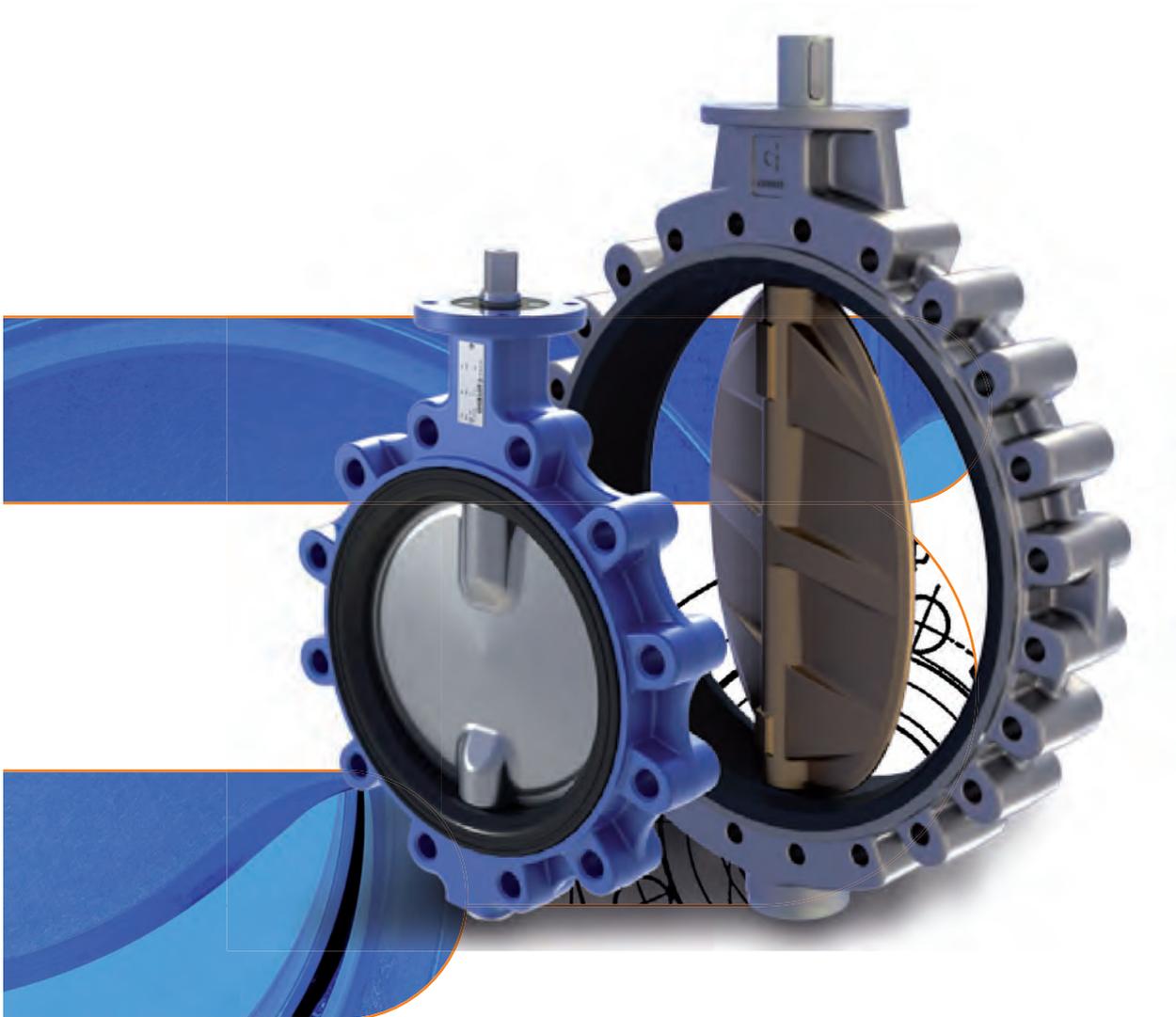


Valves

Butterfly Valves



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www.lohse-gmbh.de

| | |
|------------------------------|-----|
| Soft Seated Butterfly Valves | 177 |
| HD Series | 203 |
| PTFE Seated Butterfly Valves | 215 |

Butterfly Valves

Soft Seat



| | |
|----------------------------------|------------|
| PD, KI Series | 178 |
| technical data | 178 |
| components DN 80-300 | 179 |
| components DN 350-500 | 180 |
| components DN 600-800 | 181 |
| KA, KX technical data | 182 |
| technical data | 182 |
| KA series | 183 |
| components DN 40-300 | 183 |
| components DN 350-400 | 184 |
| components DN 450-500 | 185 |
| components DN 600-800 | 186 |
| KX series | 187 |
| components DN 50-250 | 187 |
| PD, KI, KA series | 188 |
| dimension tables | 188 |
| BVKX, BLKX series | 189 |
| dimension tables | 189 |
| Torque values tables | 190 |
| Head losses tables | 191 |
| Flanges | 192 |
| Bolts and rods dimensions | 193 |
| Installation instructions | 194 |
| Handlever | 195 |
| Gearbox | 196 |
| aluminium bods | 196 |
| cast iron body | 197 |
| Actuators and coupling | 198 |
| pneumatic adtuators | 198 |
| declutchable gearboxes | 200 |
| hydraulic actuators | 201 |

BVPD - Wafer BLPD - Lug
DN 80 - 800 • 3" - 32"

BVKI - Wafer BLKI - Lug
DN 40 - 800 • 1 1/2" - 32"

Max working pressure:

| | |
|----------------------------------|---------------|
| BVPD/BLPD DN80÷500: | 10 Bar |
| BVPD/BLPD DN800÷600: | 6 Bar |
| <i>Flange: PN 6-10-16 • A150</i> | |
| BVKI/BLKI DN40÷500: | 16 Bar |
| <i>Flange: PN 10-16 • A150</i> | |
| BVKI/BLKI DN600÷800: | 10 Bar |
| <i>Flange: PN 10-16 • A150</i> | |

KI series to be used also with vacuum

Design:

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092
ISO 5211 ~ DIN 3337 ~ API 609
PED 2014/68/EU - Mod. H

Face to face:

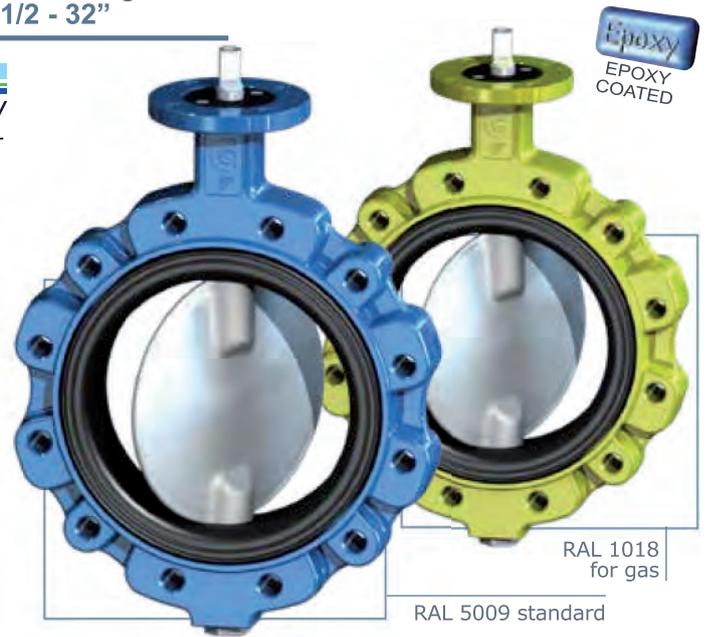
DIN EN 558 Series 20 ~ ISO 5752 Series 20
BS-5155 Series 4 ~ MSS-SP67
API609 cat.A ~ NFE 29305-1

Testing:

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

Tag:

EN 19 ~ MSS SP-25



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

| BODY | | | BVPD | BVKI/BLKI |
|------------------------------------|-----------------------|------------------|--------|-------------------|
| material | references | standard coating | DN | DN |
| Ductile iron | EN-GJS 400-15 (GS400) | Epoxy RAL 5009 | 80-800 | 40-800 |
| Carbon steel | ASTM A216-WCB | Epoxy RAL 9005 | 80-800 | 40-800 |
| Stainless steel | ASTM A351 CF8M (A316) | - | 80-800 | 40-800 |
| Aluminium-bronze | ASTM B148-C958.00 | - | 80-800 | 40-800 |
| Aluminium (P _{max} 10Bar) | EN AB 46400 | Epoxy RAL 7024 | 80-500 | 40-500 only wafer |

| DISC | | | BVPD | BVKI/BLKI |
|------------------|-------------------------|------------------|---------|-----------|
| material | references | standard coating | DN | DN |
| Steel | ASTM A105 | Zinc | 80-100 | 50-100 |
| Ductile iron | EN-GJS 400-15 (GS400) | Zinc | 125-500 | 125-500 |
| Stainless steel | ASTM A351 CF8M (A316) | - | 80-800 | 40-800 |
| Aluminium-bronze | ASTM B148-C958.00 | - | 80-800 | 40-800 |
| Hastelloy® | ASTM A494 CX2MW | - | 80-800 | 40-800 |
| Super Duplex | EN 1.4469 (A890 Gr. 5A) | - | 80-800 | 40-800 |

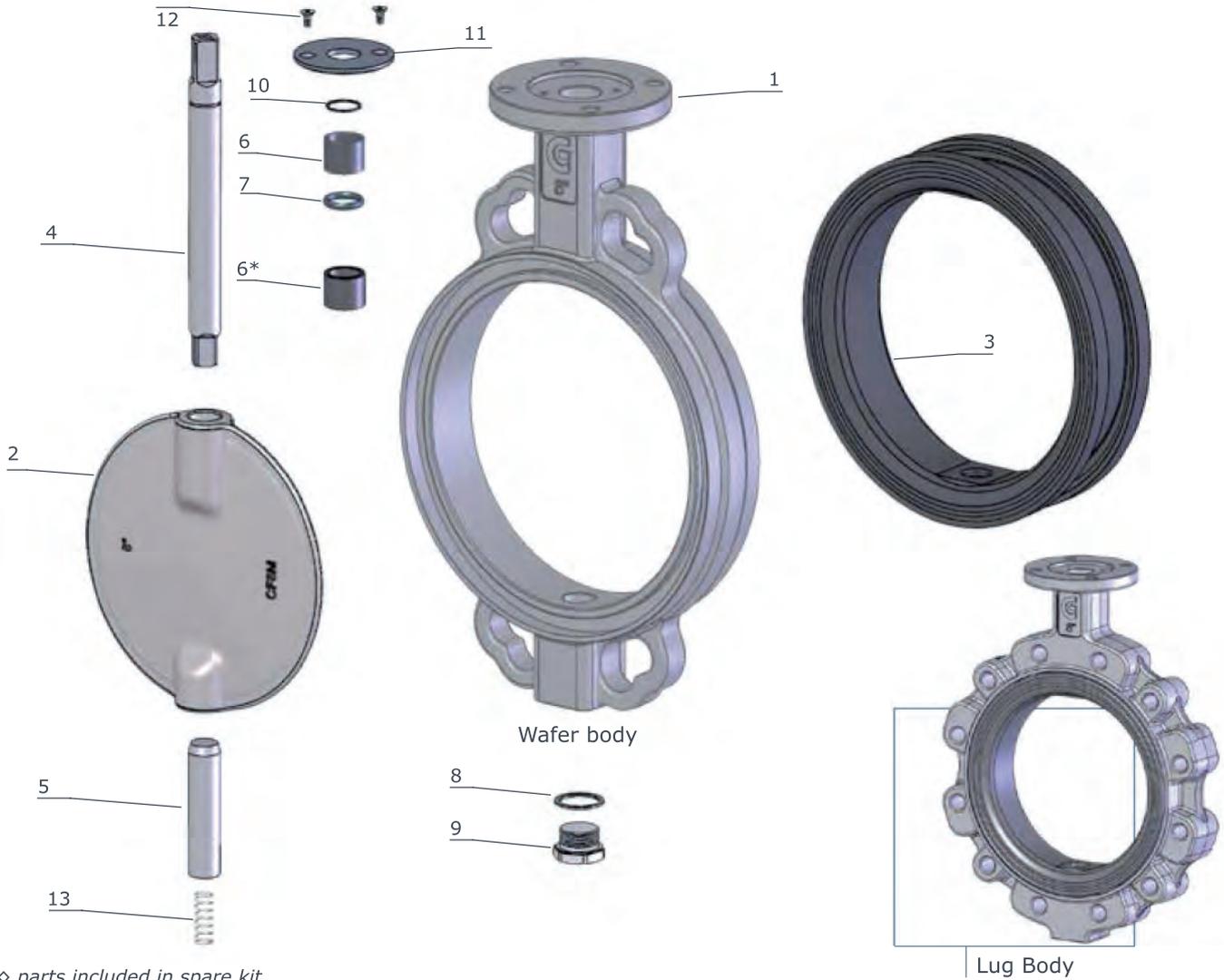
| BODY RUBBER SEAT | | DN 40/500 replaceable - DN 600/800 vulcanized not replaceable | | | | | |
|------------------|-------------------------------|---|----------|----|--------------|----------------|--|
| ref. | designation | PD 6bar | PD 10bar | KI | trade name | working temp. | applications |
| NBR | nitrile rubber | ✓ | ✓ | ✓ | BUNA® | -25°C / +100°C | oils, hydrocarbons, gas, air, water |
| EPDM | copolymer EPDM | ✓ | ✓ | ✓ | - | -35°C / +130°C | water, sea water, steam, diluted acids |
| EPDM HT | copolimery EPDM HT | ✓ | ✓ | ✓ | - | -45°C / +150°C | water, sea water, steam, diluted acids |
| CO | carboxide | ✓ | ✗ | ✓ | - | -25°C / +100°C | dust, air |
| FKM | fluoroelastomer | ✓ | ✗ | ✓ | VITON® | -20°C / +200°C | oils, acids, hydrocabons |
| CR | polychloroprene | ✓ | ✗ | ✓ | NEOPRENE® | -20°C / +100°C | alkali, bases, water |
| NR | natural rubber | ✓ | ✗ | ✓ | - | -40°C / + 80°C | glycols, abrasive media |
| MVQ | silicon rubber | ✓ | ✗ | ✓ | SILOPREN® | -60°C / +190°C | water, food, drinks |
| CSM | chlorosulfonated polyethylene | ✓ | ✗ | ✓ | HYPALON® | -20°C / +125°C | acids, mineral bases, alcohols, hydrocarbons |
| PU | poliuretane | ✓ | ✓ | ✓ | POLIURETANE® | -25°C / +90°C | abrasive media |

On request can be supplied other materials as:
Coating on request:

LCB, Hastelloy, Uranus, Alloy, Super Duplex, Special steels, Special bronzes.
RILSAN®, Halar®, Chenisil®

BVPD-Wafer BLPD-Lug
 DN 80 - 300 • 3" - 12"
 PN 6-10-16 • ANSI 150

BVKI - Wafer BLKI - Lug
 DN 40 - 300 • 1"1/2 - 12"
 PN 10-16 • ANSI 150



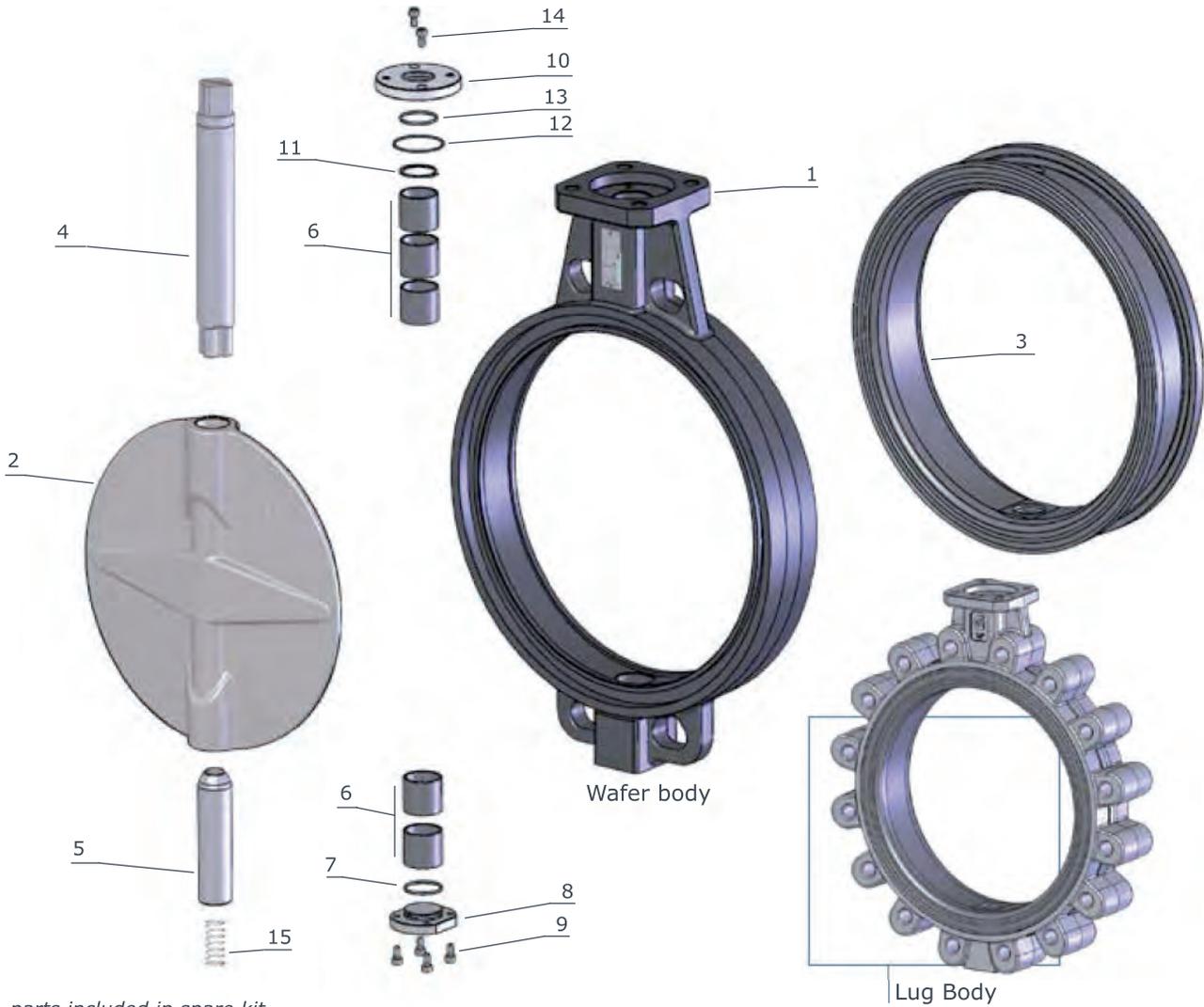
◇ parts included in spare kit

| item | q.ty | part | material |
|------------------|------|----------------------------|---|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB 1.4408~ A351-CF8M (AISI 316) EN1982-CC333G~ASTM B148 -C958.00 EN AB 46400 (only WAFER) |
| 2 | 1 | disc | EN-GJS400-15 (GS400) EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| ◇3 | 1 | body seat (replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) carboxide polychloroprene (NEOPRENE®) natural rubber silicon |
| 4 | 1 | upper shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| * only for DN300 | | | |

| item | q.ty | part | material |
|------|------|---------------|---|
| 5 | 1 | lower shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| ◇6 | 1 | bush | bronze |
| ◇6* | 3 | bush | A105+PTFE A316+PTFE (only Inox body) |
| ◇7 | 1 | shaft packing | NBR (BUNA®) FKM (VITON®) on request |
| 8 | 1 | plug packing | aluminium PTFE (CF8M body / ASTM B148) |
| 9 | 1 | threaded plug | zinc plated steel 1.4401~A316 (CF8M body / ASTM B148) |
| 10 | 1 | stop ring | steel |
| 11 | 1 | upper flange | IXEF (DN 40-150) aluminium (DN 200-300) |
| 12 | 2 | screw | 10.9 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 13 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVPD-Wafer BLPD-Lug
 DN 350 - 500 • 14" - 20"
 PN 6-10-16 • ANSI 150

BVKI - Wafer BLKI - Lug
 DN 350 - 500 • 14" - 20"
 PN 10-16 • ANSI 150



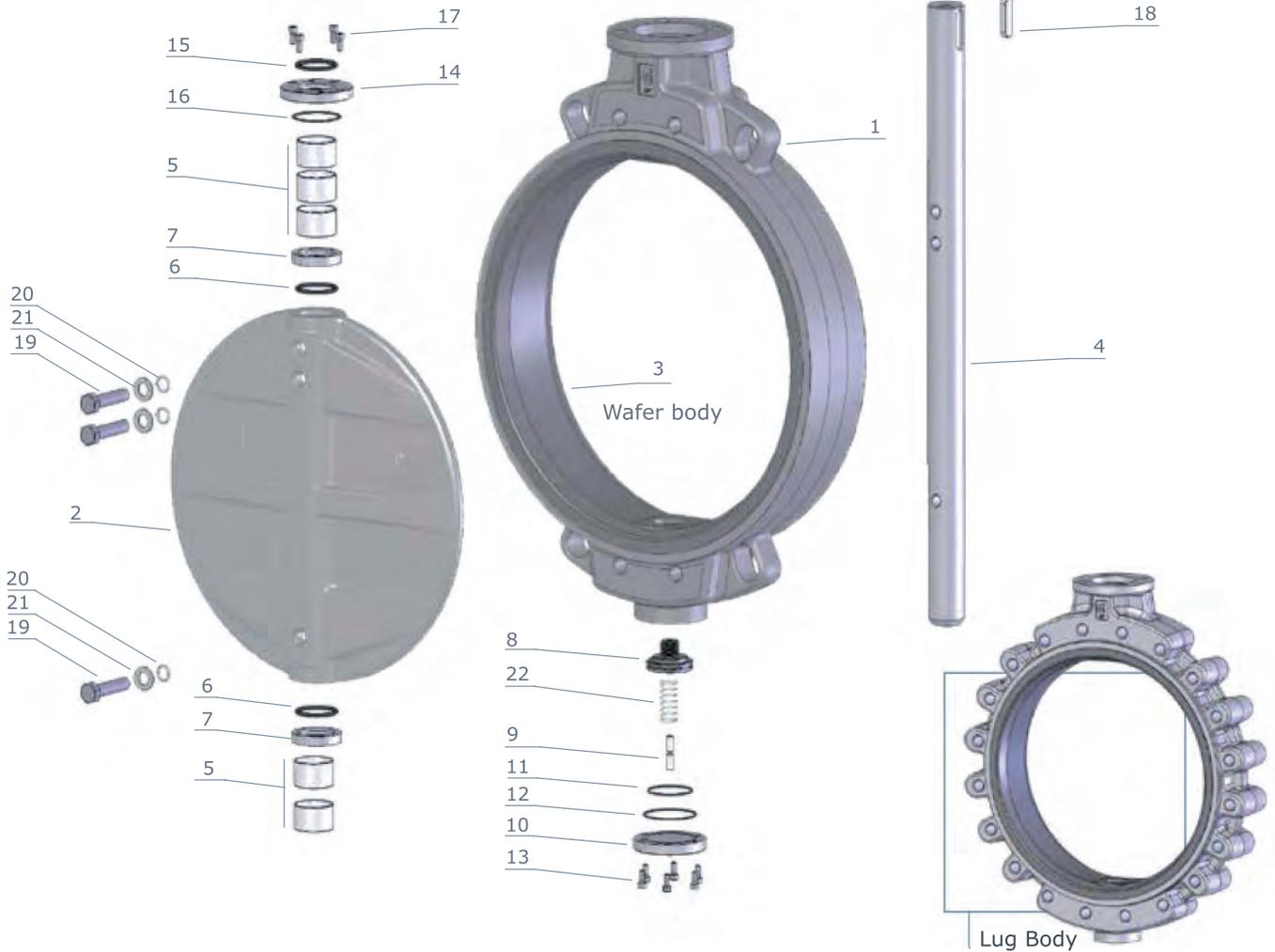
◇ parts included in spare kit

| item | q.tà | part | material |
|------|------|----------------------------|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB 1.4408~ A351-CF8M (AISI 316) EN1982-CC333G~ASTM B148 - C958.00 EN AB 46400 (only WAFER) |
| 2 | 1 | disc | EN-GJS400-15 (GS400) EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| ◇3 | 1 | body seat (replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) carboxide polychloroprene (NEOPRENE®) natural rubber silicon |
| 4 | 1 | upper shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |

| item | q.tà | part | material |
|------|------|----------------------|--|
| 5 | 1 | lower shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| ◇6 | 5 | bush | bronze steel+PTFE (DN 450-500) |
| ◇7 | 1 | packing lower flange | NBR (BUNA®) |
| 8 | 1 | lower flange | zinc plated steel 1.4401~A316 (CF8M body / ASTM B148) |
| 9 | 4 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 10 | 1 | upper flange | zinc plated steel 1.4401~A316 (CF8M body / ASTM B148) |
| 11 | 1 | stop ring | steel |
| ◇12 | 1 | O.Ring | NBR (BUNA®) |
| ◇13 | 1 | O.Ring | NBR (BUNA®) |
| 14 | 2 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 15 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVPD-Wafer BLPD-Lug
 DN 600 - 800 • 24" - 32"
 PN 6-10-16 • ANSI 150

BVKI - Wafer BLKI - Lug
 DN 600 - 800 • 24" - 32"
 PN 10-16 • ANSI 150



◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|---|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB 1.4408~ A351-CF8M (AISI 316) EN1982-CC333G~ASTM B148 - C958.00 |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4305~A303 EN 1.4401~A316 (on request) |
| ◇5 | 5 | bush | steel + PTFE |
| ◇6 | 2 | shaft O.ring | NBR (BUNA®) FKM (VITON®) on request |
| 7 | 2 | O.ring housing | A4~A316 |

| item | q.ty | part | material |
|------|------|-----------------|--|
| 8 | 1 | shaft support | Bronze |
| 9 | 2 | adjusting screw | A4~A316 |
| 10 | 1 | lower flange | zinc plated steel 1.4401~A316 (CF8M body / ASTM B148) |
| ◇11 | 1 | O.ring | NBR (BUNA®) |
| ◇12 | 1 | O.ring | NBR (BUNA®) |
| 13 | 6 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 14 | 1 | upper flange | zinc plated steel 1.4401~A316 (CF8M body ASTM B148) |
| ◇15 | 1 | O.ring | NBR (BUNA®) |
| ◇16 | 1 | O.ring | NBR (BUNA®) |
| 17 | 4 | screw | 8.8 zinc plated steel A4~A316 (CF8M body/ ASTM B148) |
| 18 | 1 | key | steel |
| 19 | 3 | screw | A4~A316 |
| ◇20 | 3 | O.ring | PTFE |
| 21 | 3 | washer | A4~A316 |
| 22 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVKA - Wafer BLKA - Lug
DN 40 - 800 • 1"1/2 - 32"

BVKX - Wafer
DN 50 - 250 • 2" - 10"

BLKX - Lug
DN 50 - 200 • 2" - 8"

Max working pressure:

| | |
|--------------------------------|---------------|
| BVKA/BLKA DN 40÷800: | 20 Bar |
| Flange: PN 10-16 • A150 | |
| BVKX DN 50÷250: | 25 Bar |
| Flange: PN 25 • A150 | |
| BLKX DN 50÷200: | 25 Bar |
| Flange: PN 25 | |

To be used also with vacuum

Design:

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092
ISO 5211 ~ DIN 3337 ~ API 609
PED 2014/68/EU - Mod. H

Face to face:

DIN EN 558 Series 20 ~ ISO 5752 Series 20
BS-5155 Series 4 ~ MSS-SP67
API609 cat.A ~ NFE 29305-1

Testing:

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

Tag:

EN 19 ~ MSS SP-25



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



BVKA

| BODY | | | BVKA/BLKA | BVKX | BLKX |
|------------------|-----------------------|------------------|-----------|--------|--------|
| material | references | standard coating | DN | DN | DN |
| Ductile iron | EN-GJS 400-15 (GS400) | Epoxy RAL 5009 | 40-800 | 50-250 | 50-200 |
| Carbon steel | ASTM A216-WCB | Epoxy RAL 9005 | 40-800 | 50-100 | 50-100 |
| Stainless steel | ASTM A351 CF8M (A316) | - | 40-800 | 50-100 | 50-100 |
| Aluminium-bronze | ASTM B148-C958.00 | - | 40-800 | 50-100 | 50-100 |

| DISCO | | | BVKA/BLKA | BVKX | BLKX |
|------------------|-------------------------|------------------|-----------|--------|--------|
| material | references | standard coating | DN | DN | DN |
| Stainless steel | ASTM A351 CF8M (A316) | - | 40-800 | 50-250 | 50-200 |
| Aluminium-bronze | ASTM B148-C958.00 | - | 40-800 | 50-250 | 50-200 |
| Hastelloy® | ASTM A494 CX2MW | - | 40-800 | 50-250 | 50-200 |
| Super Duplex | EN 1.4469 (A890 Gr. 5A) | - | 40-800 | 50-250 | 50-200 |

| BODY RUBBER SEAT | | KA DN 40/150 replaceable - DN 200/800 vulcanized not replaceable KX DN 50/250 vulcanized not replaceable | | |
|------------------|-------------------|---|----------------|--|
| ref. | designation | trade name | working temp. | applications |
| NBR | nitrile rubber | BUNA® | -25°C / +100°C | oils, hydrocarbons, gas, air, water |
| EPDM | copolymer EPDM | - | -35°C / +130°C | water, sea water, steam, diluted acids |
| EPDM HT | copolymer EPDM HT | - | -45°C / +150°C | water, sea water, steam, diluted acids |
| FKM | fluoroelastomer | VITON® | -20°C / +200°C | oils, acids, hydrocabons |

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

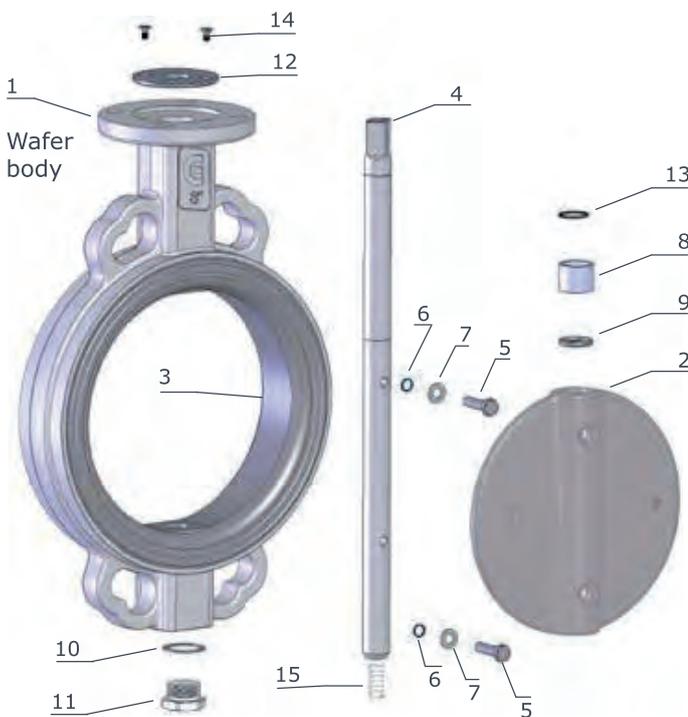
BVKA - Wafer BLKA - Lug
DN 40 - 150 • 1”1/2 - 6”
PN 10-16 • ANSI 150



◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|-------------------------|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB EN 1.4408~A351-CF8M |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| ◇3 | 1 | body seat (replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | upper shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| 5 | 1 | lower shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| ◇6 | 1 | bush | bronze |
| ◇7 | 1 | shaft packing | NBR (BUNA®) FKM (VITON®) (on request) |
| 8 | 1 | plug packing | aluminium PTFE (CF8M body / ASTM B148) |
| 9 | 1 | threaded plug | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| 10 | 1 | stop ring | steel |
| 11 | 1 | upper flange | IXEF (DN 40-150) aluminium (DN 200-300) |
| 12 | 2 | screw | 10.9 zinc plated steel A4~A316 (CF8M body/ ASTM B148) |
| 13 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

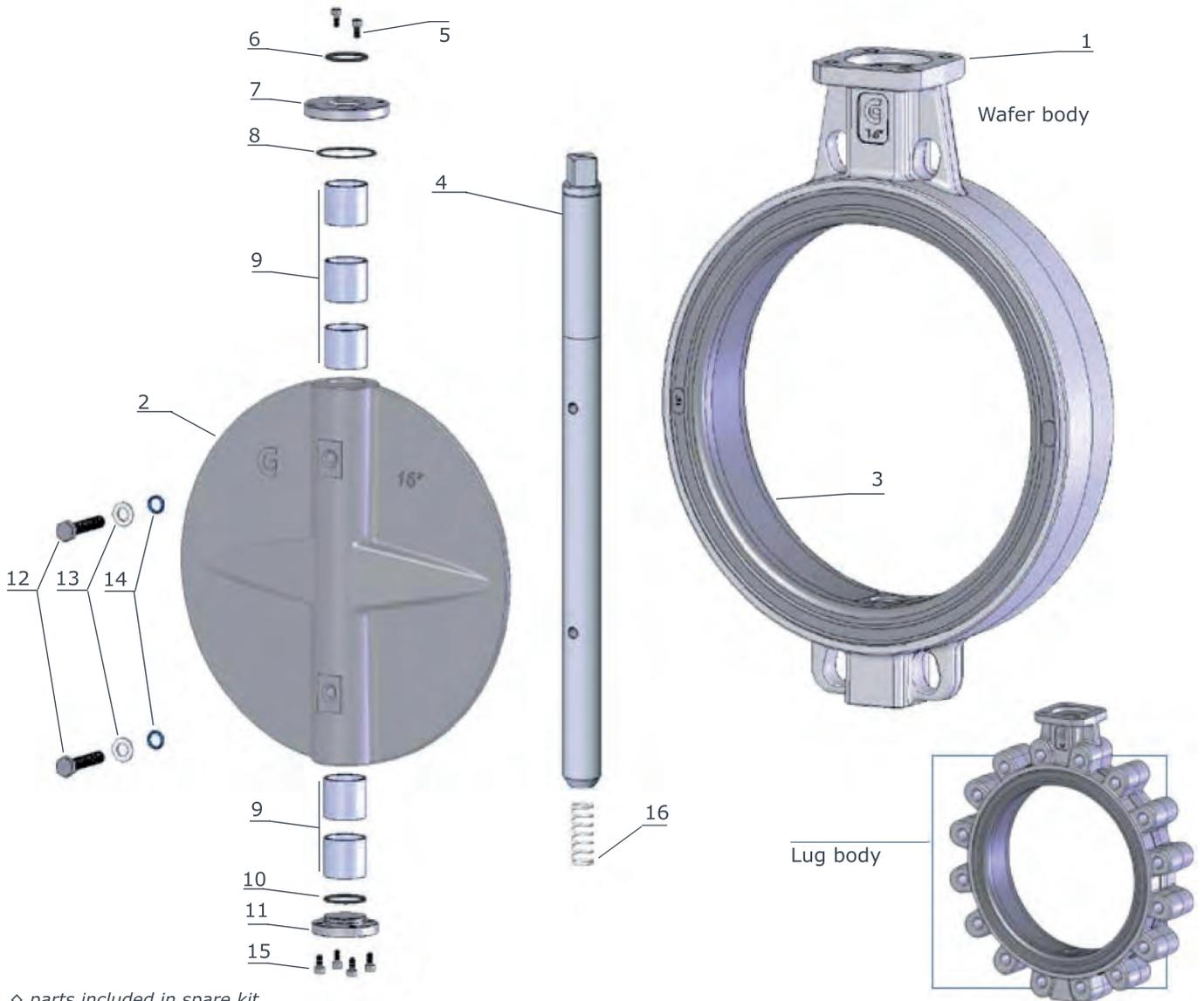
BVKA - Wafer BLKA - Lug
DN 200 - 300 • 8” - 12”
PN 10-16 • ANSI 150



◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|--|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB EN 1.4408~A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| 5 | 2 | screw | 10.9 zinc plated steel A4~A316 (CF8M body/ ASTM B148) |
| ◇6 | 2 | O.Ring | NBR (BUNA®) |
| 7 | 2 | washer | A4~A316 |
| ◇8 | 1 | bush | bronze |
| ◇9 | 1 | shaft packing | NBR (BUNA®) FKM (VITON®) (on request) |
| 10 | 1 | plug packing | aluminium PTFE (CF8M body/ ASTM B148) |
| 11 | 1 | threaded plug | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| 12 | 1 | upper flange | aluminium |
| 13 | 1 | stop ring | steel |
| 14 | 2 | screw | zinc plated steel |
| 15 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVKA - Wafer **BLKA** - Lug
 DN 350 - 400 • 14" - 16"
 PN 10-16 • ANSI 150

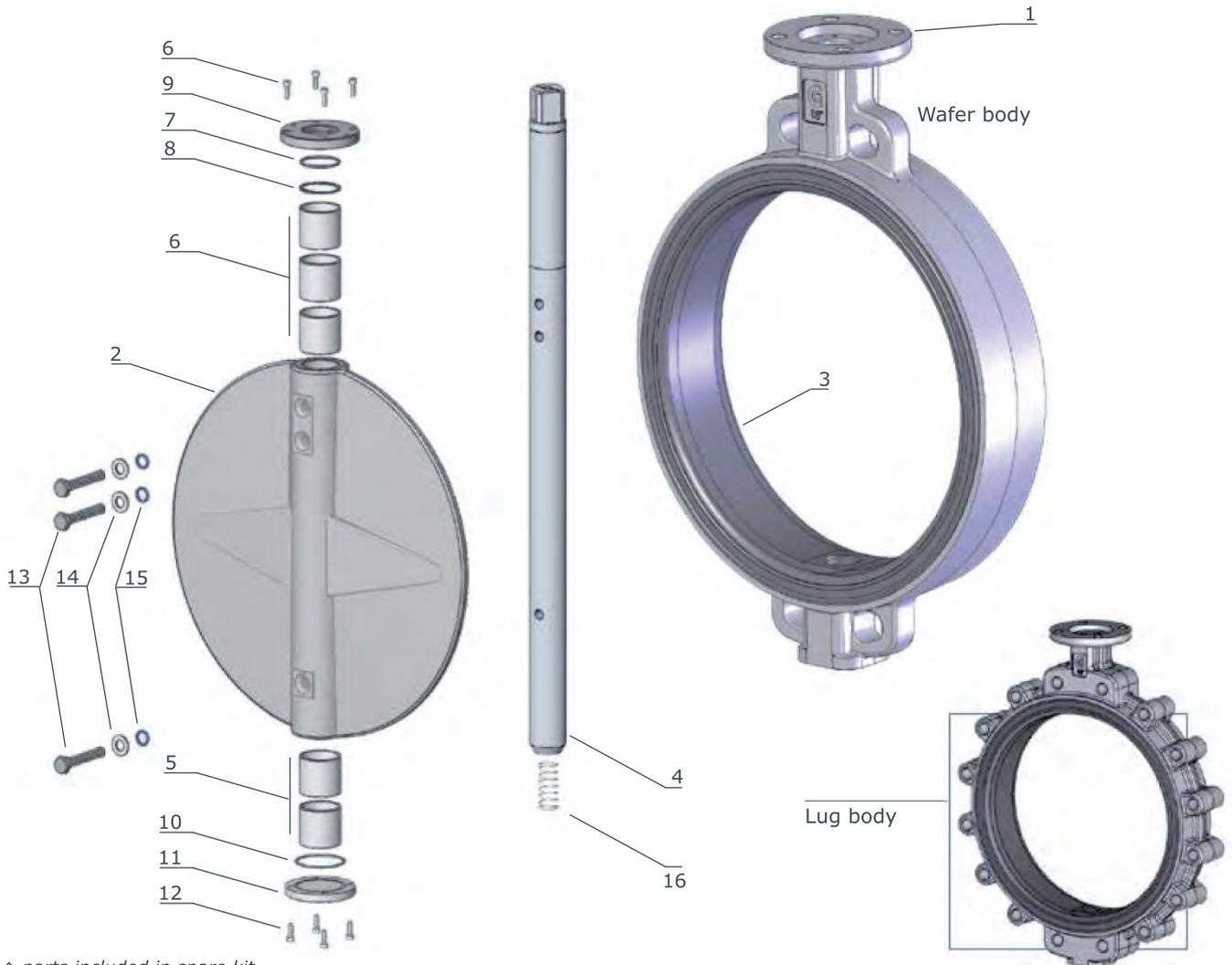


◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|---|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB EN 1.4408~A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |

| item | q.ty | part | material |
|------|------|--------------|---|
| 5 | 2 | screw | 10.9 zinc plated steel |
| ◇6 | 1 | O.ring | NBR (BUNA®) |
| 7 | 1 | upper flange | 10.9 zinc plated steel |
| ◇8 | 1 | O.ring | NBR (BUNA®) |
| ◇9 | 5 | bush | bronze |
| ◇10 | 1 | O.ring | NBR (BUNA®) |
| 11 | 1 | lower flange | IXEF (DN 40-150) aluminium (DN 200-300) aluminio (DN 200-300) |
| 12 | 2 | screw | 10.9 zinc plated steel |
| 13 | 2 | washer | A4~A316 |
| ◇14 | 2 | O. ring | NBR (BUNA®) |
| 15 | 4 | screw | 10.9 zinc plated steel |
| 16 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVKA - Wafer **BLKA** - Lug
 DN 450 - 500 • 18" - 20"
 PN 10-16 • ANSI 150

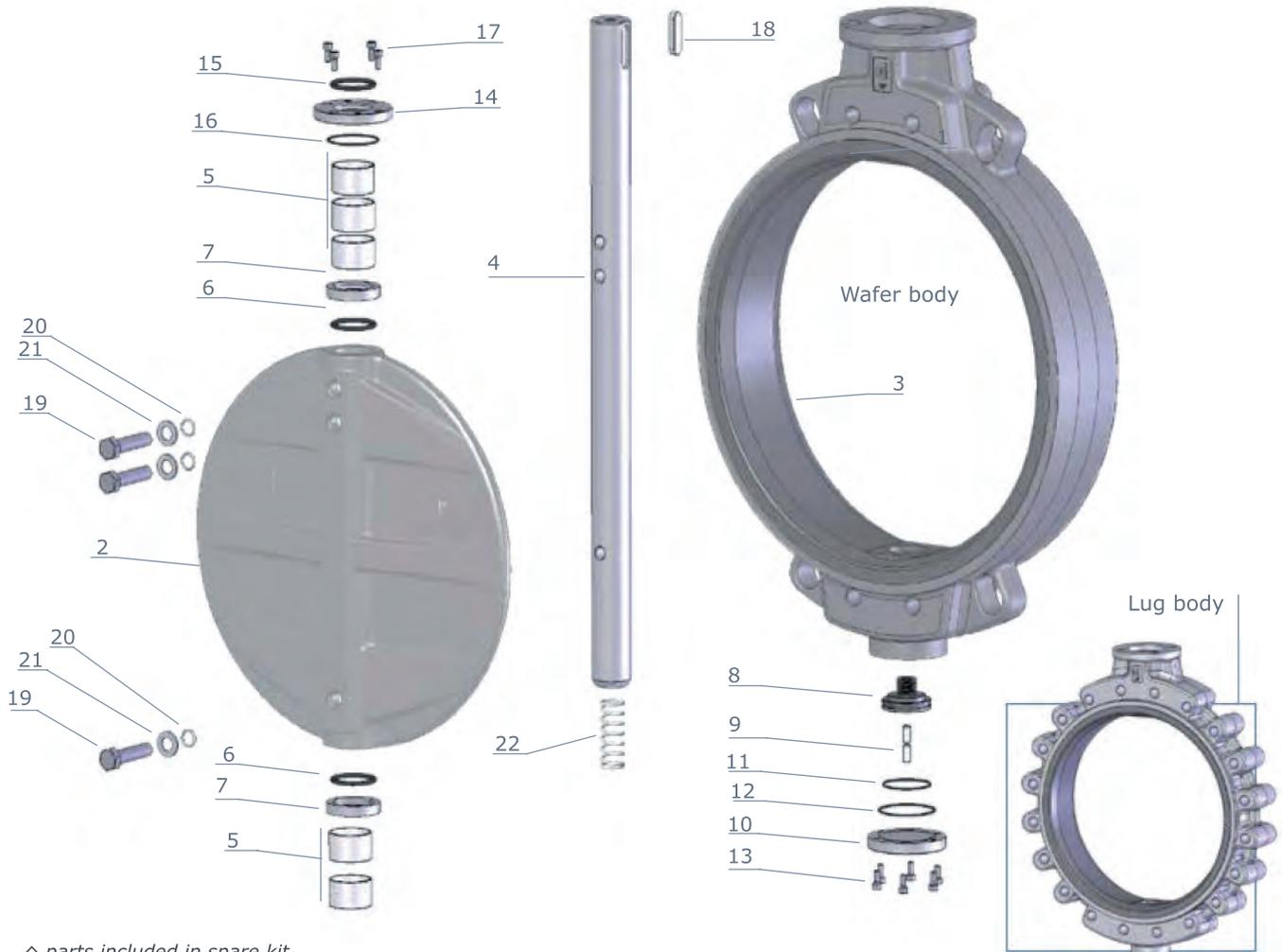


◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|---|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB 1.4408~ A351-CF8M (A316) EN1982-CC333G~ASTM B148-C958.00 |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148-C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| ◇5 | 5 | bush | steel + PTFE |

| item | q.ty | part | material |
|------|------|--------------|--|
| 6 | 4 | screw | 8.8 zinc plated steel A4~A316 (CF8M body/ ASTM B148) |
| ◇7 | 1 | O.ring | NBR (BUNA®) |
| 8 | 5 | stop ring | steel |
| 9 | 1 | upper flange | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| ◇10 | 1 | O.ring | NBR (BUNA®) |
| 11 | 1 | lower flange | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| 12 | 4 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 13 | 2 | screw | A4~A316 |
| 14 | 2 | washer | A4~A316 |
| ◇15 | 2 | O. ring | PTFE |
| 16 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVKA - Wafer **BLKA** - Lug
 DN 600 - 800 • 24" - 32"
 PN 16 • ANSI 150



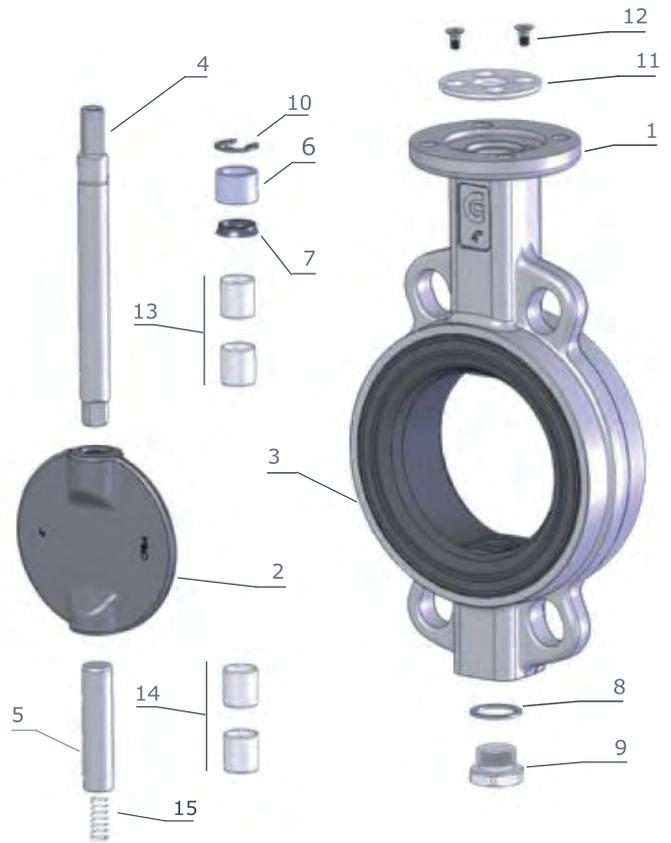
◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|--|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB EN 1.4408~A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4305~A303 EN 1.4401~A316 (on request) |
| ◇5 | 5 | bush | steel + PTFE |
| ◇6 | 2 | O.ring | NBR (BUNA®) FKM (VITON®) on request |
| 7 | 2 | O.ring housing | A4~A316 |

| item | q.ty | part | material |
|------|------|-----------------|--|
| 8 | 1 | shaft support | Bronze |
| 9 | 2 | adjusting screw | A4~A316 |
| 10 | 1 | lower flange | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| ◇11 | 1 | O.ring | NBR (BUNA®) |
| ◇12 | 1 | O.ring | NBR (BUNA®) |
| 13 | 6 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 14 | 1 | upper flange | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| ◇15 | 1 | O.ring | NBR (BUNA®) |
| ◇16 | 1 | O.ring | NBR (BUNA®) |
| 17 | 4 | screw | 8.8 zinc plated steel A4~A316 (CF8M body / ASTM B148) |
| 18 | 1 | key | steel |
| 19 | 3 | screw | A4~A316 |
| ◇20 | 3 | O.ring | PTFE |
| 21 | 3 | washer | A4~A316 |
| 22 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

BVKX - Wafer BLKX - Lug
DN 50 - 100 • 2" - 4"
PN 25

| item | q.ty | part | material |
|------|------|--|---|
| 1 | 1 | body | EN-GJS400-15 (GS400) EN 1.069~ A216-WCB 1.1156~A352-LCB EN 1.4408~A351-CF8M |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M (A316) EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replaceable) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4-5 | 1 | upper shaft lower shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| ◇6 | 1 | bush | bronze |
| ◇7 | 1 | shaft packing | NBR (BUNA®) FKM (VITON®) (on request) |
| 8 | 1 | plug packing | aluminium PTFE (corpo CF8M / ASTM B148) |
| 9 | 1 | threaded plug | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| 10 | 1 | stop ring | steel |
| 11 | 1 | upper flange | IXEF (DN 40-150) aluminium (DN 200-300) |
| 12 | 2 | screw | zinc plated steel A4~A316 (CF8M body/ ASTM B148) |
| ◇13 | 2 | upper bush | A105+PTFE |
| ◇14 | 2 | lower bush | A105+PTFE |
| 15 | 1 | spring | 1.4401 ~ A316 (antistatic device) |



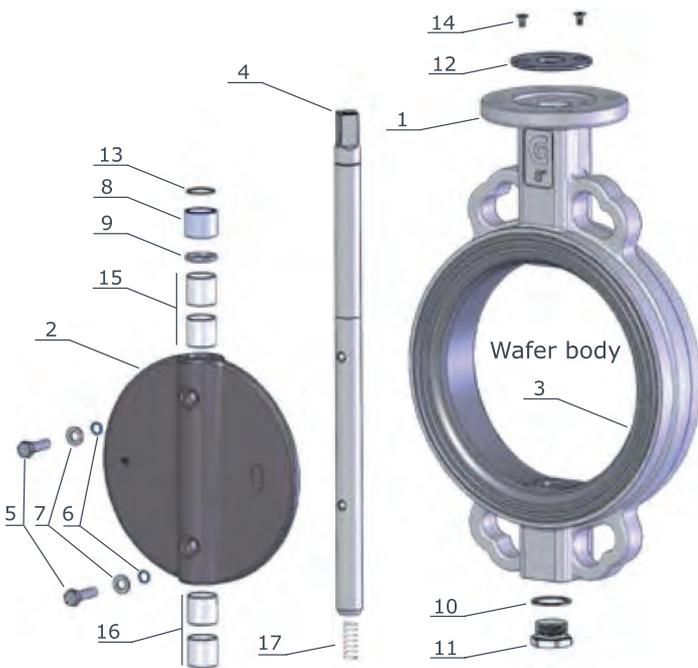
◇ parts included in spare kit

Wafer body

BVKX - Wafer
DN 125 - 250 • 5" - 10"
PN 25

BLKX - Lug
DN 125 - 200 • 5" - 8"
PN 25

| item | q.ty | part | material |
|------|------|---|--|
| 1 | 1 | body | EN-GJS400-15 (GS400) |
| 2 | 1 | disc | EN 1.4408~ A351-CF8M EN1982-CC333G~ASTM B148 - C958.00 EN 2.4602~HASTELLOY-CX2MW EN 1.4469 (A890 Gr. 5A) SUPER DUPLEX |
| 3 | 1 | body seat (vulcanized not replace- able) | NBR (BUNA®) EPDM EPDM HT FKM (VITON®) |
| 4 | 1 | shaft | EN 1.4016~A430 EN 1.4401~A316 (on request) |
| 5 | 2 | screw | A4~A316 |
| ◇6 | 2 | O.Ring | PTFE |
| 7 | 2 | washer | A4~A316 |
| ◇8 | 1 | bush | bronze |
| ◇9 | 1 | shaft packing | NBR (BUNA®) FKM (VITON®) (on req.) |
| 10 | 1 | plug packing | aluminium PTFE (corpo CF8M / ASTM B148) |
| 11 | 1 | threaded plug | zinc plated steel 1.4401~A316 (CF8M body/ASTM B148) |
| 12 | 1 | upper flange | IXEF (DN 125-150) aluminium (DN 200-250) |
| 13 | 1 | stop ring | steel |
| 14 | 2 | screw | 10.9 zinc plated steel A4~A316 (CF8M body/ ASTM B148)) |
| ◇15 | 2 | upper bush | A105+PTFE |
| ◇16 | 2 | lower bush | A105+PTFE |
| 17 | 1 | spring | 1.4401 ~ A316 (antistatic device) |

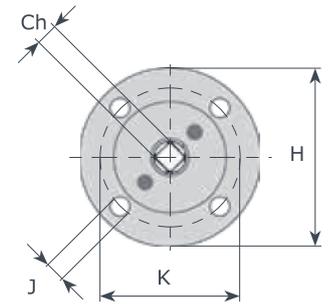
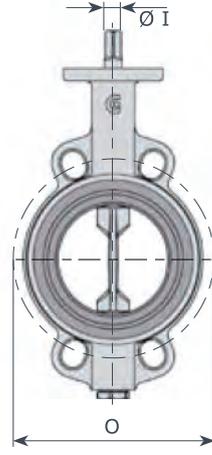
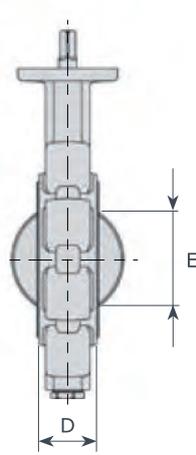
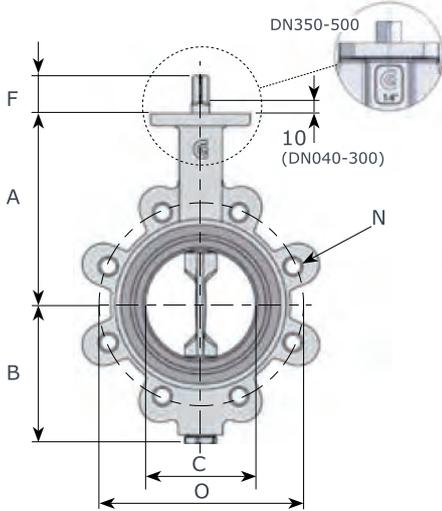


◇ parts included in spare kit

BVPD - Wafer **BLPD - Lug**

BVKI - Wafer **BLKI - Lug**

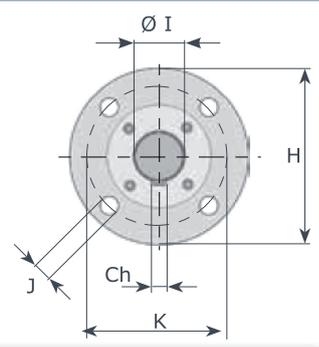
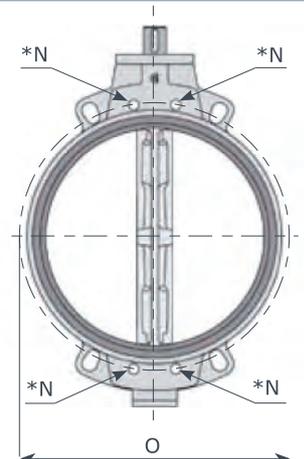
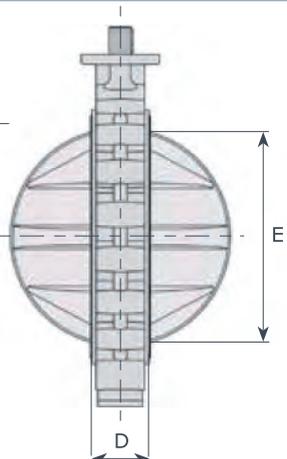
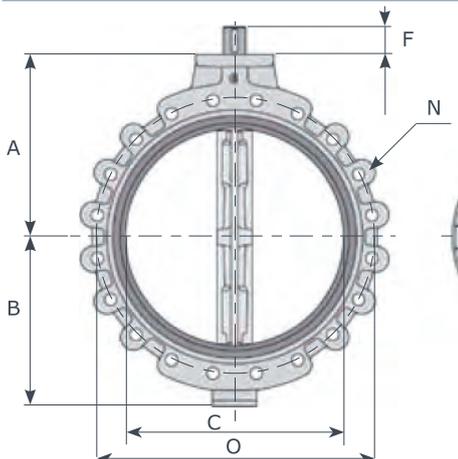
BVKA - Wafer **BLKA - Lug**



Upper flange - ISO 5211

| | |
|--------------|------------------|
| DN 40 - 150 | F07 - 4 holes |
| DN 200 - 300 | F10 - 4 holes |
| DN 350 - 400 | F12 - 4 holes |
| DN 450 | F14 - 4 holes |
| DN 500 | F14/16 - 4 holes |

| DN | A | B | C | D | E | F | Ø I | Ch | H | K | J | Kg | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|----|-----|----|-----|---------|-------|------|----|-----|-------|----|-----|-------|----|-----|----------|----|-------|-------|------|-----|------|
| | | | | | | | | | | | | PN 6 | | | PN 10 | | | PN 16 | | | ANSI 150 | | | PD-KI | | KA | |
| | | | | | | | | | | | | N | n. | O | N | n. | O | N | n. | O | N | n. | O | W | L | W | L |
| 40 | 130 | 75 | 49 | 33 | 36 | 34 | 14 | 11 | 90 | 70 | 9 | - | - | - | M16 | 4 | 110 | M16 | 4 | 110 | M14 | 4 | 98.4 | 2.2 | 3 | 2.2 | 3 |
| 50 | 138 | 81 | 55 | 43 | 35 | 34 | 14 | 11 | 90 | 70 | 9 | M12 | 4 | 110 | M16 | 4 | 125 | M16 | 4 | 125 | M16 | 4 | 120.7 | 2.8 | 3.7 | 2.8 | 3.7 |
| 65 | 144 | 98 | 68 | 46 | 50 | 34 | 14 | 11 | 90 | 70 | 9 | M12 | 4 | 130 | M16 | 8 | 145 | M16 | 8 | 145 | M16 | 4 | 139.7 | 3.7 | 5.3 | 3.7 | 5.3 |
| 80 | 158 | 110 | 81 | 46 | 67 | 34 | 14 | 11 | 90 | 70 | 9 | M16 | 4 | 150 | M16 | 8 | 160 | M16 | 8 | 160 | M16 | 4 | 152.4 | 4 | 6.1 | 4 | 6.1 |
| 100 | 173 | 128 | 101 | 52 | 87 | 34 | 16 | 11 | 90 | 70 | 9 | M16 | 4 | 170 | M16 | 8 | 180 | M16 | 8 | 180 | M16 | 8 | 190.5 | 6 | 8.1 | 6 | 8.1 |
| 125 | 186 | 140 | 126 | 56 | 113 | 34 | 18 | 14 | 90 | 70 | 9 | M16 | 8 | 200 | M16 | 8 | 210 | M16 | 8 | 210 | M20 | 8 | 215.9 | 7.2 | 9.7 | 7.2 | 9.7 |
| 150 | 202 | 155 | 150 | 56 | 140 | 34 | 18 | 14 | 90 | 70 | 9 | M16 | 8 | 225 | M20 | 8 | 240 | M20 | 8 | 240 | M20 | 8 | 241.3 | 9.1 | 11.5 | 9.5 | 11.8 |
| 200 | 240 | 190 | 200 | 60 | 191 | 38 | 22 | 17 | 125 | 102 | 11 | M16 | 8 | 280 | M20 | 8 | 295 | M20 | 12 | 295 | M20 | 8 | 298.5 | 14 | 27 | 16 | 29 |
| 250 | 270 | 220 | 250 | 68 | 241 | 38 | 30 | 22 | 125 | 102 | 11 | M16 | 12 | 335 | M20 | 12 | 350 | M24 | 12 | 355 | M22 | 12 | 362.0 | 22 | 34 | 26 | 38 |
| 300 | 300 | 247 | 298 | 78 | 289 | 38 | 30 | 22 | 125 | 102 | 11 | M20 | 12 | 395 | M20 | 12 | 400 | M24 | 12 | 410 | M22 | 12 | 431.8 | 32 | 49 | 36 | 53 |
| 350 | 330 | 280 | 341 | 78 | 332 | 28 | 35 | 27 | 150 | 125 | 14 | M20 | 12 | 445 | M20 | 16 | 460 | M24 | 16 | 470 | M24 | 12 | 476.3 | 42 | 62 | 55 | 75 |
| 400 | 355 | 305 | 390 | 102 | 376 | 28 | 40 | 27 | 150 | 125 | 14 | M20 | 16 | 495 | M24 | 16 | 515 | M27 | 16 | 525 | M27 | 16 | 539.8 | 76 | 90 | 94 | 104 |
| 450 | 400 | 343 | 444 | 114 | 430 | 37 | 45 | 36 | 175 | 140 | 18 | M20 | 16 | 550 | M24 | 20 | 565 | M27 | 20 | 585 | M27 | 16 | 577.8 | 110 | 170 | 135 | 195 |
| 500 | 422 | 366 | 495 | 127 | 479 | 37 | 45 | 36 | 210 | 140/165 | 18/22 | M20 | 20 | 600 | M24 | 20 | 620 | M30 | 20 | 650 | M27 | 20 | 635.0 | 140 | 180 | 165 | 205 |



Upper flange - ISO 5211

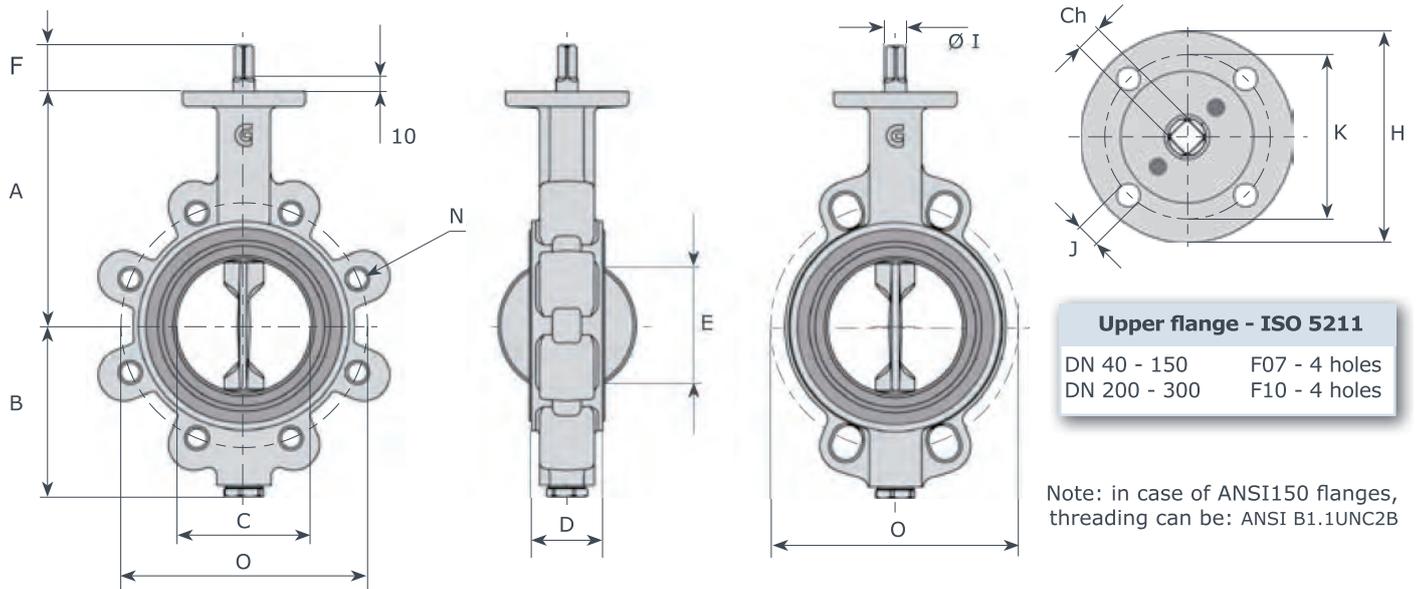
| | |
|--------------|---------------|
| DN 600 | F16 - 4 holes |
| DN 700 - 800 | F25 - 8 holes |

Note: in case of ANSI150 flanges, threading can be:
 14" ANSI B1.1UNC2B
 16" ÷ 32" ANSI B1.1-8 UNC2B

*Note: WAFER bodies DN 600 - 700 - 800 have 4 holes N threaded as relevant LUG version

| DN | A | B | C | D | E | F | Ø I | Ch | H | K | J | Kg | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|----|------|----|-----|-------|----|-----|-------|----|-----|----------|----|-------|-------|-----|-----|-----|
| | | | | | | | | | | | | PN 6 | | | PN 10 | | | PN 16 | | | ANSI 150 | | | PD-KI | | KA | |
| | | | | | | | | | | | | N | n. | O | N | n. | O | N | n. | O | N | n. | O | W | L | W | L |
| 600 | 495 | 460 | 595 | 154 | 575 | 75 | 60 | 18 | 210 | 165 | 22 | M24 | 20 | 705 | M27 | 20 | 725 | M33 | 20 | 770 | M33 | 20 | 749.3 | 220 | 290 | 220 | 290 |
| 700 | 550 | 506 | 690 | 165 | 670 | 90 | 70 | 20 | 300 | 254 | 18 | M24 | 24 | 810 | M27 | 24 | 840 | M33 | 24 | 840 | M33 | 28 | 863.6 | 300 | 415 | 300 | 415 |
| 800 | 640 | 590 | 780 | 190 | 757 | 100 | 80 | 22 | 300 | 254 | 18 | M27 | 24 | 920 | M30 | 24 | 950 | M36 | 24 | 950 | M39 | 28 | 977.9 | 444 | 570 | 465 | 570 |

BVKX - Wafer **BLKX** - Lug



| DN | " | A | B | C | D | E | F | Ø I | Ch | H | K | J | PN 25 | | | Kg. | |
|-----|-------|-----|-----|-----|----|-----|----|-----|----|-----|-----|----|-------|----|-----|-------|------|
| | | | | | | | | | | | | | N | n. | O | wafer | lug |
| 50 | 2 | 138 | 81 | 55 | 43 | 35 | 34 | 14 | 11 | 90 | 70 | 9 | M16 | 4 | 125 | 2.8 | 3.7 |
| 65 | 2 1/2 | 144 | 98 | 68 | 46 | 50 | 34 | 14 | 11 | 90 | 70 | 9 | M16 | 8 | 145 | 3.7 | 5.3 |
| 80 | 3 | 158 | 110 | 81 | 46 | 67 | 34 | 14 | 11 | 90 | 70 | 9 | M16 | 8 | 160 | 4 | 6.1 |
| 100 | 4 | 173 | 128 | 101 | 52 | 87 | 34 | 16 | 11 | 90 | 70 | 9 | M20 | 8 | 190 | 6 | 8.1 |
| 125 | 5 | 186 | 140 | 126 | 56 | 113 | 34 | 18 | 14 | 90 | 70 | 9 | M24 | 8 | 220 | 7.2 | 9.7 |
| 150 | 6 | 202 | 155 | 150 | 56 | 140 | 34 | 18 | 14 | 90 | 70 | 9 | M24 | 8 | 250 | 9.5 | 11.8 |
| 200 | 8 | 240 | 190 | 200 | 60 | 191 | 38 | 22 | 17 | 125 | 102 | 11 | M24 | 12 | 310 | 16 | 29 |
| 250 | 10 | 270 | 220 | 250 | 68 | 241 | 38 | 30 | 22 | 125 | 102 | 11 | -- | -- | 370 | 25 | -- |

PD Series - Torque values - Nm - safety factor excluded

| Seat body NBR/EPDM | | | | fluid H ₂ O - 20°C | | | |
|----------------------|----|----|----|-------------------------------|-----|-----|-----|
| working pressure BAR | | | | | | | |
| DN | 0 | 6 | 10 | DN | 0 | 6 | 10 |
| 80 | 5 | 7 | 11 | 250 | 89 | 100 | 115 |
| 100 | 8 | 12 | 24 | 300 | 167 | 180 | 280 |
| 125 | 22 | 31 | 40 | 350 | 245 | 340 | 395 |
| 150 | 40 | 45 | 49 | 400 | 382 | 405 | 420 |
| 200 | 47 | 58 | 90 | 450 | 395 | 418 | 445 |

| Seat body FKM/natural rubber | | | | fluid H ₂ O - 20°C | | | |
|------------------------------|----|----|-----|-------------------------------|-----|-----|------|
| working pressure BAR | | | | | | | |
| DN | 0 | 6 | DN | 0 | 6 | DN | 0 |
| 80 | 7 | 11 | 250 | 120 | 134 | 500 | 607 |
| 100 | 11 | 16 | 300 | 225 | 241 | 600 | 1795 |
| 125 | 29 | 42 | 350 | 465 | 495 | 700 | 2310 |
| 150 | 52 | 65 | 400 | 515 | 540 | 800 | 3376 |
| 200 | 62 | 78 | 450 | 578 | 627 | - | - |

KI Series - Torque values - Nm - safety factor excluded

| Seat body NBR/EPDM | | | | fluid H ₂ O - 20°C | | | |
|----------------------|----|----|----|-------------------------------|-----|-----|-----|
| working pressure BAR | | | | working pressure BAR | | | |
| DN | 0 | 6 | 10 | 16 | DN | 0 | 6 |
| 40 | 11 | 11 | 13 | 14 | 150 | 55 | 60 |
| 50 | 11 | 12 | 13 | 15 | 200 | 100 | 107 |
| 65 | 11 | 16 | 16 | 18 | 250 | 160 | 175 |
| 80 | 20 | 30 | 36 | 40 | 300 | 260 | 270 |
| 100 | 40 | 43 | 45 | 48 | 350 | 410 | 450 |
| 125 | 48 | 52 | 52 | 70 | 400 | 450 | 480 |

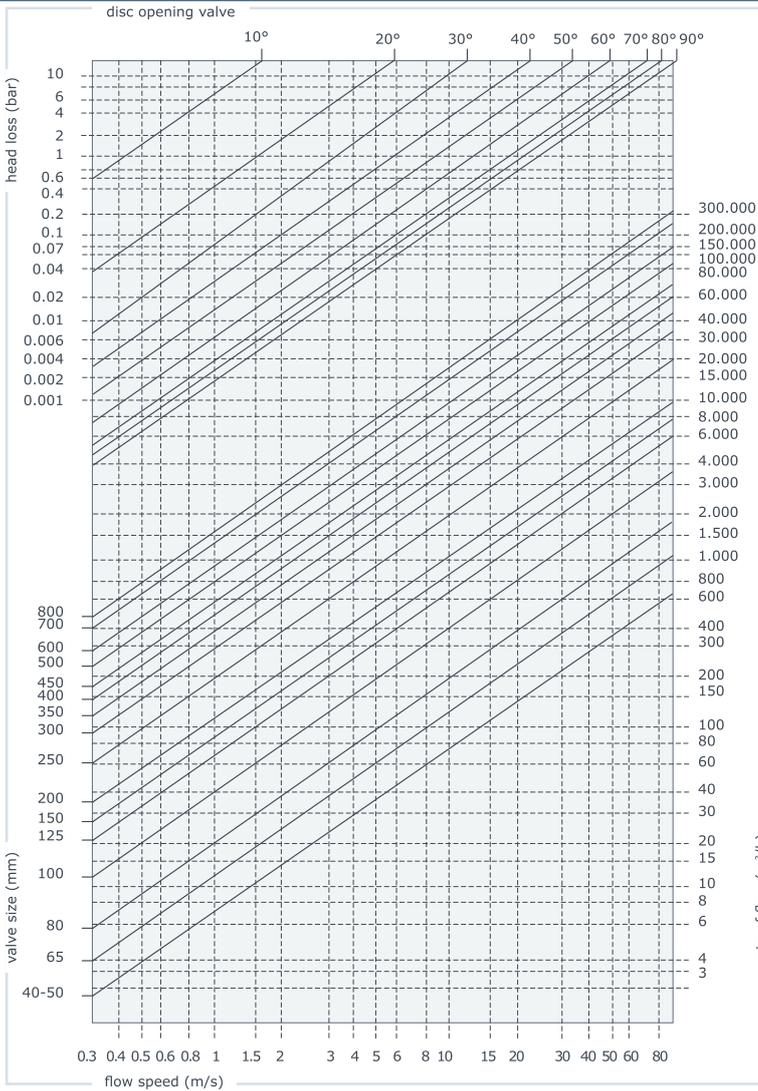
| Seat body FKM/natural rubber | | | | fluid H ₂ O - 20°C | | | |
|------------------------------|----|----|----|-------------------------------|-----|-----|-----|
| working pressure BAR | | | | working pressure BAR | | | |
| DN | 0 | 6 | 10 | 16 | DN | 0 | 6 |
| 40 | 14 | 14 | 16 | 17 | 150 | 66 | 72 |
| 50 | 14 | 15 | 16 | 18 | 200 | 120 | 129 |
| 65 | 14 | 20 | 20 | 22 | 250 | 192 | 210 |
| 80 | 24 | 36 | 44 | 48 | 300 | 312 | 330 |
| 100 | 48 | 52 | 54 | 58 | 350 | 498 | 545 |
| 125 | 60 | 62 | 64 | 84 | 400 | 550 | 584 |

KA/KX Series - Torque values - Nm - safety factor excluded

| Seat body NBR/EPDM | | | | fluid H ₂ O - 20°C | | | |
|----------------------|-----|-----|-----|-------------------------------|-----|-----|-----|
| working pressure BAR | | | | | | | |
| DN | 0 | 6 | 10 | 16 | 20 | 25 | DN |
| 40 | 12 | 12 | 14 | 15 | 15 | - | 300 |
| 50 | 12 | 13 | 14 | 16 | 17 | 20 | 350 |
| 65 | 12 | 17 | 17 | 19 | 20 | 31 | 400 |
| 80 | 21 | 32 | 38 | 42 | 44 | 49 | 450 |
| 100 | 42 | 45 | 47 | 50 | 53 | 65 | 500 |
| 125 | 50 | 55 | 55 | 74 | 77 | 82 | 600 |
| 150 | 58 | 63 | 88 | 95 | 99 | 103 | 700 |
| 200 | 105 | 112 | 189 | 221 | 231 | 320 | 800 |
| 250 | 175 | 190 | 231 | 336 | 352 | 440 | - |

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

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 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 | 450 | 500 | 600 | 700 | 800 |
|-------|-------|-----|-----|-----|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 5° | - | - | - | - | - | - | - | - | - | 53 | 68 | 85 | 106 | 151 | 206 | 270 |
| 10° | - | - | - | - | - | - | - | 21 | 49 | 123 | 161 | 199 | 246 | 354 | 482 | 629 |
| 15° | 0,2 | 0,6 | 1,8 | 2,4 | 4,2 | 5,6 | 14 | 80 | 188 | 228 | 299 | 369 | 457 | 658 | 900 | 1168 |
| 20° | 0,9 | 2,5 | 5,2 | 9,5 | 15 | 23 | 110 | 156 | 280 | 315 | 412 | 511 | 630 | 907 | 1234 | 2010 |
| 25° | 3 | 6,1 | 12 | 22 | 38 | 61 | 125 | 225 | 354 | 457 | 597 | 740 | 914 | 1314 | 1789 | 2735 |
| 30° | 6,1 | 11 | 21 | 39 | 69 | 112 | 211 | 310 | 381 | 661 | 863 | 1069 | 1320 | 1899 | 2585 | 5080 |
| 35° | 9,9 | 18 | 33 | 60 | 105 | 166 | 303 | 433 | 521 | 890 | 1162 | 1440 | 1778 | 2560 | 3484 | 6254 |
| 40° | 15 | 27 | 49 | 88 | 148 | 228 | 405 | 591 | 742 | 1184 | 1547 | 1916 | 2366 | 3407 | 4638 | 9700 |
| 45° | 21 | 38 | 68 | 121 | 199 | 303 | 528 | 774 | 987 | 1552 | 2028 | 2512 | 3102 | 4466 | 6079 | 11581 |
| 50° | 29 | 51 | 91 | 159 | 262 | 394 | 679 | 988 | 1252 | 2008 | 2620 | 3248 | 4010 | 5774 | 7860 | 15000 |
| 55° | 39 | 68 | 119 | 207 | 338 | 505 | 863 | 1247 | 1571 | 2548 | 3318 | 4123 | 5090 | 7329 | 9976 | 17765 |
| 60° | 53 | 90 | 156 | 269 | 434 | 641 | 1085 | 1591 | 2059 | 3225 | 4202 | 5218 | 6442 | 9277 | 12627 | 22200 |
| 65° | 72 | 121 | 209 | 357 | 565 | 820 | 1364 | 2065 | 2807 | 3983 | 5196 | 6445 | 7957 | 11457 | 15595 | 26077 |
| 70° | 92 | 161 | 283 | 487 | 768 | 1097 | 1788 | 2715 | 3744 | 5195 | 6775 | 8412 | 10377 | 14944 | 20341 | 34500 |
| 75° | 109 | 209 | 381 | 662 | 1059 | 1507 | 2425 | 3625 | 4935 | 6964 | 9084 | 11269 | 13912 | 20032 | 27267 | 39546 |
| 80° | 115 | 240 | 457 | 815 | 1303 | 1861 | 3043 | 4768 | 6831 | 9301 | 12142 | 15048 | 18578 | 26752 | 36413 | 47560 |
| 85° | 115 | 253 | 502 | 906 | 1457 | 2008 | 3642 | 4890 | 8230 | 10280 | 13408 | 16632 | 20533 | 29568 | 40246 | 52566 |
| 90° | 116 | 257 | 508 | 925 | 1492 | 2168 | 3838 | 5010 | 9233 | 10792 | 14082 | 17840 | 22024 | 31715 | 43166 | 56381 |

Flanges to be used

| | | | | | |
|--|---|---|---|---|--|
|  <p>EN1092-1 Tipo 11</p> <p>UNI 2280/81 2282/67</p> <p>DIN 2631 2632 2633</p> <p>A150 B16.5 welding neck</p> |  <p>EN1092-1 Tipo 01</p> <p>UNI 2276/77 2278/67</p> <p>DIN 2575 2576 2577</p> <p>A150 B16.5 slip on</p> |  <p>EN1092-1 Tipo 02/32</p> <p>UNI 6088/89 6090</p> <p>DIN 2641 2642 2643</p> |  <p>EN1092-1 Tipo 04/34</p> <p>UNI 2289/90 2291</p> <p>DIN 2672 2673 2674</p> |  <p>EN1092-1 Tipo 02/33</p> |  <p>NOTE only valves with vulcanized seat (KA/KX) are recommended with these flanges</p> |
|--|---|---|---|---|--|

Compatibility flanges - body Wafer

| DN | EN 1092-1 / EN 1092-2 | | | | | ASME/ANSI | | | BS 10 | | JIS B2220 | | |
|-----|-----------------------|-------|-------|-------|-------|-----------|-----------|-----------|-------|-------|-----------|-----|-------|
| | PN 6 | PN 10 | PN 16 | PN 25 | PN 40 | class 125 | class 150 | class 300 | tab D | tab E | 5K | 10K | 16K |
| 40 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✓ | ✓ |
| 50 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ☐ | ✗ |
| 65 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ● | ● | ✓ | ✓ | ☐ |
| 80 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ● | ● | ● | ● | ✓ |
| 100 | ☐ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ● | ✓ | ✗ | ● | ✓ |
| 125 | ☐ | ✓ | ✓ | ● (1) | ● (1) | ✓ | ✓ | ✗ | ✓ | ✓ | ☐ | ✓ | ● (1) |
| 150 | ☐ | ✓ | ✓ | ● (1) | ● (1) | ✓ | ✓ | ✗ | ● | ● | ☐ | ✓ | ✗ |
| 200 | ☐ | ✓ | ✓ | ✓ (2) | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ✓ (2) |
| 250 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | ● | ✓ | ✗ |
| 300 | ☐ | ✓ | ✓ | ✓ (2) | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ✓ (2) |
| 350 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ● |
| 400 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ● | ✓ |
| 450 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ● | ● | ✓ | ✗ |
| 500 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ✓ | ✓ |
| 600 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ✗ | ✗ |
| 700 | ☐ | ✓ | ✓ | ✗ | ✗ | | ✓ | ✗ | | | ● | ✓ | ✗ |
| 800 | ☐ | ✓ | ✓ | ✗ | ✗ | | ✓ | ✗ | | | ● | ✓ | ✗ |

- ✓ standard
- on request
- ☐ only body PN 6 version
- ✗ not possible
- (1) only with ductile iron bodies
- (2) standard with ductile iron and steel bodies, on request with different materials

Compatibility flanges - body Lug

| DN | EN 1092-1 / EN 1092-2 | | | | | ASME/ANSI | | | BS 10 | | JIS B2220 | | |
|-----|-----------------------|-------|-------|-------|-------|-----------|-----------|-----------|-------|---------|-----------|-------|-------|
| | PN 6 | PN 10 | PN 16 | PN 25 | PN 40 | class 125 | class 150 | class 300 | tab D | tab E | 5K | 10K | 16K |
| 40 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ☐ | ☐ | ● | ● | ● |
| 50 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ✗ |
| 65 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ● | ● | ● | ● | ● |
| 80 | ☐ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ● | ● | ● | ● | ✓ |
| 100 | ☐ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ● | ✓ | ✗ | ● | ● |
| 125 | ☐ | ✓ | ✓ | ● (1) | ● (1) | ✓ | ✓ | ✗ | ✓ | ✓ (PN6) | ✓ | ● | ● (1) |
| 150 | ☐ | ✓ | ✓ | ● (1) | ● (1) | ✓ | ✓ | ✗ | ● | ● | ● | ✓ | ✗ |
| 200 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ✗ |
| 250 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ● | ● | ● | ✗ |
| 300 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ● | ● | ● | ✓ (1) | ✗ |
| 350 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ✗ |
| 400 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ● |
| 450 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ● | ● | ✓ | ✗ |
| 500 | ☐ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ✓ | ✗ |
| 600 | ☐ | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ✗ | ✗ |
| 700 | ☐ | ✓ | ✓ | ✗ | ✗ | | ✓ | ✗ | | | ● | ✓ | ✗ |
| 800 | ☐ | ✓ | ✓ | ✗ | ✗ | | ✓ | ✗ | | | ● | ✓ | ✗ |

- ✓ standard
- on request
- ☐ only body PN 6 version
- ✗ not possible
- (1) only with ductile iron bodies
- (2) standard with ductile iron and steel bodies, on request with different materials

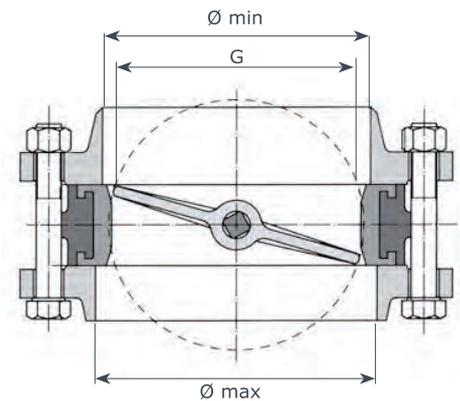
Bolts and rods dimensions

| DN | Wafer valves | | | | | | | | | | | |
|-----|--------------|---------|----|---------|---------|----|---------|---------|----|----------|---------|----|
| | PN 6 | | | PN 10 | | | PN 16 | | | ANSI 150 | | |
| | Bolts | Rods | N° | Bolts | Rods | N° | Bolts | Rods | N° | Bolts | Rods | N° |
| 40 | M12x80 | M12x90 | 4 | M16x90 | M16x100 | 4 | M16x90 | M16x100 | 4 | M14x90 | M14x110 | 4 |
| 50 | M12x90 | M12x100 | 4 | M16x100 | M16x120 | 4 | M16x100 | M16x120 | 4 | M16x100 | M16x130 | 4 |
| 65 | M12x100 | M12x110 | 4 | M16x110 | M16x130 | 8 | M16x110 | M16x130 | 8 | M16x110 | M16x140 | 4 |
| 80 | M16x100 | M16x120 | 4 | M16x110 | M16x130 | 8 | M16x110 | M16x130 | 8 | M16x120 | M16x150 | 4 |
| 100 | M16x110 | M16x120 | 4 | M16x120 | M16x140 | 8 | M16x120 | M16x140 | 8 | M16x120 | M16x150 | 8 |
| 125 | M16x120 | M16x140 | 8 | M16x120 | M16x150 | 8 | M16x120 | M16x150 | 8 | M20x130 | M20x160 | 8 |
| 150 | M16x120 | M16x140 | 8 | M20x130 | M20x160 | 8 | M20x130 | M20x160 | 8 | M20x140 | M20x160 | 8 |
| 200 | M16x130 | M16x150 | 8 | M20x140 | M20x170 | 8 | M20x140 | M20x170 | 12 | M20x150 | M20x170 | 8 |
| 250 | M16x140 | M16x160 | 12 | M20x150 | M20x180 | 12 | M24x150 | M24x180 | 12 | M22x160 | M22x190 | 12 |
| 300 | M20x150 | M20x180 | 12 | M20x160 | M20x190 | 12 | M24x160 | M24x190 | 12 | M22x170 | M22x210 | 12 |
| 350 | M20x150 | M20x180 | 12 | M20x160 | M20x190 | 16 | M24x170 | M24x200 | 16 | M24x180 | M24x220 | 12 |
| 400 | M20x180 | M20x210 | 16 | M24x190 | M24x220 | 16 | M27x210 | M27x240 | 16 | M27x210 | M27x250 | 16 |
| 450 | M20x190 | M20x220 | 16 | M24x200 | M24x230 | 20 | M27x220 | M27x250 | 20 | M27x230 | M27x270 | 16 |
| 500 | M20x210 | M20x240 | 20 | M24x210 | M24x240 | 20 | M30x240 | M30x280 | 20 | M27x250 | M27x290 | 20 |
| 600 | M24x240 | M24x270 | 20 | M27x250 | M27x290 | 20 | M33x270 | M33x320 | 20 | M33x290 | M33x340 | 20 |
| 700 | M24x250 | M24x280 | 24 | M27x260 | M27x310 | 24 | M33x280 | M33x330 | 24 | M33x350 | M33x400 | 28 |
| 800 | M27x280 | M27x320 | 24 | M30x290 | M30x350 | 24 | M36x320 | M36x360 | 24 | M39x400 | M33x460 | 28 |

| DN | Lug valves | | | | | | | |
|-----|------------|----|---------|----|---------|----|----------|----|
| | PN 6 | | PN 10 | | PN 16 | | ANSI 150 | |
| | Bolts | N° | Bolts | N° | Bolts | N° | Bolts | N° |
| 40 | M12x30 | 8 | M16x30 | 8 | M16x30 | 8 | M14x30 | 8 |
| 50 | M12x35 | 8 | M16x35 | 8 | M16x35 | 8 | M16x35 | 8 |
| 65 | M12x35 | 8 | M16x40 | 16 | M16x40 | 16 | M16x40 | 8 |
| 80 | M16x40 | 8 | M16x40 | 16 | M16x40 | 16 | M16x40 | 8 |
| 100 | M16x40 | 8 | M16x40 | 16 | M16x40 | 16 | M16x45 | 16 |
| 125 | M16x45 | 16 | M16x45 | 16 | M16x45 | 16 | M20x50 | 16 |
| 150 | M16x45 | 16 | M20x45 | 16 | M20x45 | 16 | M20x50 | 16 |
| 200 | M16x50 | 16 | M20x50 | 16 | M20x50 | 24 | M20x55 | 16 |
| 250 | M16x55 | 24 | M20x55 | 24 | M24x55 | 24 | M22x60 | 24 |
| 300 | M20x60 | 24 | M20x60 | 24 | M24x60 | 24 | M22x60 | 24 |
| 350 | M20x60 | 24 | M20x60 | 32 | M24x65 | 32 | M24x65 | 24 |
| 400 | M20x70 | 32 | M24x70 | 32 | M27x70 | 32 | M27x80 | 32 |
| 450 | M20x80 | 32 | M24x80 | 40 | M27x80 | 40 | M27x80 | 32 |
| 500 | M20x80 | 40 | M24x80 | 40 | M30x80 | 40 | M27x90 | 40 |
| 600 | M24x90 | 40 | M27x90 | 40 | M33x100 | 40 | M33x100 | 40 |
| 700 | M24x100 | 48 | M27x100 | 48 | M33x110 | 48 | M33x130 | 56 |
| 800 | M27x110 | 48 | M30x120 | 48 | M36x130 | 48 | M39x150 | 56 |

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

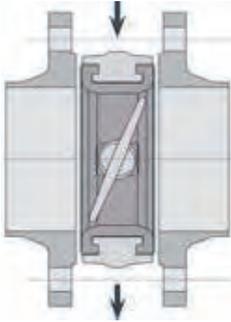
NOTE 2 Number of nuts should be double when WAFER valves are assembled with threaded rods.



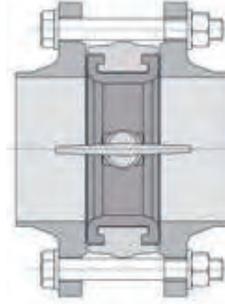
| DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 |
|-------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| G | 36 | 35 | 50 | 67 | 87 | 113 | 140 | 191 | 241 | 289 | 332 | 376 | 430 | 475 | 575 | 670 | 757 |
| Ø min | 46 | 44 | 60 | 75 | 98 | 122 | 148 | 196 | 244 | 296 | 342 | 378 | 440 | 485 | 585 | 681 | 782 |
| Ø max | 49 | 62 | 80 | 93 | 118 | 146 | 175 | 225 | 275 | 330 | 372 | 422 | 450 | 500 | 600 | 717 | 815 |

Installation

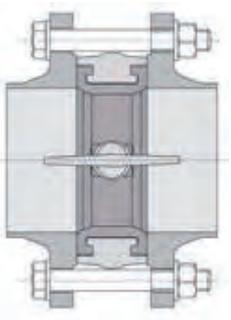
Assembly



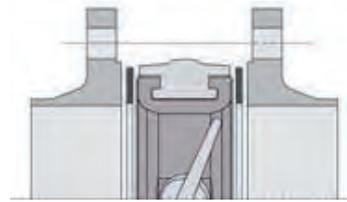
1 - Leave a space between flanges so that valve can be easily inserted and removed.



2 - Open completely the valve before tightening flanges.



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

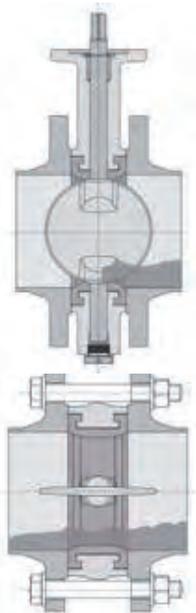


4 - **NOTE:** do not insert other packing between flange and valve.

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



Wrong
Vertical rotation axis

←
powders or muddy fluids

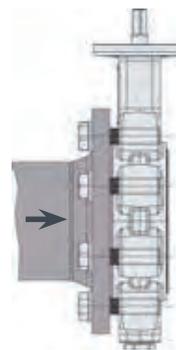
Right
Horizontal rotation axis

←
powders or muddy fluids

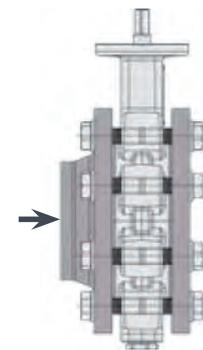
This type of installation is always advisable with valve diameters over DN 400.

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.



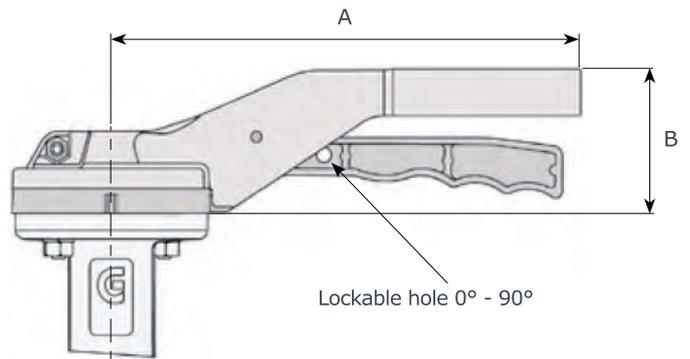
Type A installation without counterflange



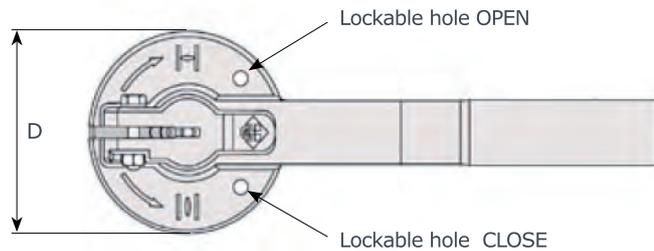
Type B installation with counterflange

| valve type | P _{max} (Bar) | |
|------------|------------------------|--------------|
| | type A inst. | type B inst. |
| BLPD | 4 | 6 |
| BLKI | 6 | 16 |
| BLKA | 16 | 20 |
| BLKX | 16 | 25 |

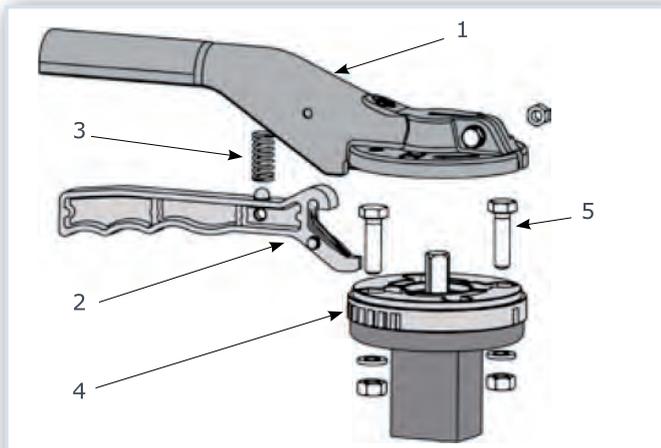
Handlevers



| DN | A | B | D | Kg | |
|-----------|-----|----|-----|-----------|-----------|
| | | | | aluminium | st. steel |
| 40 - 100 | 220 | 67 | 93 | 0.60 | 1.80 |
| 125 - 150 | 275 | 67 | 93 | 0.65 | 2.05 |
| 200 - 300 | 340 | 76 | 125 | 1 | -- |

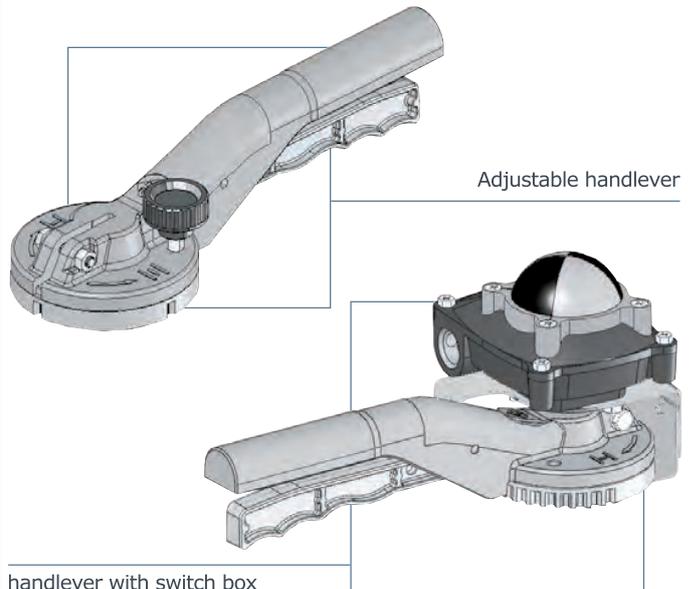


Note: DN 250 - 300 handlever not recommended (PD series excluded)

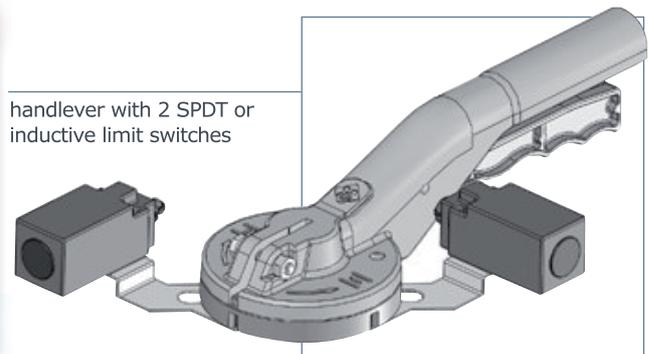
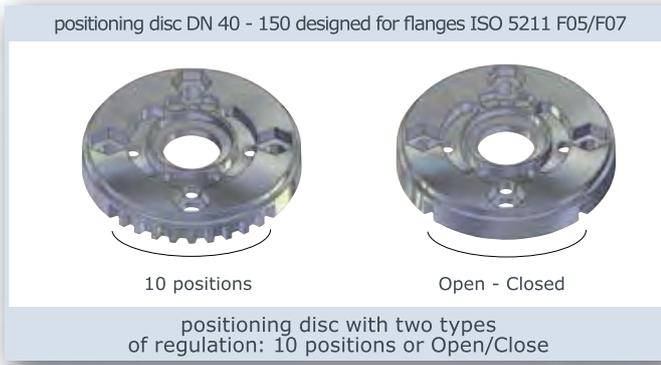


| | | DN40 - 300 | DN40 - 150 |
|---|------------------|-----------------|-----------------|
| 1 | lever | aluminium | A351 CF8M |
| 2 | trigger | aluminium | A351 CF8M |
| 3 | spring | stainless steel | stainless steel |
| 4 | disc positioning | aluminium | A351 CF8M |
| 5 | screws | stainless steel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

OPTIONALS



handlever with switch box (only DN 40/300)



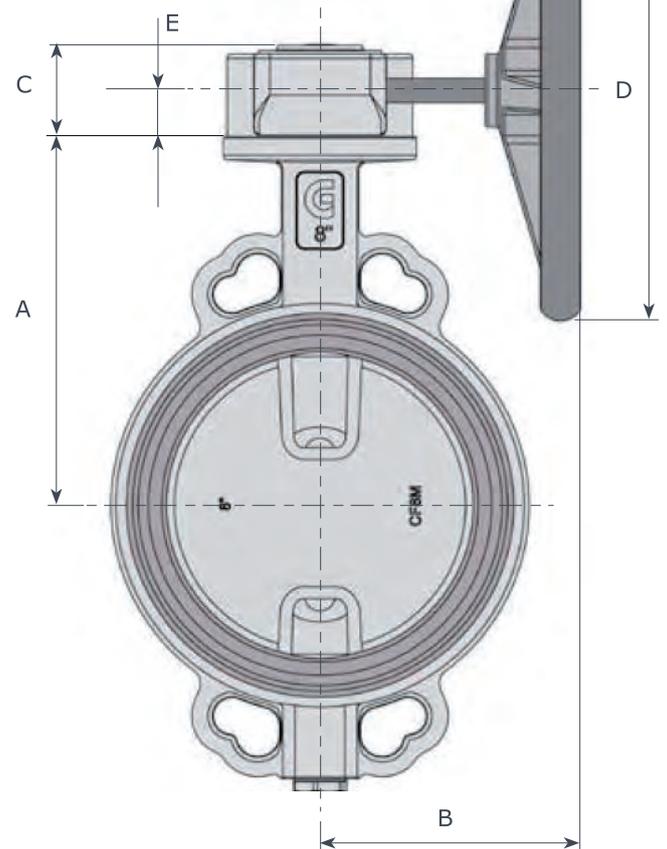
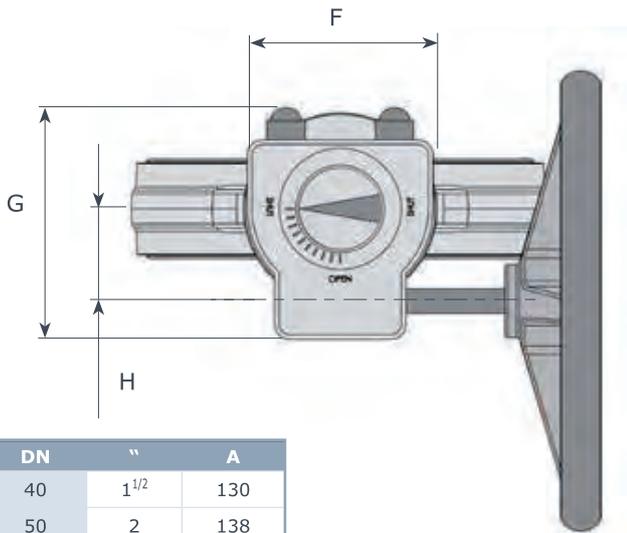
handlever with 2 SPDT or inductive limit switches

Gearboxes Aluminium body - HW Series

Coupling valve - actuators

| DN | " | PD | KT | | | KA | KX |
|-----|------------------|-------|-----------|------------|------------|-------|-------|
| | | | p = 6 bar | p = 10 bar | p = 16 bar | | |
| 40 | 1 ^{1/2} | -- | HW070 | HW070 | HW070 | -- | -- |
| 50 | 2 | -- | HW070 | HW070 | HW070 | HW070 | HW070 |
| 65 | 2 ^{1/2} | -- | HW070 | HW070 | HW070 | HW070 | HW070 |
| 80 | 3 | HW070 | HW070 | HW070 | HW070 | HW070 | HW070 |
| 100 | 4 | HW070 | HW070 | HW070 | HW070 | HW070 | HW070 |
| 125 | 5 | HW070 | HW070 | HW070 | HW070 | HW070 | HW070 |
| 150 | 6 | HW070 | HW070 | HW070 | HW070 | HW070 | HW070 |
| 200 | 8 | HW102 | HW102 | HW102 | HW102 | HW102 | HW102 |
| 250 | 10 | HW102 | HW102 | HW102 | HW102 | HW102 | HW102 |
| 300 | 12 | HW102 | HW102 | HW102 | HW102 | HW102 | -- |
| 350 | 14 | HW140 | HW140 | HW140 | HW140 | HW140 | -- |
| 400 | 16 | HW140 | HW140 | HW140 | HW140 | -- | -- |

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



| DN | " | A |
|-----|------------------|-----|
| 40 | 1 ^{1/2} | 130 |
| 50 | 2 | 138 |
| 65 | 2 ^{1/2} | 144 |
| 80 | 3 | 158 |
| 100 | 4 | 173 |
| 125 | 5 | 186 |
| 150 | 6 | 202 |
| 200 | 8 | 240 |
| 250 | 10 | 270 |
| 300 | 12 | 300 |
| 350 | 14 | 330 |
| 400 | 16 | 355 |
| 450 | 18 | 400 |
| 500 | 20 | 422 |
| 600 | 24 | 495 |
| 700 | 28 | 550 |
| 800 | 32 | 640 |

| Mod. | B | C | D | E | F | G | H | Kg |
|-------|-----|----|------|----|-----|-----|----|-----|
| HW070 | 165 | 48 | 140 | 27 | 80 | 115 | 42 | 1.6 |
| HW102 | 240 | 56 | 300 | 33 | 120 | 150 | 60 | 3 |
| HW140 | 250 | 95 | 400* | 51 | 185 | 225 | 80 | 10 |

* for DN 350: D =350

Gearboxes Cast Iron body - GH/AB Series

Coupling valve - actuators

| DN | " | PD | KI | KA | KX | DN | " | A |
|-----|----|------|-------|--------|-------|-----|-------|-----|
| 40 | 1½ | -- | GH10 | GH10 | GH10 | 40 | 1 1/2 | 130 |
| 50 | 2 | -- | GH10 | GH10 | GH10 | 50 | 2 | 138 |
| 65 | 2½ | -- | GH10 | GH10 | GH10 | 65 | 2 1/2 | 144 |
| 80 | 3 | GH10 | GH10 | GH10 | GH10 | 80 | 3 | 158 |
| 100 | 4 | GH10 | GH10 | GH10 | GH10 | 100 | 4 | 173 |
| 125 | 5 | GH10 | GH10 | GH10 | GH10 | 125 | 5 | 186 |
| 150 | 6 | GH10 | GH10 | GH10 | GH20 | 150 | 6 | 202 |
| 200 | 8 | GH20 | GH20 | GH10 | GH20 | 200 | 8 | 240 |
| 250 | 10 | GH20 | GH20 | GH10 | AB550 | 250 | 10 | 270 |
| 300 | 12 | GH20 | GH20 | AB550 | -- | 300 | 12 | 300 |
| 350 | 14 | GH30 | GH30 | AB880 | -- | 350 | 14 | 330 |
| 400 | 16 | GH30 | GH30 | AB880 | -- | 400 | 16 | 355 |
| 450 | 18 | GH55 | GH55 | AB1250 | -- | 450 | 18 | 400 |
| 500 | 20 | GH55 | GH55 | AB1250 | -- | 500 | 20 | 422 |
| 600 | 24 | GH88 | GH88 | AB1954 | -- | 600 | 24 | 495 |
| 700 | 28 | GH99 | GH99 | AB6804 | -- | 700 | 28 | 550 |
| 800 | 32 | GH99 | GH195 | AB6806 | -- | 800 | 32 | 640 |

GH/AB series

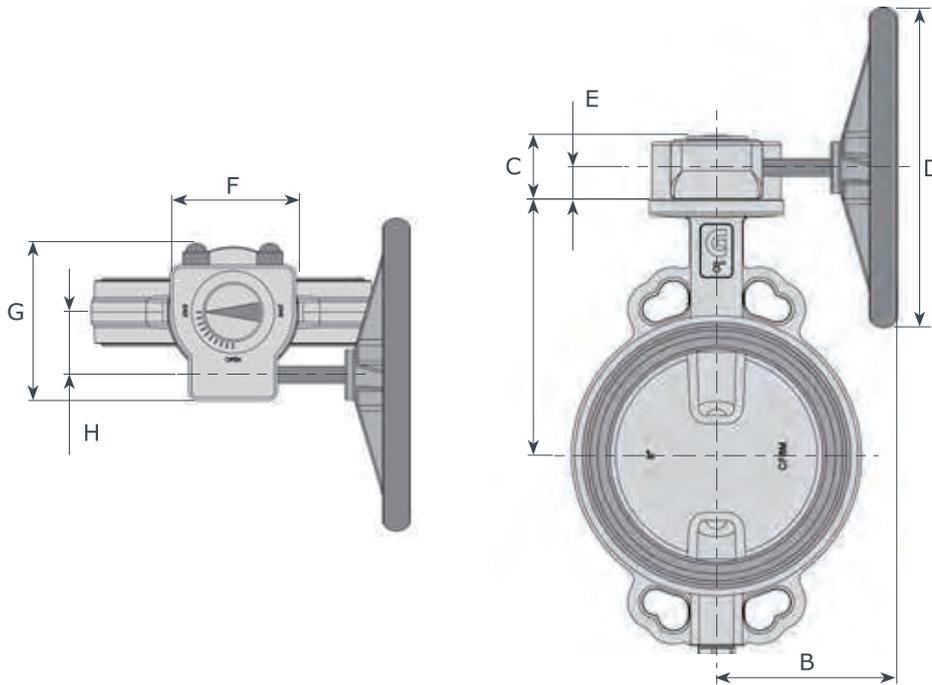
| | |
|--------------|--------------|
| body: | ductile iron |
| worm gears: | steel |
| sector gear: | ductile iron |
| shaft: | steel |
| handwheel: | steel |
| protection: | IP67 |
| T: | -20 / +80 °C |

low/high temperature execution on request

Waterproof valve shaft extension

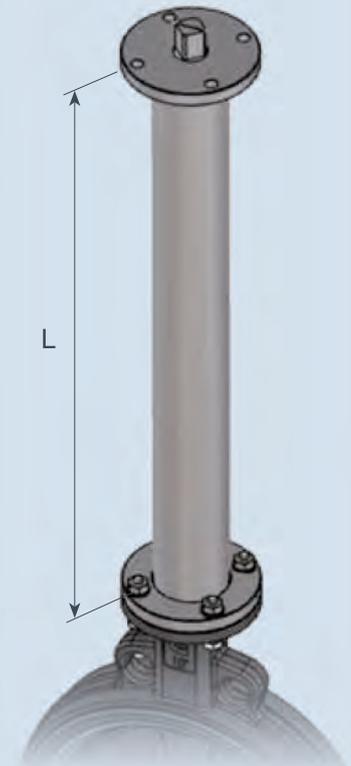
When necessary, it's possible to extend the valve shaft as indicated in the figure. Construction is in carbon steel with protective paint (on request stainless steel).

"L" measure should be indicated when ordering.



| Mod. GH | B | C | D | E | F | G | H | I | Kg |
|---------|-----|------|-----|------|-----|-------|-----|------|------|
| GH10 | 170 | 64 | 200 | 29 | 90 | 122.5 | 44 | 52.5 | 2.2 |
| GH20 | 179 | 65.5 | 200 | 29 | 125 | 144 | 52 | 65 | 3.6 |
| GH21 | 214 | 73 | 300 | 36 | 125 | 162 | 62 | 74 | 4.8 |
| GH30 | 265 | 89 | 350 | 46 | 150 | 202 | 79 | 89 | 12 |
| GH55 | 300 | 99 | 400 | 49.5 | 210 | 229 | 89 | 105 | 13 |
| GH88 | 350 | 350 | 500 | 55 | 225 | 267 | 112 | 112 | 20.1 |
| GH99 | 374 | 374 | 500 | 55 | 300 | 317 | 124 | 150 | 28.5 |
| GH195 | 430 | 430 | 600 | 63 | 300 | 350 | 129 | 150 | 37 |

| Mod. AB | B | C | D | E | F | G | H | I | Kg |
|---------|-----|-----|-----|----|-----|-----|-----|-----|------|
| 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 |
| AB1954 | 398 | 126 | 600 | 55 | 285 | 323 | 130 | 143 | 39 |
| AB6804 | 451 | 159 | 600 | 59 | 370 | 407 | 182 | 170 | 62.5 |
| AB6806 | 451 | 159 | 600 | 59 | 370 | 407 | 182 | 170 | 64.2 |



Our technical department is available to solve special applications.

Pneumatic actuator DA / DOUBLE ACTING

Rack & Pinion Actuators

Max air pressure: 8 bar - 5,5 bar (AT series)
 Temperature: -20/+85°C
 -20/+80°C (AT series)

Torque range: 8/5059 Nm
 13,2/9173 Nm a 5,5 bar
 (AT series)

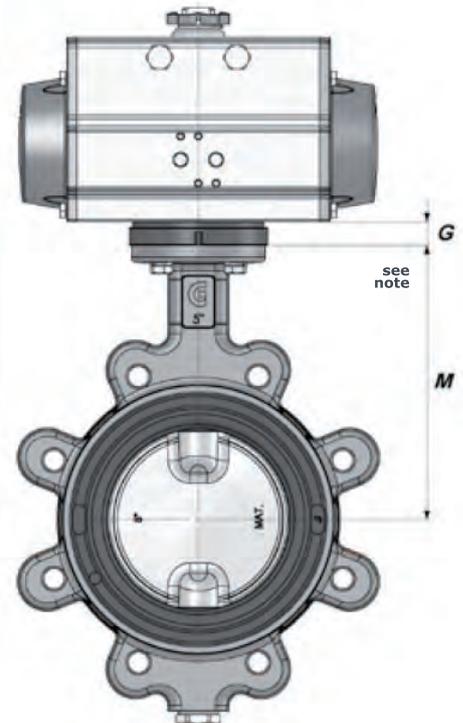
Double travel stop open/close: ±5°
 -5°/+15 close (serie AT)
 +5°/-15 open (serie AT)

valve seat: EPDM/NBR fluid: H₂O T: 20°C operating air pressure: ≥5.5 bar

| DN | " | M | PD | | | | KI | | | | | | KA | | KX | | | |
|-----|----|-----|--------|-----|--------|----|--------|-----|--------|-----|--------|----|---------|-----|--------|-----|--------|-----|
| | | | P=6 B | G | P=10 B | G | P=6 B | G | P=10 B | G | P=16 B | G | mod. | G | mod. | G | | |
| 40 | 1½ | 130 | ≈ | ≈ | ≈ | ≈ | VA 52 | 24 | VA 52 | 24 | VA 52 | 24 | VA 52 | 24 | VA 52 | 24 | ≈ | ≈ |
| 50 | 2 | 138 | ≈ | ≈ | ≈ | ≈ | VA 52 | 24 | VA 52 | 24 | VA 52 | 24 | VA 52 | 24 | VA 63 | 24 | VA 63 | 20 |
| 65 | 2½ | 144 | ≈ | ≈ | ≈ | ≈ | VA 52 | 24 | VA 52 | 24 | VA 63 | 20 | VA 63 | 20 | VA 75 | 16 | VA 75 | 16 |
| 80 | 3 | 158 | VA 52 | 24 | VA 52 | 24 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 |
| 100 | 4 | 173 | VA 52 | 24 | VA 63 | 20 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 85 | 16 | VA 85 | 16 |
| 125 | 5 | 186 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 85 | 16 | VA 85 | 16 | VA 100 | 16 | VA 100 | 16 |
| 150 | 6 | 202 | VA 75 | 16 | VA 75 | 16 | VA 85 | 16 | VA 100 | 16 | VA 100 | 16 | VA 100 | 16 | VA 100 | 16 | VA 100 | 16 |
| 200 | 8 | 240 | VA 85 | 20 | VA 100 | 20 | VA 100 | 20 | VA 115 | 20 | VA 125 | 14 | VA 125 | 14 | VA 140 | 14 | VA 140 | 14 |
| 250 | 10 | 270 | VA 115 | 14 | VA 115 | 14 | VA 115 | 14 | VA 125 | 14 | VA 140 | 14 | VA 140 | 14 | VA 160 | 14 | VA 160 | 14 |
| 300 | 12 | 300 | VA 115 | 14 | VA 140 | 14 | VA 140 | 14 | VA 140 | 14 | VA 160 | 14 | VA 160 | 14 | ≈ | ≈ | ≈ | ≈ |
| 350 | 14 | 330 | VA 140 | 0 | VA 160 | 0 | VA 160 | 0 | VA 180 | 0 | VA 200 | 0 | VA 200 | 0 | VA 230 | 100 | VA 230 | 100 |
| 400 | 16 | 355 | VA 160 | 0 | VA 160 | 0 | VA 160 | 0 | VA 180 | 0 | VA 200 | 0 | VA 200 | 0 | VA 230 | 100 | VA 230 | 100 |
| 450 | 18 | 400 | VA 180 | 0 | VA 180 | 0 | VA 180 | 0 | VA 200 | 0 | VA 230 | 0 | VA 230 | 0 | VA 270 | 100 | VA 270 | 100 |
| 500 | 20 | 422 | VA 180 | 0 | VA 180 | 0 | VA 180 | 0 | VA 200 | 0 | VA 230 | 0 | VA 230 | 0 | VA 270 | 100 | VA 270 | 100 |
| 600 | 24 | 495 | VA 270 | 100 | ≈ | ≈ | VA 270 | 100 | VA 330 | 100 | ≈ | ≈ | AT 1001 | 100 | ≈ | ≈ | ≈ | ≈ |
| 700 | 28 | 550 | VA 270 | 100 | ≈ | ≈ | VA 330 | 150 | VA 330 | 150 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 800 | 32 | 640 | VA 330 | 150 | ≈ | ≈ | VA 330 | 150 | VA 330 | 150 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |

valve seat: EPDM/NBR fluid: Aria T: 20°C operating air pressure: ≥5,5 bar
 valve seat: FKM (n.a. for PD 10bar) fluid: H₂O

| DN | " | M | PD | | | | KI | | | | | | | |
|-----|----|-----|--------|-----|--------|----|--------|-----|---------|-----|--------|-----|--------|-----|
| | | | P=6 B | G | P=10 B | G | P=6 B | G | P=10 B | G | P=16 B | G | | |
| 40 | 1½ | 130 | ≈ | ≈ | ≈ | ≈ | VA 52 | 16 | VA 52 | 24 | VA 63 | 20 | VA 63 | 20 |
| 50 | 2 | 138 | ≈ | ≈ | ≈ | ≈ | VA 52 | 24 | VA 63 | 20 | VA 63 | 20 | VA 63 | 20 |
| 65 | 2½ | 144 | ≈ | ≈ | ≈ | ≈ | VA 63 | 20 | VA 63 | 20 | VA 63 | 20 | VA 63 | 20 |
| 80 | 3 | 158 | VA 52 | 24 | VA 52 | 24 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 | VA 75 | 16 |
| 100 | 4 | 173 | VA 52 | 24 | VA 75 | 20 | VA 75 | 16 | VA 85 | 16 | VA 85 | 16 | VA 85 | 16 |
| 125 | 5 | 186 | VA 75 | 16 | VA 75 | 16 | VA 85 | 16 | VA 85 | 16 | VA 100 | 16 | VA 100 | 16 |
| 150 | 6 | 202 | VA 85 | 16 | VA 85 | 16 | VA 85 | 16 | VA 100 | 16 | VA 100 | 16 | VA 100 | 16 |
| 200 | 8 | 240 | VA 85 | 20 | VA 100 | 29 | VA 115 | 20 | VA 125 | 14 | VA 125 | 14 | VA 125 | 14 |
| 250 | 10 | 270 | VA 115 | 14 | VA 115 | 14 | VA 125 | 14 | VA 140 | 14 | VA 160 | 14 | VA 160 | 14 |
| 300 | 12 | 300 | VA 125 | 14 | VA 140 | 14 | VA 140 | 14 | VA 160 | 14 | VA 160 | 14 | VA 160 | 14 |
| 350 | 14 | 330 | VA 150 | 0 | VA 180 | 0 | VA 180 | 0 | VA 200 | 0 | VA 230 | 100 | VA 230 | 100 |
| 400 | 16 | 355 | VA 180 | 0 | VA 180 | 0 | VA 180 | 0 | VA 200 | 0 | VA 230 | 100 | VA 230 | 100 |
| 450 | 18 | 400 | VA 180 | 0 | VA 180 | 0 | VA 180 | 0 | VA 200 | 0 | VA 230 | 0 | VA 230 | 0 |
| 500 | 20 | 422 | VA 200 | 0 | VA 200 | 0 | VA 200 | 0 | VA 230 | 0 | VA 270 | 0 | VA 270 | 0 |
| 600 | 24 | 495 | VA 270 | 100 | ≈ | ≈ | VA 330 | 100 | VA 330 | 100 | ≈ | ≈ | ≈ | ≈ |
| 700 | 28 | 550 | VA 330 | 100 | ≈ | ≈ | VA 330 | 150 | AT 1001 | 150 | ≈ | ≈ | ≈ | ≈ |
| 800 | 32 | 640 | VA 330 | 150 | ≈ | ≈ | VA 330 | 150 | AT 1001 | 150 | ≈ | ≈ | ≈ | ≈ |



G dimension can change depending on valve/actuator coupling.

Pneumatic actuator SR / SPRING RETURN

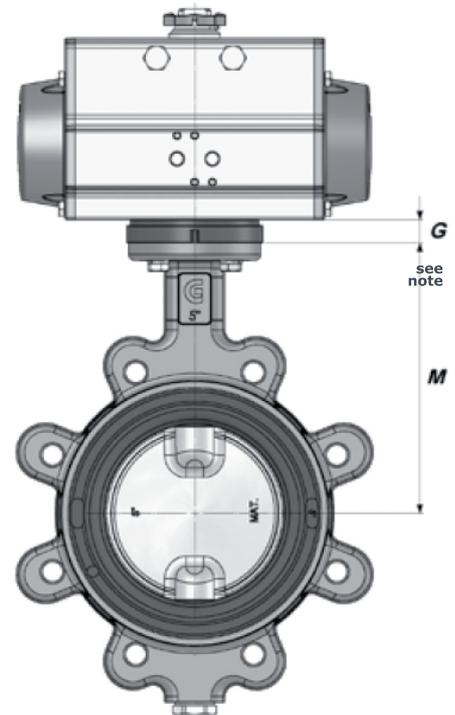
Rack & Pinion Actuators

Max air pressure: 8 bar - 5,5 bar (AT series) Torque range: 8/5059 Nm Double travel stop open/close: ±5°
 Temperature: -20/+85°C 13,2/9173 Nm a 5,5 bar -5°/+15 close (serie AT)
 -20/+80°C (AT series) (AT series) +5°/-15 open (serie AT)

| valve seat: EPDM/NBR | | | fluid: H ₂ O | | | | T: 20°C | | | | operating air pressure: ≥5.5 bar | | | | | |
|----------------------|----|-----|-------------------------|-----|-----------|-----|------------|-----|------------|-----|----------------------------------|-----|------------|-----|-----------|----|
| DN | " | M | PD | | | | KI | | | | | | KA | | KX | |
| | | | P=6 B | G | P=10 B | G | P=6 B | G | P=10 B | G | P=16 B | G | mod. | G | mod. | G |
| 40 | 1½ | 130 | ≈ | ≈ | ≈ | ≈ | VA 75 SR | 16 | VA 75 SR | 16 | VA 75 SR | 24 | VA 75 SR | 16 | ≈ | ≈ |
| 50 | 2 | 138 | ≈ | ≈ | ≈ | ≈ | VA 75 SR | 16 | VA 75 SR | 16 | VA 75 SR | 24 | VA 75 SR | 16 | VA 85 SR | 16 |
| 65 | 2½ | 144 | ≈ | ≈ | ≈ | ≈ | VA 75 SR | 16 | VA 75 SR | 16 | VA 75 SR | 20 | VA 85 SR | 16 | VA 100 SR | 16 |
| 80 | 3 | 158 | VA 63 SR | 20 | VA 75 SR | 16 | VA 85 SR | 16 | VA 100 SR | 16 | VA 100 SR | 16 | VA 100 SR | 16 | VA 115 SR | 16 |
| 100 | 4 | 173 | VA 75 SR | 24 | VA 85 SR | 20 | VA 100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 |
| 125 | 5 | 186 | VA 100 SR | 16 | VA100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 125 SR | 16 | VA 125 SR | 16 | VA 125 SR | 16 |
| 150 | 6 | 202 | VA 100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 125 SR | 16 | VA 125 SR | 16 | VA 140 SR | 16 | VA 140 SR | 16 |
| 200 | 8 | 240 | VA 115 SR | 14 | VA 125 SR | 14 | VA 140 SR | 14 | VA 160 SR | 14 | VA 160 SR | 14 | VA 180 SR | 14 | VA 200 SR | 14 |
| 250 | 10 | 270 | VA 140 SR | 14 | VA 140 SR | 14 | VA 160 SR | 14 | VA 180 SR | 50 | VA 200 SR | 50 | VA 200 SR | 50 | VA 230 SR | 50 |
| 300 | 12 | 300 | VA 160 SR | 14 | VA 180 SR | 50 | VA 180 SR | 50 | VA 200 SR | 50 | VA 200 SR | 50 | VA 230 SR | 50 | ≈ | ≈ |
| 350 | 14 | 330 | VA 200 SR | 0 | VA 200 SR | 0 | VA 230 SR | 100 | VA 230 SR | 100 | VA 270 SR | 100 | VA 330 SR | 100 | ≈ | ≈ |
| 400 | 16 | 355 | VA 200 SR | 0 | VA 230 SR | 100 | VA 230 SR | 100 | VA 270 SR | 100 | VA 270 SR | 100 | VA 330 SR | 100 | ≈ | ≈ |
| 450 | 18 | 400 | VA 230 SR | 0 | VA 230 SR | 0 | VA 230 SR | 0 | VA 270 SR | 100 | VA 330 SR | 100 | AT 1001 SR | 100 | ≈ | ≈ |
| 500 | 20 | 422 | VA 230 SR | 0 | VA 230 SR | 0 | VA 230 SR | 0 | VA 270 SR | 0 | VA 330 SR | 0 | AT 1001 SR | 0 | ≈ | ≈ |
| 600 | 24 | 495 | VA 330 SR | 100 | ≈ | ≈ | AT 1001 SR | 100 | AT 1001 SR | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 700 | 28 | 550 | AT 1001 SR | 150 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 800 | 32 | 640 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |

valve seat: EPDM/NBR fluid: Aria T: 20°C operating air pressure: ≥5,5 bar
 valve seat: FKM (n.a. for PD 10bar) fluid: H₂O

| DN | " | M | PD | | | | KI | | | | | | | |
|-----|----|-----|------------|-----|-----------|-----|-----------|-----|-----------|-----|------------|-----|--|--|
| | | | P=6 B | G | P=10 B | G | P=6 B | G | P=10 B | G | P=16B | G | | |
| 40 | 1½ | 130 | ≈ | ≈ | ≈ | ≈ | VA 75 SR | 16 | VA 75 SR | 16 | VA 75 SR | 16 | | |
| 50 | 2 | 138 | ≈ | ≈ | ≈ | ≈ | VA 75 SR | 16 | VA 75 SR | 16 | VA 75 SR | 16 | | |
| 65 | 2½ | 144 | ≈ | ≈ | ≈ | ≈ | VA 85 SR | 16 | VA 85 SR | 16 | VA 85 SR | 16 | | |
| 80 | 3 | 158 | VA 75 SR | 16 | VA 75 SR | 16 | VA 100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | | |
| 100 | 4 | 173 | VA 75 SR | 16 | VA 100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 125 SR | 16 | | |
| 125 | 5 | 186 | VA 100 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 115 SR | 16 | VA 125 SR | 16 | | |
| 150 | 6 | 202 | VA 115 SR | 16 | VA 115 SR | 16 | VA 125 SR | 16 | VA 140 SR | 16 | VA 140 SR | 14 | | |
| 200 | 8 | 240 | VA 125 SR | 16 | VA 140 SR | 14 | VA 160 SR | 14 | VA 180 SR | 50 | VA 180 SR | 50 | | |
| 250 | 10 | 270 | VA 160 SR | 14 | VA 160 SR | 14 | VA 180 SR | 50 | VA 180 SR | 50 | VA 200 SR | 50 | | |
| 300 | 12 | 300 | VA 180 SR | 50 | VA 200 SR | 14 | VA 200 SR | 50 | VA 200 SR | 50 | VA 230 SR | 50 | | |
| 350 | 14 | 330 | VA 230 SR | 100 | VA 230 SR | 100 | VA 230 SR | 100 | VA 270 SR | 100 | VA 270 SR | 100 | | |
| 400 | 16 | 355 | VA 230 SR | 100 | VA 230 SR | 100 | VA 230 SR | 100 | VA 270 SR | 100 | VA 330 SR | 100 | | |
| 450 | 18 | 400 | VA 270 SR | 100 | VA 230 SR | 0 | VA 270 SR | 100 | VA 270 SR | 100 | VA 330 SR | 100 | | |
| 500 | 20 | 422 | VA 270 SR | 0 | VA 230 SR | 0 | VA 270 SR | 0 | VA 330 SR | 0 | AT 1001 SR | 0 | | |
| 600 | 24 | 495 | AT 1001 SR | 150 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | | |
| 700 | 28 | 550 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | | |
| 800 | 32 | 640 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | | |

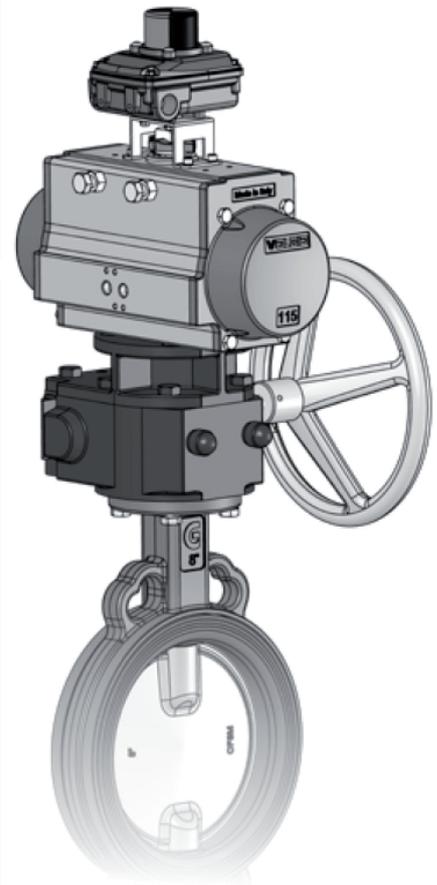


G dimension can change depending on valve/actuator coupling.

Declutchable manual gearboxes

| GD Series | | | |
|------------------|---------------------------|---------------------------|------------------------|
| body: | aluminium | shaft: | stainless steel |
| worm gears: | steel | handwheel: | steel |
| sector gear: | ductile iron | protection: | IP65 |
| | | T: | -20 / +120 °C |
| Ø valve | DA actuator double action | SR actuator spring return | emergency gearbox type |
| DN040-150 | VA 63-100 | VA 75-115 | GD070 |
| | | VA 125 | GD102 |
| DN200 | VA 85-100 | | GD070 |
| DN200-300 | VA 115-160 | VA 115-160 | GD102 |
| | | VA 180-200 | GD140 |
| DN350-500 | VA 140-200 | VA 200 | GD140 |

| ILGD Series | | | |
|--------------------|---------------------------|---------------------------|------------------------|
| body: | ductile iron GGG40 | shaft: | steel |
| worm gears: | steel | handwheel: | steel |
| sector gear: | ductile iron | protection: | IP65 (IP67 on req.) |
| | | T: | -20 / +120 °C |
| Ø valve | DA actuator double action | SR actuator spring return | emergency gearbox type |
| DN 40÷150 | VA 63-100 | VA 63-100 | ILGD200 |
| | VA 115-125 | VA 115-160 | ILGD600 |
| | | VA 180-200 | ILGD900 |
| DN 200÷300 | VA 85-160 | VA 115-160 | ILGD600 |
| | VA 180-200 | VA 180-200 | ILGD900 |
| | VA 230 | VA 230 | ILGD1500 |
| DN 350÷400 | VA 140-200 | VA 200 | ILGD900 |
| | VA 230 | VA 230 | ILGD1500 |
| | VA 270 | 270 | ILGD2400 |
| DN 450 | VA 180-230 | VA 230 | ILGD1500 |
| | VA 270 | VA 270-330 | ILGD2400 |
| DN 500 | VA 180-230 | VA 230 | ILGD1500 |
| | VA 270 | VA 270 | ILGD2400 |
| | VA 330 | VA 330 | ILGD5000 |
| DN 600 | VA 270 | | ILGD2400 |
| | VA 330 | VA 330 | ILGD5000 |
| DN 700 | VA 270-330-AT1001 | | ILGD5000 |
| | | AT1001 | ILGD16000 |
| DN 800 | VA 330-AT1001 | | ILGD16000 |

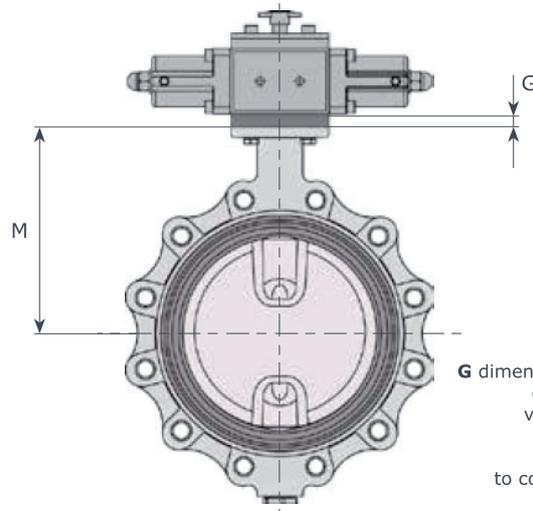


Hydraulic actuators ARES

- Technical features:
 - » ductile iron cast body
 - » steel rack and pinion
 - » NBR seats
- fluid material:
 - » hydraulic oil type : HPL DIN51524-2 / ISO 6743-4.
 - » Viscosity 15/200 cst
- working pressure: 10 - 120 bar
- working temperature: -20°C / +80°C

Compact design, 90° rotation ±5°,
Travel adjustment in both direction
of rotation, Flange ISO 5211,
Double or single acting with spring return

| | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 |
| M | 130 | 138 | 148 | 158 | 173 | 186 | 202 | 240 | 270 |
| DN | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 800 | |
| M | 300 | 330 | 355 | 400 | 422 | 495 | 550 | 640 | |



G dimension can vary depending on valve/actuator coupling. Pls refer to coupling tables

valve seat: NBR / EPDM - Fluid H₂O - T = 20°C - oil pressure: 60 Bar

| DN | " | DA type - Double Acting | | | | | | | | SR type - Spring close | | | | | | | |
|-----|------------------|-------------------------|--------|-----------|-----|-----------|-----|-----------|----|------------------------|-----|-----------|-----|-----------|-----|-----------|-----|
| | | PD series | G | KI series | G | KA series | G | KX series | G | PD series | G | KA series | G | KA series | G | KX series | G |
| 40 | 1 ^{1/2} | ≈ | ≈ | H 28 | 0 | H 28 | 0 | ≈ | ≈ | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 | ≈ | ≈ |
| 50 | 2 | ≈ | ≈ | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 |
| 65 | 2 ^{1/2} | ≈ | ≈ | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 |
| 80 | 3 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 |
| 100 | 4 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 40 SRA | 0 | H 50 SRA | 14 |
| 125 | 5 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRA | 0 | H 50 SRA | 14 | H 50 SRA | 14 | H 50 SRA | 14 |
| 150 | 6 | H 28 | 0 | H 28 | 0 | H 40 | 0 | H 40 | 0 | H 40 SRA | 0 | H 50 SRA | 14 | H 50 SRA | 14 | H 50 SRA | 14 |
| 200 | 8 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 63 | 50 | H 50 SRA | 0 | H 63 SRA | 50 | H 63 SRA | 50 | H 80 SRA | 100 |
| 250 | 10 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 63 | 50 | H 50 SRA | 0 | H 80 SRA | 100 | H 80 SRA | 100 | H 80 SRA | 100 |
| 300 | 12 | H 50 | 0 | H 63 | 50 | H 63 | 50 | ≈ | ≈ | H 63 SRA | 50 | H 80 SRA | 100 | H 80 SRA | 100 | ≈ | ≈ |
| 350 | 14 | H 63 | 100 | H 80 | 100 | H 80 | 100 | ≈ | ≈ | H 80 SRA | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 400 | 16 | H 80 | 100 | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | H 80 SRA | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 450 | 18 | H 80 | 100 | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 500 | 20 | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 600 | 24 | a ric. | a ric. | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |

valve seat: NBR / EPDM - Fluid H₂O - T = 20°C - oil pressure: 120 Bar

| DN | " | DA type - Double Acting | | | | | | | | SR type - Spring close | | | | | | | |
|-----|------------------|-------------------------|--------|-----------|-----|-----------|-----|-----------|---|------------------------|-----|-----------|-----|-----------|----|-----------|----|
| | | PD series | G | KI series | G | KA series | G | KX series | G | PD series | G | KA series | G | KA series | G | KX series | G |
| 40 | 1 ^{1/2} | ≈ | ≈ | H 28 | 0 | H 28 | 0 | ≈ | | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 50 | 2 | ≈ | ≈ | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 65 | 2 ^{1/2} | ≈ | ≈ | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 80 | 3 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 100 | 4 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 125 | 5 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 150 | 6 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 28 | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 | H 40 SRB | 0 |
| 200 | 8 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 50 SRB | 0 | H 50 SRB | 0 | H 50 SRB | 0 | H 63 SRB | 50 |
| 250 | 10 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 50 | 0 | H 50 SRB | 0 | H 63 SRB | 50 | H 63 SRB | 50 | H 63 SRB | 50 |
| 300 | 12 | H 50 | 0 | H 50 | 0 | H 50 | 0 | ≈ | ≈ | H 50 SRB | 0 | H 63 SRB | 50 | H 63 SRB | 50 | ≈ | ≈ |
| 350 | 14 | H 63 | 100 | H 63 | 100 | H 63 | 100 | ≈ | ≈ | H 63 SRB | 100 | H 80 SRB | 100 | ≈ | ≈ | ≈ | ≈ |
| 400 | 16 | H 63 | 100 | H 63 | 100 | H 63 | 100 | ≈ | ≈ | H 63 SRB | 100 | H 80 SRB | 100 | ≈ | ≈ | ≈ | ≈ |
| 450 | 18 | H 80 | 100 | H 80 | 100 | H 80 | 100 | ≈ | ≈ | H 80 SRB | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 500 | 20 | H 80 | 100 | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | H 80 SRB | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 600 | 24 | a ric. | a ric. | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |
| 700 | 28 | H 80 | 100 | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ | ≈ |

Butterfly Valves

HD Series



| | |
|---------------------------|-----|
| HD series | 204 |
| technical data | 204 |
| components | 205 |
| RTFE seat | 205 |
| Inconel seat | 206 |
| "FIRE SAVE" design | 207 |
| dimensions | 208 |
| compatible flages JIS | 209 |
| torque values | 209 |
| pressure / temperature | 209 |
| bolts and rods dimensions | 210 |
| installation instructions | 211 |
| Operators | 212 |
| Handlever and Gearboxes | 212 |
| Pneumatic actuators | 213 |
| declutchable gearboxes | 213 |
| Extension shaft | 214 |
| Hydraulic Actuator | 214 |

BVHD - Wafer DN 40 - 600 • 1"½ - 24"

BLHD - Lug DN 40 - 600 • 1"½ - 24"

Max working pressure:

BVHD/BLHD DN 40+600: **25 Bar**
Flange: **PN 10-16-25 • A150**

Design:

EN 593-EN 736
EN 12516-EN 1092-EN12266
ISO 5211-DIN 3337-API 609-ASME B16.34
PED 2014/68/EU - Mod. H

Face to face:

DIN EN 558 Series 20-ISO 5752 Series 20
BS-5155 Series 4-MSS-SP67
NFE 29305-1
API 609 cat.B
API 609 cat.A (DN 350 excluded)

Testing:

EN 12266-1 Rate A (supersedes DIN 3230)
ISO 5208 Rate A ~ API 598
FIRE TEST API 607 VI Ed. September
Class V - Met/Met

Tag:

EN 19 ~ MSS SP-25



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



BODY

| material | references | standard coating | DN |
|------------------------------|---------------------------|--------------------------------|--------|
| Carbon steel (wafer, lug) | EN 1.0619 (ASTM A216-WCB) | High-temp coating - grey color | 40-600 |
| Stainless steel (wafer, lug) | EN 1.4408 (A351 CF8M) | - | 40-600 |
| Austenitic Stainless steel | EN 1.4547 (A351 CK3MCuN) | - | 40-600 |
| SUPERDUPLEX | EN 1.4469 (A890 Gr. 5A) | - | 40-600 |

DISC

| material | references | DN |
|----------------------------|--------------------------|--------|
| Stainless steel | EN 1.4408 (A351 CF8M) | 40-600 |
| Austenitic Stainless steel | EN 1.4547 (A351 CK3MCuN) | 40-600 |
| SUPERDUPLEX | EN 1.4469 (A890 Gr. 5A) | 40-600 |

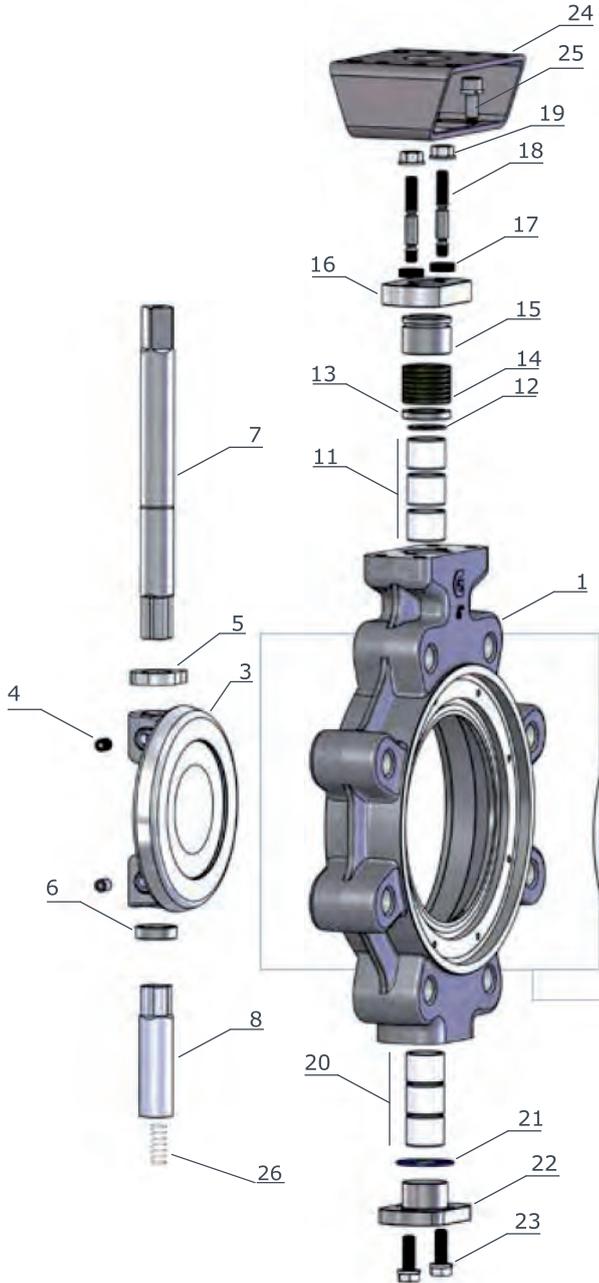
SEDE

| ref. | material | working temp. |
|------|------------------------|-----------------------------------|
| RT | RTFE (PTFE reinforced) | Min: -55°C - Max: +230°C |
| IN | Inconel 625 | Min: -55°C - Max: +450°C |
| FS | RTFE + Inconel 625 | Min: -55°C - Max: +230°C / +450°C |

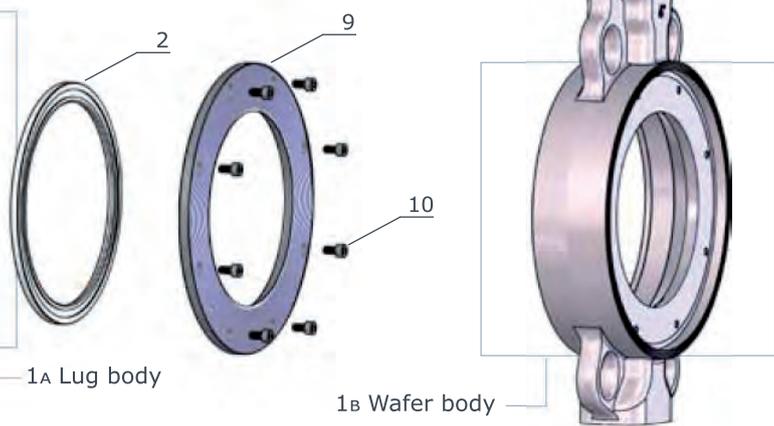
On request can be supplied other materials as: LCB, Hastelloy, Uranus, Alloy, Super Duplex, Special steels, Special bronzes.
Special coating on request.

BVHD - Wafer • RTFE seat
 DN 40 - 600 • 1”½ - 24”
 PN 10 - 16 - 25 • ANSI 150

BLHD - Lug • RTFE seat
 DN 40 - 600 • 1”½ - 24”
 PN 10 - 16 - 25 • ANSI 150



| item | q.ty | part | material |
|------|------|----------------------------|---|
| 1 | 1 | body a: Lug b: Wafer | • EN 1.0619 (ASTM A216-WCB) • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) * • EN 1.4469 (A890 Gr. 5A) * |
| ◇ 2 | 1 | soft seat | • RTFE (PTFE reinforced) |
| 3 | 1 | disc | • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) • EN 1.4469 (A890 Gr. 5A) |
| 4 | 2 | locking pins | • A4 ~ A316 |
| 5 | 1 | upper spacer | • EN 1.4401 (A316) |
| 6 | 1 | lower spacer | • EN 1.4401 (A316) |
| 7 | 1 | upper shaft | • EN 1.4542 (A564 A630) |
| 8 | 1 | lower shaft | • EN 1.4542 (A564 A630) |
| 9 | 1 | seat retaining flange | • EN 1.4404 (A316L) |
| 10 | 8 | screw | • A4 ~ A316 |
| ◇ 11 | 3 | upper bush | • stainless steel + PTFE • steel + PTFE |



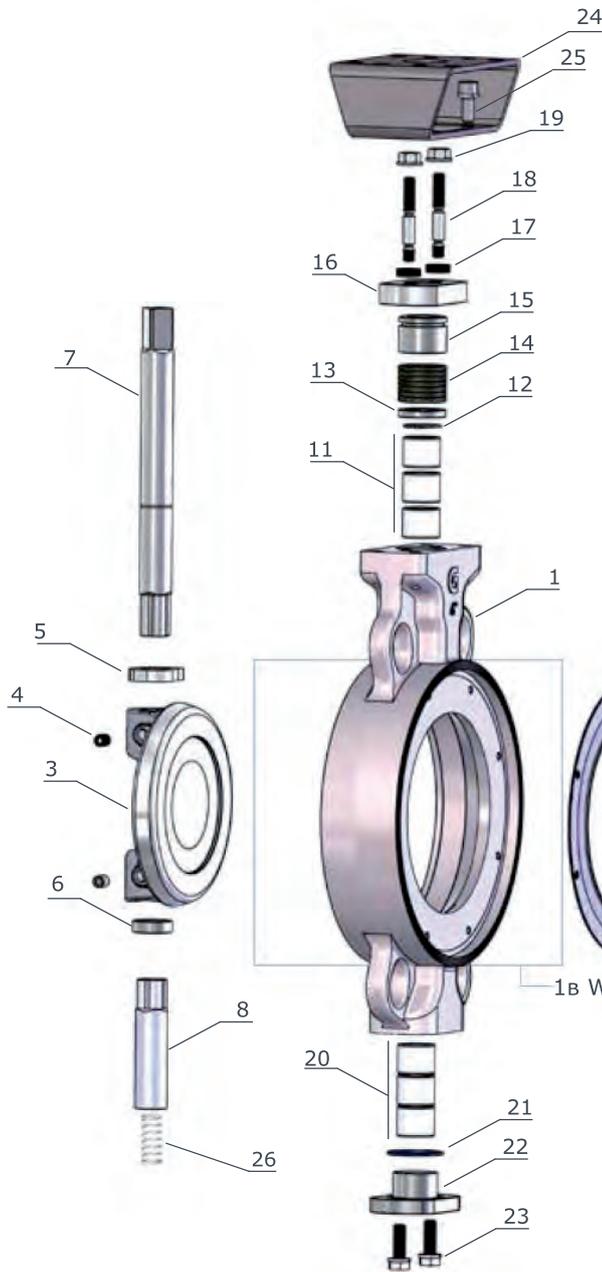
| item | q.ty | part | material |
|------|------|----------------|--|
| 12 | 1 | retaining ring | • AISI 301 |
| 13 | 1 | thrust block | • EN 1.4401 (A316) |
| ◇ 14 | 1 | shaft packing | • graphite • PTFE (on request) |
| 15 | 1 | gland | • EN 1.4401 (A316) |
| 16 | 1 | gland flange | • EN 1.4401 (A316) |
| 17 | 2 | springs set | • AISI 301 |
| 18 | 2 | rods | • A4 ~ A316 |
| 19 | 2 | nut | • A2 ~ A304 |
| ◇ 20 | 3 | lower bush | • stainless steel + PTFE • steel + PTFE |
| ◇ 21 | 1 | O-ring | • PTFE |
| 22 | 1 | lower plug | • EN 1.4401 (A316) |
| 23 | 2 | screw | • A4 ~ A316 |
| 24 | 1 | upper flange | • steel epoxy coated |
| 25 | 4 | screw | • A4 ~ A316 |
| 26 | 1 | spring | • 1.4401 ~ A316 (antistatic device) |

◇ parts included in spare kit

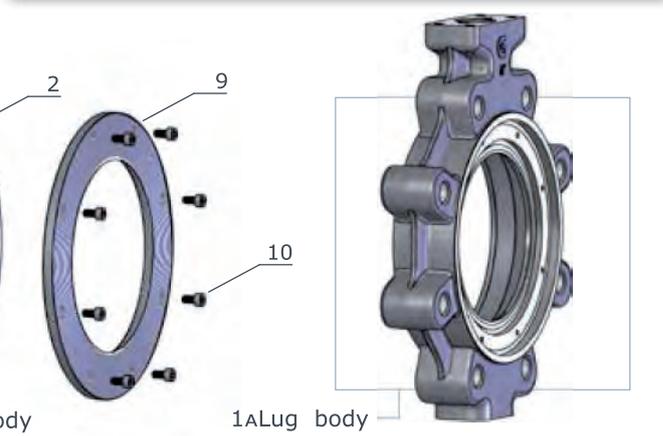
* with special material body the components in contact with the fluid will also be in a suitable material

BVHD - Wafer • Inconel seat
 DN 40 - 600 • 1”½ - 24”
 PN 10 - 16 - 25 • ANSI 150

BLHD - Lug • Inconel seat
 DN 40 - 600 • 1”½ - 24”
 PN 10 - 16 - 25 • ANSI 150



| item | q.ty | part | material |
|------|------|----------------------------|---|
| 1 | 1 | body A: Lug B: Wafer | • EN 1.0619 (ASTM A216-WCB) • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) * • EN 1.4469 (A890 Gr. 5A) * |
| ◇ 2 | 1 | metallic seat | • Inconel 625 + graphite |
| 3 | 1 | disc | • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) • EN 1.4469 (A890 Gr. 5A) |
| 4 | 2 | locking pins | • A4 ~ A316 |
| 5 | 1 | upper spacer | • EN 1.4401 (A316) |
| 6 | 1 | lower spacer | • EN 1.4401 (A316) |
| 7 | 1 | upper shaft | • EN 1.4542 (A564 A630) |
| 8 | 1 | lower shaft | • EN 1.4542 (A564 A630) |
| 9 | 1 | seat retaining flange | • EN 1.4404 (A316L) |
| 10 | 8 | screw | • A4 ~ A316 |
| ◇ 11 | 3 | upper bush | • stainless steel + PTFE • steel + PTFE |



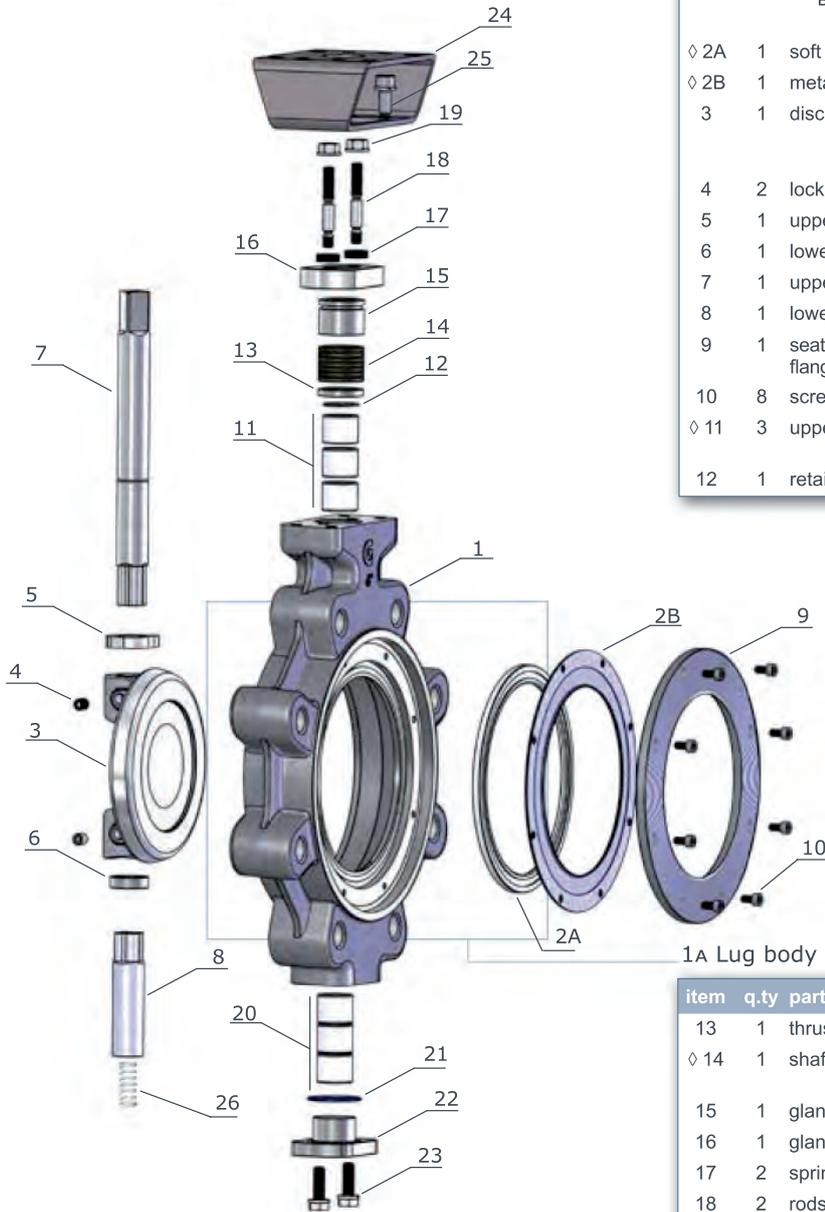
| item | q.ty | part | material |
|------|------|----------------|--|
| 12 | 1 | retaining ring | • AISI 301 |
| 13 | 1 | thrust block | • EN 1.4401 (A316) |
| ◇ 14 | 1 | shaft packing | • graphite • PTFE (on request) |
| 15 | 1 | gland | • EN 1.4401 (A316) |
| 16 | 1 | gland flange | • EN 1.4401 (A316) |
| 17 | 2 | springs set | • AISI 301 |
| 18 | 2 | rods | • A4 ~ A316 |
| 19 | 2 | nut | • A2 ~ A304 |
| ◇ 20 | 3 | lower bush | • stainless steel + PTFE • steel + PTFE |
| ◇ 21 | 1 | packing | • graphite |
| 22 | 1 | lower plug | • EN 1.4401 (A316) |
| 23 | 2 | screw | • A4 ~ A316 |
| 24 | 1 | upper flange | • steel epoxy coated |
| 25 | 4 | screw | • A4 ~ A316 |
| 26 | 1 | spring | • 1.4401 ~ A316 (antistatic device) |

◇ parts included in spare kit

* with special material body the components in contact with the fluid will also be in a suitable material

BVHD - Wafer • "FIRE SAFE" design
 DN 40 - 600 • 1"½ - 24"
 PN 10-16-25 • ANSI 150

BLHD - Lug • "FIRE SAFE" design
 DN 40 - 600 • 1"½ - 24"
 PN 10-16-25 • ANSI 150



| item | q.ty | part | material |
|------|------|----------------------------|---|
| 1 | 1 | body A: Lug B: Wafer | • EN 1.0619 (ASTM A216-WCB) • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) * • EN 1.4469 (A890 Gr. 5A) * |
| ◇ 2A | 1 | soft seat | • RTFE (PTFE reinforced) |
| ◇ 2B | 1 | metallic seat | • Inconel 625 + graphite |
| 3 | 1 | disc | • EN 1.4408 (A351 CF8M) • EN 1.4547 (A351 CK3MCuN) • EN 1.4469 (A890 Gr. 5A) |
| 4 | 2 | locking pins | • A4 ~ A316 |
| 5 | 1 | upper spacer | • EN 1.4401 (A316) |
| 6 | 1 | lower spacer | • EN 1.4401 (A316) |
| 7 | 1 | upper shaft | • EN 1.4542 (A564 A630) |
| 8 | 1 | lower shaft | • EN 1.4542 (A564 A630) |
| 9 | 1 | seat retaining flange | • EN 1.4404 (A316L) |
| 10 | 8 | screw | • A4 ~ A316 |
| ◇ 11 | 3 | upper bush | • stainless steel + PTFE • steel + PTFE |
| 12 | 1 | retaining ring | • AISI 301 |

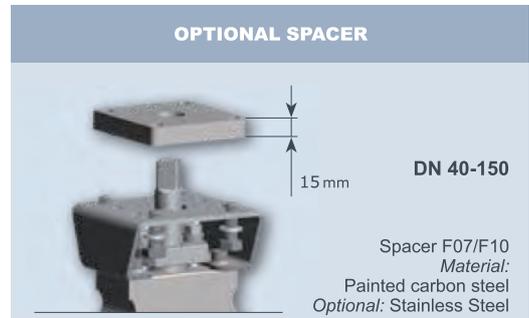
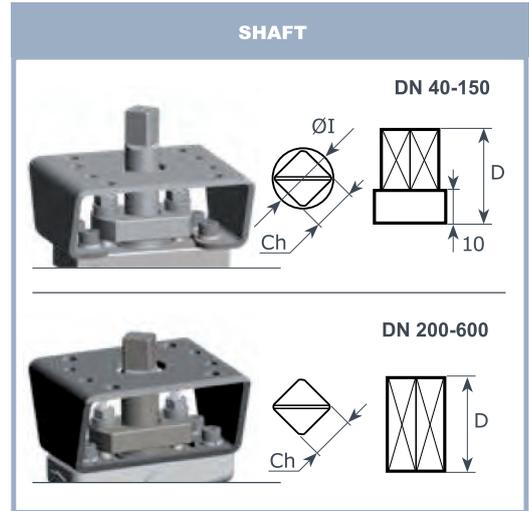
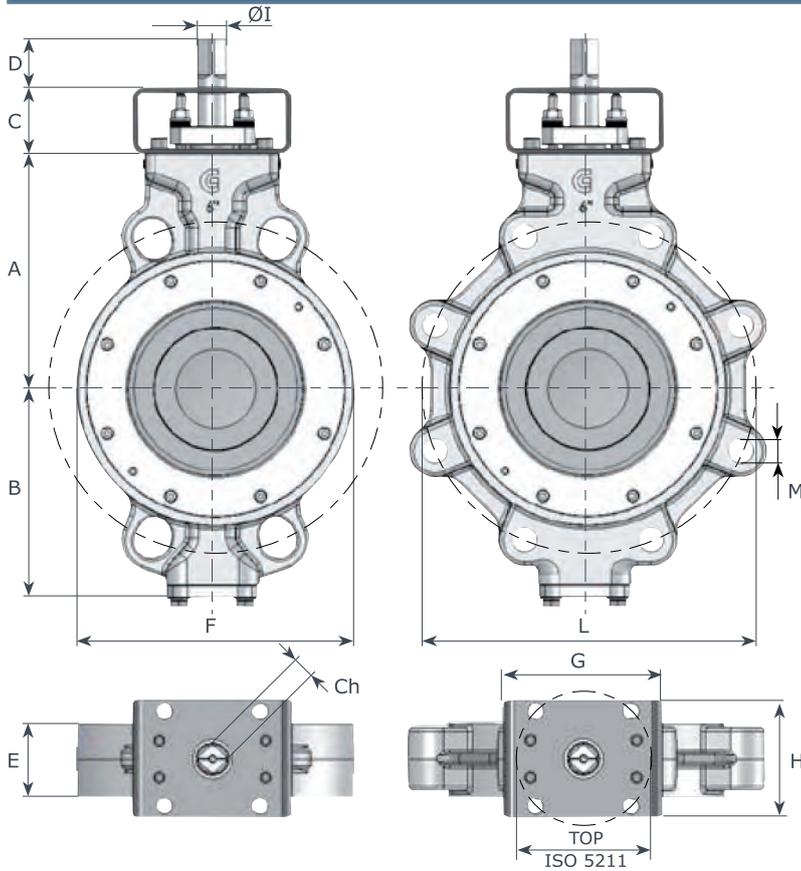


| item | q.ty | part | material |
|------|------|---------------|--|
| 13 | 1 | thrust block | • EN 1.4401 (A316) |
| ◇ 14 | 1 | shaft packing | • graphite • PTFE (on request) |
| 15 | 1 | gland | • EN 1.4401 (A316) |
| 16 | 1 | gland flange | • EN 1.4401 (A316) |
| 17 | 2 | springs set | • AISI 301 |
| 18 | 2 | rods | • A4 ~ A316 |
| 19 | 2 | nut | • A2 ~ A304 |
| ◇ 20 | 3 | lower bush | • stainless steel + PTFE • steel + PTFE |
| ◇ 21 | 1 | packing | • graphite |
| 22 | 1 | lower plug | • EN 1.4401 (A316) |
| 23 | 2 | screw | • A4 ~ A316 |
| 24 | 1 | upper flange | • steel epoxy coated |
| 25 | 4 | screw | • A4 ~ A316 |
| 26 | 1 | spring | • 1.4401 ~ A316 (antistatic device) |

◇ parts included in spare kit

* with special material body the components in contact with the fluid will also be in a suitable material

BVHD/BLHD dimensions



| DN | " | A | B | C | D | E | F | G | H | Ø I | Ch | TOP |
|-----|-------|-----|-----|-----|----|-----|-----|-----|-----|-----|----|---------|
| 40 | 1 1/2 | 113 | 76 | 50 | 34 | 39 | 85 | 100 | 70 | 14 | 11 | F05/F07 |
| 50 | 2 | 117 | 81 | 50 | 34 | 43 | 95 | 100 | 70 | 14 | 11 | F05/F07 |
| 65 | 2 1/2 | 120 | 93 | 50 | 34 | 46 | 105 | 100 | 70 | 14 | 11 | F05/F07 |
| 80 | 3 | 129 | 101 | 50 | 34 | 46 | 127 | 100 | 70 | 14 | 11 | F05/F07 |
| 100 | 4 | 160 | 128 | 50 | 34 | 52 | 150 | 100 | 70 | 18 | 14 | F05/F07 |
| 125 | 5 | 170 | 159 | 50 | 38 | 56 | 174 | 120 | 90 | 22 | 17 | F07/F10 |
| 150 | 6 | 179 | 168 | 50 | 38 | 56 | 210 | 120 | 90 | 22 | 17 | F07/F10 |
| 200 | 8 | 218 | 207 | 60 | 23 | 61 | 270 | 120 | 90 | 28 | 22 | F07/F10 |
| 250 | 10 | 257 | 232 | 80 | 23 | 69 | 325 | 160 | 130 | 30 | 22 | F12/F14 |
| 300 | 12 | 300 | 270 | 80 | 28 | 78 | 378 | 160 | 130 | 35 | 27 | F12/F14 |
| 350 | 14 | 328 | 304 | 100 | 28 | 92 | 432 | 200 | 140 | 40 | 27 | F14 |
| 400 | 16 | 387 | 340 | 100 | 37 | 102 | 485 | 200 | 140 | 45 | 36 | F16 |
| 500 | 20 | 451 | 427 | 100 | 47 | 127 | 580 | 200 | 165 | 60 | 46 | F16 |
| 600 | 24 | 515 | 460 | 150 | 56 | 154 | 694 | 300 | 300 | 70 | 55 | F25 |

| DN | PN 10 | | | PN 16 | | | PN 25 | | | ANSI 150 | | | Kg. | |
|-----|-------|----|-----|-------|----|-----|-------|----|-----|------------------|----|-------|-------|------|
| | M | n. | L | M | n. | L | M | n. | L | M ⁽¹⁾ | n. | L | wafer | lug |
| 40 | M16 | 4 | 110 | M16 | 4 | 110 | M16 | 4 | 110 | M14 | 4 | 98,4 | 4,0 | 4,0 |
| 50 | M16 | 4 | 125 | M16 | 4 | 125 | M16 | 4 | 125 | M16 | 4 | 120,7 | 3,5 | 5,7 |
| 65 | M16 | 8 | 145 | M16 | 8 | 145 | M16 | 8 | 145 | M16 | 4 | 139,7 | 4,0 | 7 |
| 80 | M16 | 8 | 160 | M16 | 8 | 160 | M16 | 8 | 160 | M16 | 4 | 152,4 | 4,8 | 7,6 |
| 100 | M16 | 8 | 180 | M16 | 8 | 180 | M20 | 8 | 190 | M16 | 8 | 190,5 | 8 | 9,7 |
| 125 | M16 | 8 | 210 | M16 | 8 | 210 | M24 | 8 | 220 | M20 | 8 | 215,9 | 10,1 | 14,8 |
| 150 | M20 | 8 | 240 | M20 | 8 | 240 | M24 | 8 | 250 | M20 | 8 | 241,3 | 13,5 | 17,6 |
| 200 | M20 | 8 | 295 | M20 | 12 | 295 | M24 | 12 | 310 | M20 | 8 | 298,5 | 22 | 32 |
| 250 | M20 | 12 | 350 | M24 | 12 | 355 | M27 | 12 | 370 | M22 | 12 | 362,0 | 35 | 46 |
| 300 | M20 | 12 | 400 | M24 | 12 | 410 | M27 | 16 | 430 | M22 | 12 | 431,8 | 50 | 62 |
| 350 | M20 | 16 | 460 | M24 | 16 | 470 | M30 | 16 | 490 | M24 | 12 | 476,3 | 83 | 110 |
| 400 | M24 | 16 | 515 | M27 | 16 | 525 | M33 | 16 | 550 | M27 | 16 | 539,8 | 107 | 140 |
| 500 | M24 | 20 | 620 | M30 | 20 | 650 | M33 | 20 | 660 | M27 | 20 | 635,0 | 200 | 250 |
| 600 | M27 | 30 | 725 | M33 | 20 | 770 | M36 | 20 | 770 | M33 | 20 | 749,3 | 280 | 350 |

NOTE ⁽¹⁾: in case of ANSI150 flanges, threading can be ANSI B1.1 UNC2B

Compatible flanges JIS B2220 :2004

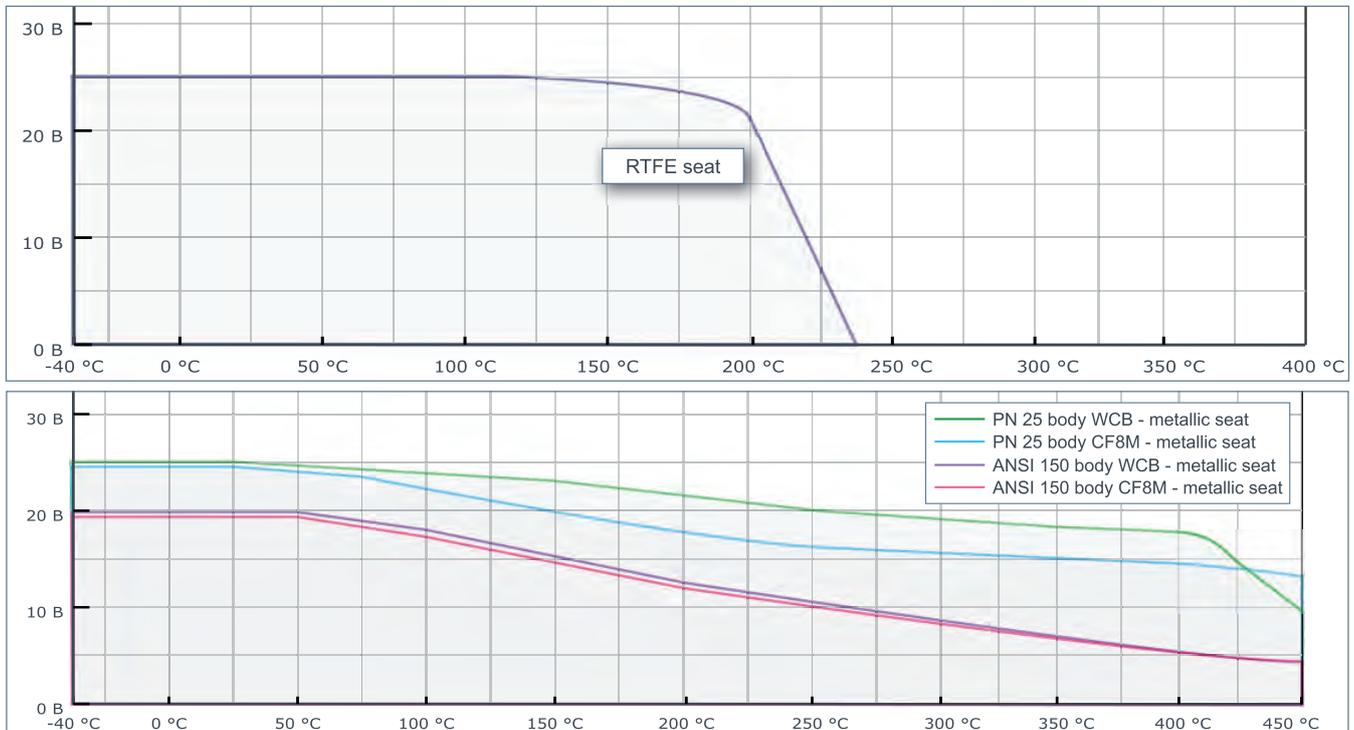
| DN | BVHD - wafer (Pmax = 25bar) | | | | | BLHD - lug (Pmax = 25bar) | | | | |
|-----|---------------------------------|---------|---------|---------|---------|---------------------------|---------|---------|---------|---------|
| | JIS 5K | JIS 10K | JIS 16K | JIS 20K | JIS 30K | JIS 5K | JIS 10K | JIS 16K | JIS 20K | JIS 30K |
| 40 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 50 | X | ✓ | ● | ● | ● | X | ● | ● | ● | X |
| 65 | ● | ✓ | ● | ● | X | ● | ● | ● | ● | X |
| 80 | ● | ● | ● | ● | X | ● | ● | ● | ● | ● |
| 100 | X | ● | ✓ | ✓ | ✓ | X | ● | ● | ● | ● |
| 125 | ● | ● | ✓ | ✓ | ✓ | ● | ● | ● | ● | ● |
| 150 | ● | ✓ | X | X | X | ● | ✓ | X | X | X |
| 200 | X | ● | ✓ | ✓ | ● | X | ● | ● | ● | ● |
| 250 | ● | ✓ | X | X | X | ● | ● | X | X | X |
| 300 | X | X | X | X | X | X | X | X | X | X |
| 350 | X | X | ● | ● | ● | X | X | ● | ● | ● |
| 400 | X | ● | ● | ● | X | X | ● | ● | ● | X |
| 500 | please contact Technical Office | | | | | | | | | |
| 600 | please contact Technical Office | | | | | | | | | |

standard
 on request
 not possible

Torque values - Nm | safety factor excluded

| seat: RTFE - fluid: H ₂ O - 20°C | | | | | seat: INCONEL - fluid: H ₂ O - 20°C | | | | |
|---|------|------|------|------|--|------|------|------|------|
| working pressure: BAR | | | | | working pressure: BAR | | | | |
| DN | 10 | 16 | 20 | 25 | DN | 10 | 16 | 20 | 25 |
| 40 | 21 | 27 | 36 | 42 | 40 | 32 | 40 | 52 | 61 |
| 50 | 24 | 30 | 40 | 47 | 50 | 36 | 44 | 58 | 68 |
| 65 | 34 | 38 | 48 | 60 | 65 | 51 | 56 | 70 | 86 |
| 80 | 38 | 45 | 54 | 68 | 80 | 57 | 67 | 78 | 97 |
| 100 | 45 | 56 | 62 | 81 | 100 | 68 | 83 | 89 | 114 |
| 125 | 85 | 90 | 105 | 120 | 125 | 124 | 133 | 154 | 168 |
| 150 | 130 | 145 | 170 | 210 | 150 | 186 | 212 | 248 | 302 |
| 200 | 155 | 251 | 326 | 423 | 200 | 261 | 350 | 392 | 570 |
| 250 | 330 | 450 | 520 | 580 | 250 | 480 | 668 | 765 | 848 |
| 300 | 580 | 640 | 740 | 850 | 300 | 848 | 941 | 1085 | 1244 |
| 350 | 780 | 1030 | 1190 | 1550 | 350 | 950 | 1250 | 1500 | 1850 |
| 400 | 850 | 1400 | 1750 | 2275 | 400 | 1750 | 2180 | 2470 | 2830 |
| 500 | 1925 | 2560 | 2980 | 3875 | 500 | 2740 | 3445 | 3910 | 4500 |
| 600 | 3550 | 4700 | 5600 | 6600 | 600 | 5000 | 6300 | 7450 | 8000 |

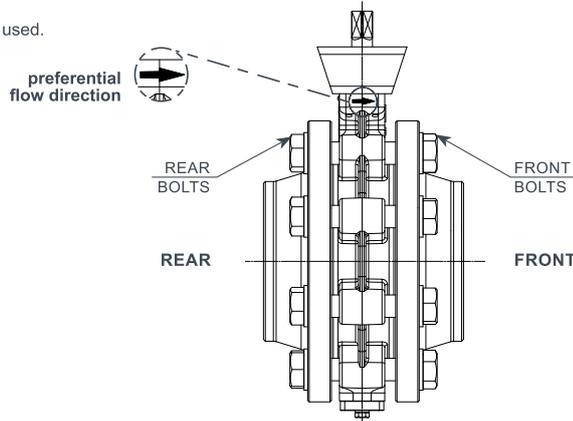
Pressure / Temperature



Bolts and rods dimensions

| DN | Wafer valves | | | | | | | | | | | |
|-----|-----------------------|---------|----|-----------------------|---------|----|------------------------|---------|----|------------------------|---------|----|
| | PN10 | | | PN16 | | | PN25 | | | A150 | | |
| | Bolts | Rods | N° | Bolts | Rods | N° | Bolts | Rods | N° | Bolts | Rods | N° |
| 40 | M16x100 | M16x120 | 4 | M16x100 | M16x120 | 4 | M16x100 | M16x120 | 4 | M14x100 | M14x120 | 4 |
| 50 | M16x110 | M16x130 | 4 | M16x110 | M16x130 | 4 | M16x120 | M16x130 | 4 | M16x120 | M16x130 | 4 |
| 65 | M16x120 | M16x130 | 8 | M16x120 | M16x130 | 8 | M16x120 | M16x140 | 8 | M16x130 | M16x140 | 4 |
| 80 | M16x120 | M16x130 | 8 | M16x120 | M16x130 | 8 | M16x130 | M16x140 | 8 | M16x130 | M16x140 | 4 |
| 100 | M16x130 | M16x140 | 8 | M16x130 | M16x140 | 8 | M20x140 | M20x150 | 8 | M16x130 | M16x150 | 8 |
| 125 | M16x130 | M16x150 | 8 | M16x140 | M16x150 | 8 | M24x150 | M24x170 | 8 | M20x140 | M20x160 | 8 |
| 150 | M20x140 | M20x150 | 8 | M20x140 | M20x150 | 8 | M24x150 | M24x170 | 8 | M20x140 | M20x160 | 8 |
| 200 | M20x150 | M20x160 | 8 | M20x150 | M20x160 | 12 | M24x160 | M24x180 | 12 | M20x160 | M20x170 | 8 |
| 250 | M20x160 | M20x180 | 12 | M24x160 | M24x180 | 12 | M27x180 | M27x200 | 12 | M22x170 | M22x200 | 12 |
| 300 | M20x170 | M20x180 | 12 | M24x180 | M24x200 | 12 | M27x200 | M27x220 | 16 | M22x180 | M22x200 | 12 |
| 350 | M20x180 | M20x200 | 12 | M24x200 | M24x220 | 16 | M30x220 | M30x240 | 16 | M24x220 | M24x220 | 12 |
| 400 | M24x200 | M24x220 | 16 | M27x220 | M27x240 | 16 | M33x240 | M33x260 | 16 | M27x220 | M27x240 | 16 |
| 500 | M24x220 | M24x240 | 16 | M30x240 | M30x280 | 16 | M33x260 | M33x300 | 16 | M27x260 | M27x280 | 16 |
| | * REAR: Bolts M24x60 | | 4 | * REAR: Bolts M30x70 | | 4 | * REAR: Bolts M33x80 | | 4 | * REAR: Bolts M27x80 | | 4 |
| | * FRONT: Bolts M24x70 | | 4 | * FRONT: Bolts M30x80 | | 4 | * FRONT: Bolts M33x90 | | 4 | * FRONT: Bolts M27x90 | | 4 |
| 600 | M27x300 | M27x330 | 16 | M33x310 | M33x340 | 16 | M36x320 | M36x350 | 16 | M33x320 | M33x350 | 16 |
| | * REAR: Bolts M27x70 | | 4 | * REAR: Bolts M33x80 | | 4 | * REAR: Bolts M36x90 | | 4 | * REAR: Bolts M33x90 | | 4 |
| | * FRONT: Bolts M27x80 | | 4 | * FRONT: Bolts M33x90 | | 4 | * FRONT: Bolts M36x100 | | 4 | * FRONT: Bolts M33x100 | | 4 |

* Valves DN500 and DN600 (both LUG and WAFER execution) have 4 threaded blind holes each side, therefore screws marked with * are to be used.



NOTE 1

Screw and rod dimensions have been calculated with:

- spiralwound gasket ASME B16.20a (ex API 601)
- washer EN ISO 7089 (ex UNI 6592) - on both flanges
- welding neck flanges PN 10/16/25 (EN1092-1 Type 11)
- welding neck flanges ANSI150 (ANSI B16.5)

NOTE 2

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

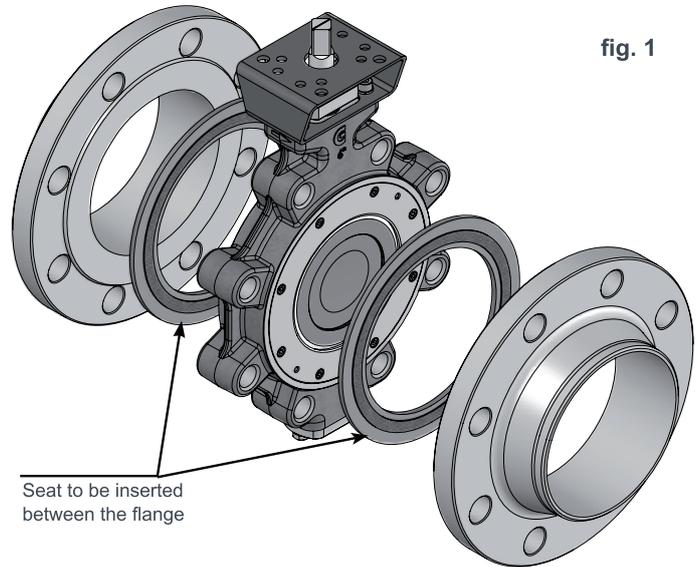
| DN | Lug valves | | | | | | | | | | | | | | | |
|-----|----------------|----|----------------|----|----------------|----|----------------|----|----------------|----|-----------------|----|----------------|----|-----------------|----|
| | PN10 | | | | PN16 | | | | PN25 | | | | A150 | | | |
| | Rear | | Front | | Rear | | Front | | Rear | | Front | | Rear | | Front | |
| | Bolts | N° | Bolts | N° | Bolts | N° | Bolts | N° |
| 40 | M16x35 | 4 | M16x40 | 4 | M16x35 | 4 | M16x40 | 4 | M16x40 | 4 | M16x40 | 4 | M14x35 | 4 | M14x40 | 4 |
| 50 | M16x45 | 4 | M16x45 | 4 | M16x45 | 4 | M16x45 | 4 |
| 65 | M16x40 | 8 | M16x50 | 8 | M16x40 | 8 | M16x50 | 8 | M16x45 | 8 | M16x55 | 8 | M16x45 | 4 | M16x55 | 4 |
| 80 | M16x45 | 8 | M16x55 | 8 | M16x45 | 8 | M16x55 | 8 | M16x50 | 8 | M16x55 | 8 | M16x45 | 4 | M16x55 | 4 |
| 100 | M16x50 | 8 | M16x50 | 8 | M16x50 | 8 | M16x50 | 8 | M20x55 | 8 | M20x55 | 8 | M16x55 | 8 | M16x55 | 8 |
| 125 | M16x55 | 8 | M16x55 | 8 | M16x55 | 8 | M16x55 | 8 | M24x55 | 8 | M24x60 | 8 | M20x55 | 8 | M20x55 | 8 |
| 150 | M20x55 | 8 | M20x65 | 8 | M20x55 | 8 | M20x55 | 8 | M24x60 | 8 | M24x60 | 8 | M20x55 | 8 | M20x60 | 8 |
| 200 | M20x55 | 8 | M20x65 | 8 | M20x55 | 8 | M20x65 | 8 | M24x60 | 12 | M24x70 | 12 | M20x60 | 8 | M20x65 | 8 |
| 250 | M20x60 | 12 | M20x70 | 12 | M24x60 | 12 | M24x70 | 12 | M27x65 | 12 | M27x75 | 12 | M22x65 | 12 | M22x70 | 12 |
| 300 | M20x65 | 12 | M20x70 | 12 | M24x70 | 12 | M24x75 | 12 | M27x75 | 16 | M27x80 | 16 | M22x70 | 12 | M22x80 | 12 |
| 350 | M20x70 | 12 | M20x80 | 12 | M24x70 | 16 | M24x90 | 16 | M30x80 | 16 | M30x100 | 16 | M24x80 | 12 | M24x90 | 12 |
| 400 | M24x75 | 16 | M24x90 | 16 | M27x80 | 16 | M27x90 | 16 | M33x90 | 16 | M33x100 | 16 | M27x80 | 16 | M27x100 | 16 |
| 500 | M24x90 | 16 | M24x90 | 16 | M30x100 | 16 | M30x100 | 16 | M33x110 | 16 | M33x110 | 16 | M27x110 | 16 | M27x110 | 16 |
| | * bolts M24x60 | 4 | * bolts M24x70 | 4 | * bolts M30x70 | 4 | * bolts M30x80 | 4 | * bolts M33x80 | 4 | * bolts M33x90 | 4 | * bolts M27x80 | 4 | * bolts M27x90 | 4 |
| 600 | M27x100 | 16 | M27x110 | 16 | M33x110 | 16 | M33x120 | 16 | M36x120 | 16 | M36x130 | 16 | M33x120 | 16 | M33x130 | 16 |
| | * bolts M27x70 | 4 | * bolts M27x80 | 4 | * bolts M33x80 | 4 | * bolts M33x90 | 4 | * bolts M36x90 | 4 | * bolts M36x100 | 4 | * bolts M33x90 | 4 | * bolts M33x100 | 4 |

* Valves DN500 and DN600 (both LUG and WAFER execution) have 4 threaded blind holes each side, therefore screws marked with * are to be used.

Installation

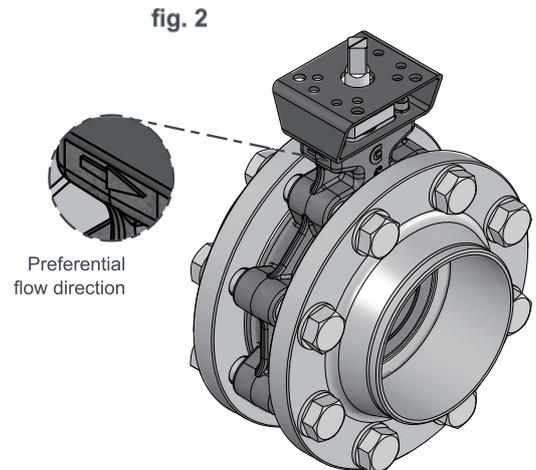
Valve/pipe assembly

1. Leave a space between flanges to allow easy installation of the valve (see fig. 1). Insert two gaskets between flange and valve (not supplied).
2. HD butterfly valves are bi-directional and can be installed with the flow in both directions. There is however a preferential direction (see fig.2), which minimize turbulences when fluid is under pressure.
3. HD Butterfly valves can be installed with the shaft axis in any direction. It is however preferable to keep it vertical .
4. Center valve body between flanges, then tighten the bolts.
ATTENTION: Non correct centering of the valve may damage valve disc.
5. After start-up make sure that there are no leakings and that the valve is properly operating



Remarks:

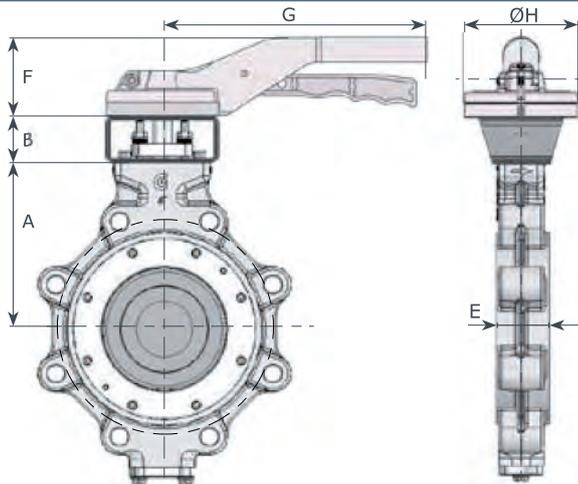
- Always remove the valve before any flange welding to avoid possible damages due to heat
- On top of upper shaft there is a notch parallel to disc indicating its position. (for valves DN>200 refer to the key).
- When actuator or gear box are assembled on the valve, please consider that there is a mechanical stop allowing only anti-clockwise rotation.
- Valve is closed when disc is against the stop.



Valve/pipe disassembly

1. Make sure that there is no fluid under pressure upstream or downstream the valve. Disconnect any electronic as well as pneumatic device.
2. Make sure that valve disc is closed.
3. Loose bolts and widen piping flanges. While keeping the valve, remove bolts and disassemble the valve.

Handlever

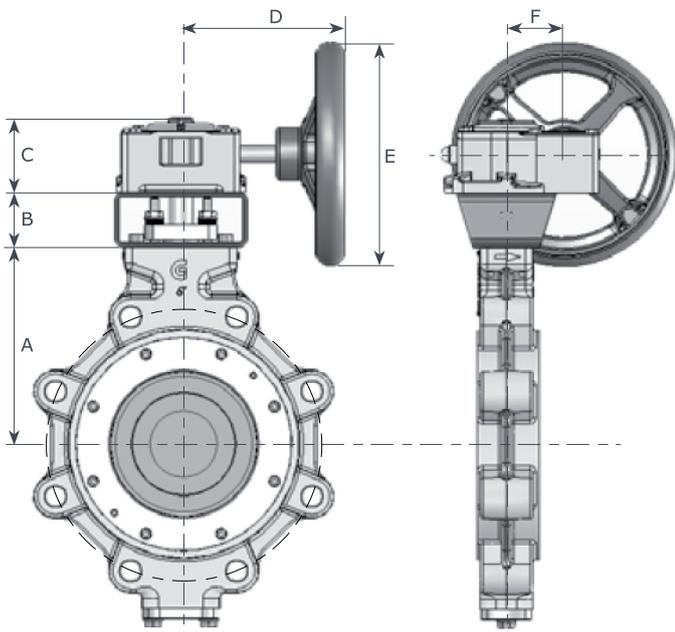


| DN | " | A | B | E | F | G | ØH | aluminium Weight (Kg) wafer | lug | St. steel Weight (Kg) wafer | lug |
|-----|-------|-----|----|----|----|-----|-----|-----------------------------------|------|-----------------------------------|------|
| 40 | 1 1/2 | 113 | 50 | 39 | 67 | 220 | 93 | 4.6 | 4.6 | 5.7 | 5.7 |
| 50 | 2 | 117 | 50 | 43 | 67 | 220 | 93 | 4.1 | 6.3 | 5.2 | 7.4 |
| 65 | 2 1/2 | 120 | 50 | 46 | 67 | 220 | 93 | 4.6 | 7.6 | 5.7 | 8.7 |
| 80 | 3 | 129 | 50 | 46 | 67 | 220 | 93 | 5.4 | 8.2 | 6.5 | 9.3 |
| 100 | 4 | 160 | 50 | 52 | 67 | 275 | 93 | 8.7 | 10.4 | 10.0 | 11.7 |
| 125 | 5 | 170 | 50 | 56 | 76 | 340 | 125 | 11.1 | 15.8 | - | - |
| 150 | 6 | 179 | 50 | 56 | 76 | 340 | 125 | 14.5 | 18.6 | - | - |

COMPONENTS

| | | DN 40-150 | DN 40-100 |
|---|------------------|-----------------|-----------------|
| 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 |

Gearboxes - coupling and dimensions



RTFE seated valve / fluid: H2O / T: 20°C

| DN | " | A | B | C | D | E | F | type | Weight (Kg) wafer | lug |
|-----|-------|-----|-----|-----|-----|-----|-----|-------------|----------------------|------|
| 40 | 1 1/2 | 113 | 50 | 64 | 170 | 200 | 44 | GH 10 | 6.3 | 6.3 |
| 50 | 2 | 117 | 50 | 64 | 170 | 200 | 44 | GH 10 | 5.8 | 8 |
| 65 | 2 1/2 | 120 | 50 | 64 | 170 | 200 | 44 | GH 10 | 6.3 | 9.3 |
| 80 | 3 | 129 | 50 | 64 | 170 | 200 | 44 | GH 10 | 7.1 | 9.9 |
| 100 | 4 | 160 | 50 | 64 | 170 | 200 | 44 | GH 10 | 10.3 | 12 |
| 125 | 5 | 170 | 50 | 66 | 179 | 200 | 52 | GH 20 | 13.7 | 18.4 |
| 150 | 6 | 179 | 50 | 66 | 179 | 200 | 52 | GH 20 | 17.1 | 21.2 |
| 200 | 8 | 218 | 60 | 73 | 214 | 300 | 62 | GH 21 | 27 | 37 |
| 250 | 10 | 257 | 80 | 89 | 265 | 350 | 79 | GH 30 | 47 | 58 |
| 300 | 12 | 300 | 80 | 99 | 300 | 400 | 89 | GH 55 | 62 | 74 |
| 350 | 14 | 328 | 100 | 92 | 275 | 500 | 101 | GH 66 | 97 | 124 |
| 400 | 16 | 387 | 100 | 115 | 350 | 500 | 112 | GH 88 | 127 | 160 |
| 500 | 20 | 451 | 100 | 126 | 430 | 600 | 129 | GH195 BR3.5 | 235 | 285 |
| 600 | 24 | 515 | 150 | 153 | 430 | 600 | 157 | GH300 BR5 | 330 | 400 |

INCONEL seated valve / fluid: H2O / T: 20°C

| DN | " | A | B | C | D | E | F | type | Weight (Kg) wafer | lug |
|-----|-------|-----|-----|-----|-----|-----|-----|-------------|----------------------|------|
| 40 | 1 1/2 | 113 | 50 | 64 | 170 | 200 | 44 | GH 10 | 6.3 | 6.3 |
| 50 | 2 | 117 | 50 | 64 | 170 | 200 | 44 | GH 10 | 5.8 | 8 |
| 65 | 2 1/2 | 120 | 50 | 64 | 170 | 200 | 44 | GH 10 | 6.3 | 9.3 |
| 80 | 3 | 129 | 50 | 64 | 170 | 200 | 44 | GH 10 | 7.1 | 9.9 |
| 100 | 4 | 160 | 50 | 64 | 170 | 200 | 44 | GH 10 | 10.3 | 12 |
| 125 | 5 | 170 | 50 | 66 | 179 | 200 | 52 | GH 20 | 13.7 | 18.4 |
| 150 | 6 | 179 | 50 | 66 | 179 | 200 | 52 | GH 20 | 17.1 | 21.2 |
| 200 | 8 | 218 | 60 | 73 | 214 | 300 | 62 | GH 21 | 27 | 37 |
| 250 | 10 | 257 | 80 | 89 | 265 | 350 | 79 | GH 30 | 47 | 58 |
| 300 | 12 | 300 | 80 | 99 | 300 | 400 | 89 | GH 55 | 62 | 74 |
| 350 | 14 | 328 | 100 | 92 | 275 | 500 | 101 | GH 66 | 97 | 124 |
| 400 | 16 | 387 | 100 | 115 | 350 | 500 | 112 | GH 88 | 127 | 160 |
| 500 | 20 | 451 | 100 | 126 | 430 | 600 | 129 | GH195 BR3.5 | 235 | 285 |
| 600 | 24 | 515 | 150 | 153 | 430 | 600 | 157 | GH300 BR6 | 340 | 410 |

GH series

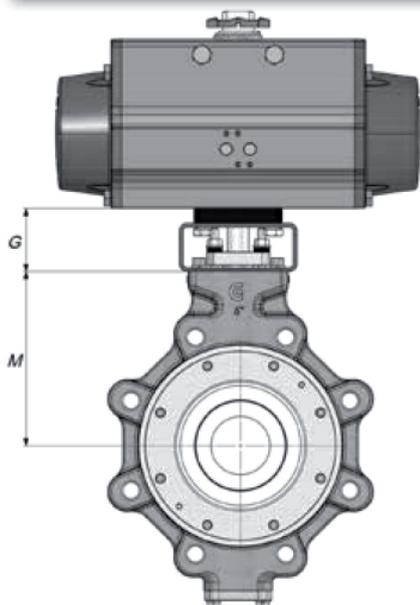
body: ductile iron GGG40
 worm gears: steel
 sector gear: ductile iron
 shaft: steel
 handwheel: steel
 protection: IP67
 T: -20 / +80 °C

*low/high
 temperature
 execution
 on request*

Pneumatic actuator

Rack & Pinion Actuators

Max air pressure: 8 bar
5,5 bar (AT series)
Temperature: -20°C / +85°C
-20°C / +80°C (AT series)
Torque range: 8/5059 Nm
13,2/9173 Nm a 5,5 Bar (AT series)
Double travel stop open/close: ± 5°
-5°/+15 close (AT series)
+5°/-15 open (AT series)



NOTE

G quote can change depending on valve/actuator coupling.

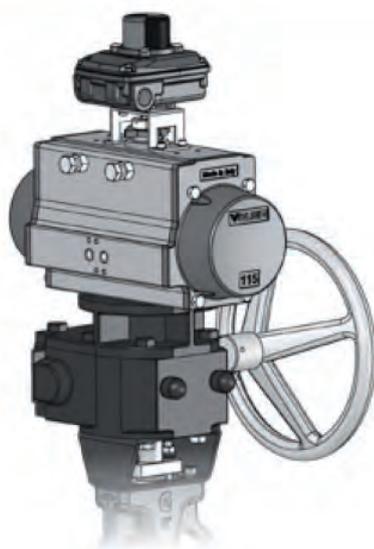
Fluid: H2O - T: 20° C - Air pressure: 5,5 Bar - Seat: RTFE

| DN | M | PN 10 | | | | PN 16 | | | | PN 20 / PN 25 | | | |
|-----|-----|---------|-----|------------|--------|---------|-----|------------|--------|---------------|-----|------------|--------|
| | | DA mod. | G | SR mod. | G | DA mod. | G | SR mod. | G | DA mod. | G | SR mod. | G |
| 40 | 113 | VA 63 | 70 | VA 85 | SR 65 | VA 75 | 65 | VA 100 | SR 65 | VA 75 | 65 | VA 115 | SR 65 |
| 50 | 117 | VA 63 | 70 | VA 85 | SR 65 | VA 75 | 65 | VA 100 | SR 65 | VA 75 | 65 | VA 115 | SR 65 |
| 65 | 120 | VA 75 | 65 | VA100 | SR 65 | VA 75 | 65 | VA 100 | SR 65 | VA 85 | 65 | VA 115 | SR 65 |
| 80 | 129 | VA 75 | 65 | VA100 | SR 65 | VA 75 | 65 | VA 115 | SR 65 | VA 85 | 65 | VA 115 | SR 65 |
| 100 | 160 | VA 85 | 65 | VA115 | SR 65 | VA 85 | 65 | VA 115 | SR 65 | VA 100 | 65 | VA 125 | SR 65 |
| 125 | 170 | VA100 | 65 | VA125 | SR 65 | VA100 | 65 | VA 125 | SR 65 | VA115 | 65 | VA 140 | SR 65 |
| 150 | 179 | VA115 | 65 | VA140 | SR 65 | VA115 | 65 | VA 160 | SR 65 | VA125 | 65 | VA 160 | SR 65 |
| 200 | 218 | VA115 | 60 | VA160 | SR 60 | VA125 | 60 | VA 180 | SR 60 | VA160 | 60 | VA 200 | SR 60 |
| 250 | 257 | VA140 | 80 | VA200 | SR 80 | VA160 | 80 | VA 230 | SR 80 | VA180 | 80 | VA 230 | SR 80 |
| 300 | 300 | VA180 | 80 | VA230 | SR 80 | VA180 | 80 | VA 270 | SR 80 | VA 200 | 80 | VA 270 | SR 80 |
| 350 | 328 | VA200 | 100 | VA270 | SR 100 | VA230 | 100 | VA 330 | SR 100 | VA 230 | 100 | VA 330 | SR 100 |
| 400 | 387 | VA200 | 100 | VA270 | SR 100 | VA230 | 100 | VA 330 | SR 100 | VA 270 | 100 | on request | |
| 500 | 451 | VA270 | 100 | AT1001 | SR 100 | VA330 | 100 | AT1001 | SR 100 | VA 330 | 100 | on request | |
| 600 | 515 | AT 801 | 150 | on request | | AT1001 | 150 | on request | | AT1001 | 150 | on request | |

Fluid: H2O - T: 20° C - Air pressure: 5,5 Bar - Seat: INCONEL

| DN | M | PN 10 | | | | PN 16 | | | | PN 20 / PN 25 | | | |
|-----|-----|---------|-----|------------|--------|---------|-----|------------|--------|---------------|-----|------------|--------|
| | | DA mod. | G | SR mod. | G | DA mod. | G | SR mod. | G | DA mod. | G | SR mod. | G |
| 40 | 113 | VA 75 | 65 | VA 100 | SR 65 | VA 75 | 65 | VA 115SR | 65 | VA 85 | 65 | VA 115 | SR 65 |
| 50 | 117 | VA 75 | 65 | VA 100 | SR 65 | VA 75 | 65 | VA 115SR | 65 | VA 85 | 65 | VA 115 | SR 65 |
| 65 | 120 | VA 75 | 65 | VA 115 | SR 65 | VA 85 | 65 | VA115SR | 65 | VA 100 | 65 | VA 125 | SR 65 |
| 80 | 129 | VA 85 | 65 | VA 115 | SR 65 | VA 85 | 65 | VA 125SR | 65 | VA 100 | 65 | VA 140 | SR 65 |
| 100 | 160 | VA 85 | 65 | VA 115 | SR 65 | VA 100 | 65 | VA 125SR | 65 | VA 100 | 65 | VA 140 | SR 65 |
| 125 | 170 | VA115 | 65 | VA 140 | SR 65 | VA 115 | 65 | VA 160SR | 65 | VA 115 | 65 | VA 160 | SR 65 |
| 150 | 179 | VA115 | 65 | VA 160 | SR 65 | VA 125 | 65 | VA 180SR | 65 | VA 140 | 65 | VA 200 | SR 65 |
| 200 | 218 | VA125 | 60 | VA 180 | SR 60 | VA 140 | 60 | VA 200SR | 60 | VA 180 | 60 | VA 230 | SR 60 |
| 250 | 257 | VA160 | 80 | VA 230 | SR 80 | VA 180 | 80 | VA 270SR | 180 | VA 200 | 80 | VA 270 | SR 80 |
| 300 | 300 | VA 200 | 80 | VA 270 | SR 180 | VA 200 | 80 | VA 330SR | 180 | VA 230 | 80 | VA 330 | SR 80 |
| 350 | 328 | VA 200 | 100 | VA 330 | SR 100 | VA 230 | 100 | VA 330SR | 100 | VA 270 | 100 | AT1001 | SR 200 |
| 400 | 387 | VA 270 | 100 | AT 801 | SR 100 | VA 270 | 100 | AT1001 | SR 100 | VA 300 | 100 | AT1001 | SR 100 |
| 500 | 451 | VA 330 | 100 | AT1001 | SR 100 | VA 330 | 100 | on request | | AT1001 | 100 | on request | |
| 600 | 515 | AT1001 | 150 | on request | | AT1001 | 150 | on request | | on request | | on request | |

Dec clutchable manual gearboxes



ILGD Series

body: ductile iron GGG40 shaft: steel
worm gears: steel handwheel: steel
sector gear: ductile iron T: -20/+120°C protection: IP65
IP67 on req.

| Ø valve | DA actuator double action | SR actuator spring return | emergency gearbox type |
|------------|---------------------------|---------------------------|------------------------|
| DN 40-150 | VA 63-100 | VA 85-100 | ILGD200 |
| | VA 115-140 | VA 115-160 | ILGD600 |
| | | VA 180-200 | ILGD900 |
| DN 200-300 | VA 115-140 | | ILGD600 |
| | VA 160-200 | VA 160-200 | ILGD900 |
| | VA 230 | VA 230 | ILGD1500 |
| | | VA 270 | ILGD2400 |
| DN 350 | VA 200-230 | | ILGD1500 |
| | VA 270 | VA 270-330 | ILGD2400 |
| DN 400 | VA 200-230 | | ILGD1500 |
| | VA 270 | | ILGD2400 |
| | VA 330 | VA 330 | ILGD5000 |
| DN 500 | VA 270 | | ILGD2400 |
| | VA 330 | TBD | ILGD5000 |
| DN 600 | VA 330-AT1001 | TBD | ILGD5000 |

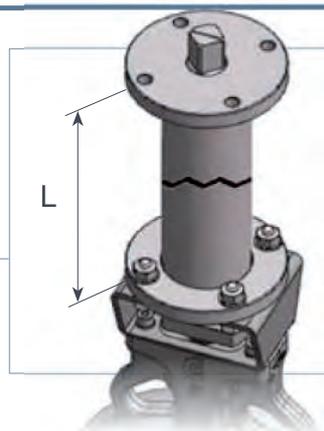
Waterproof valve shaft extension

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).

NOTE

Our technical department is available to solve special applications.

"L" measure should be indicated when ordering.



Hydraulic actuator

- Technical features:
 - » ductile iron cast body
 - » steel rack and pinion
 - » NBR seats
- fluid type:
 - » hydraulic oil type : HPL
DIN51524-2 / ISO 6743-4.
Viscosity 15/200 cst
- working pressure: 10 - 120 bar
- working temperature: -20°C / +80°C

| Fluid: H2O - T: 20° C - Seat: RTFE | | | | | | | | | | | | |
|------------------------------------|---------------------|--------|-------|--------|---------------|--------|----------------------|--------|-------|--------|---------------|--------|
| DN | Oil pressure: 60Bar | | | | | | Oil pressure: 120Bar | | | | | |
| | PN 10 | | PN 16 | | PN 20 / PN 25 | | PN 10 | | PN 16 | | PN 20 / PN 25 | |
| | DA | SR | DA | SR | DA | SR | DA | SR | DA | SR | DA | SR |
| 40 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 50 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 65 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 80 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 100 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H50SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 125 | H28DA | H50SRA | H40DA | H50SRA | H40DA | H50SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 150 | H40DA | H50SRA | H40DA | H63SRA | H50DA | H63SRA | H28DA | H40SRB | H28DA | H50SRB | H40DA | H50SRB |
| 200 | H50DA | H63SRA | H50DA | H63SRA | H63DA | H80SRA | H40DA | H50SRB | H40DA | H50SRB | H50DA | H63SRB |
| 250 | H50DA | H80SRA | H63DA | H80SRA | H63DA | - | H50DA | H63SRB | H50DA | H63SRB | H50DA | H80SRB |
| 300 | H63DA | - | H63DA | - | H80DA | - | H50DA | H80SRB | H50DA | H80SRB | H63DA | H80SRB |
| 350 | H80DA | - | H80DA | - | - | - | H63DA | H80SRB | H63DA | - | H80DA | - |
| 400 | H80DA | - | - | - | - | - | H80DA | H80SRB | H80DA | - | H80DA | - |
| 500 | - | - | - | - | - | - | H80DA | - | H80DA | - | - | - |
| 600 | - | - | - | - | - | - | - | - | - | - | - | - |



| Fluid: H2O - T: 20° C - Seat: INCONEL | | | | | | | | | | | | |
|---------------------------------------|---------------------|--------|-------|--------|---------------|--------|----------------------|--------|-------|--------|---------------|--------|
| DN | Oil pressure: 60Bar | | | | | | Oil pressure: 120Bar | | | | | |
| | PN 10 | | PN 16 | | PN 20 / PN 25 | | PN 10 | | PN 16 | | PN 20 / PN 25 | |
| | DA | SR | DA | SR | DA | SR | DA | SR | DA | SR | DA | SR |
| 40 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 50 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 65 | H28DA | H40SRA | H28DA | H40SRA | H28DA | H50SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 80 | H28DA | H40SRA | H28DA | H40SRA | H40DA | H50SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 100 | H28DA | H40SRA | H28DA | H50SRA | H40DA | H50SRA | H28DA | H40SRB | H28DA | H40SRB | H28DA | H40SRB |
| 125 | H40DA | H50SRA | H40DA | H63SRA | H40DA | H63SRA | H28DA | H40SRB | H28DA | H50SRB | H28DA | H50SRB |
| 150 | H50DA | H63SRA | H50DA | H63SRA | H50DA | H80SRA | H40DA | H50SRB | H40DA | H50SRB | H40DA | H63SRB |
| 200 | H50DA | H80SRA | H50DA | H80SRA | H63DA | - | H40DA | H50SRB | H50DA | H63SRB | H50DA | H80SRB |
| 250 | H63DA | - | H63DA | - | H80DA | - | H50DA | H63SRB | H50DA | H80SRB | H63DA | H80SRB |
| 300 | H80DA | - | H80DA | - | - | - | H63DA | H80SRB | H63DA | - | H63DA | - |
| 350 | H80DA | - | - | - | - | - | H63DA | - | H63DA | - | H80DA | - |
| 400 | - | - | - | - | - | - | H80DA | - | H80DA | - | - | - |
| 500 | - | - | - | - | - | - | - | - | - | - | - | - |
| 600 | - | - | - | - | - | - | - | - | - | - | - | - |

Butterfly Valves

PTFE Seat



| | |
|----------------------------------|-----|
| TT series | 216 |
| technical data | 216 |
| components DN 40-300 | 217 |
| Stainless steel disc | 217 |
| components DN 50-300 | 218 |
| Stainless steel + PTFE disc | 218 |
| components DN 350-600 | 219 |
| Stainless steel disc | 219 |
| Stainless steel + PTFE disc | 220 |
| dimensions | 221 |
| torque values | 222 |
| Flanges | 223 |
| Bolts and rods dimensions | 224 |
| Installation instruction | 225 |
| Tests | 225 |
| Handlever | 226 |
| Gearbox | 227 |
| Actuators Coupling | 228 |
| Pneumatic actuators | 228 |
| de clutchable gearboxes | 228 |

BVTT - Wafer
DN040-600 . 1" 1/2 -24"

BLTT - Lug
DN050-600 . 2"-24"

Max working pressure

| type | DN | Pmax | disc | vacuum | Flanges |
|-----------|-----------|-------|-----------|--------|-----------------|
| Wafer | DN040 | 16bar | inox | Y | PN 10-16 • A150 |
| Wafer Lug | DN050÷200 | 16bar | inox | Y | PN 10-16 • A150 |
| Wafer Lug | DN050÷200 | 16bar | inox+PTFE | N | PN 10-16 • A150 |
| Wafer Lug | DN250÷300 | 10bar | inox | Y | PN 10-16 • A150 |
| Wafer Lug | DN250÷300 | 10bar | inox+PTFE | N | PN 10-16 • A150 |
| Wafer Lug | DN350÷400 | 10bar | inox | Y | PN 10-16 • A150 |
| Wafer Lug | DN350÷400 | 10bar | inox+PTFE | N | PN 10-16 • A150 |
| Wafer Lug | DN500÷600 | 6bar | inox | Y | PN 10-16 • A150 |
| Wafer Lug | DN500÷600 | 6bar | inox+PTFE | N | PN 10-16 • A150 |

Design:

EN 593 ~ EN 736 ~ EN 12516 ~ EN 1092
ISO 5211 ~ DIN 3337 ~ API 609
PED 2014/68/EU - Mod. H

Face to face:

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

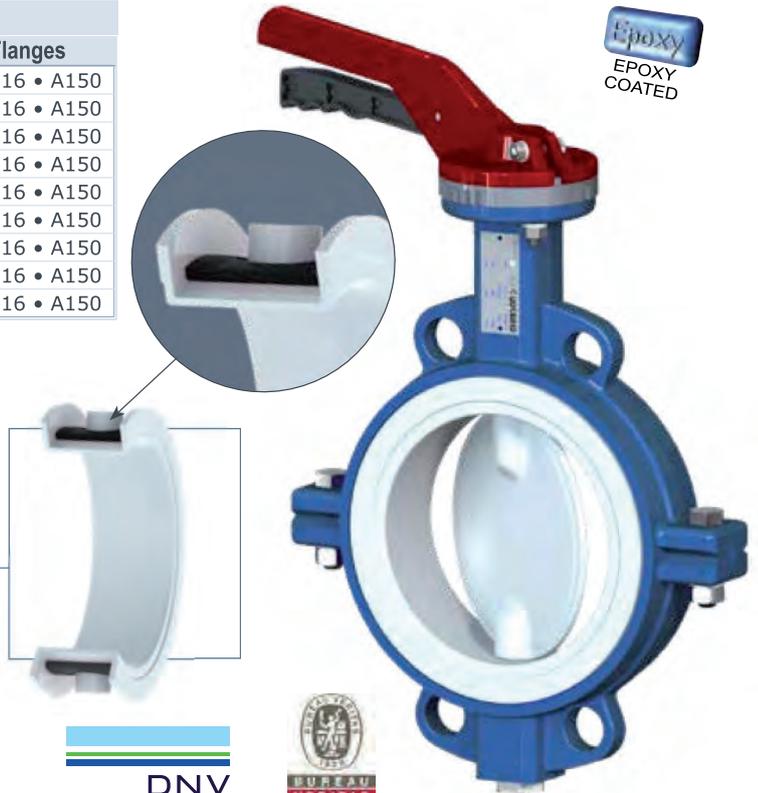
Testing:

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

Tag:

EN 19 ~ MSS SP-25

The thickness of the PTFE body seat varies from 2,5 to 3 mm depending on the position



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



II 2GD Ex h X X (see ATEX accompanying instructions)



| BODY | | | | |
|------------------------------|----------------------------|------------------|--------|--------|
| material | references | standard coating | lug | wafer |
| Ductile iron (wafer, lug) | EN-GJS 400-15 (GS400) | Epoxy RAL 5009 | 50-600 | 40-600 |
| Carbon steel (wafer only) | EN 1.0619 (ASTM A216-WCB) | Epoxy RAL 9005 | - | 50-600 |
| Stainless steel (wafer only) | EN 1.4408 (ASTM A351 CF8M) | - | - | 50-600 |

| DISC | | | | |
|-----------------|-----------------------------|------------------|--------------------|--------|
| material | references | standard coating | coating on request | DN |
| Stainless steel | EN 1.4408 (ASTM A351 CF8M) | - | HALAR® | 40-600 |
| Stainless steel | A747 CB7Cu-1 + PTFE | PTFE | - | 50-600 |
| Hastelloy® | EN 2.4602 (ASTM A494 CX2MW) | - | - | 40-600 |
| Super Duplex | EN 1.4469 (A890 Gr. 5A) | - | - | 40-600 |

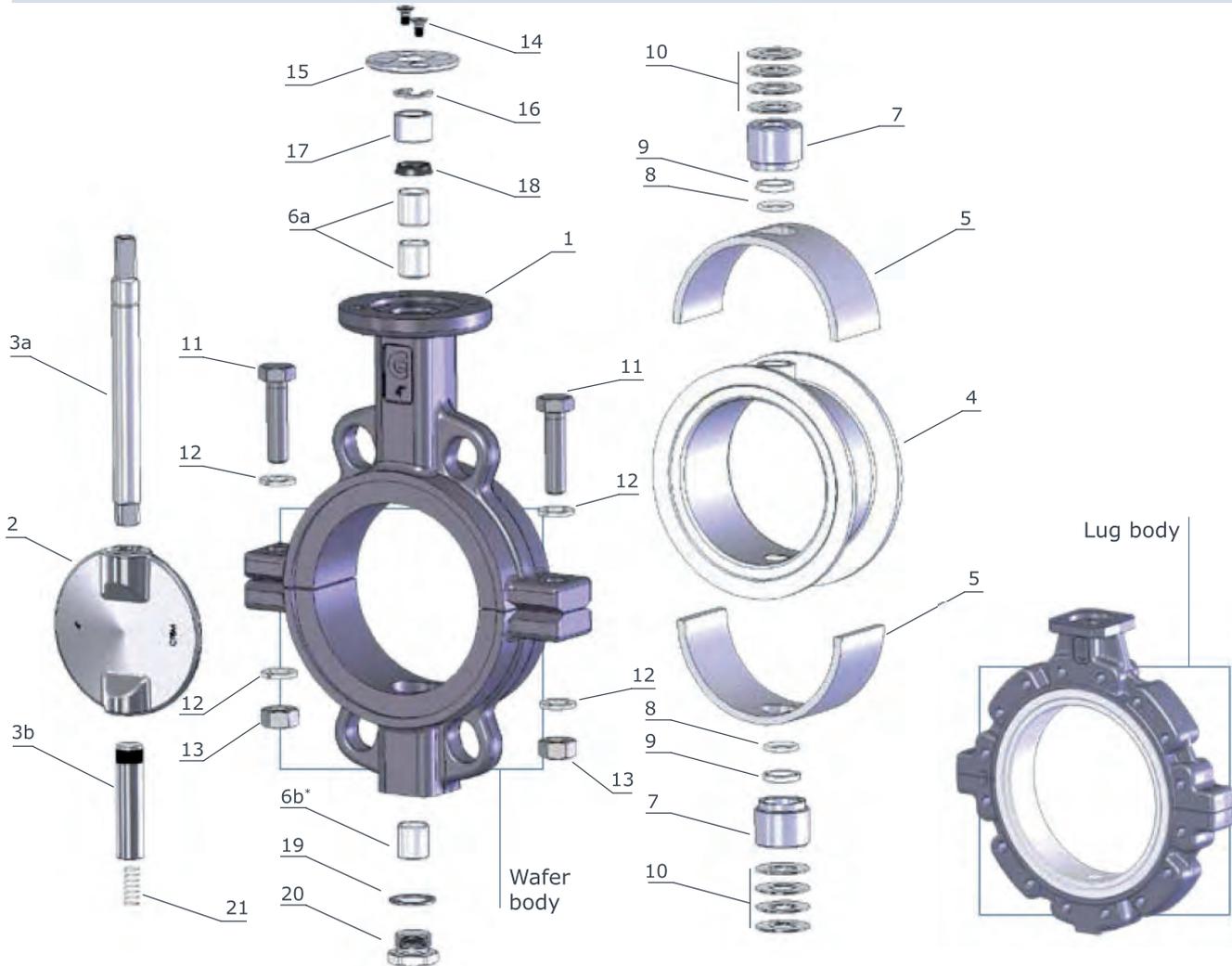
| BODY SEAT | | | | |
|-----------|------------------------|------------|----------------|------------------------|
| ref. | designation | trade name | working temp. | applications |
| PTFE | polytetrafluorethylene | TEFLON® | -55°C / +200°C | acids, foods, solvents |

On request can be supplied other materials as:
Coating on request:

LCB, Hastelloy, Uranus, Alloy, SuperDuplex, Special steels.
Halar®, Chenisil®, PFA

BVTT DN040-300 . 1" 1/2 - 12"
BLTT DN050-300 . 2" - 12"
PN 10-16 • ANSI 150

Stainless steel EN 1.4408~CF8M (A316) disc



| item | q.ty | part | material |
|------|------|------------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> • EN-GJS400-15 (GS400) • EN 1.069~ A216-WCB (wafer only) • A351-CF8M (wafer only) |
| 2 | 1 | disc | <ul style="list-style-type: none"> • A351 - CF8M (AISI 316) • HALAR® (on request) |
| 3a | 1 | upper shaft | • EN 1.4401~ AISI 316 |
| 3b | 1 | lower shaft | • EN 1.4401~ AISI 316 |
| ◇4 | 1 | body seat | • PTFE |
| ◇5 | 1 | elastic support | • silicon |
| 6a | 2 | bush upper shaft | • steel + PTFE |
| 6b* | 1* | bush lower shaft | • steel + PTFE |
| 7 | 2 | housing | • EN 1.4401~ AISI 316 |
| ◇8 | 2 | O. Ring | • FEP + FKM (VITON®) |
| ◇9 | 2 | C. Ring | • PTFE |
| 10 | 2 | springs set | • steel |

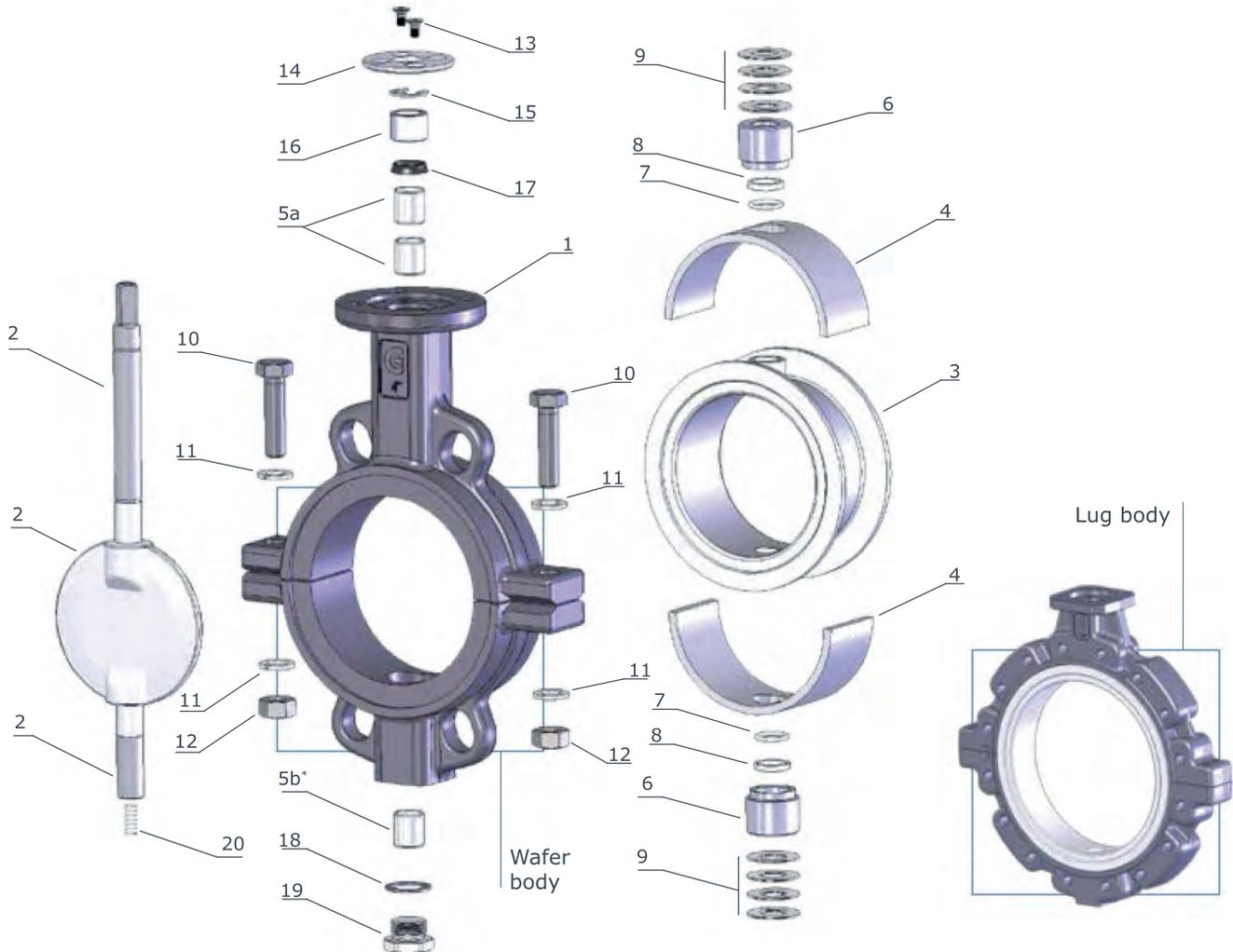
* only DN200/300

◇ parts included in spare kit

| item | q.ty | part | material |
|------|------|---------------|---|
| 11 | 2 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |
| 12 | 4 | washer | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |
| 13 | 2 | screw nut | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A2~304 (body CF8M) |
| 14 | 2 | screw | <ul style="list-style-type: none"> • 10.9 zinc plated steel • A4~A316 (body CF8M) |
| 15 | 1 | upper flange | <ul style="list-style-type: none"> • IXEF (DN 50/150) • aluminium (DN 200/300) |
| 16 | 1 | stop ring | • steel |
| ◇17 | 1 | upper bush | • PTFE |
| ◇18 | 1 | O. Ring | • FKM (VITON®) |
| 19 | 1 | plug packing | <ul style="list-style-type: none"> • aluminium • PTFE (body CF8M) |
| 20 | 1 | threaded plug | <ul style="list-style-type: none"> • zinc plated steel • 1.4401~A316 (body CF8M) |
| 21 | 1 | spring | <ul style="list-style-type: none"> • 1.4401~A316 (antistatic device) |

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

disc A747 CB7Cu-1 +PTFE



| item | q.ty | part | material |
|------|------|------------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> • EN-GJS400-15 (GS400) • EN 1.069~ A216-WCB (wafer only) • A351-CF8M (wafer only) |
| ◇2 | 1 | disc - shafts | • A747 CB7Cu-1 + PTFE |
| ◇3 | 1 | body seat | • PTFE |
| ◇4 | 1 | elastic support | • silicon |
| 5a | 1 | bush upper shaft | • steel + PTFE |
| 5b * | 1 | bush lower shaft | • steel + PTFE |
| 6 | 2 | housing | • EN 1.4401~A316 |
| ◇7 | 1* | O. Ring | • FEP + FKM (VITON®) |
| ◇8 | 2 | C. Ring | • PTFE |
| 9 | 2 | springs set | • steel |
| 10 | 2 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |

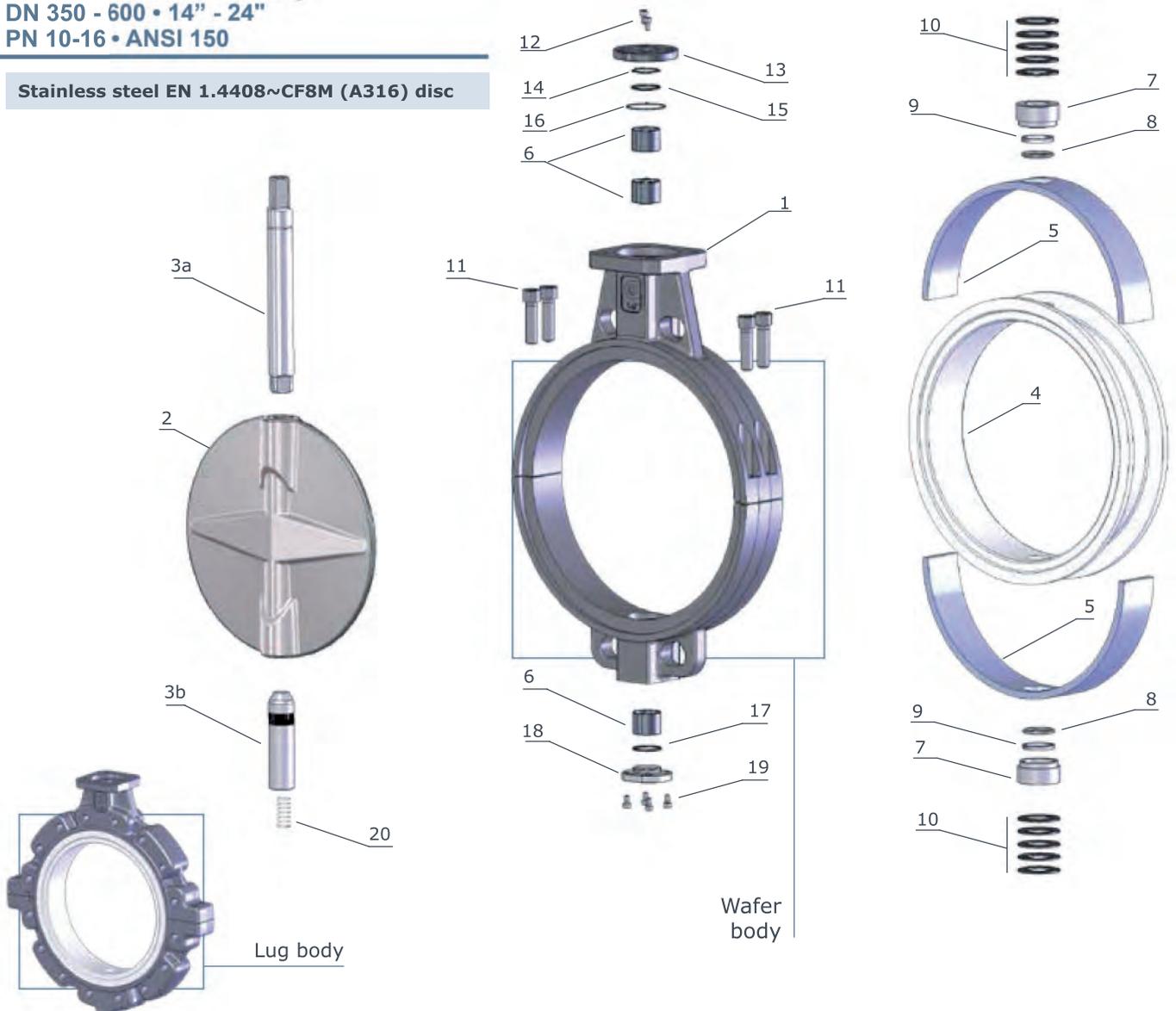
| item | q.ty | part | material |
|------|------|---------------|--|
| 11 | 2 | washer | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |
| 12 | 2 | screw nut | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A2~304 (body CF8M) |
| 13 | 4 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A2~316 (body CF8M) |
| 14 | 2 | upper flange | <ul style="list-style-type: none"> • IXEF (DN 50/150) • aluminium (DN 200/300) |
| 15 | 2 | stop ring | • steel |
| ◇16 | 1 | upper bush | • PTFE |
| ◇17 | 1 | O. Ring | • FKM (VITON®) |
| 18 | 1 | plug packing | <ul style="list-style-type: none"> • aluminium • PTFE (body CF8M) |
| 19 | 1 | threaded plug | <ul style="list-style-type: none"> • zinc plated steel • 1.4401~A316 (body CF8M) |
| 20 | 1 | spring | • 1.4401~A316 (antistatic device) |

*only DN200/300

◇ parts included in spare kit

BVTT - Wafer **BLTT - Lug**
 DN 350 - 600 • 14" - 24"
 PN 10-16 • ANSI 150

Stainless steel EN 1.4408~CF8M (A316) disc



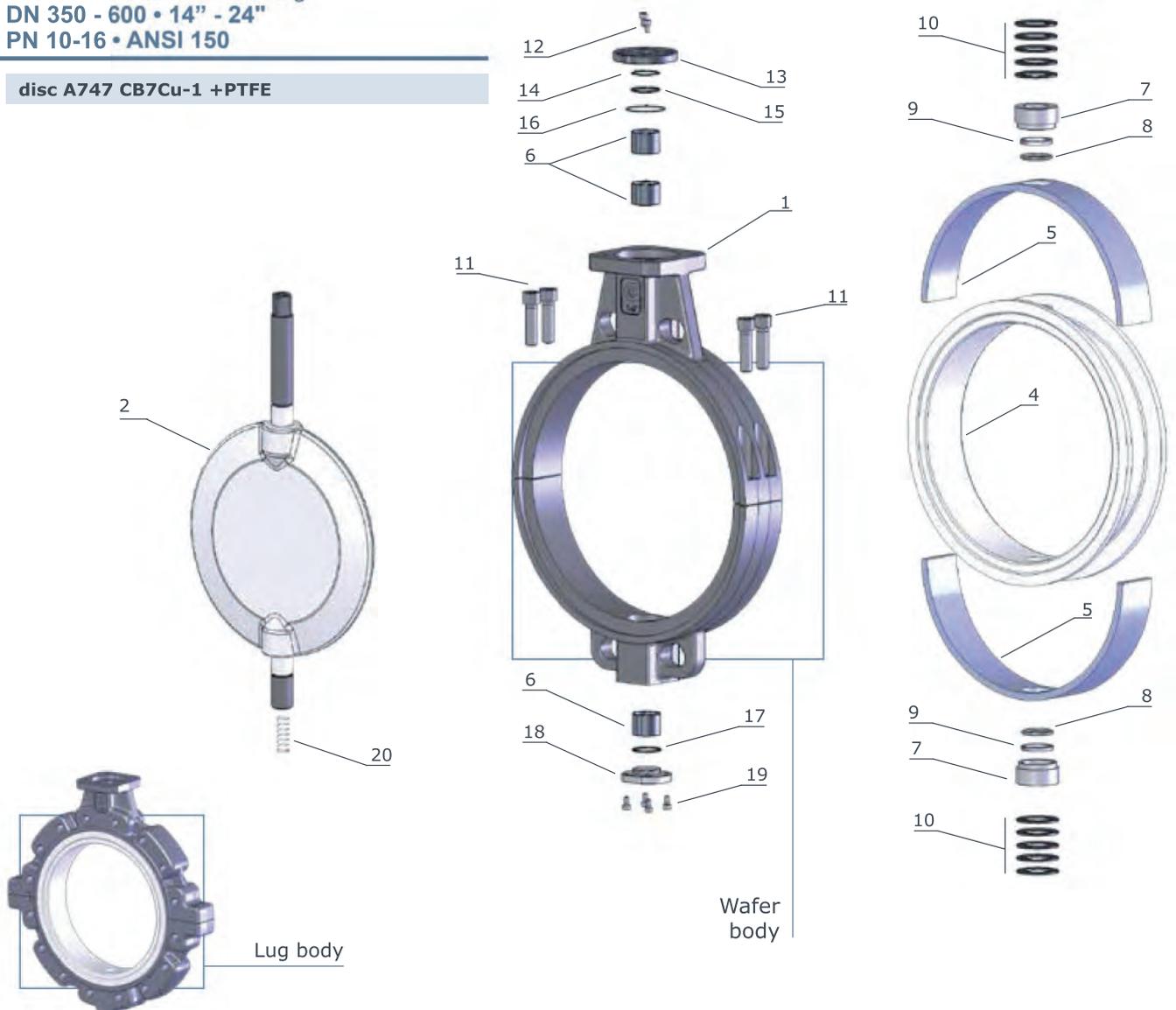
| item | q.ty | part | material |
|------|------|-----------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> EN-GJS400-15 (GS400) EN 1.069~ A216-WCB (wafer only) EN 1.4408~CF8M (A316) wafer only |
| 2 | 1 | disc | <ul style="list-style-type: none"> EN 1.4408~CF8M (A316) HALAR® (on request) |
| 3a | 1 | upper shafts | EN 1.4401~AISI 316 |
| 3b | 1 | lower shafts | EN 1.4401~AISI 316 |
| ◇4 | 1 | body seat | PTFE |
| ◇5 | 1 | elastic support | silicon |
| 6 | 3 | bush shaft | A105 + PTFE |
| 7 | 2 | housing | EN 1.4401~ AISI 316 |
| ◇8 | 2 | O. Ring | FEP + FKM (VITON®) |
| ◇9 | 2 | C. Ring | PTFE |
| 10 | 2 | springs set | steel |
| 11 | 4 | screw | <ul style="list-style-type: none"> 8.8 zinc plated steel A4~A316 (body CF8M) |

| item | q.ty | part | material |
|------|------|--------------|---|
| 12 | 2 | screw | <ul style="list-style-type: none"> 8.8 zinc plated steel A4~A316 (body CF8M) |
| 13 | 1 | upper flange | <ul style="list-style-type: none"> zinc plated steell 1.4401~A316 (body CF8M) |
| ◇14 | 1 | O.Ring | FKM (VITON®) |
| 15 | 1 | stop ring | steel |
| ◇16 | 1 | O.Ring | FKM (VITON®) |
| ◇17 | 1 | O.Ring | FKM (VITON®) |
| 18 | 1 | lower flange | <ul style="list-style-type: none"> zinc plated steel 1.4401~A316 (body CF8M) |
| 19 | 4 | screw | <ul style="list-style-type: none"> 8.8 zinc plated steel A4~A316 (body CF8M) |
| 20 | 1 | spring | 1.4401~A316 (antistatic device) |

◇ parts included in spare kit

BVTT - Wafer BLTT - Lug
DN 350 - 600 • 14" - 24"
PN 10-16 • ANSI 150

disc A747 CB7Cu-1 +PTFE

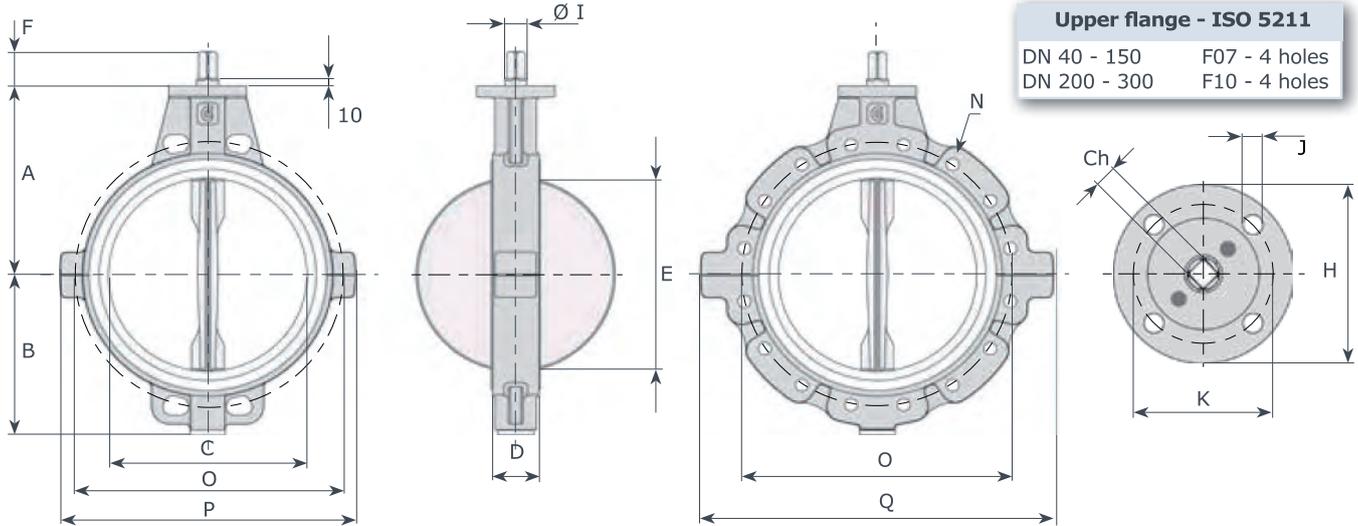


| item | q.ty | part | material |
|------|------|-----------------|---|
| 1 | 1 | body | <ul style="list-style-type: none"> • EN-GJS400-15 (GS400) • EN 1.069~ A216-WCB (wafer only) • EN 1.4408~CF8M (A316) wafer only |
| 2 | 1 | disc | • A747 CB7Cu-1 + PTFE |
| ◇4 | 1 | body seat | • PTFE |
| ◇5 | 1 | elastic support | • silicon |
| 6 | 3 | bush shaft | • A105 + PTFE |
| 7 | 2 | housing | • EN 1.4401~ AISI 316 |
| ◇8 | 2 | O. Ring | • FEP + FKM (VITON®) |
| ◇9 | 2 | C. Ring | • PTFE |
| 10 | 2 | springs set | • steel |
| 11 | 4 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |

| item | q.ty | part | material |
|------|------|---------------|--|
| 12 | 2 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |
| 13 | 1 | upper flange | <ul style="list-style-type: none"> • zinc plated steel • 1.4401~A316 (body CF8M) |
| ◇14 | 1 | O.Ring | • FKM (VITON®) |
| 15 | 1 | stop ring | • steel |
| ◇16 | 1 | O.Ring | • FKM (VITON®) |
| ◇17 | 1 | O.Ring | • FKM (VITON®) |
| 18 | 1 | lower flange= | <ul style="list-style-type: none"> • zinc plated steel • 1.4401~A316 (body CF8M) |
| 19 | 4 | screw | <ul style="list-style-type: none"> • 8.8 zinc plated steel • A4~A316 (body CF8M) |
| 20 | 1 | spring | <ul style="list-style-type: none"> • 1.4401~A316 (antistatic device) |

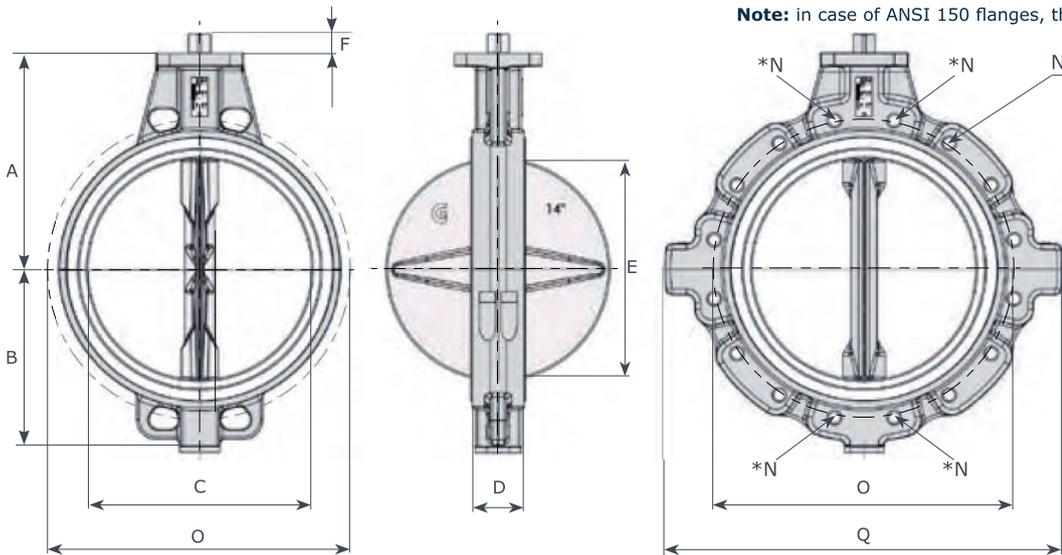
◇ parts included in spare kit

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 |
| 40 | 1 1/2 | 130 | 75 | 49 | 33 | 36 | 34 | 14 | 11 | 90 | 70 | 9 | - | - | M16 | 4 | 110 | M16 | 4 | 110 | M14 | 4 | 98.4 | 3 | - |
| 50 | 2 | 138 | 81 | 55 | 43 | 35 | 34 | 14 | 11 | 90 | 70 | 9 | 165 | 165 | M16 | 4 | 125 | M16 | 4 | 125 | M16 | 4 | 120.7 | 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 | 298.5 | 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 | 362.0 | 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 |

Note: in case of ANSI 150 flanges, threading can be ANSI B1.1 UNC2B



***Note:** WAFER bodies DN 600 - 700 - 800 have 4 holes N threaded as relevant LUG version

| Upper flange ISO 5211 | |
|-----------------------|-----------------|
| DN350-400 | F12-4 fori |
| DN500 | F14/16 - 4 fori |
| DN600 | F16-4 fori |

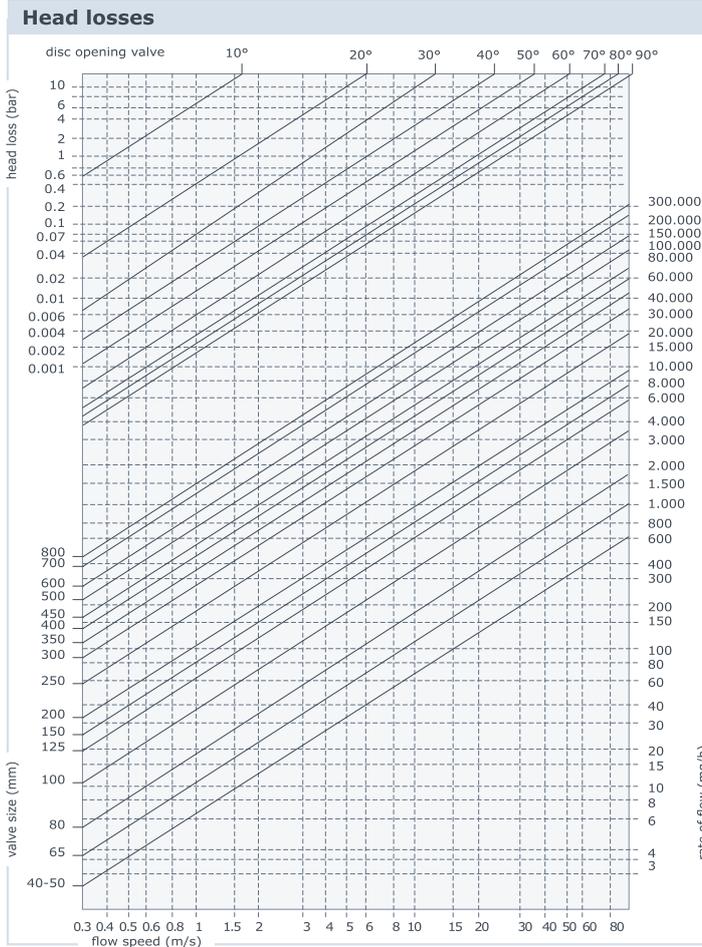
| DN | " | A | B | C | D | E | F | Ø I | Ch | H | K | J | Q | PN10 | | | PN16 | | | ANSI150 | | | kg. | |
|-----|----|-----|-----|-----|-----|-----|----|-----|----|-----|---------|-------|-----|------|----|-----|------|----|-----|---------|----|-------|-------|-----|
| | | | | | | | | | | | | | | N | n. | O | N | n. | O | N | n. | O | wafer | lug |
| 350 | 14 | 330 | 280 | 341 | 78 | 332 | 28 | 35 | 27 | 150 | 125 | 14 | 600 | M20 | 16 | 460 | M24 | 16 | 470 | M24 | 12 | 476.3 | 54 | 73 |
| 400 | 16 | 355 | 305 | 390 | 102 | 376 | 28 | 40 | 27 | 150 | 125 | 14 | 690 | M24 | 16 | 515 | M27 | 16 | 525 | M27 | 16 | 539.8 | 68 | 104 |
| 500 | 20 | 422 | 366 | 485 | 127 | 479 | 37 | 45 | 36 | 210 | 140/165 | 18/22 | 820 | M24 | 20 | 620 | M30 | 20 | 650 | M27 | 20 | 635.0 | 149 | 179 |
| 600 | 24 | 495 | 460 | 595 | 154 | 575 | 47 | 60 | 46 | 210 | 165 | 22 | 940 | M27 | 20 | 725 | M33 | 20 | 770 | M33 | 20 | 749,3 | 215 | 310 |

TT Series - Torque values - Nm - safety factor excluded

| disc: EN 1.4408~CF8M (A316) | | | | | fluid H ₂ O - 20°C | | | | | | | | |
|-----------------------------|----|----|----|----|-------------------------------|-----|-----|-----|-----|-----|------|------|------|
| working pressure BAR | | | | | | | | | | | | | |
| DN | 0 | 6 | 10 | 16 | DN | 0 | 6 | 10 | 16 | DN | 0 | 6 | 10 |
| 40 | 5 | 9 | 13 | 20 | 125 | 65 | 70 | 85 | 100 | 350 | 400 | 450 | 550 |
| 50 | 13 | 16 | 19 | 28 | 150 | 60 | 65 | 94 | 105 | 400 | 700 | 800 | 1000 |
| 65 | 20 | 28 | 35 | 38 | 200 | 128 | 153 | 188 | 250 | 500 | 980 | 1250 | - |
| 80 | 35 | 45 | 52 | 65 | 250 | 190 | 232 | 296 | - | 600 | 1805 | 2470 | - |
| 100 | 40 | 60 | 70 | 75 | 300 | 214 | 296 | 366 | - | - | - | - | - |

| disc: St. Steel + PTFE | | | | | fluid H ₂ O - 20°C | | | | | | | | |
|------------------------|----|----|----|----|-------------------------------|-----|-----|-----|-----|-----|------|------|------|
| working pressure BAR | | | | | | | | | | | | | |
| DN | 0 | 6 | 10 | 16 | DN | 0 | 6 | 10 | 16 | DN | 0 | 6 | 10 |
| 40 | - | - | - | - | 125 | 50 | 60 | 75 | 85 | 350 | 500 | 540 | 590 |
| 50 | 14 | 16 | 18 | 25 | 150 | 60 | 70 | 90 | 100 | 400 | 750 | 850 | 1030 |
| 65 | 16 | 20 | 23 | 28 | 200 | 122 | 145 | 180 | 219 | 500 | 950 | 1240 | - |
| 80 | 26 | 40 | 49 | 55 | 250 | 180 | 220 | 280 | - | 600 | 1950 | 2550 | - |
| 100 | 35 | 51 | 62 | 66 | 300 | 205 | 280 | 350 | - | - | - | - | - |

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

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:

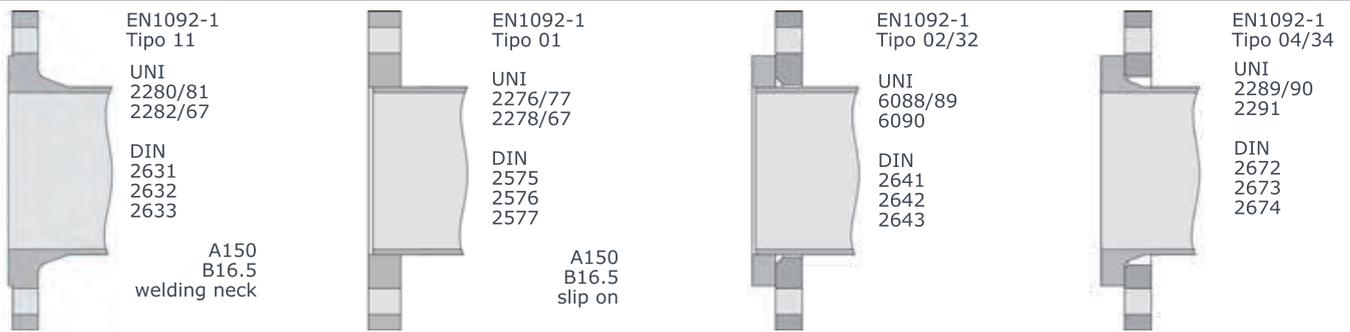
$$Q_e = Q \sqrt{\frac{d}{1000}}$$

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)

| angle | Values KV (CV = 1,16 KV) | | | | | | | | | | | | |
|-------|--------------------------|-----|-----|-----|------|------|------|------|------|-------|-------|-------|-------|
| | 40/50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 |
| 5° | - | - | - | - | - | - | - | - | - | 53 | 68 | 106 | 207 |
| 10° | - | - | - | - | - | - | - | 21 | 49 | 123 | 161 | 246 | 629 |
| 15° | 0,2 | 0,6 | 1,8 | 2,4 | 4,2 | 5,6 | 14 | 80 | 188 | 228 | 299 | 457 | 1168 |
| 20° | 0,9 | 2,5 | 5,2 | 9,5 | 15 | 23 | 110 | 156 | 280 | 315 | 412 | 630 | 2010 |
| 25° | 3 | 6,1 | 12 | 22 | 38 | 61 | 125 | 225 | 354 | 457 | 597 | 914 | 2735 |
| 30° | 6,1 | 11 | 21 | 39 | 69 | 112 | 211 | 310 | 381 | 661 | 863 | 1320 | 5080 |
| 35° | 9,9 | 18 | 33 | 60 | 105 | 166 | 303 | 433 | 521 | 890 | 1162 | 1778 | 6254 |
| 40° | 15 | 27 | 49 | 88 | 148 | 228 | 405 | 591 | 742 | 1184 | 1547 | 2366 | 9700 |
| 45° | 21 | 38 | 68 | 121 | 199 | 303 | 528 | 774 | 987 | 1552 | 2028 | 3102 | 11581 |
| 50° | 29 | 51 | 91 | 159 | 262 | 394 | 679 | 988 | 1252 | 2008 | 2620 | 4010 | 15000 |
| 55° | 39 | 68 | 119 | 207 | 338 | 505 | 863 | 1247 | 1571 | 2548 | 3318 | 5090 | 17765 |
| 60° | 53 | 90 | 156 | 269 | 434 | 641 | 1085 | 1591 | 2059 | 3225 | 4202 | 6442 | 22200 |
| 65° | 72 | 121 | 209 | 357 | 565 | 820 | 1364 | 2065 | 2807 | 3983 | 5196 | 7957 | 26077 |
| 70° | 92 | 161 | 283 | 487 | 768 | 1097 | 1788 | 2715 | 3744 | 5195 | 6775 | 10377 | 34500 |
| 75° | 109 | 209 | 381 | 662 | 1059 | 1507 | 2425 | 3625 | 4935 | 6964 | 9084 | 13912 | 39546 |
| 80° | 115 | 240 | 457 | 815 | 1303 | 1861 | 3043 | 4768 | 6831 | 9301 | 12142 | 18578 | 47560 |
| 85° | 115 | 253 | 502 | 906 | 1457 | 2008 | 3642 | 4890 | 8230 | 10280 | 13408 | 20533 | 52566 |
| 90° | 116 | 257 | 508 | 925 | 1492 | 2168 | 3838 | 5010 | 9233 | 10792 | 14082 | 22024 | 56381 |

Flanges to be used



Compatibility flanges - body Wafer

| DN | EN 1092-1 / EN 1092-2 | | | | | ASME/ANSI | | | BS 10 | | JIS B2220 | | |
|-----|-----------------------|-------|-------|-------|-------|-----------|-----------|-----------|-------|-------|-----------|-----|-----|
| | PN 6 | PN 10 | PN 16 | PN 25 | PN 40 | class 125 | class 150 | class 300 | tab D | tab E | 5K | 10K | 16K |
| 40 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 50 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ✓ | ✗ |
| 65 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ● | ● | ● | ● | ✓ | ● |
| 80 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ✓ |
| 100 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ● | ✗ | ● | ● | ✓ |
| 125 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ✓ |
| 150 | ● | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ● | ● | ● | ✓ | ✗ |
| 200 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ✓ |
| 250 | ● | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ● |
| 300 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ✗ |
| 350 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ✗ | ✗ | ● |
| 400 | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ● | ● |
| 500 | ✗ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✓ | ● |
| 600 | ● | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ● | ✗ |

✓ standard ● on request
✗ not possible

Compatibility flanges - body Lug

| DN | EN 1092-1 / EN 1092-2 | | | | | ASME/ANSI | | | BS 10 | | JIS B2220 | | |
|-----|-----------------------|-------|-------|-------|-------|-----------|-----------|-----------|-------|-------|-----------|-----|-----|
| | PN 6 | PN 10 | PN 16 | PN 25 | PN 40 | class 125 | class 150 | class 300 | tab D | tab E | 5K | 10K | 16K |
| 50 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ✗ |
| 65 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ✓ | ● |
| 80 | ● | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ | ● | ● | ● | ● | ● |
| 100 | ✗ | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ✗ | ● | ● | ● | ● |
| 125 | ● | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ● |
| 150 | ● | ✓ | ✓ | ● | ● | ✓ | ✓ | ✗ | ● | ● | ● | ✓ | ✗ |
| 200 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ● |
| 250 | ● | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✓ | ● | ● | ✗ |
| 300 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ✗ | ✗ |
| 350 | ● | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✗ | ✓ | ✓ | ● | ● | ● |
| 400 | ● | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ● | ● |
| 500 | ● | ✓ | ✓ | ● | ✓ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ● | ● |
| 600 | ● | ✓ | ✓ | ● | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ● | ✗ | ✗ |

✓ standard ● on request
✗ not possible

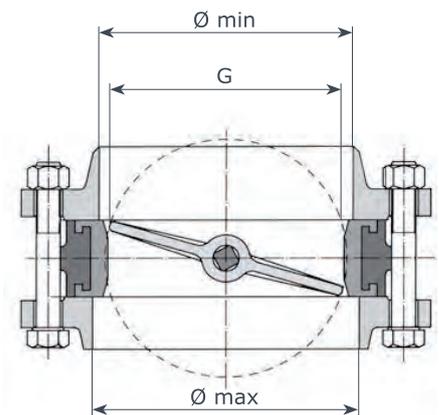
Bolts and rods dimensions

| 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 |
| 500 | M24x210 | M24x240 | 20 | M30x240 | M30x280 | 20 | M27x250 | M27x290 | 20 |
| 600 | M27x250 | M27x290 | 20 | M33x270 | M33x320 | 20 | M33x290 | M33x340 | 20 |
| | M27x75 | - | 8 | M33x85 | - | 8 | M33x95 | - | 8 |

| DN | Lug valves | | | | | |
|-----|------------|----|---------|----|----------|----|
| | PN 10 | | PN 16 | | ANSI 150 | |
| | Bolts | N° | Bolts | N° | Bolts | N° |
| 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 |
| 500 | M24x80 | 40 | M30x80 | 40 | M27x90 | 40 |
| 600 | M27x90 | 40 | M33x100 | 40 | M33x100 | 40 |

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

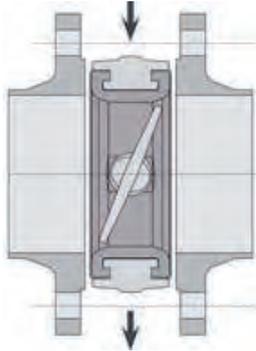
NOTE 2: Number of nMTS should be double when WAFER valves are assembled with threaded rods.



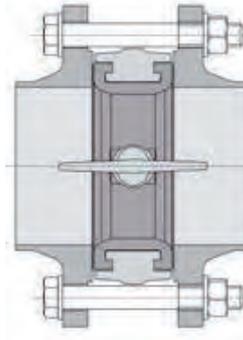
| DN | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | DN | 300 | 350 | 400 | 500 | 600 |
|-------------------|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| G | 36 | 35 | 50 | 67 | 87 | 113 | 140 | 191 | 241 | 5° | 289 | 332 | 376 | 479 | 575 |
| \varnothing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

Installation

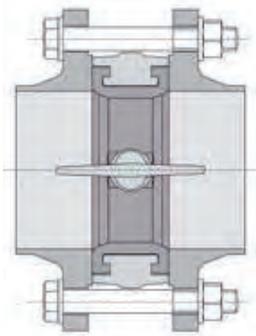
Assembly



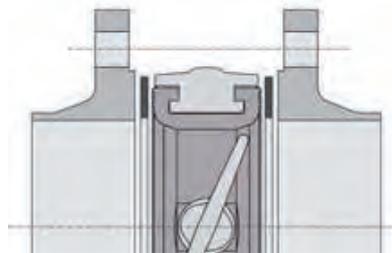
1 - Leave a space between flanges so that valve can be easily inserted and removed.



2 - Open completely the valve before tightening flanges.



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

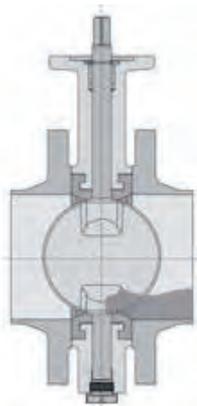


4 - **NOTE:** do not insert other packing between flange and valve.

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.

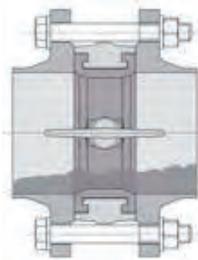
Installation for powders and muddy fluids

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



Wrong

Vertical rotation axis



Right

Horizontal rotation axis

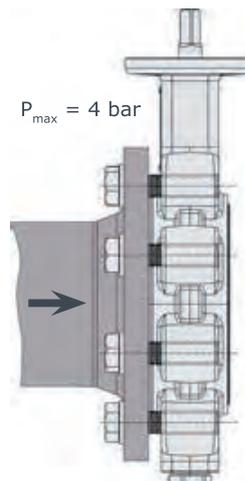
← powders or muddy fluids

← powders or muddy fluids

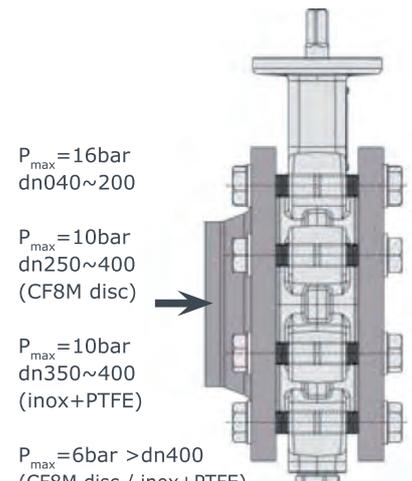
This type of installation is always advisable with valve diameters over DN 400.

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.

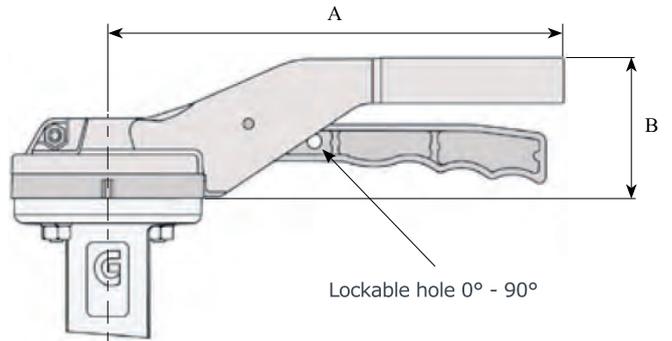


Type A installation with MT end piping



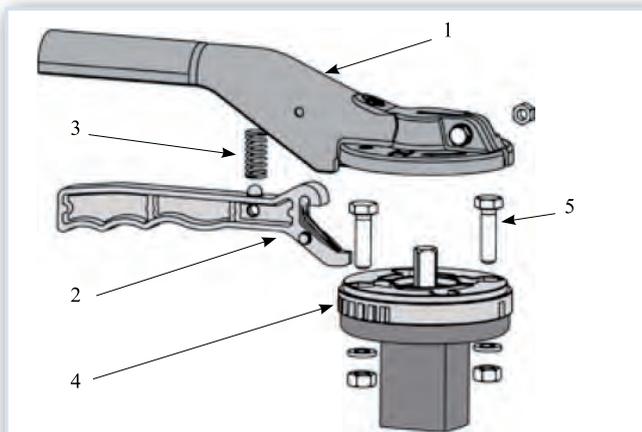
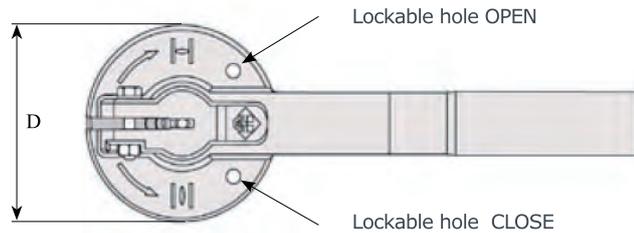
Type B installation with end piping

Handlevers



| DN | A | B | D | Kg | |
|-----------|-----|----|-----|-----------|-----------|
| | | | | aluminium | st. steel |
| 40 - 100 | 220 | 67 | 93 | 0.60 | 1.80 |
| 125 - 150 | 275 | 67 | 93 | 0.65 | 2.05 |
| 200 - 300 | 340 | 76 | 125 | 1 | - |

Note: DN 250 - 300 handlever not recommended



| | | DN40 - 300 | DN40 - 150 |
|---|------------------|-----------------|-----------------|
| 1 | lever | aluminium | EN 1.408~A351 |
| 2 | trigger | aluminium | EN 1.408~A351 |
| 3 | spring | stainless steel | stainless steel |
| 4 | disc positioning | aluminium | EN 1.408~A351 |
| 5 | screws | stainless steel | stainless steel |

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



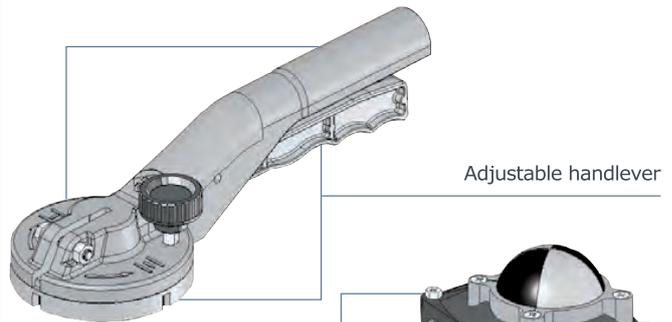
10 positions



Open - Closed

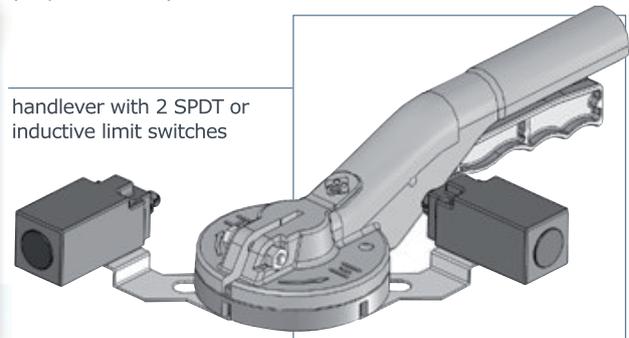
positioning disc with two types of regulation: 10 positions or Open/Close

OPTIONALS



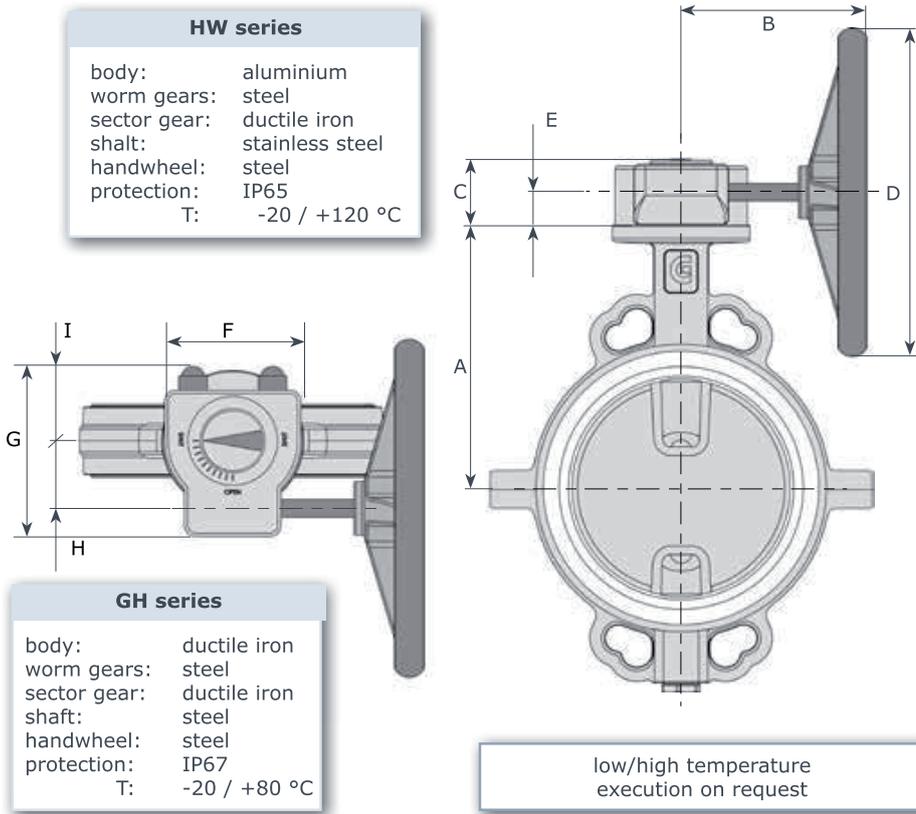
Adjustable handlever

handlever with switch box (only DN 40/300)



handlever with 2 SPDT or inductive limit switches

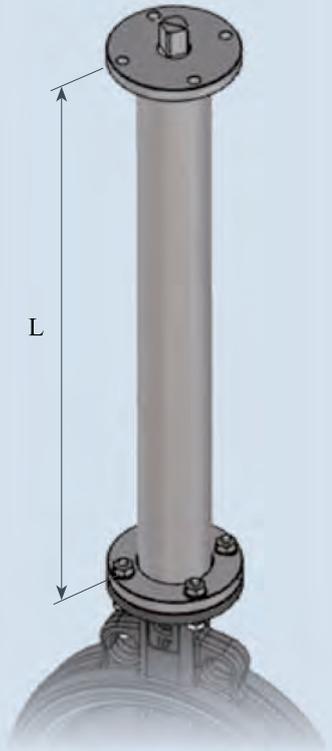
Gearboxes - Aluminium body - HW Series - Cast Iron body - GH Series



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.

Dimensions

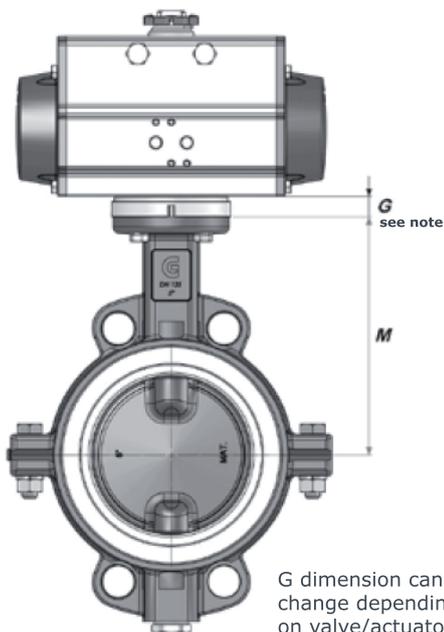
| Mod. HW | B | C | D | E | F | G | H | | Kg |
|---------|-----|------|-----|------|-----|-------|-----|------|------|
| HW 070 | 160 | 48 | 140 | 27 | 80 | 115 | 42 | | 1.6 |
| HW 102 | 215 | 56 | 250 | 33 | 120 | 150 | 60 | | 3 |
| HW 140 | 325 | 95 | 400 | 51 | 185 | 225 | 80 | | 10 |
| Mod. GH | B | C | D | E | F | G | H | I | Kg |
| GH10 | 170 | 64 | 200 | 29 | 90 | 122.5 | 44 | 52.5 | 2.2 |
| GH20 | 179 | 65.5 | 200 | 29 | 125 | 144 | 52 | 65 | 3.6 |
| GH21 | 214 | 73 | 300 | 36 | 125 | 162 | 62 | 74 | 4.8 |
| GH30 | 265 | 89 | 350 | 46 | 150 | 202 | 79 | 89 | 12 |
| GH55 | 300 | 99 | 400 | 49.5 | 210 | 229 | 89 | 105 | 13 |
| GH88 | 350 | 350 | 500 | 55 | 225 | 267 | 112 | 112 | 20.1 |

Coupling valve - actuators

| DN | " | mod. HW | mod. GH | A |
|-----|------------------|---------|---------|-----|
| 40 | 1 ^{1/2} | HW070 | GH10 | 138 |
| 50 | 2 | HW070 | GH10 | 138 |
| 65 | 2 ^{1/2} | HW070 | GH10 | 144 |
| 80 | 3 | HW070 | GH10 | 158 |
| 100 | 4 | HW070 | GH10 | 173 |
| 125 | 5 | HW070 | GH10 | 186 |
| 150 | 6 | HW070 | GH10 | 202 |
| 200 | 8 | HW102 | GH20 | 202 |

| DN | " | mod. HW | mod. GH | A |
|-----|----|---------|---------|-----|
| 250 | 10 | HW102 | GH20 | 270 |
| 300 | 12 | HW102 | GH20 | 300 |
| 350 | 14 | HW140 | GH30 | 330 |
| 400 | 16 | HW140 | GH30 | 355 |
| DN | " | mod. HW | mod. GH | A |
| 500 | 20 | - | GH55 | 422 |
| DN | " | mod. HW | mod. AB | A |
| 600 | 24 | - | GH88 | 495 |

Pneumatic actuators: double action / spring return



G dimension can change depending on valve/actuator coupling.

Valve seat: PTFE - Fluid: H2O - T: 20° C air: 5,5 Bar

| DN | M | PN 6 | | | | | | PN 10 | | | | PN 16 | | | |
|-----|-----|--------|-----|------------|-----|--------|-----|-----------|-----|--------|----|-----------|----|------|---|
| | | DA | | SR | | mod. | G | DA | | SR | | DA | | SR | |
| | | mod. | G | mod. | G | | | mod. | G | mod. | G | mod. | G | mod. | G |
| 40 | 130 | VA 52 | 24 | VA 75 SR | 16 | VA 52 | 24 | VA 75 SR | 16 | VA 63 | 20 | VA 85 SR | 16 | | |
| 50 | 138 | VA 63 | 20 | VA 85 SR | 16 | VA 63 | 20 | VA 85 SR | 16 | VA 63 | 20 | VA 100 SR | 16 | | |
| 65 | 144 | VA 63 | 20 | VA 85 SR | 16 | VA 75 | 20 | VA 100 SR | 16 | VA 75 | 16 | VA 100 SR | 16 | | |
| 80 | 158 | VA 75 | 16 | VA 115 SR | 16 | VA 85 | 16 | VA 115 SR | 16 | VA 85 | 16 | VA 125 SR | 16 | | |
| 100 | 173 | VA 85 | 16 | VA 125 SR | 16 | VA 85 | 16 | VA 125 SR | 16 | VA 85 | 16 | VA 125 SR | 16 | | |
| 125 | 186 | VA 85 | 16 | VA 125 SR | 16 | VA 100 | 16 | VA 125 SR | 16 | VA 100 | 16 | VA 140 SR | 14 | | |
| 150 | 202 | VA 85 | 16 | VA 125 SR | 16 | VA 100 | 16 | VA 140 SR | 14 | VA 100 | 16 | VA 140 SR | 14 | | |
| 200 | 240 | VA 115 | 14 | VA 160 SR | 14 | VA 125 | 14 | VA 180 SR | 14 | VA 125 | 16 | VA 200 SR | 50 | | |
| 250 | 270 | VA 125 | 14 | VA 200 SR | 50 | VA 140 | 14 | VA 200 SR | 50 | - | - | - | - | | |
| 300 | 300 | VA 140 | 14 | VA 200 SR | 50 | VA 160 | 14 | VA 230 SR | 50 | - | - | - | - | | |
| 350 | 330 | VA 160 | 0 | VA 230 SR | 100 | VA 180 | 0 | VA 270 SR | 100 | - | - | - | - | | |
| 400 | 355 | VA 200 | 0 | VA 270 SR | 100 | VA 230 | 100 | VA 330 SR | 100 | - | - | - | - | | |
| 500 | 422 | VA 230 | 0 | VA 330 SR | 0 | - | - | - | - | - | - | - | - | | |
| 600 | 495 | VA 330 | 100 | AT 1001 SR | 0 | - | - | - | - | - | - | - | - | | |

Rack & Pinion Actuators

Max air pressure: 8 bar
5,5 bar (AT series)
Temperature: -20°C / +85°C
-20°C / +80°C (AT series)

Torque range: 8/5059 Nm
13,2/9173 Nm a 5,5Bar (AT series)
Double travel stop open/close: ±5°
-5°/+15 close (AT series)
+5°/-15 open(AT series)

Dec clutchable manual gearboxes

GD Series
body: aluminium
worm gears: steel
sector gear: ductile iron

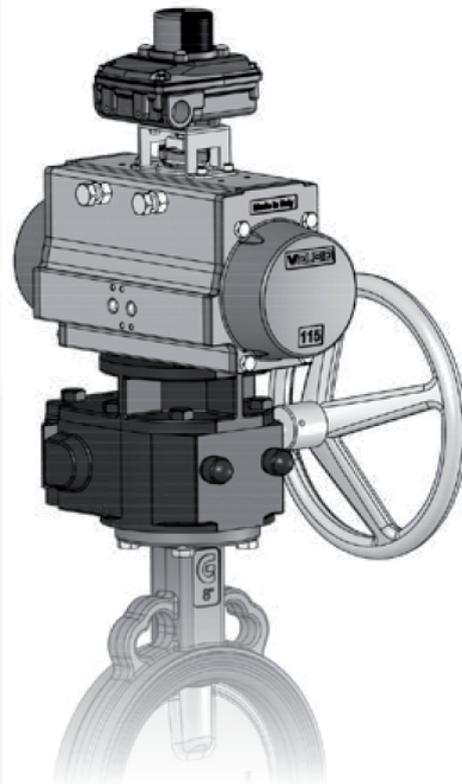
shaft: stainless steel
handwheel: steel
protection: IP65
T: -20 / +120 °C

| ∅ valve | DA actuator double action | SR actuator spring return | emergency gearbox type |
|-----------|---------------------------|---------------------------|------------------------|
| DN 40÷150 | VA 63-100 | VA 75-115 | GD070 |
| | | VA 125 | GD102 |
| DN200 | VA 85-100 | | GD070 |
| DN200-300 | VA 115-160 | VA 115-160 | GD102 |
| | | VA 180-200 | GD140 |
| DN350-500 | VA 140-200 | VA 200 | GD140 |

ILGD Series
body: ductile iron GGG40
worm gears: steel
sector gear: ductile iron

shaft: steel
handwheel: steel
protection: IP65 (IP67 on req.)
T: -20 / +120 °C

| ∅ valve | DA actuator double action | SR actuator spring return | emergency gearbox type |
|-----------|---------------------------|---------------------------|------------------------|
| DN040-150 | VA 63-100 | VA 63-100 | ILGD200 |
| | VA 115-125 | VA 115-160 | ILGD600 |
| | | VA 180-200 | ILGD900 |
| DN200-300 | VA 85-160 | VA 115-160 | ILGD600 |
| | VA 180-200 | VA 180-200 | ILGD900 |
| | VA 230 | VA 230 | ILGD1500 |
| DN350-400 | VA 140-200 | VA 200 | ILGD2400 |
| | VA 230 | VA 230 | ILGD1500 |
| | VA 270 | VA 270 | ILGD2400 |
| DN450 | VA 180-230 | VA 230 | ILGD1500 |
| | VA 270 | VA 270-330 | ILGD2400 |
| DN500 | VA 180-230 | VA 230 | ILGD5000 |
| | VA 270 | VA 270 | ILGD2400 |
| | VA 330 | VA 330 | ILGD5000 |
| DN600 | VA 270 | | ILGD2400 |
| | VA 330 | VA 330 | ILGD5000 |



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