



BUREAU
VERITAS

Bureau Veritas Certification

Certificate

Awarded to

ZETKAMA Sp. z o.o.

ul. 3-Maja 12, 57-410 Ścinawka Średnia

This is a multi-site certificate, additional site details are listed in the appendix to this certificate.

BUREAU VERITAS CERTIFICATION CZ, s.r.o. certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standard detailed below:

Standard

ISO 50001:2018

Scope of supply

Energy Management System Applied to:

**§ DESIGN, PRODUCTION AND SALE OF INDUSTRIAL VALVES, FITTINGS
AND IRON CASTINGS.**

| | |
|---|------------|
| Original Approval Date: | 27-09-2021 |
| Expiry date of previous cycle: | 26-09-2024 |
| Recertification Cycle Start Date: | 27-09-2024 |
| Recertification Cycle End Date: | 26-09-2027 |
| Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: | 26-09-2027 |

To check this certificate validity please call: +420 210 088 215

Further clarifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.

Version **1** Issue Date: **10-08-2024**

Certificate Number: **CZE - 2400206**



MANAGING OFFICE: BUREAU VERITAS CERTIFICATION CZ, s.r.o., Olbrachtova 1, 140 02 Praha 4, Czech Republic

ISSUING OFFICE ADDRESS: BUREAU VERITAS CERTIFICATION CZ, s.r.o., Olbrachtova 1, 140 02 Praha 4, Czech Republic



BUREAU
VERITAS

Bureau Veritas Certification

Certificate

Awarded to

ZETKAMA Sp. z o.o.

ul. 3-Maja 12, 57-410 Ścinawka Średnia

BUREAU VERITAS CERTIFICATION CZ, s.r.o. has issued this appendix to the Certificate Number: CZE - 2400206

Standard

ISO 50001:2018

Scope of supply detailed according to each site

| Site Name/Location | Site Address | Site Scope |
|--------------------|--|---|
| Headquarters | ul. 3-Maja 12, 57-410 Ścinawka Średnia | DESIGN, PRODUCTION AND SALE OF INDUSTRIAL VALVES, FITTINGS AND IRON CASTINGS. |
| Site Sosnowiec | ul. Swobodna 9, 41-200 Sosnowiec | DESIGN, PRODUCTION AND SALE OF INDUSTRIAL VALVES. |



Version **1** Issue Date: **10-08-2024**

MANAGING OFFICE: BUREAU VERITAS CERTIFICATION CZ, s.r.o., Olbrachtova 1, 140 02 Praha 4, Czech Republic

ISSUING OFFICE ADDRESS: BUREAU VERITAS CERTIFICATION CZ, s.r.o., Olbrachtova 1, 140 02 Praha 4, Czech Republic



BUREAU
VERITAS

Bureau Veritas Certification

Certificate

Awarded to

ZETKAMA Sp. z o.o.
ul. 3 Maja 12, 57-410 ŚCINAWKA ŚREDNIA
POLAND
Including sites in appendix

Bureau Veritas Certification certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standard detailed below

STANDARDS

ISO 9001:2015
ISO 14001:2015

SCOPE OF CERTIFICATION

DESIGN, MANUFACTURING AND SUPPLYING OF INDUSTRIAL VALVES, ACCESSORIES AND CASTINGS GRADE CAST IRON.

Certification Cycle Start Date: **30 July 2024**

Subject to the continued satisfactory operation of the organisation's Management System, this certificate is valid until: **29 July 2027**

*To check this certificate validity please call: +48 22 549 04 00
Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.*

Issue Date: 29 July 2024

Certificate Number: **PL016534/P**

Joanna Waberska
Local Technical Manager



AC 081



BUREAU
VERITAS

Bureau Veritas Certification

Certificate

Awarded to

ZETKAMA Sp. z o.o.

Bureau Veritas Certification has issued this appendix to the Certificate awarded to the above named organization

CERTIFICATE NUMBER

PL016534/P

LOCATION OF SITES

Headquarters: ul. 3 Maja 12, 57-410 ŚCINAWKA ŚREDNIA
DESIGN, MANUFACTURING AND SUPPLYING OF INDUSTRIAL VALVES,
ACCESSORIES AND CASTINGS GRADE CAST IRON.

Production plant in Sosnowiec: ul. Swobodna 9, 41-200 SOSNOWIEC
DESIGN, MANUFACTURING AND SUPPLYING
OF INDUSTRIAL VALVES.

Issue Date: 29 July 2024

EU CERTIFICATE OF CONFORMITY

In accordance with the requirements of the Pressure Equipment Directive
2014/68/EU.

This is to certify that the Quality Management System of:

ZETKAMA Sp. z o.o.
ul. 3 Maja 12, 57-410 Ścinawka Średnia
Poland

has been assessed against the requirements of Annex III, Module D of the
above Directive and conforms to the requirements for the products shown
below:

Safety valves

Approval is subject to the continued maintenance of the quality system in
accordance with the requirements of the above Directive and continuing to
comply with the EU Type Examination Certificate(s) as listed on the attached
schedule.

Authorisation is hereby given to use the Notified Body Identification Number
in accordance with the requirements of the specified Directive in relation to
the products as identified above.

| | |
|------------------------|-------------------------------|
| Certificate No.: | 0343/ROT/PED/PRJ11100366888/1 |
| Original Approval: | 01 March 2022 |
| Current Issue: | 25 February 2025 |
| Certificate Expiry: | 28 February 2028 |
| Notified Body No. 0343 | |



Prafulla Vyas on behalf of LRQA Nederland B.V.


CERTIFICATE SCHEDULE

0343/ROT/PED/PRJ11100366888/1

In accordance with the requirements of the Pressure Equipment Directive
2014/68/EU

| Products | Certificate Number | Issuing Notified Body | Expiry Date |
|--|---|-----------------------|-------------|
| Safety Valves 781, 782, 775, 240, 270, 570, 610, 613, 614, 630, 650, 670, 673, 674 | 0343/ROT/PED/PRJ11100349250/1 Schedule Issue 2 dd 01.07.2024 | LRQA Nederland B.V. | 28.02.2032 |
| 600 (without balanced bellow) | 0343/KAT/PED/KAT2300140/1 | LRQA Nederland B.V. | 19.02.2034 |
| 600 (with balanced bellow) | 0343/KAT/PED/KAT2300140/2 | LRQA Nederland B.V. | 19.02.2034 |
| 620 (without balanced bellow) | 0343/KAT/PED/KAT2300140/3 | LRQA Nederland B.V. | 19.02.2034 |
| 620 (with balanced bellow) | 0343/KAT/PED/KAT2300140/4 | LRQA Nederland B.V. | 19.03.2034 |
| Valves' characteristics as per characteristic tables included in each Type Examination Certificates. | | | |

Schedule Issue: 03
Date of Schedule Issue: 25 February 2025
Notified Body No. 0343



 Prafulla Vyas on behalf of LRQA Nederland B.V.

LRQA Nederland B.V. (Reg. no. 24247948) is a private limited company registered in the Netherlands with registered office at George Hintzenweg 77, 3068 AX Rotterdam. A subsidiary of LRQA Group Limited.

LRQA Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



FULL LIFT SAFETY VALVES zARMAK 600

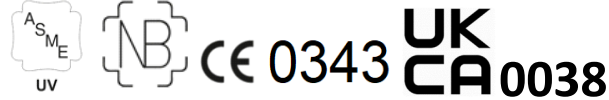
ANSIclass150

Body material F (SA-216 Grade WCB)

-29°C ÷ +427°C (-20°F ÷ +800°F)

Body material I (SA-351 Grade CF8M)

-196°C ÷ +538°C (-320,8°F ÷ +1000°F)



ANSIclass300L

Body material F (SA-216 Grade WCB)

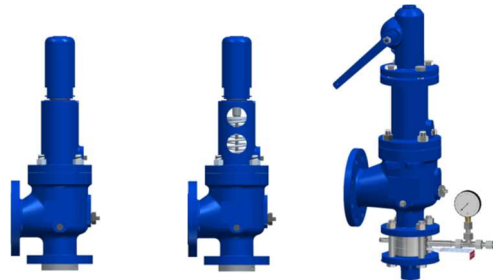
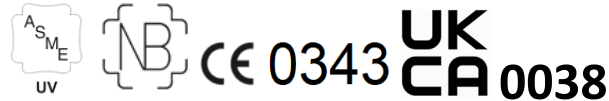
-29°C ÷ +427°C (-20°F ÷ +800°F)

Body material Q (SA-217 Grade WC6)

425°C ÷ +538°C (+800°F ÷ +1000°F)

Body material I (SA-351 Grade CF8M)

-196°C ÷ +538°C (-320,8°F ÷ +1000°F)



ANSIclass300

Body material F (SA-216 Grade WCB)

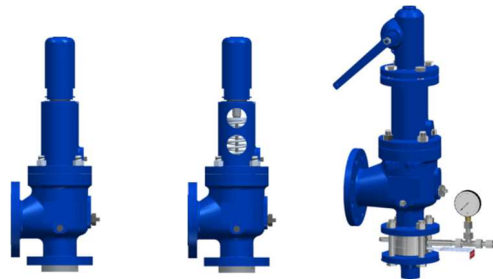
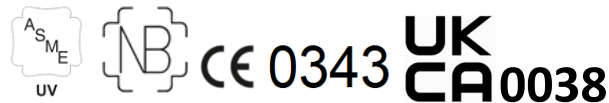
-29°C ÷ +427°C (-20°F ÷ +800°F)

Body material Q (SA-217 Grade WC6)

425°C ÷ +538°C (+800°F ÷ +1000°F)

Body material I (SA-351 Grade CF8M)

-196°C ÷ +538°C (-320,8°F ÷ +1000°F)



ANSIclass600

Body material F (SA-216 Grade WCB)

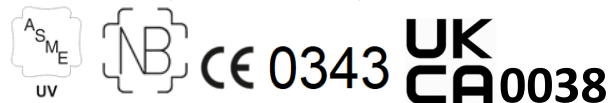
-29°C ÷ +427°C (-20°F ÷ +800°F)

Body material Q (SA-217 Grade WC6)

425°C ÷ +538°C (+800°F ÷ +1000°F)

Body material I (SA-351 Grade CF8M)

-196°C ÷ +538°C (-320,8°F ÷ +1000°F)



Details of the safety valve system with a bursting disc can be found on page 47 and in the dedicated catalog sheet.

ANSI class 150, 300L, 300, 600

600

Full lift spring flanged safety valves



Closed bonnet



Open bonnet

Application

Industries



INDUSTRIAL



SHIPBUILDING
INDUSTRY



PETROCHEMICAL
INDUSTRY



POWER ENGINEERING



PHARMACEUTICAL
INDUSTRY



CHEMICAL INDUSTRY

Media



INDUSTRY WATER



SEWAGE



GLYCOL



CRUDE OIL



HYDROCARBON





INDUSTRIAL OILS



DIATHERMIC OIL

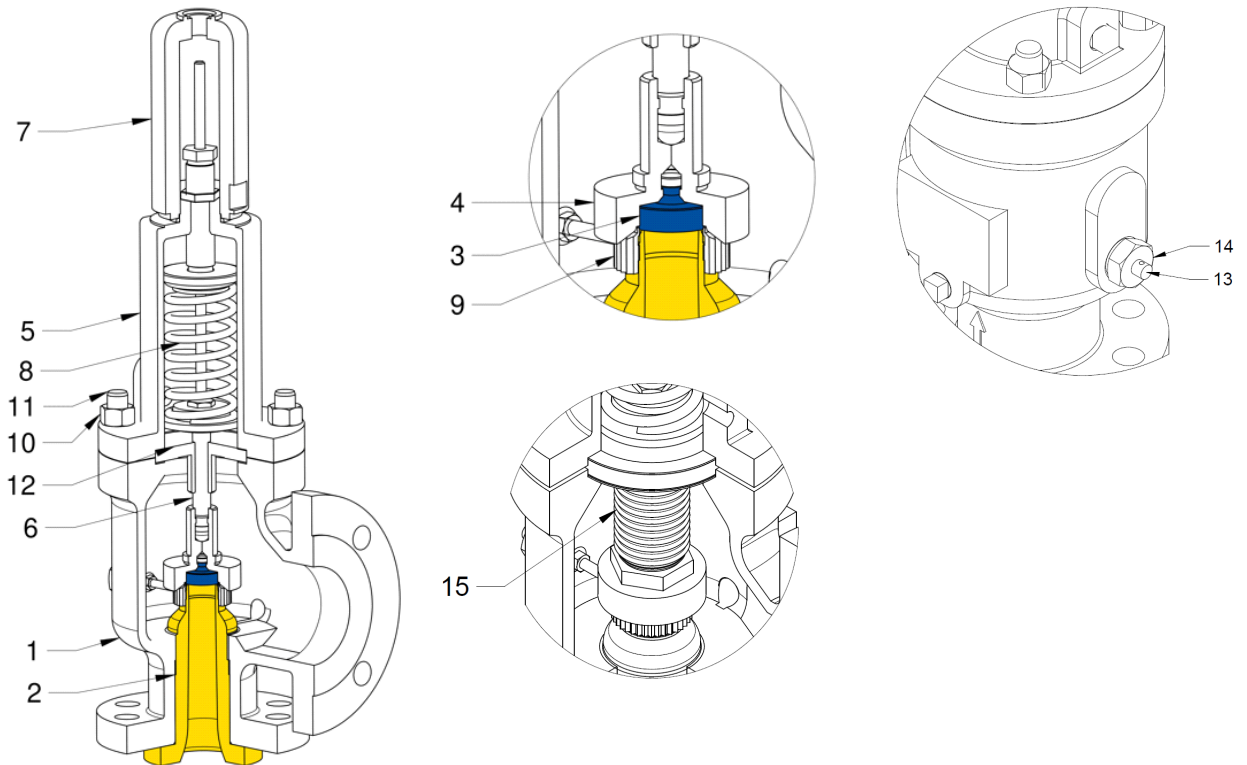
Technical data

| Figure | Types | Approval | Body material | | Class inlet/outlet | DN | Temp. range | Ends | |
|--------|---|----------|---------------|-------------|--------------------|----------|-----------------|---|---|
| | | | | | | | | Inlet | Outlet |
| 600 | According to the list of types on page 43 | -1 | F | SA-216 WCB | 1 150/150 | 1" – 8" | -29°C ÷ +427°C |  |  |
| | | | | | 2 300L/150 | 1½" – 6" | | | |
| | | | | | 3 300/150 | 1" – 8" | | | |
| | | | | | 6 600/150 | 1" – 4" | | | |
| | | | Q | SA-217 WC6 | 2 300L/150 | 6" | +427°C ÷ +538°C | | |
| | | | | | 3 300/150 | 1" – 8" | | | |
| | | | | | 6 600/150 | 1" – 4" | | | |
| | | | I | SA-351 CF8M | 1 150/150 | 1" – 8" | -196°C ÷ +538°C | | |
| | | | | | 2 300L/150 | 1½" – 6" | | | |
| | | | | | 3 300/150 | 1" – 8" | | | |
| | | | | | 6 600/150 | 1" – 4" | | | |

Data given can be changed without notice.

Edition 01/2024

Materials



| | Body material → | | F | Q | I |
|----|-----------------|------------|---|----------------------------|-----------------------------|
| | Detail ↓ | | 600 | | |
| 1 | Body | | SA-216 Grade WCB 1.0619 | SA-217 Grade WC6 1.7357 | SA-351 Grade CF8M 1.4408 |
| 2 | Inlet nozzle | Inlet ≤ 3" | SA-479 Grade 316L stellited X39CrMo17-1 (1.4122) hardened * | | |
| | | Inlet > 3" | SA-351 Grade CF8M stellited 1.4408 | | |
| 3 | Disc | | X39CrMo17-1 / X17CrNi16-2 1.4122 / 1.4057 | | X6CrNiTi18-10 1.4541 |
| 4 | Bell | | X20Cr13 / X17CrNi16-2 1.4021 / 1.4057 | X17CrNi16-2 1.4057 | X6CrNiTi18-10 1.4541 |
| 5 | Bonnet | | SA-216 Grade WCB 1.0619 | SA-217 Grade WC6 1.7357 | SA-351 Grade CF8M 1.4408 |
| 6 | Spindle | | X20Cr13 / X17CrNi16-2 1.4021 / 1.4057 | X17CrNi16-2 1.4057 | X6CrNiTi18-10 1.4541 |
| 7 | Cap | | SA-216 Grade WCB / P250GH 1.0619 / 1.460 | | SA-351 Grade CF8M 1.4408 |
| 8 | Spring | | 51CrV4 / FDSiCr 1.8159 / - | X10CrNi18-10 1.4310 | |
| 9 | Adjusting ring | | GX5CrNiMo19-11-2 / X5CrNi18-10 / X6CrNiTi18-10 / X6CrNiMoTi17-12-2 1.4408 / 1.4301 / 1.4541 / 1.4571 | | |
| 10 | Nut | | SA194 Grade 2H | | SA194 Grade 8M |
| 11 | Stud | | SA193 Grade B7 | | SA193 Grade B8M |
| 12 | Guide | | GX5CrNiMo19-11-2 / X39CrMo17-1 / X17CrNi16-2 1.4408 / 1.4122 / 1.4057 | | GX5CrNiMo19-11-2 1.4408 |
| 13 | Lock pin | | X20Cr13 1.4021 | | X6CrNiTi18-10 1.4541 |
| 14 | Lock screw | | X2CrNiMo17-12-2 / 316L 1.4404 | | |
| 15 | Bellows | | X6CrNiTi18-10 / X6CrNiMoTi17-12-2 1.4541 / 1.4571 | | |

* On request - only for valves without UV marking

Pressure-temperature ratings

Data given can be changed without notice.

Edition 01/2024

| Metric units | class | -29 to 38°C | 50°C | 100°C | 150°C | 200°C | 250°C | 300°C | 350°C | 400°C | 425°C | 450°C | 500°C | 538°C |
|--|-------|--------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| | | barg | | | | | | | | | | | | |
| SA 216 WCB acc. to B16.34 Table 2-1.1 | 150 | 19,6 | 19,2 | 17,7 | 15,8 | 13,8 | 12,1 | 10,2 | 8,4 | 6,5 | 5,5 | | | |
| | 300 | 51,1 | 50,1 | 46,6 | 45,1 | 43,8 | 41,9 | 39,8 | 37,6 | 34,7 | 28,8 | | | |
| | 600 | 102,1 | 100,2 | 93,2 | 90,2 | 87,6 | 83,9 | 79,6 | 75,1 | 69,4 | 57,5 | | | |
| SA 217 WC6 acc. to B16.34 Table 2-1.9 | 300 | 51,7 | 51,7 | 51,5 | 49,7 | 48,0 | 46,3 | 42,9 | 40,3 | 36,5 | 35,2 | 33,7 | 25,7 | 14,9 |
| | 600 | 103,4 | 103,4 | 103,0 | 99,5 | 95,9 | 92,7 | 85,7 | 80,4 | 73,3 | 70,0 | 67,7 | 51,5 | 29,8 |
| SA 351 CF8M acc. to B16.34 Table 2-2.2 | 150 | 19,0 | 18,4 | 16,2 | 14,8 | 13,7 | 12,1 | 10,2 | 8,4 | 6,5 | 5,5 | 4,6 | 2,8 | 1,4 |
| | 300 | 49,6 | 48,1 | 42,2 | 38,5 | 35,7 | 33,4 | 31,6 | 30,3 | 29,4 | 29,1 | 28,8 | 28,2 | 25,2 |
| | 600 | 99,3 | 96,2 | 84,4 | 77,0 | 71,3 | 66,8 | 63,2 | 60,7 | 58,9 | 58,3 | 57,7 | 56,5 | 50,0 |
| US units | class | -20 to 100°F | 200°F | 300°F | 400°F | 500°F | 600°F | 650°F | 700°F | 750°F | 800°F | 900°F | 950°F | 1000°F |
| | | psig | | | | | | | | | | | | |
| SA 216 WCB acc. to B16.34 Table VII-2-1.1 | 150 | 285 | 260 | 230 | 200 | 170 | 140 | 125 | 110 | 95 | 80 | | | |
| | 300 | 740 | 680 | 655 | 635 | 605 | 570 | 550 | 530 | 505 | 410 | | | |
| | 600 | 1480 | 1360 | 1310 | 1265 | 1205 | 1135 | 1100 | 1060 | 1015 | 825 | | | |
| SA 217 WC6 acc. to B16.34 Table VII-2-1.9 | 300 | 750 | 750 | 720 | 695 | 665 | 605 | 590 | 570 | 530 | 510 | 450 | 320 | 215 |
| | 600 | 1500 | 1500 | 1445 | 1385 | 1330 | 1210 | 1175 | 1135 | 1065 | 1015 | 900 | 640 | 430 |
| SA 351 CF8M acc. to B16.34 Table VII-2-2.2 | 150 | 275 | 235 | 215 | 195 | 170 | 140 | 125 | 110 | 95 | 80 | 50 | 35 | 20 |
| | 300 | 720 | 620 | 560 | 515 | 480 | 450 | 440 | 435 | 425 | 420 | 415 | 385 | 365 |
| | 600 | 1440 | 1240 | 1120 | 1025 | 955 | 900 | 885 | 870 | 855 | 845 | 830 | 775 | 725 |

Data given can be changed without notice.

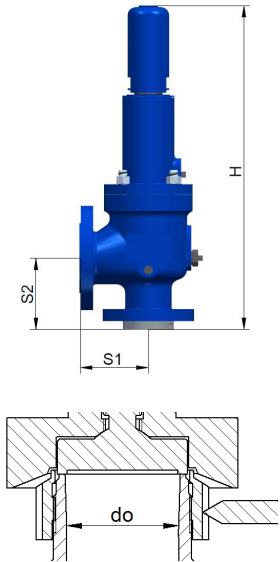
Edition 01/2024

Orifice R

6R8 DN150x200 6R10 DN150x250

Dimensions

| Metric units | | ANSI class (inlet / outlet) | | |
|------------------------|----------------------|-----------------------------|------------|-----------|
| | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| Orifice diameter d_o | [mm] | 121 | | |
| Orifice area A | [mm ²] | 11499 | | |
| S_1 | [mm] | 241 | | 267 |
| S_2 | [mm] | 240 | | 240 |
| H | [mm] | 1236 | | 1287 |
| Weight without bellows | [kg] | 216,9 | 226,8 | 237,5 |
| Weight with bellows | [kg] | 219,4 | 229,3 | 240,0 |
| US units | | ANSI class (inlet / outlet) | | |
| | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| Orifice diameter d_o | [inch] | 4,764 | | |
| Orifice area A | [inch ²] | 17,824 | | |
| S_1 | [inch] | 9 1/2 | | 10 1/2 |
| S_2 | [inch] | 9 7/16 | | 9 7/16 |
| H | [inch] | 48,661 | | 50,669 |
| Weight without bellows | [lbm] | 478,183 | 500,008 | 523,598 |
| Weight with bellows | [lbm] | 483,694 | 505,520 | 529,109 |



Set pressure

| Body material: F (SA-216 WCB) | | | | |
|--------------------------------|--------|-----------|------------|-----------|
| Metric units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [barg] | 0,45 | | |
| P_{min} with bellows | | 1,0 | | |
| P_{max} | | 6,9 | 15,9 | |
| US units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [psig] | 6,53 | | |
| P_{min} with bellows | | 14,5 | | |
| P_{max} | | 100 | 230 | |
| Body material: Q (SA-217 WC6) | | | | |
| Metric units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [barg] | N/A | 0,45 | N/A |
| P_{min} with bellows | | | 1,0 | |
| P_{max} | | | 6,9 | |
| US units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [psig] | N/A | 6,53 | N/A |
| P_{min} with bellows | | | 1,0 | |
| P_{max} | | | 100 | |
| Body material: I (SA-351 CF8M) | | | | |
| Metric units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [barg] | 0,45 | | |
| P_{min} with bellows | | 1,0 | | |
| P_{max} | | 6,9 | 15,9 | |
| US units | | 6R8 | | 6R10 |
| | | 150 / 150 | 300L / 150 | 300 / 150 |
| P_{min} standard | [psig] | 6,53 | | |
| P_{min} with bellows | | 14,5 | | |
| P_{max} | | 100 | 230 | |

Data given can be changed without notice.

Edition 01/2024

Pressure limit

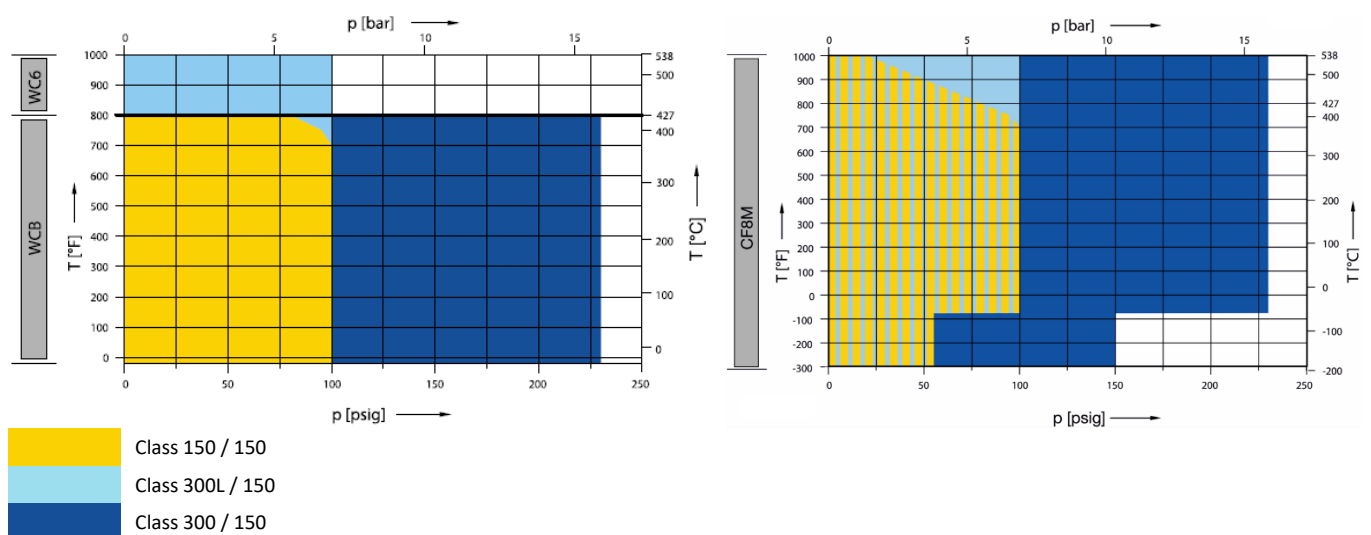
| Metric units | | | 6R8 | | | | | | 6R10 | | |
|--------------|--------------|--------|---------------|----------------|---------------|---------------|----------------|---------------|---------------|----------------|---------------|
| | | | 150 / 150 | | | 300L / 150 | | | 300 / 150 | | |
| | | | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 |
| Outlet | standard | [barg] | 4,1 | | | | | | 6,1 | | |
| | with bellows | | | | | | | | | | |
| US units | | | 6R8 | | | | | | 6R10 | | |
| | | | 150 / 150 | | | 300L / 150 | | | 300 / 150 | | |
| | | | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 | WCB 1.0619 | CF8M 1.4408 | WC6 1.7357 |
| Outlet | standard | [psig] | 60 | | | | | | 100 | | |
| | with bellows | | | | | | | | | | |

Discharge coefficients

| Valves without reduced lift designed for liquids (L), two-phase flow, and flashing conditions | ANSI class | |
|---|----------------------------------|--|
| | 150 / 150, 300L / 150, 300 / 150 | |
| | Dla cieczy (L) | Coefficient for steam and gases (S/G) for two-phase flow and flashing conditions |
| ASME Sec. VIII Div. 1 | 0,718 | - |
| PED / EN ISO 4126-1 | | 0,700 |

| Valves with reduced lift designed for gases (S/G) | ANSI class | | |
|---|---------------------------|------------|-----------|
| | 150 / 150 | 300L / 150 | 300 / 150 |
| | For steam and gases (S/G) | | |
| ASME Sec. VIII Div. 1 | - | | |
| PED / EN ISO 4126-1 | 0,863 | | |

Selection charts



Data given can be changed without notice.

Edition 01/2024

Capacity tables for safety valves ANSI class 150, 300L, 300, 600

Metric units

Capacity for water acc. to EN ISO 4126 based on the set pressure plus 10% overpressure at 20°C

| Orifice | D | E | F | G | H | J | K | L | M | N | P | Q | R | T |
|--|---------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| d _o - orifice diameter [mm] | 12 | 13 | 17 | 22 | 29 | 35 | 41 | 50 | 55,5 | 63,5 | 76 | 100 | 121 | 152 |
| A - orifice area [mm ²] | 113 | 133 | 227 | 380 | 661 | 962 | 1320 | 1963 | 2419 | 3167 | 4536 | 7854 | 11499 | 18146 |
| Set pressure [barg] | Water [kg/h] | | | | | | | | | | | | | |
| 1 | 4330 | 5097 | 8699 | 14562 | 25330 | 36864 | 50583 | 75223 | 92697 | 121361 | 173821 | 300968 | 440646 | 695361 |
| 2 | 6124 | 7208 | 12302 | 20593 | 35822 | 52134 | 71535 | 106381 | 131093 | 171630 | 245820 | 425633 | 623167 | 983389 |
| 3 | 7500 | 8828 | 15067 | 25222 | 43872 | 63851 | 87612 | 130290 | 160556 | 210203 | 301067 | 521292 | 763221 | 1204401 |
| 4 | 8660 | 10193 | 17397 | 29123 | 50660 | 73728 | 101166 | 150446 | 185394 | 242721 | 347642 | 601936 | 881292 | 1390723 |
| 5 | 9683 | 11396 | 19451 | 32561 | 56639 | 82431 | 113107 | 168203 | 207277 | 271371 | 388676 | 672985 | 985314 | 1554875 |
| 6 | 10607 | 12484 | 21307 | 35669 | 62045 | 90298 | 123902 | 184258 | 227060 | 297272 | 425773 | 737218 | 1079358 | 1703280 |
| 7 | 11457 | 13484 | 23015 | 38527 | 67016 | 97533 | 133830 | 199021 | 245253 | 321090 | 459888 | 796287 | 1165839 | 1839753 |
| 8 | 12248 | 14415 | 24604 | 41187 | 71643 | 104268 | 143070 | 212762 | 262187 | 343260 | 491641 | 851266 | 1246335 | 1966779 |
| 9 | 12991 | 15290 | 26096 | 43685 | 75989 | 110593 | 151749 | 225669 | 278091 | 364082 | 521464 | 902904 | 1321938 | |
| 10 | 13693 | 16117 | 27508 | 46048 | 80100 | 116575 | 159957 | 237876 | 293134 | 383776 | 549671 | 951745 | 1393445 | |
| 11 | 14362 | 16904 | 28850 | 48296 | 84009 | 122265 | 167764 | 249486 | 307441 | 402508 | 576500 | 998198 | 1461457 | |
| 12 | 15000 | 17655 | 30133 | 50443 | 87745 | 127701 | 175224 | 260580 | 321112 | 420405 | 602134 | 1042584 | 1526442 | |
| 13 | 15613 | 18376 | 31364 | 52503 | 91328 | 132916 | 182379 | 271220 | 334224 | 437572 | 626721 | 1085156 | 1588771 | |
| 14 | 16202 | 19070 | 32548 | 54485 | 94775 | 137933 | 189264 | 281458 | 346840 | 454090 | 650379 | 1126120 | 1648746 | |
| 15 | 16771 | 19739 | 33690 | 56397 | 98102 | 142774 | 195907 | 291337 | 359014 | 470028 | 673206 | 1165645 | 1706614 | |
| 16 / 15,9 (for orifice R) | 17321 | 20386 | 34795 | 58247 | 101319 | 147457 | 202332 | 300891 | 370788 | 485442 | 695285 | 1203873 | 1757067 | |
| 18 | 18371 | 21623 | 36906 | 61780 | 107465 | 156402 | 214605 | 319144 | 393280 | 514889 | 737461 | 1276900 | | |
| 20 | 19365 | 22793 | 38902 | 65122 | 113278 | 164862 | 226214 | 336407 | 414553 | 542741 | 777352 | 1345970 | | |
| 20,7 | 19701 | 23188 | 39577 | 66252 | 115243 | 167722 | 230138 | 342243 | 421746 | 552157 | 790839 | 1369322 | | |
| 25 | 21651 | 25483 | 43494 | 72809 | 126649 | 184321 | 252914 | 376114 | 463485 | 606803 | 869106 | | | |
| 30 | 23717 | 27915 | 47645 | 79758 | 138737 | 201913 | 277054 | 412013 | 507722 | 664719 | 952058 | | | |
| 35 | 25618 | 30152 | 51462 | 86148 | 149853 | 218091 | 299252 | 445025 | 548403 | 717979 | 1028340 | | | |
| 36,2 | 26053 | 30664 | 52337 | 87613 | 152400 | 221799 | 304339 | 452589 | 557725 | 730183 | 1045820 | | | |
| 40 | 27387 | 32234 | 55016 | 92097 | 160199 | 233150 | 319914 | 475751 | 586267 | 767552 | | | | |
| 45 | 29048 | 34189 | 58353 | 97683 | 169917 | 247293 | 339320 | 504610 | 621830 | 814112 | | | | |
| 50 | 30619 | 36038 | 61509 | 102967 | 179108 | 260669 | 357675 | 531906 | 655466 | 858149 | | | | |
| 51 | 30924 | 36397 | 62121 | 103992 | 180891 | 263263 | 361234 | 537199 | 661989 | 866688 | | | | |
| 55 | 32114 | 37797 | 64511 | 107993 | 187851 | 273392 | 375133 | 557868 | 687459 | | | | | |
| 60 | 33542 | 39478 | 67380 | 112795 | 196203 | 285549 | 391813 | 582674 | 718028 | | | | | |
| 70 | 36229 | 42641 | 72779 | 121832 | 211924 | 308428 | 423207 | 629360 | 775558 | | | | | |
| 75,9 | 37725 | 44402 | 75784 | 126863 | 220674 | 321163 | 440681 | 655346 | 807582 | | | | | |
| 80 | 38730 | 45585 | 77804 | 130244 | 226556 | 329723 | 452427 | 672814 | | | | | | |
| 90 | 41080 | 48351 | 82523 | 138145 | 240299 | 349724 | 479871 | 713627 | | | | | | |
| 102,1 | 43754 | 51498 | 87896 | 147138 | 255943 | 372493 | 511112 | 760086 | | | | | | |

$$Q_m = A \cdot 1,61 \cdot K_{dr} \cdot K_v \cdot \sqrt{\frac{P_0 - P_b}{v}}$$

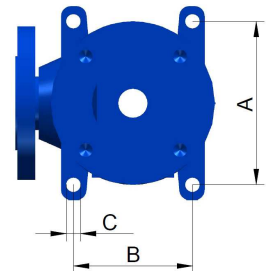
| | | |
|-----------------|----------------------|---------------------------------|
| Q _m | [kg/h] | Flow rate |
| A | [mm ²] | Required actual discharge area |
| K _{dr} | - | Coefficient of discharge |
| K _v | - | Correction factor for viscosity |
| P ₀ | [bar a] | Reliving pressure |
| P _b | [bar a] | Total backpressure |
| v | [m ³ /kg] | Volume |

Data given can be changed without notice.

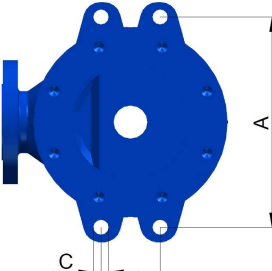
Edition 01/2024

Dimension of supported lug

| Orifice | Inlet class | A | B | C |
|---------|-------------|------|-----|----|
| | | [mm] | | |
| D | 300, 600 | 160 | 116 | 14 |
| E | | | | |
| F | | 254 | 70 | 18 |
| G | | | | |
| H | 300 | 176 | 57 | 14 |
| | 600 | 254 | 70 | 18 |
| J | 300, 600 | 256 | 65 | |
| K | 300 | 254 | | |
| | 600 | 256 | | |
| L | 300 | 330 | 95 | |
| | 600 | | 95 | |
| M | 300 | 254 | 65 | |
| | 600 | 330 | 90 | |
| N | 300 | | 90 | |
| P | 300 | 400 | 120 | |
| R | 300 | | | |
| T | 300 | | | 20 |



For orifice D – E

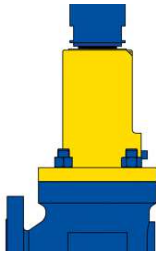


For orifice F - R

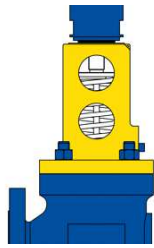
Data given can be changed without notice.

Edition 01/2024

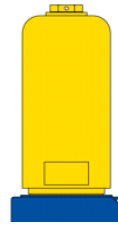
Available options



Closed bonnet



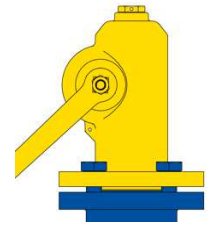
Open bonnet



Leverless cap



Threaded cap with sealed lever



Flanged cap with sealed lever



Type with FdSiCr spring



Type with Stainless steel spring



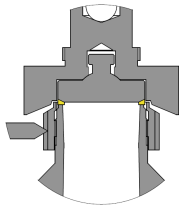
Type with INCONEL spring



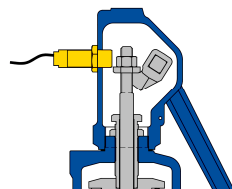
Type with stainless steel bellows



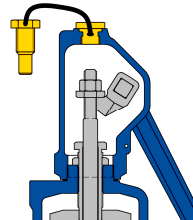
Type with INCONEL bellows



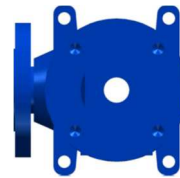
Type with stellited disc



Type with inductive sensor



Type with test gag



Type with threaded supported lug



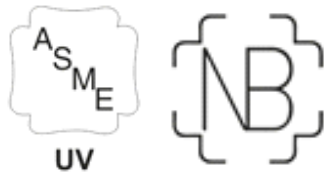
Safety valve – Bursting disc



Type for oxygen



Type for hydrogen



Certificate number: 61550
Validity: April 24, 2027



Validity: February 19, 2034
EN ISO 4126:2013, ASME B16.34 : 2022, EN 12516-1 :2014, EN 12516-2 :2014, ASME XIII



Validity: February 19, 2034
EN ISO 4126:2013, ASME B16.34 : 2022, EN 12516-1 :2014, EN 12516-2 :2014, ASME XIII

