearbox | 10 |

GHIBSON

Zola Predosa
Bologna



BVTT - Wafer
DN 50 - 500 • 2" - 20"

BLTT - Lug
DN 50 - 500 • 2" - 20"

Max working pressure:

BVTT/BLTT DN 50÷400: **10 Bar**
Flange: **PN 10-16-A150**

BVTT/BLTT DN 500: **6 Bar**
Flange: **PN 10-16-A150**

To be used for vacuum (not with PTFE disc)

Design:

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092
ISO 5211 ~ DIN 3337 ~ API 609
PED 97/23/EC (cat III) Mod H

Face to face:

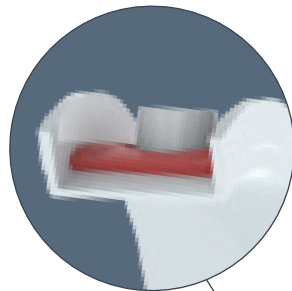
DIN EN 558-1 Series 20 ~ ISO 5752 Series 20
BS-5155 Series 4 ~ MSS-SP67
API 609 cat. A ~ NFE 29305-1

Testing:

EN 12266-1 Rate A ~ ISO 5208 Rate A
DIN 3230 ~ API 598

Tag:

EN 19 ~ MSS SP-25



EPOXY COATED



Alle the valves are supplied with a metallic label in compliance with PED directive.

BODY

| material | references | standard coating | lug | wafer |
|---------------------------|-----------------------|------------------|--------|--------|
| Ductile iron (wafer, lug) | EN-GJS 400-15 (GS400) | Epoxy RAL 5009 | 50-500 | 50-500 |
| Carbon steel (wafer) | ASTM A216-WCB | Epoxy RAL 9005 | - | 50-500 |
| Stainless steel (wafer) | ASTM A351 CF8M (A316) | - | - | 50-500 |

DISC

| material | references | standard coating | coating on request | DN |
|-----------------|-----------------------|------------------|--------------------|--------|
| Stainless steel | ASTM A351 CF8M (A316) | - | HALAR®, PFA | 50-500 |
| Stainless steel | ASTM A564 Type 630 | PTFE | - | 50-300 |
| Hastelloy® | ASTM A494 CX2MW | - | - | 50-500 |
| Monel® | ASTM A494 M35-1 | - | - | 50-500 |

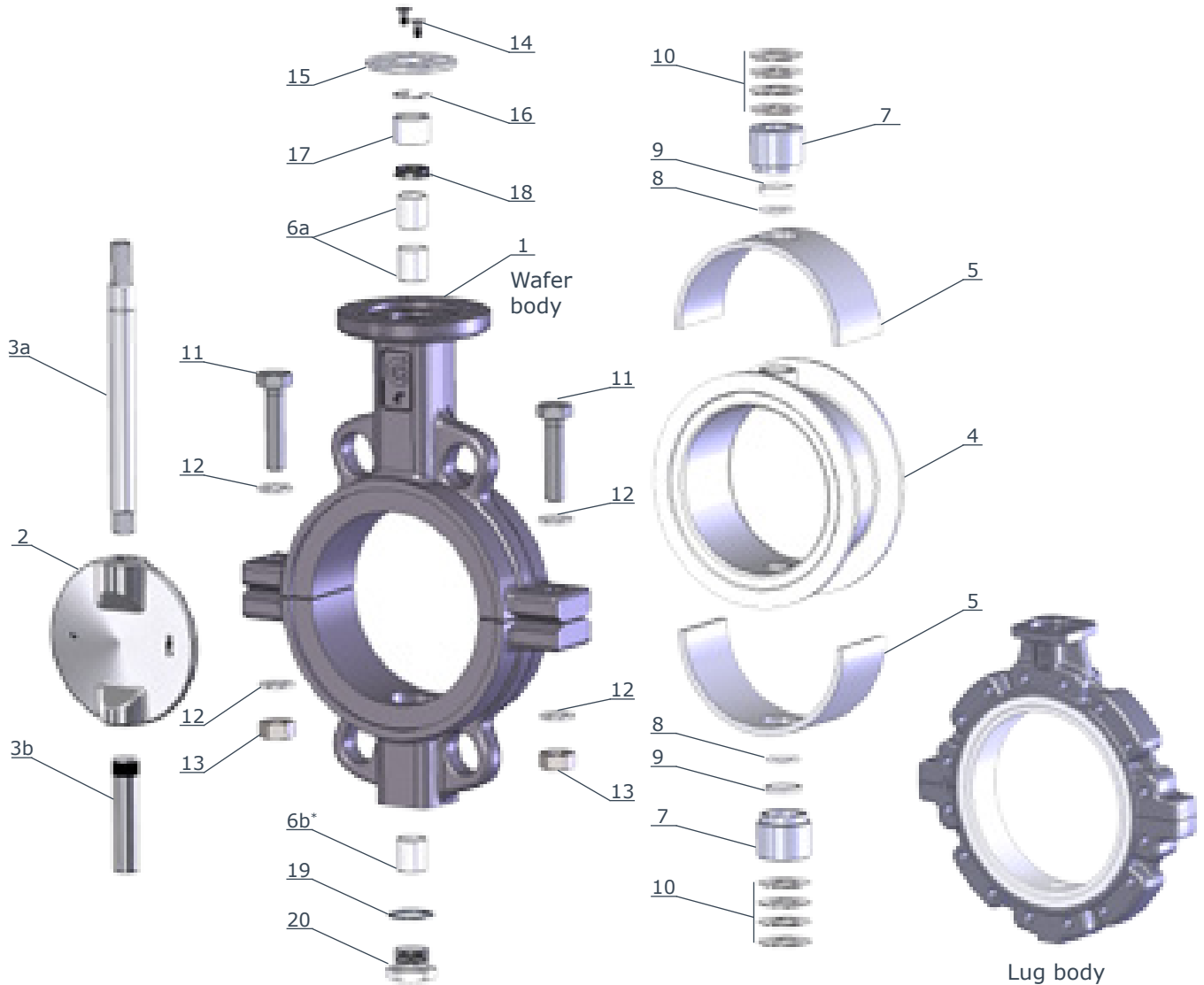
BODY SEAT

| ref. | designation | trade name | working temp. | applications |
|------|------------------------|------------|----------------|------------------------|
| PTFE | polytetrafluorethylene | TEFLON® | -60°C / +190°C | acids, foods, solvents |

On request can be supplied other materials as: LCB, Hastelloy, Monel, Uranus, Alloy, DUPLEX, Special steels, Special bronzes.
Coating on request: RILSAN®, Halar®, Chenisil®, PFA.

BVTT - Wafer BLTT - Lug
 DN 50 - 300 • 2" - 12"
 PN 10-16 • ANSI 150

Stainless steel (ASTM A351 CF8M) disc



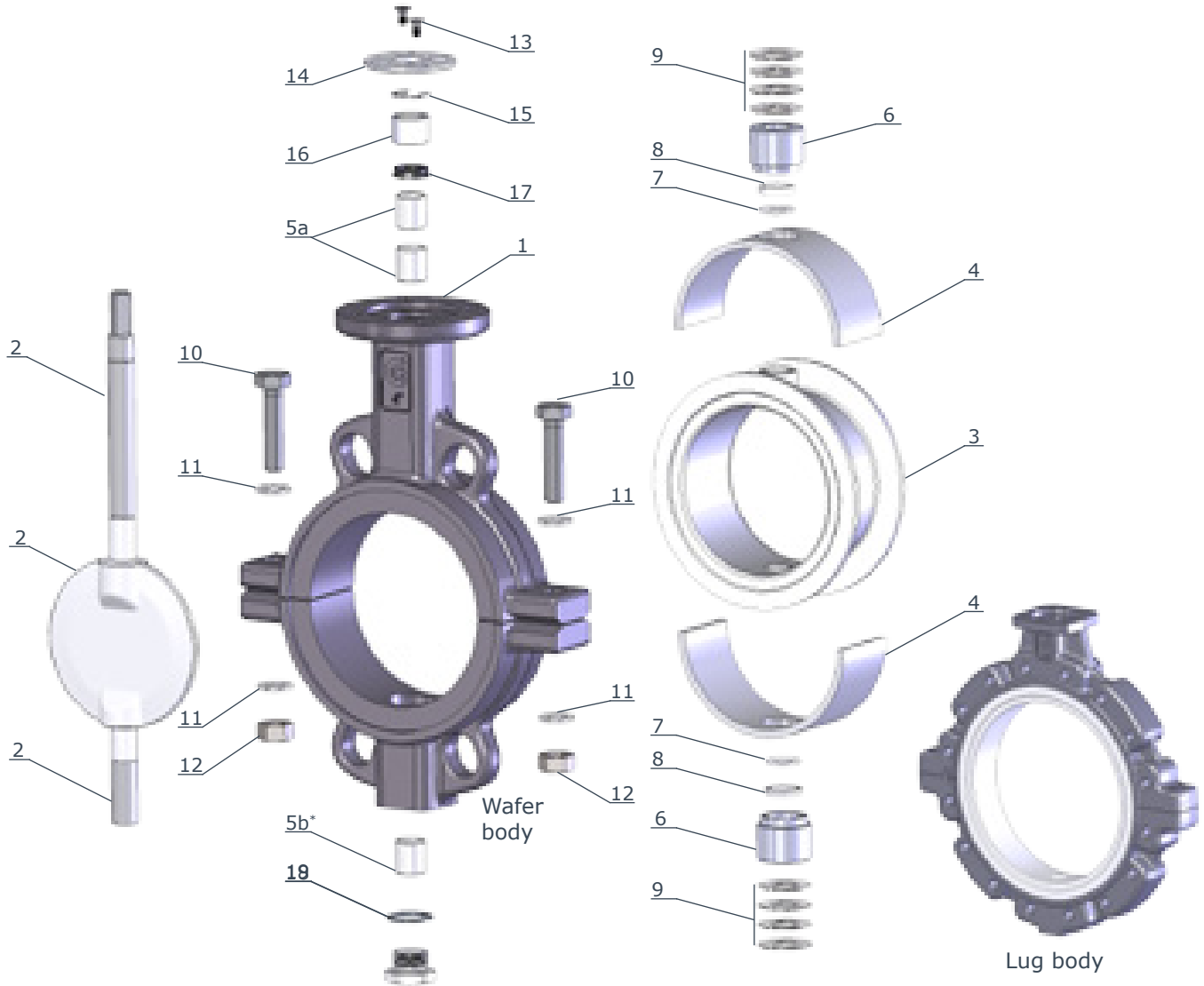
| item | q.ty | part | material | item | q.ty | part | material |
|------|------|------------------|--|------|------|---------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> ductile iron GS400 A216 - WCB A351 - CF8M (AISI 316) | 11 | 2 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 2 | 1 | disc | <ul style="list-style-type: none"> A351 - CF8M (AISI 316) HALAR® (on request) | 12 | 4 | washer | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 3a | 1 | upper shaft | <ul style="list-style-type: none"> AISI 316 | 13 | 2 | screw nut | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 3b | 1 | lower shaft | <ul style="list-style-type: none"> AISI 316 | 14 | 2 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 4 | 1 | body seat | <ul style="list-style-type: none"> PTFE | 15 | 1 | upper flange | <ul style="list-style-type: none"> IXEF (DN 50/150) aluminium (DN 200/300) |
| 5 | 1 | elastic support | <ul style="list-style-type: none"> silicon | 16 | 1 | stop ring | <ul style="list-style-type: none"> steel |
| 6a | 2 | bush upper shaft | <ul style="list-style-type: none"> steel + PTFE | 17 | 1 | upper bush | <ul style="list-style-type: none"> PFTE |
| 6b* | 1* | bush lower shaft | <ul style="list-style-type: none"> steel + PTFE | 18 | 1 | O.Ring | <ul style="list-style-type: none"> FKM (VITON®) |
| 7 | 2 | housing | <ul style="list-style-type: none"> AISI 316 | 19 | 1 | plug paking | <ul style="list-style-type: none"> aluminium PTFE (body AISI 316) |
| 8 | 2 | O. Ring | <ul style="list-style-type: none"> FEP + FKM (VITON®) | 20 | 1 | threaded plug | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 9 | 2 | C. Ring | <ul style="list-style-type: none"> PTFE | | | | |
| 10 | 2 | springs set | <ul style="list-style-type: none"> steel | | | | |

* only DN200/300

◇ parts included in spare kit

BVTT - Wafer BLTT - Lug
 DN 50 - 300 • 2" - 12"
 PN 10-16 • ANSI 150

Stainless steel disc (ASTM A564 Type 630) PTFE coated

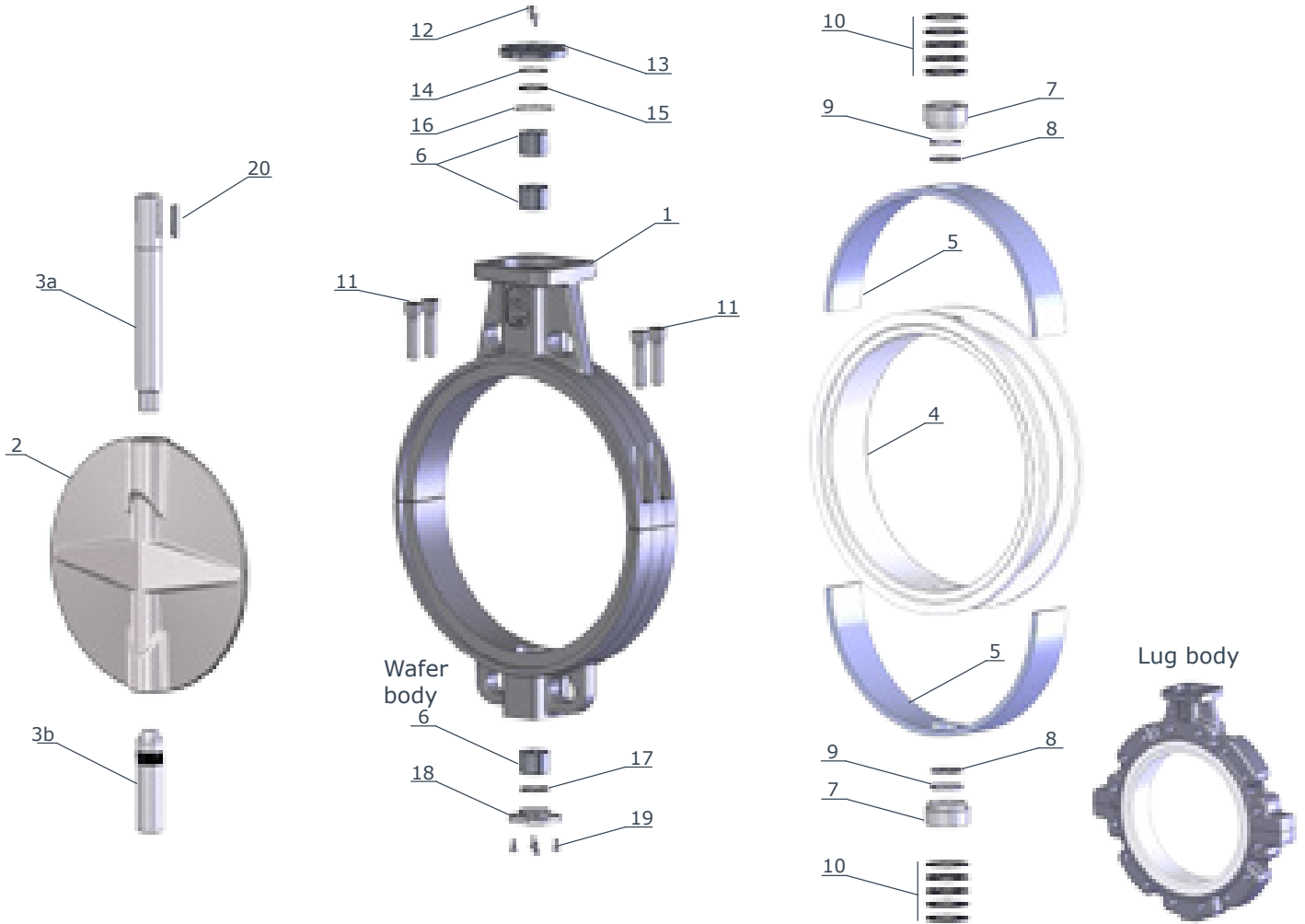


| item | q.ty | part | material | item | q.ty | part | material |
|------|------|------------------|--|------|------|---------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> ductile iron GS400 A216 - WCB A351 - CF8M (AISI 316) | 11 | 4 | washer | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| ◇2 | 1 | disc - shafts | <ul style="list-style-type: none"> ASTM A564 Type 630 + PTFE | 12 | 2 | screw nut | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| ◇3 | 1 | body seat | <ul style="list-style-type: none"> PTFE | 13 | 2 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| ◇4 | 1 | elastic support | <ul style="list-style-type: none"> silicon | 14 | 1 | upper flange | <ul style="list-style-type: none"> IXEF (DN 50/150) aluminium (DN 200/300) |
| 5a | 2 | bush upper shaft | <ul style="list-style-type: none"> steel + PTFE | 15 | 1 | stop ring | <ul style="list-style-type: none"> steel |
| 5b* | 1* | bush lower shaft | <ul style="list-style-type: none"> steel + PTFE | ◇16 | 1 | upper bush | <ul style="list-style-type: none"> PTFE |
| 6 | 2 | housing | <ul style="list-style-type: none"> AISI 316 | ◇17 | 1 | O.Ring | <ul style="list-style-type: none"> FKM (VITON®) |
| ◇7 | 2 | O. Ring | <ul style="list-style-type: none"> FEP + FKM (VITON®) | 18 | 1 | plug paking | <ul style="list-style-type: none"> aluminium PTFE (body AISI 316) |
| ◇8 | 2 | C. Ring | <ul style="list-style-type: none"> PTFE | 19 | 1 | threaded plug | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 9 | 2 | springs set | <ul style="list-style-type: none"> steel | | | | |
| 10 | 2 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) | | | | |

* only DN200/300

◇ parts included in spare kit

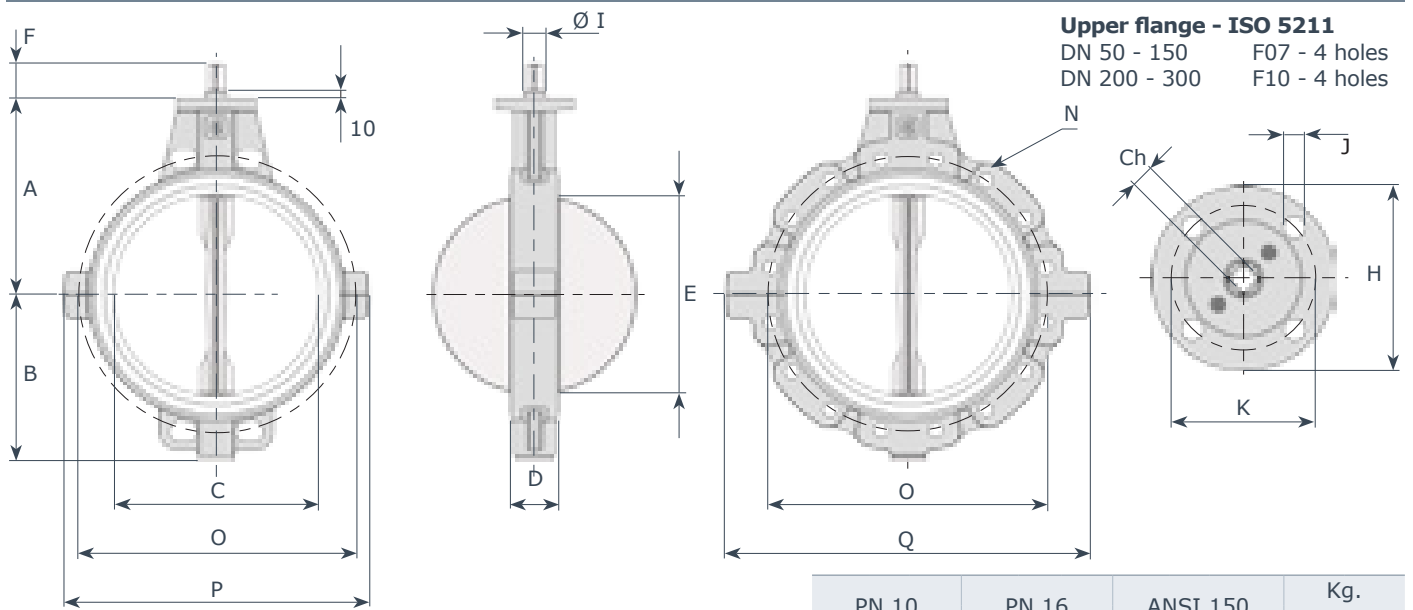
BVTT - Wafer BLTT - Lug
 DN 350 - 500 • 14" - 20"
 PN 10-16 • ANSI 150



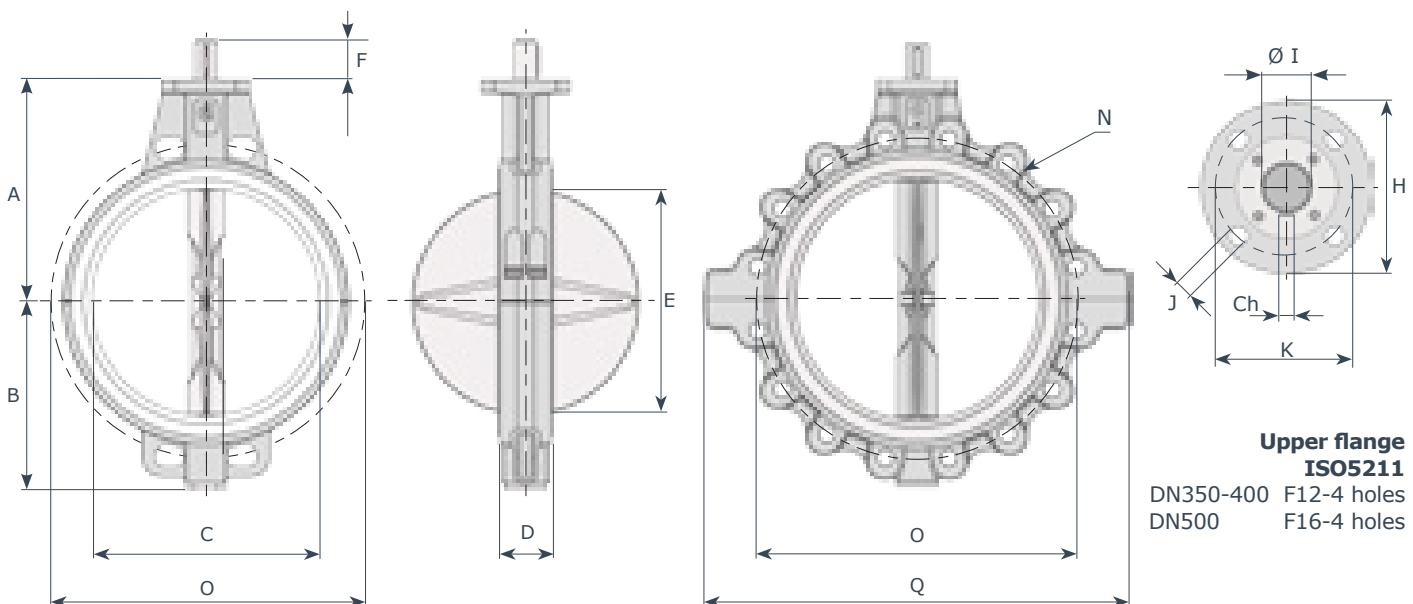
| item | q.ty | part | material | item | q.ty | part | material |
|------|------|-----------------|--|------|------|--------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> ductile iron GS400 A216 - WCB A351 - CF8M (AISI 316) | 11 | 4 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 2 | 1 | disc | <ul style="list-style-type: none"> A351 - CF8M (AISI 316) HALAR® (on request) | 12 | 2 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 3a | 1 | upper shafts | <ul style="list-style-type: none"> AISI 316 | 13 | 1 | upper flange | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| 3b | 1 | lower shafts | <ul style="list-style-type: none"> AISI 316 | ◇14 | 1 | O.Ring | <ul style="list-style-type: none"> FKM (VITON®) |
| ◇4 | 1 | body seat | <ul style="list-style-type: none"> PTFE | 15 | 1 | stop ring | <ul style="list-style-type: none"> steel |
| ◇5 | 1 | elastic support | <ul style="list-style-type: none"> silicon | ◇16 | 1 | O.Ring | <ul style="list-style-type: none"> FKM (VITON®) |
| 6 | 3 | bush shaft | <ul style="list-style-type: none"> A105 + PTFE | ◇17 | 1 | O.Ring | <ul style="list-style-type: none"> FKM (VITON®) |
| 7 | 2 | housing | <ul style="list-style-type: none"> AISI 316 | 18 | 1 | lower flange | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| ◇8 | 2 | O. Ring | <ul style="list-style-type: none"> FEP + FKM (VITON®) | 19 | 4 | screw | <ul style="list-style-type: none"> zinc plated steel AISI 316 (body AISI 316) |
| ◇9 | 2 | C. Ring | <ul style="list-style-type: none"> PTFE | 20 | 1 | key | <ul style="list-style-type: none"> steel C40 |
| 10 | 2 | springs set | <ul style="list-style-type: none"> steel | | | | |

◇ parts included in spare kit

BVTT - Wafer BLTT - Lug



| DN | " | A | B | C | D | E | F | Ø I | Ch | H | K | J | P | Q | PN 10 | | | PN 16 | | | ANSI 150 | | | Kg. | |
|-----|------------------|-----|-----|-----|----|-----|----|-----|----|-----|-----|----|-----|-----|-------|----|-----|-------|----|-----|----------|----|-------|-------|------|
| | | | | | | | | | | | | | | | N | n. | O | N | n. | O | N | n. | O | wafer | lug |
| 50 | 2 | 138 | 81 | 55 | 43 | 35 | 34 | 14 | 11 | 90 | 70 | 9 | 165 | 165 | M16 | 4 | 125 | M16 | 4 | 125 | M16 | 4 | 120.6 | 3.4 | 3.9 |
| 65 | 2 ^{1/2} | 144 | 98 | 68 | 46 | 50 | 34 | 14 | 11 | 90 | 70 | 9 | 186 | 186 | M16 | 8 | 145 | M16 | 8 | 145 | M16 | 4 | 139.7 | 4.1 | 4.7 |
| 80 | 3 | 158 | 110 | 81 | 46 | 67 | 34 | 14 | 11 | 90 | 70 | 9 | 196 | 242 | M16 | 8 | 160 | M16 | 8 | 160 | M16 | 4 | 152.4 | 4.4 | 7.6 |
| 100 | 4 | 173 | 128 | 101 | 52 | 87 | 34 | 16 | 11 | 90 | 70 | 9 | 220 | 270 | M16 | 8 | 180 | M16 | 8 | 180 | M16 | 8 | 190.5 | 6.8 | 8.4 |
| 125 | 5 | 186 | 140 | 126 | 56 | 113 | 34 | 18 | 14 | 90 | 70 | 9 | 250 | 297 | M16 | 8 | 210 | M16 | 8 | 210 | M20 | 8 | 215.9 | 8.8 | 11.2 |
| 150 | 6 | 202 | 155 | 150 | 56 | 140 | 34 | 18 | 14 | 90 | 70 | 9 | 278 | 321 | M20 | 8 | 240 | M20 | 8 | 240 | M20 | 8 | 241.3 | 10.5 | 12.9 |
| 200 | 8 | 240 | 190 | 200 | 60 | 191 | 38 | 22 | 17 | 125 | 102 | 11 | 355 | 420 | M20 | 8 | 295 | M20 | 12 | 295 | M20 | 8 | 298.4 | 15.2 | 25.0 |
| 250 | 10 | 270 | 220 | 250 | 68 | 241 | 38 | 30 | 22 | 125 | 102 | 11 | 398 | 472 | M20 | 12 | 350 | M24 | 12 | 355 | M22 | 12 | 361.9 | 24.5 | 30.0 |
| 300 | 12 | 300 | 247 | 298 | 78 | 289 | 38 | 30 | 22 | 125 | 102 | 11 | 455 | 540 | M20 | 12 | 400 | M24 | 12 | 410 | M22 | 12 | 431.8 | 32.0 | 45.0 |



| DN | " | A | B | C | D | E | F | Ø I | Ch | H | K | J | Q | PN10 | | | PN16 | | | ANSI150 | | | kg. | |
|-----|----|-----|-----|-----|-----|-----|----|-----|----|-----|-----|----|-----|------|----|-----|------|----|-----|---------|----|-----|-------|-----|
| | | | | | | | | | | | | | | N | n. | O | N | n. | O | N | n. | O | wafer | lug |
| 350 | 14 | 330 | 280 | 341 | 78 | 332 | 60 | 35 | 10 | 150 | 125 | 14 | 600 | M20 | 16 | 460 | M24 | 16 | 470 | M24 | 12 | 476 | 54 | 73 |
| 400 | 16 | 355 | 305 | 390 | 102 | 376 | 60 | 40 | 12 | 150 | 125 | 14 | 690 | M24 | 16 | 515 | M27 | 16 | 525 | M27 | 16 | 539 | 68 | 104 |
| 500 | 20 | 422 | 366 | 485 | 127 | 468 | 60 | 45 | 12 | 210 | 165 | 22 | 820 | M24 | 20 | 620 | M30 | 20 | 650 | M27 | 20 | 635 | 149 | 179 |

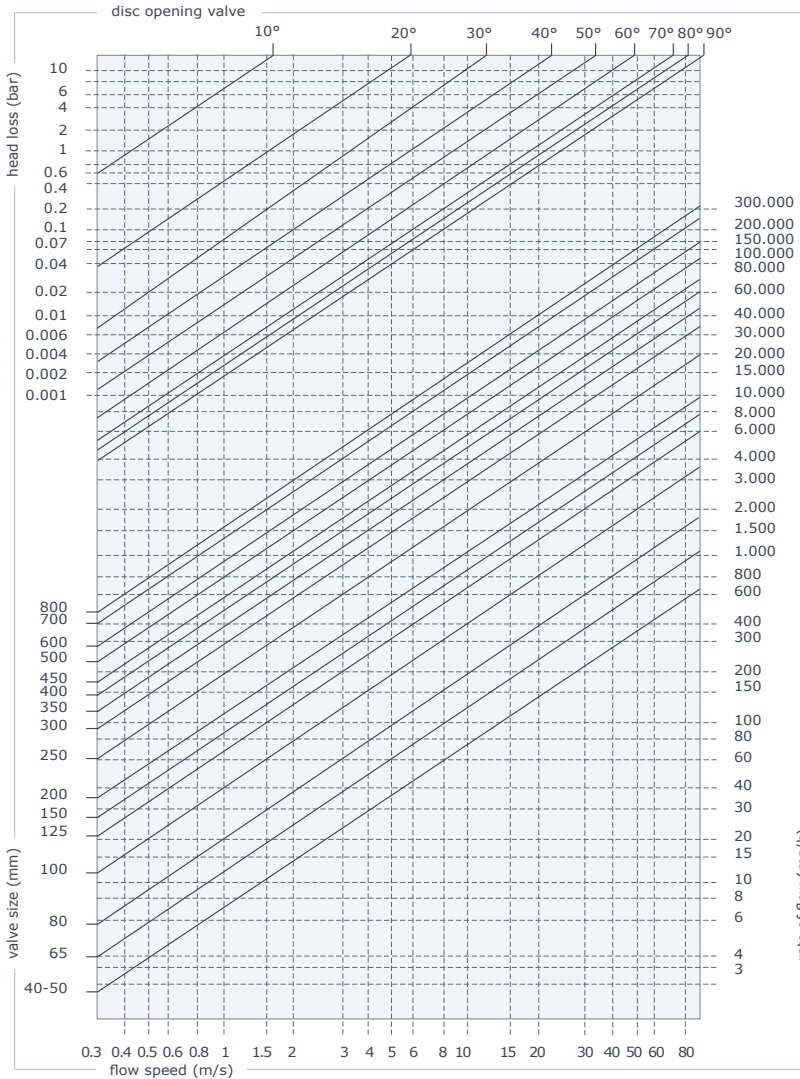
TT Series - Torque values - Nm - safety factor excluded

| disc: CF8M (A316) | | | | fluid H ₂ O - 20°C working pressure BAR | | | | disc: A564 (A630) + PTFE | | | | fluid H ₂ O - 20°C working pressure BAR | | | |
|--------------------------|----|----|----|---|-----|-----|-----|---|-----|------|------|---|-----|-----|-----|
| DN | 0 | 6 | 10 | DN | 0 | 6 | 10 | DN | 0 | 6 | 10 | DN | 0 | 6 | 10 |
| 50 | 13 | 16 | 19 | 125 | 45 | 57 | 75 | 300 | 214 | 296 | 366 | 50 | 12 | 15 | 18 |
| 65 | 15 | 21 | 24 | 150 | 53 | 63 | 94 | 350 | 400 | 450 | 550 | 65 | 14 | 20 | 23 |
| 80 | 28 | 42 | 52 | 200 | 128 | 153 | 188 | 400 | 700 | 800 | 1000 | 80 | 26 | 40 | 49 |
| 100 | 32 | 54 | 65 | 250 | 198 | 232 | 296 | 500 | 980 | 1250 | - | 100 | 30 | 51 | 62 |
| | | | | | | | | | | | | 200 | 122 | 145 | 180 |
| | | | | | | | | | | | | 250 | 180 | 220 | 280 |
| | | | | | | | | | | | | 300 | 311 | 344 | 385 |

Head losses

notes: values indicated in this page is only for information

Formulae for calculation of rate flow



Liquids:
$$Q = \frac{KV}{\sqrt{\frac{PS}{\Delta P}}}$$

Q rate of flow (m³/h)
PS specific gravity (water=1)
ΔP pressure drop (bar)

Gas:
$$Q = 28.5 \frac{KV}{\sqrt{P_2 \cdot \Delta P}}$$

Q rate of flow (m³/h)
PS specific gravity (air=1)
ΔP pressure drop (bar) (less than 1/2 inlet pressure)
P₂ outlet pressure

Steam:
$$Q = 22.5 \cdot KV \cdot \sqrt{P_2 \cdot \Delta P}$$

Q rate of flow (Kg/h)
ΔP pressure drop (bar) (less than 1/2 inlet pressure)
P₂ outlet pressure

Calculation of the rate of flow equivalent to H₂O:

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

For different liquid, gas or steam head losses are determined by equivalent water rate of flow, as follows:

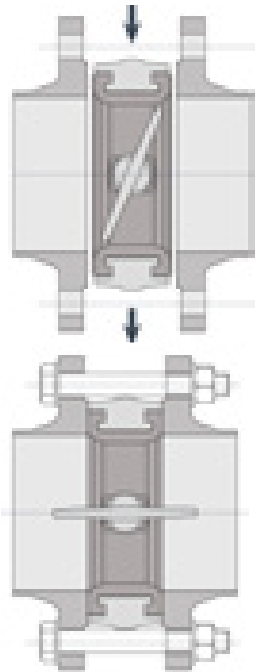
- Q_e equivalent water flow (mc/l o l/s)
- Q fluid flow (mc/l o l/s)
- d fluid specific gravity (Kg/mc)

Values KV (CV = 1,16 KV)

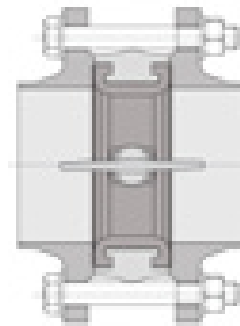
| angle | 40/50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 |
|-------|-------|-----|-----|-----|------|------|------|------|------|-------|-------|-------|
| 5° | - | - | - | - | - | - | - | - | - | 53 | 68 | 106 |
| 10° | - | - | - | - | - | - | - | 21 | 49 | 123 | 161 | 246 |
| 15° | 0,2 | 0,6 | 1,8 | 2,4 | 4,2 | 5,6 | 14 | 80 | 188 | 228 | 299 | 457 |
| 20° | 0,9 | 2,5 | 5,2 | 9,5 | 15 | 23 | 110 | 156 | 280 | 315 | 412 | 630 |
| 25° | 3 | 6,1 | 12 | 22 | 38 | 61 | 125 | 225 | 354 | 457 | 597 | 914 |
| 30° | 6,1 | 11 | 21 | 39 | 69 | 112 | 211 | 310 | 381 | 661 | 863 | 1320 |
| 35° | 9,9 | 18 | 33 | 60 | 105 | 166 | 303 | 433 | 521 | 890 | 1162 | 1778 |
| 40° | 15 | 27 | 49 | 88 | 148 | 228 | 405 | 591 | 742 | 1184 | 1547 | 2366 |
| 45° | 21 | 38 | 68 | 121 | 199 | 303 | 528 | 774 | 987 | 1552 | 2028 | 3102 |
| 50° | 29 | 51 | 91 | 159 | 262 | 394 | 679 | 988 | 1252 | 2008 | 2620 | 4010 |
| 55° | 39 | 68 | 119 | 207 | 338 | 505 | 863 | 1247 | 1571 | 2548 | 3318 | 5090 |
| 60° | 53 | 90 | 156 | 269 | 434 | 641 | 1085 | 1591 | 2059 | 3225 | 4202 | 6442 |
| 65° | 72 | 121 | 209 | 357 | 565 | 820 | 1364 | 2065 | 2807 | 3983 | 5196 | 7957 |
| 70° | 92 | 161 | 283 | 487 | 768 | 1097 | 1788 | 2715 | 3744 | 5195 | 6775 | 10377 |
| 75° | 109 | 209 | 381 | 662 | 1059 | 1507 | 2425 | 3625 | 4935 | 6964 | 9084 | 13912 |
| 80° | 115 | 240 | 457 | 815 | 1303 | 1861 | 3043 | 4768 | 6831 | 9301 | 12142 | 18578 |
| 85° | 115 | 253 | 502 | 906 | 1457 | 2008 | 3642 | 4890 | 8230 | 10280 | 13408 | 20533 |
| 90° | 116 | 257 | 508 | 925 | 1492 | 2168 | 3838 | 5010 | 9233 | 10792 | 14082 | 22024 |

Installation and test

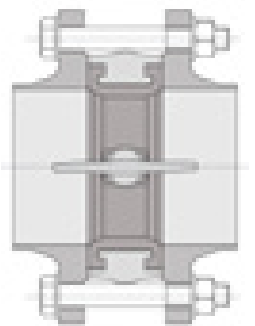
Assembly



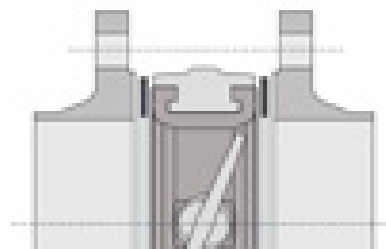
1 - Leave a space between flanges so that valve can be easily inserted and removed.



2 - Open completely the valve before tightening flanges.



3 - Tighten bolts till flanges are in contact with valve body.

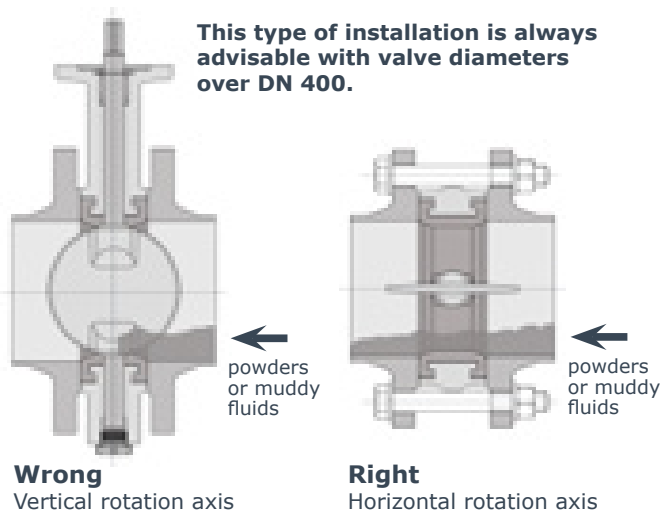


4 - NOTE: do not insert other packing between flange and valve.

NOTE: Weld the pipe only in spots with the valve between flanges. Remove the valve before finishing welding to avoid that heat damage the seat. Clean carefully the welding to avoid that slags damage the seat.

Installation for powders and muddy fluids

In case of use with muddy fluids or powders, install the valve with horizontal rotation axis, to allow sediments to flow easily on opening.



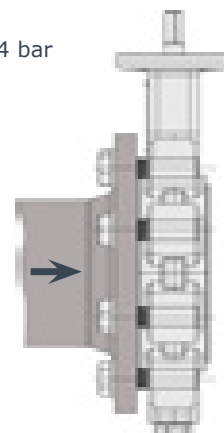
This type of installation is always advisable with valve diameters over DN 400.

End piping installation

When valves are installed end of piping, a counterflange as per dwg type B is needed to secure tightness at max pressure.

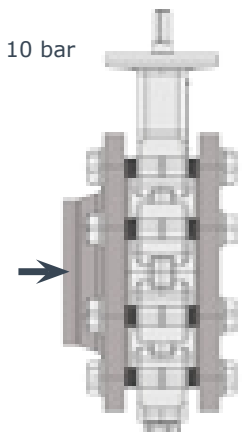
Type A installation without end piping

$P_{max} = 4 \text{ bar}$



Type B installation with end piping

$P_{max} = 10 \text{ bar}$



Test

GIBSON valves are built according to following international standards:

| | |
|--------------------------|-------------------------------|
| Body test pressure: | DIN 3230BA - API598 |
| Hydraulic test pressure: | DIN 3230BN1 - API598 |
| Pneumatic test pressure: | DIN 3230BO1 - API598 |
| Test certificates: | UNI EN 10204 2.2 (standard) |
| | UNI EN 10204 3.1 (on request) |
| | UNI EN 10204 3.2 (on request) |

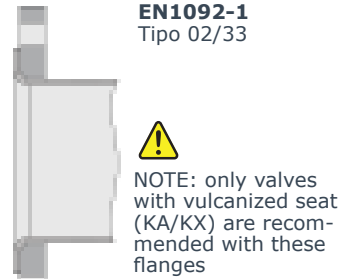
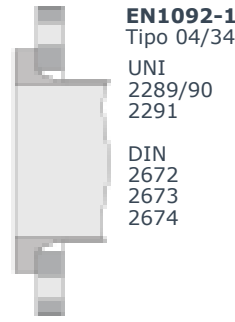
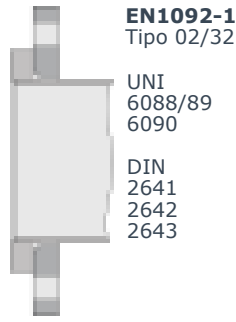
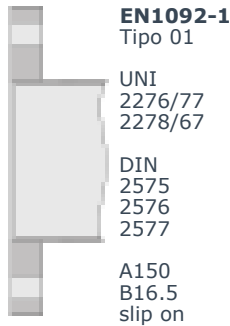
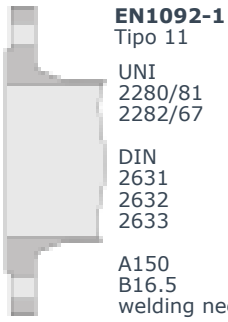
| DIN | body test | hydraulic test | pneu test |
|------|-----------|----------------|-----------|
| 3230 | | | |
| PN6 | 9 bar | 7 bar | 6 bar |
| PN10 | 15 bar | 11 bar | 6 bar |
| PN16 | 24 bar | 17,6 bar | 6 bar |
| PN25 | 38 bar | 27,5 bar | 6 bar |

Test duration is indicated by API598 standard

| | | |
|--------------------------|--------------------------|--------------------------|
| Body test pressure: | Hydraulic test pressure: | Pneumatic test pressure: |
| < DN 65 = 15 sec. | < DN 65 = 15 sec. | < DN 65 = 15 sec. |
| DN 65 / DN 200 = 80 sec. | DN 65 / DN 200 = 30 sec. | DN 65 / DN 200 = 30 sec. |
| > DN 200 = 180 sec. | > DN 200 = 60 sec | > DN 200 = 60 sec |

| API598 | body test | hydraulic test |
|---------|-----------|----------------|
| ANSI125 | 21 bar | 18 bar |
| ANSI150 | 30 bar | 22 bar |
| ANSI300 | 78 bar | 58 bar |

Flanges to be used



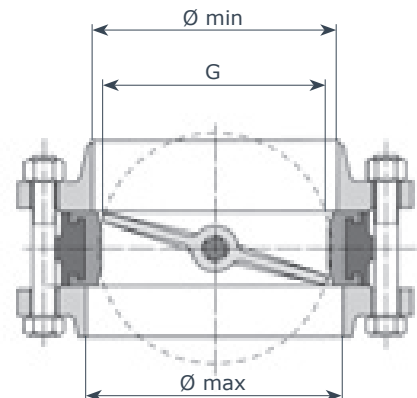
Bolts and rods dimensions

| DN | Wafer valves | | | | | | | | |
|-----|--------------|---------|----|---------|---------|----|----------|---------|----|
| | PN 10 | | | PN 16 | | | ANSI 150 | | |
| | Bolts | Rods | N° | Bolts | Rods | N° | Bolts | Rods | N° |
| 40 | M16x90 | M16x100 | 4 | M16x90 | M16x100 | 4 | M14x90 | M14x110 | 4 |
| 50 | M16x100 | M16x120 | 4 | M16x100 | M16x120 | 4 | M16x100 | M16x130 | 4 |
| 65 | M16x110 | M16x130 | 8 | M16x110 | M16x130 | 8 | M16x110 | M16x140 | 4 |
| 80 | M16x110 | M16x130 | 8 | M16x110 | M16x130 | 8 | M16x120 | M16x150 | 4 |
| 100 | M16x120 | M16x140 | 8 | M16x120 | M16x140 | 8 | M16x120 | M16x150 | 8 |
| 125 | M16x120 | M16x150 | 8 | M16x120 | M16x150 | 8 | M20x130 | M20x160 | 8 |
| 150 | M20x130 | M20x160 | 8 | M20x130 | M20x160 | 8 | M20x140 | M20x160 | 8 |
| 200 | M20x140 | M20x170 | 8 | M20x140 | M20x170 | 12 | M20x150 | M20x170 | 8 |
| 250 | M20x150 | M20x180 | 12 | M24x150 | M24x180 | 12 | M22x160 | M22x190 | 12 |
| 300 | M20x160 | M20x190 | 12 | M24x160 | M24x190 | 12 | M22x170 | M22x210 | 12 |
| 350 | M20x160 | M20x190 | 16 | M24x170 | M24x200 | 16 | M24x180 | M24x220 | 12 |
| 400 | M24x190 | M24x220 | 16 | M27x210 | M27x240 | 16 | M27x210 | M27x250 | 16 |
| 450 | M24x200 | M24x230 | 20 | M27x220 | M27x250 | 20 | M27x230 | M27x270 | 16 |
| 500 | M24x210 | M24x240 | 20 | M30x240 | M30x280 | 20 | M27x250 | M27x290 | 20 |

| DN | Lug valves - Double Flange valves | | | | | |
|-----|-----------------------------------|----|--------|----|----------|----|
| | PN 10 | | PN 16 | | ANSI 150 | |
| | Bolts | N° | Bolts | N° | Bolts | N° |
| 40 | M16x30 | 8 | M16x30 | 8 | M14x30 | 8 |
| 50 | M16x35 | 8 | M16x35 | 8 | M16x35 | 8 |
| 65 | M16x40 | 16 | M16x40 | 16 | M16x40 | 8 |
| 80 | M16x40 | 16 | M16x40 | 16 | M16x40 | 8 |
| 100 | M16x40 | 16 | M16x40 | 16 | M16x45 | 16 |
| 125 | M16x45 | 16 | M16x45 | 16 | M20x50 | 16 |
| 150 | M20x45 | 16 | M20x45 | 16 | M20x50 | 16 |
| 200 | M20x50 | 16 | M20x50 | 24 | M20x55 | 16 |
| 250 | M20x55 | 24 | M24x55 | 24 | M22x60 | 24 |
| 300 | M20x60 | 24 | M24x60 | 24 | M22x60 | 24 |
| 350 | M20x60 | 32 | M24x65 | 32 | M24x65 | 24 |
| 400 | M24x70 | 32 | M27x70 | 32 | M27x80 | 32 |
| 450 | M24x80 | 40 | M27x80 | 40 | M27x80 | 32 |
| 500 | M24x80 | 40 | M30x80 | 40 | M27x90 | 40 |

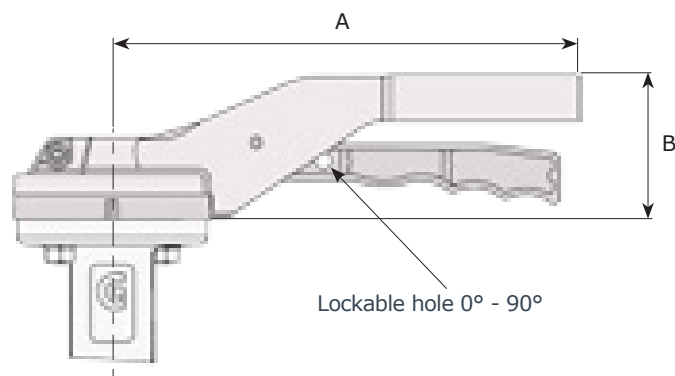
NOTE 1: Screw and rod dimensions have been calculated with WELDING NECK flanges PN 6/10/16 (EN1092-1 Tipo 11) ANSI150 (ANSI B16.5)

NOTE 2: Number of nuts should be double when WAFER valves are assembled with threaded rods.

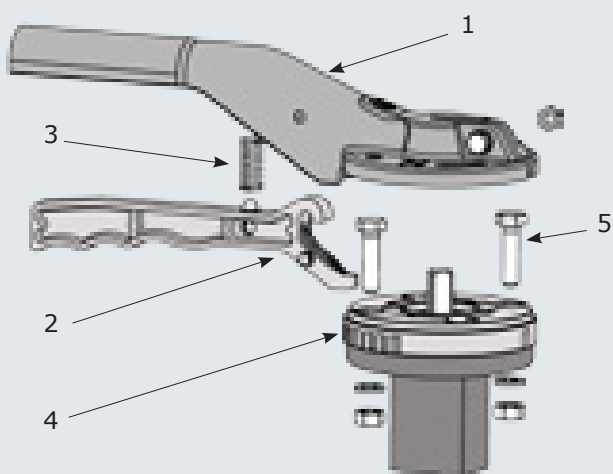
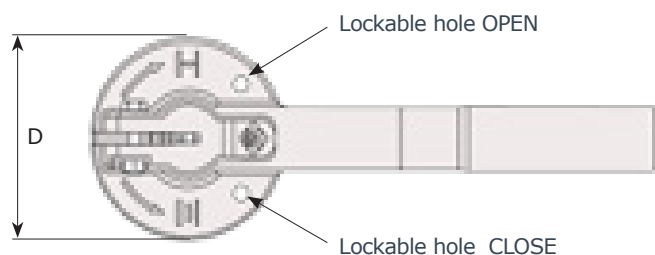


| DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | DN | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 |
|-------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| G | 36 | 35 | 50 | 67 | 87 | 113 | 140 | 191 | 241 | 5° | 289 | 332 | 376 | 430 | 479 | 575 | 670 | 757 |
| Ø min | 29 | 44 | 60 | 75 | 98 | 122 | 148 | 196 | 244 | 10° | 296 | 332 | 378 | 428 | 478 | 566 | 681 | 782 |
| Ø max | 49 | 62 | 80 | 93 | 118 | 146 | 175 | 225 | 275 | 15° | 330 | 372 | 422 | 450 | 500 | 600 | 717 | 815 |

Handlevers

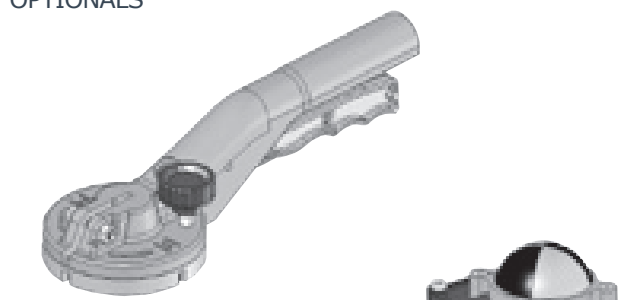


| DN | A | B | D | Kg |
|-----------|-----|----|-----|------|
| 40 - 100 | 220 | 67 | 93 | 0.6 |
| 125 - 150 | 275 | 67 | 93 | 0.65 |
| 200 | 340 | 76 | 125 | 1 |

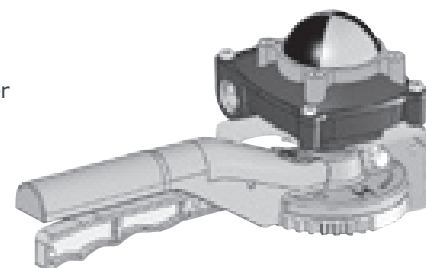


| | | DN40 - 300 | DN40 - 150 |
|---|------------------|-----------------|-----------------|
| 1 | lever | aluminium | A351 CF8M |
| 2 | trigger | aluminium | A351 CF8M |
| 3 | spring | stainless steel | stainless steel |
| 4 | disc positioning | aluminium | A351 CF8M |
| 5 | screws | stainless steel | stainless steel |

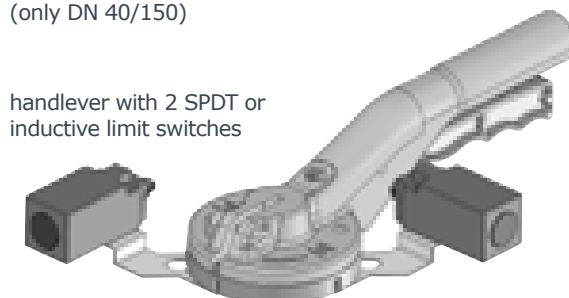
OPTIONALS



Adjustable handlever

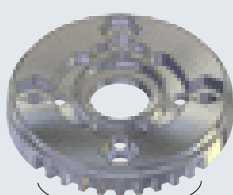


handlever with switch box (only DN 40/150)



handlever with 2 SPDT or inductive limit switches

positioning disc DN 40 - 150 designed for flanges ISO 5211 F05/F07



10 positions



2 positions
Open - Closed

positioning disc with two types of regulation: 10 positions or Open/Close

Gearboxes

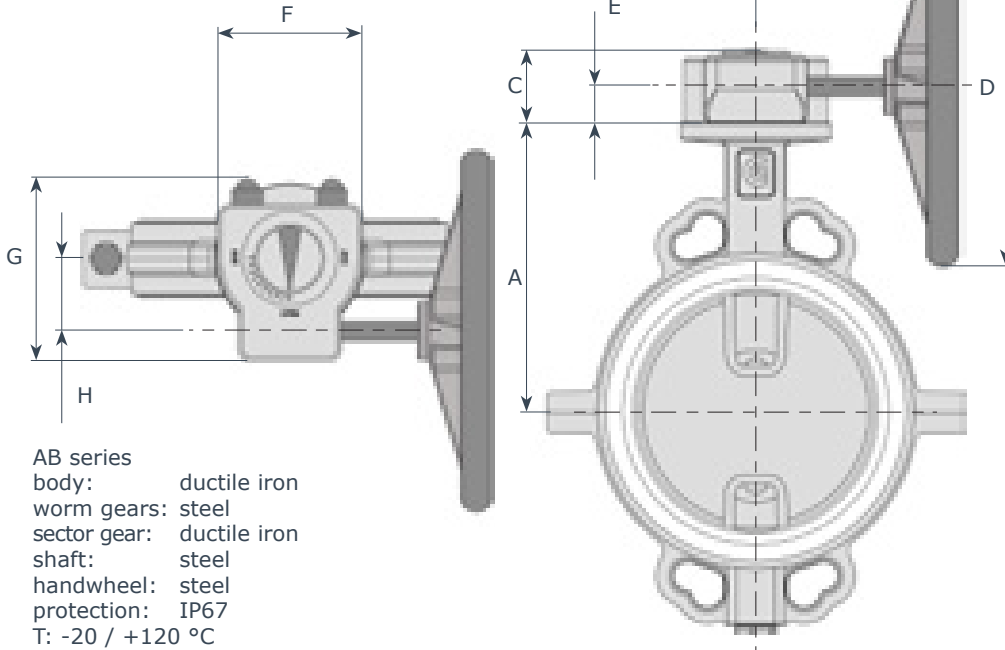
Aluminium body - HW Series

Cast Iron body - AB Series

HW series

body: aluminium
 worm gears: steel
 sector gear: ductile iron
 shaft: stainless steel
 handwheel: steel
 protection: IP65
 T: -20 / +120 °C

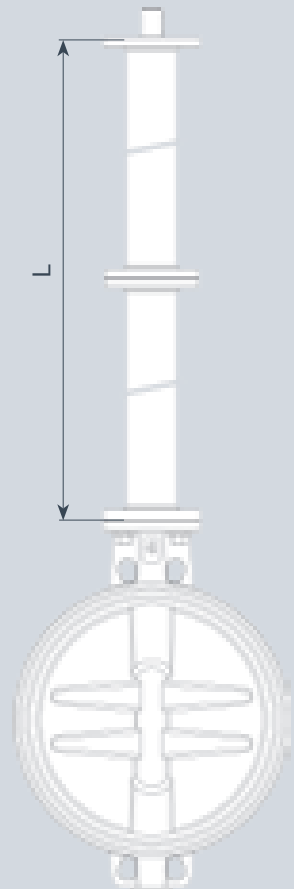
low/high temperature execution on request



Waterproof valve shaft extension

When necessary, it's possible to extend the valve shaft as indicated in the figure. Construction is in carbon steel with protective paint (on request stainless steel).

"L" measure should be indicated when ordering.



Our technical department is available to solve special applications.

AB series
 body: ductile iron
 worm gears: steel
 sector gear: ductile iron
 shaft: steel
 handwheel: steel
 protection: IP67
 T: -20 / +120 °C

Dimensions

| Mod. HW | B | C | D | E | F | G | H | | Kg |
|-----------|-------|-----|-----|----|-----|-----|-----|-----|------|
| HW 070 | 160 | 48 | 140 | 27 | 80 | 115 | 42 | | 1.6 |
| HW 102 | 215 | 56 | 250 | 33 | 120 | 150 | 60 | | 3 |
| HW 140 | 325 | 95 | 400 | 51 | 185 | 225 | 80 | | 10 |
| HW 165 | 395 | 105 | 600 | 61 | 230 | 268 | 105 | | 20 |
| Mod. | B | C | D | E | F | G | H | I | Kg |
| AB150 | 157.5 | 55 | 125 | 27 | 80 | 124 | 43 | 58 | 2.2 |
| AB215 | 217 | 63 | 200 | 29 | 102 | 128 | 52 | 48 | 3.5 |
| AB550 | 282 | 88 | 300 | 41 | 138 | 174 | 71 | 69 | 8.5 |
| AB880 | 282 | 93 | 400 | 42 | 200 | 226 | 86 | 100 | 14 |
| AB1250 | 322 | 102 | 500 | 48 | 220 | 258 | 105 | 110 | 22 |
| AB1950 | 425 | 126 | 600 | 55 | 285 | 323 | 130 | 143 | 32 |
| AB195-PR4 | 398 | 126 | 600 | 55 | 285 | 323 | 130 | 143 | 39 |
| AB680-PR4 | 451 | 159 | 600 | 59 | 370 | 407 | 182 | 170 | 62.5 |
| AB680-PR6 | 451 | 159 | 600 | 59 | 370 | 407 | 182 | 170 | 64.2 |

Coupling valve - actuators

| DN | " | mod. HW 10 bar | mod. AB 10 bar | A | DN | " | mod. HW 10 bar | mod. AB 10 bar | A |
|-----|------------------|-------------------|-------------------|-----|-----|----|-------------------|-------------------|-----|
| 50 | 2 | HW070 | AB150 | 138 | 200 | 8 | HW102 | AB215 | 240 |
| 65 | 2 ^{1/2} | HW070 | AB150 | 144 | 250 | 10 | HW102 | AB550 | 270 |
| 80 | 3 | HW070 | AB150 | 158 | 300 | 12 | HW102 | AB550 | 300 |
| 100 | 4 | HW070 | AB150 | 173 | 350 | 14 | HW140 | AB880 | 330 |
| 125 | 5 | HW070 | AB150 | 186 | 400 | 16 | HW140 | AB880 | 355 |
| 150 | 6 | HW070 | AB150 | 202 | 500 | 20 | HW165 | AB880 | 422 |



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Cooling Water systems - Metallurgical processes
Powder transportation & storage
Oil field recovery - Liquid natural gas
Steam service - Steam Turbine
Saltwater Service - District heating & cooling
Hot Air & Smokes
Chemicals storage & transportation
Food & Beverage processes

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- AFTER SALES SUPPORT

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- before selling we can start from dimensioning the valves and actuators, make selection of materials for all parts upon knowing the specification, prepare all types of drawings etc.
- after selling we make final documentation, provide installation supervision, undertake commissioning etc.

BUTTERFLY VALVES

Rubber Seated
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Damper Valves

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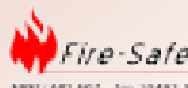
CONTROL SYSTEMS

CUSTOMIZED VALVES

CHECK VALVES

Disc type
Swing type
Dual plate

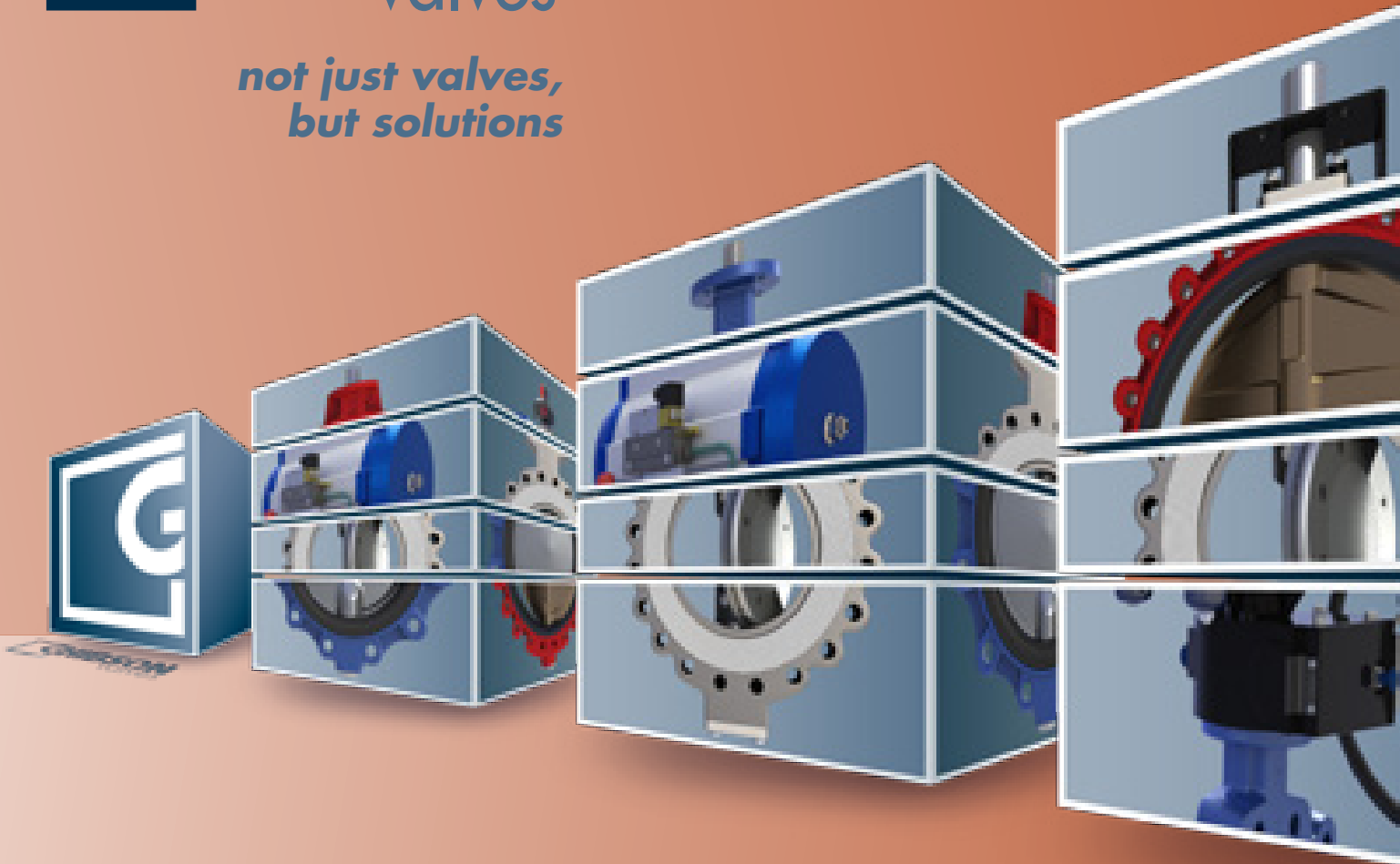
CERTIFICATIONS





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area.nord@ghibson.it