

→ Series 812



■ MATERIAL



■ SPECIFICATION



1/2" – 2"



– 60°C to + 225°C
depending on version



0,2 – 50 bar
depending on version

■ SUITABLE FOR

Air, gases and vapours neutral



■ EXAMPLES OF USE

For the protection of:

- pressure tanks and
- pressure systems

for air and other neutral, non-poisonous and non-flammable gases which can be freely discharged into the environment.

Please observe plant-specific regulations and use of appropriate valve version and sealing material.

- pneumatic control units
- pressure booster plants air-side
- paint spray shops
- transport- and railway applications
- pneumatic braking systems

Safety valves are set and sealed at the factory.

■ APPROVALS

| | |
|------------------------------------|----------------------------|
| TÜV Type test approval 2003 | D/G |
| ASME | G |
| CRN | G |
| EU type examination | S/G |
| TSG ZF001-2006 | D/G (S/G) |
| KGS | G |
| TR ZU 032/2013 - TR ZU 010/2011 | D/G (S/G) |
| Type approval Deutsche Bahn | |
| Requirements | |
| AD 2000 Data sheet A2 | ASME-Code Sec. VIII Div. 1 |
| DIN EN ISO 4126-1 | KGS AA 319 |
| PED 2014/68/EU | |

| | |
|---------------------------------------|---------|
| Classification society | |
| DNV | DNV |
| Lloyd's Register EMEA | LR EMEA |
| American Bureau of Shipping | ABS |
| Bureau Veritas | BV |
| Russian Maritime Register of Shipping | RS |
| Registro Italiano Navale | RINA |

■ MATERIALS

| Component | Material | DIN EN | ASME |
|----------------|-------------------------|-----------------|----------------|
| Inlet body | Brass | CW617N | CW617N |
| Outlet body | Brass | CW617N | CW617N |
| Internal parts | Brass / Stainless steel | CW617N / 1.4404 | CW617N / 316 L |
| Spring | Stainless steel | 1.4310 / 1.4568 | 302 / 631 |
| Sealing cap | Stainless steel | 1.4301 | 304 |

| | | |
|----------|----------|--|
| s | Standard | cylindrical form, atmospheric discharge, for air and similar neutral, non-toxic and non-flammable gases that can be freely discharged into the atmosphere. |
|----------|----------|--|

■ MEDIUM

| | | |
|----------|---------|-------------------------------|
| G | gaseous | Air and similar neutral gases |
|----------|---------|-------------------------------|

■ TYPE OF LIFTING MECHANISM

| | | |
|----------|--|--|
| K | Standard with twist-type lifting mechanism | |
| 0 | without lifting device | |

■ AVAILABLE NOMINAL DIAMETERS AND CONNECTION SIZES

| Nominal diameter DN | 15 | 20 | 25 | 32 | 40 | 50 |
|--|-----------|-----------|---------|-------------|-------------|---------|
| Inlet | 1/2" (15) | 3/4" (20) | 1" (25) | 1 1/4" (32) | 1 1/2" (40) | 2" (50) |
| Atmospheric discharge via outlet apertures | ■ | ■ | ■ | ■ | ■ | ■ |

■ TYPE OF CONNECTION INLET / OUTLET THREADED CONNECTIONS

| | | | |
|-------------------|----------|-----------------------|---------------------------|
| m / - | Standard | Male thread BSP-P / - | DIN EN ISO 228-1 / - |
| BSP-Tm / - | | Male thread BSP-T | DIN EN 10226, ISO 7-1 / - |
| NPT-m / - | | Male thread NPT / - | ANSI B1.20.1 / - |

■ SEALS

| | | | |
|-------------|--------------------------|-----------------------------------|-----------------|
| NBR | Nitrile rubber | Elastomere flat seal 0,2 – 30 bar | -30°C to +130°C |
| FKM | Fluorocarbon | Elastomere flat seal 0,2 – 30 bar | -20°C to +200°C |
| EPDM | Ethylene propylene diene | Elastomere flat seal 0,2 – 30 bar | -40°C to +170°C |
| PTFE | Polytetrafluoroethylene | Flat seal 0,2 – 50 bar | -60°C to +225°C |

■ NOMINAL DIAMETERS, CONNECTIONS, INSTALLATION DIMENSIONS

| Series 812: Connection, installation dimensions, ranges of adjustment | | | | | | | |
|---|--------------------------|-----------|-----------|---------|-------------------------|-------------------------|---------------------|
| Nominal diameter | DN | 15 | 20 | 25 | 32 | 40 | 50 |
| Connection DIN EN ISO 228 | G | 1/2" (15) | 3/4" (20) | 1" (25) | 1 1/4" (32) | 1 1/2" (40) | 2" (50) |
| Installation dimensions in mm | H (H1) | 144 | 177 | 177 | 215 (177 ¹) | 215 (177 ¹) | 282 |
| | H2 | 137 | 173 | 173 | 212 | 212 | 284 |
| | h | 12 | 15 | 15 | 22,5 | 22,5 | 26 |
| | SW | 32 | 41 | 41 | 55 | 55 | 80 |
| | d0 | 14 | 20 | 24 | 31 | 31 | 48 |
| Coefficients of flow ISO 4126-1 | $c_{w} / K_{dr} (D/G)^2$ | 0,76 | 0,8 | 0,8 | 0,8 | 0,8 | 0,51 ³ |
| Coefficients of flow ASME-Code Sec. VIII Div. 1 | $c_w / K_{dr} (D/G)$ | 0,774 | 0,774 | 0,774 | 0,774 | 0,774 | 30,116 ⁴ |
| Weight | kg | 0,6 | 1,3 | 1,3 | 2,6 | 2,6 | 5,4 |
| Range of adjustment | bar | 0,2-50 | 0,2-50 | 0,2-50 | 0,2-50 | 0,2-50 | 0,2-30 |
| Range of adjustment ASME | psi | 15-725 | 15-725 | 15-725 | 15-725 | 15-725 | 15-435 |

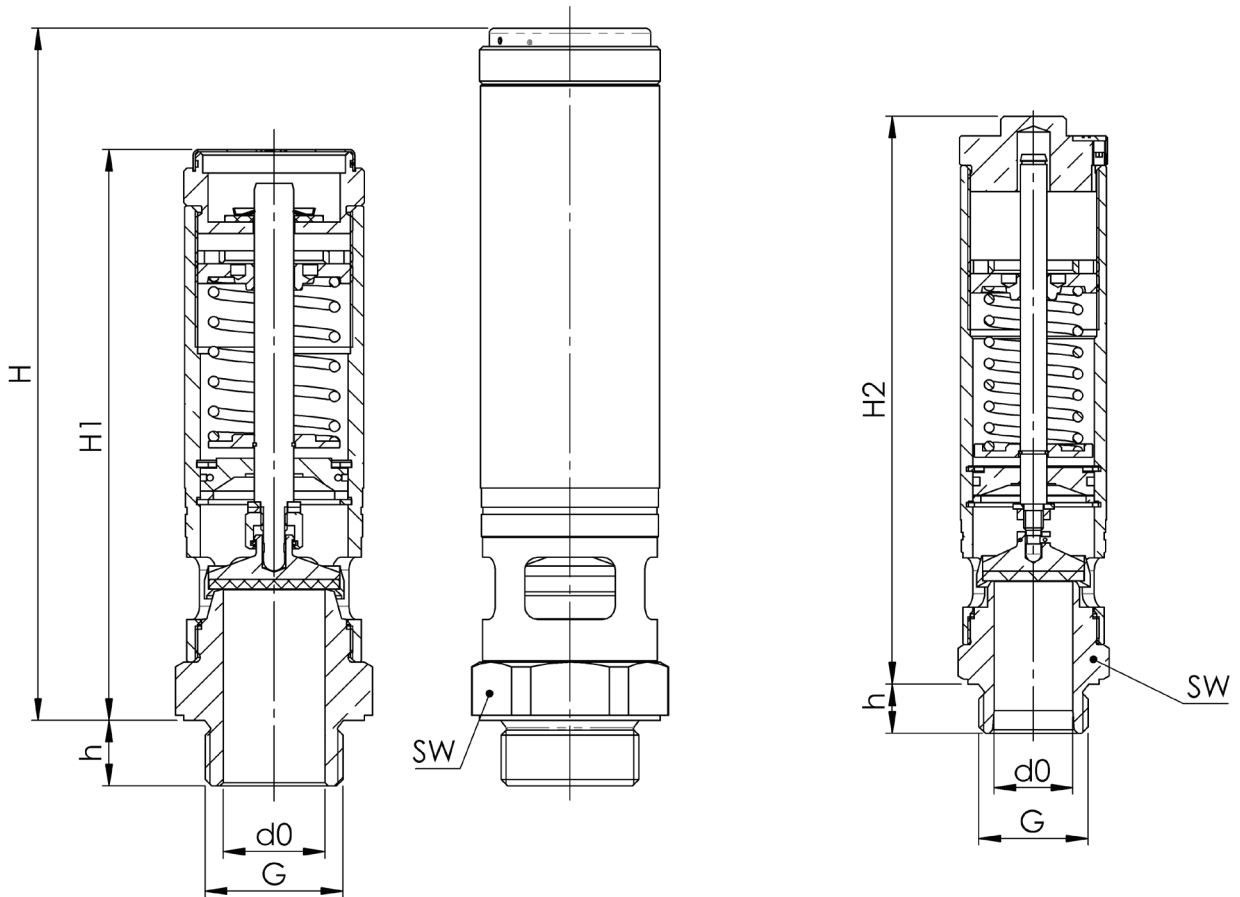
¹Type 812 with the option SHORT for the pressure range 0,2 to 6 bar also available as short version

²Flow coefficients for blow-off pressures > 4,0 bar

³Flow coefficients for blow-off pressures > 7,0 bar

⁴Rated slope value for D/G in scfm/psia

■ MAIN DIMENSIONS, INSTALLATION DIMENSIONS



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| Series | Valve version | Medium | Lifting device | Nominal diameter DN | Connection type | | Connection size | | Seal | Options | Set pressure | Quantity |
|--------|---------------|--------|----------------|---------------------|-----------------|--------|-----------------|--------|------|---------|--------------|----------|
| | | | | | Inlet | Outlet | Inlet | Outlet | | | | |
| 812 | s | G | K | 40 | m | – | 40 | – | FKM | | 5,0 | 3 |
| 812 | s | G | K | 32 | m | – | 32 | – | NBR | SHORT | 3,5 | 2 |
| 812 | s | G | K | | | – | | – | | | | |
| 812 | s | G | K | | | – | | – | | | | |

■ PROPERTIES

| | | | | | |
|------------|--|--------------------------|------------|-----------------------------------|--------------------------|
| GOX | Especially for gaseous O2 applications by employment of specific materials including oil- and grease free production process | <input type="checkbox"/> | P03 | Galvanically nickel-plated finish | <input type="checkbox"/> |
| P01 | Oil- and grease-free production | <input type="checkbox"/> | P04 | Chrome-plated finish | <input type="checkbox"/> |
| P02 | Chemically nickel-plated finish | <input type="checkbox"/> | | | <input type="checkbox"/> |

■ CERTIFICATES / APPROVALS

| | | | | | |
|------------|---|--------------------------|------------|---|--------------------------|
| C01 | Factory certificate acc. DIN EN 10204 2.2 (WKZ 2.2) | <input type="checkbox"/> | C06 | ATEX evaluation acc. to 2014/34/EU | <input type="checkbox"/> |
| C02 | Test certificate acc. DIN EN 10204 3.1 (WPZ 3.1) | <input type="checkbox"/> | C07 | SIL evaluation relating to IEC 61508-2 | <input type="checkbox"/> |
| C03 | Material test certificate acc. DIN EN 10204 3.1 (MPZ 3.1) (pressure retaining part) | <input type="checkbox"/> | C09 | Seat tightness test with helium, leak detection method under vacuum incl. Factory Inspection Certificate 3.1 acc. to DIN EN 10204 | <input type="checkbox"/> |
| C04 | TÜV/DEKRA individual inspection acc. EN 10204 3.2 (TÜV/DEKRA-APZ) | <input type="checkbox"/> | C10 | Certificate of oil- and grease free production | <input type="checkbox"/> |
| C05 | Manufacturer certification (FDA, USP 3, 3-A,...), Please indicate description of certificate: | <input type="checkbox"/> | C11 | Certification of the production process especially for gaseous oxygen applications by employment of specific materials | <input type="checkbox"/> |

■ ADMISSIONS / ACCREDITATIONS

| | | | | | |
|------------|--|--------------------------|------------|---|--------------------------|
| AA1 | EC Type examination acc. to Directive 2014/68/EU | <input type="checkbox"/> | AK1 | Det Norske Veritas (DNV) type approval | <input type="checkbox"/> |
| AA2 | TÜV component test acc. to VdTÜV specification sheet SV 100 | <input type="checkbox"/> | AK2 | Lloyd's Register (LR) type approval | <input type="checkbox"/> |
| AA3 | Certification acc. to ASME Boiler and Pressure Vessel Code, Section VIII.Div 1 (ASME) | <input type="checkbox"/> | AK3 | American Bureau of Shipping (ABS) type approval | <input type="checkbox"/> |
| AA4 | EAC - certificate/declaration with passport for the valve and laser marking of the valve | <input type="checkbox"/> | AK4 | Bureau Veritas (BV) type approval | <input type="checkbox"/> |
| AA5 | Manufacture License of Special Equipment People's Republic of China (ML) | <input type="checkbox"/> | AK5 | Russian Maritime Register of Shipping (RMRS) type approval | <input type="checkbox"/> |
| AA6 | Certification acc. to. Korean Gas Safety Corporation (KGS) ³ | <input type="checkbox"/> | AK6 | Registro Italiano Navale (RINA) type approval | <input type="checkbox"/> |
| AA7 | Registration according to Canadian Registration Number (CRN) ⁴ | <input type="checkbox"/> | AL | Individual inspection by notified body inspector – (body to be indicated): | <input type="checkbox"/> |
| AA8 | Certification according to "Deutsche Bahn" | <input type="checkbox"/> | | | |

³KGS only in combination with ASME | ⁴CRN only in combination with ASME

■ ENQUIRY

Copy and send to: order@goetze-armaturen.de.

Order form easily to be found online under the section for each series.

| Series 812: Blowing-off rates at 10% above set pressure | | | | | | | |
|---|--------|------------|------------|------------|------------|------------|------------|
| Nominal diameter DN | | 15 | 20 | 25 | 32 | 40 | 50 |
| Set pressure bar | | d0 = 14 mm | d0 = 20 mm | d0 = 24 mm | d0 = 31 mm | d0 = 31 mm | d0 = 48 mm |
| | | | | | | | |
| Air I Nm³/h | 0,2 | 57,3 | 147,0 | 211,7 | 353,2 | 353,2 | 662,2 |
| | 0,5 | 100,3 | 220,2 | 317,1 | 529,1 | 529,1 | 926,9 |
| | 1,0 | 148,5 | 320,9 | 462,2 | 771,1 | 771,1 | 1382,7 |
| | 1,5 | 196,5 | 422,4 | 608,2 | 1014,7 | 1014,7 | 1852,6 |
| | 2,0 | 246,1 | 522,8 | 752,8 | 1256,0 | 1256,0 | 2334,0 |
| | 2,5 | 292,7 | 621,5 | 894,9 | 1493,1 | 1493,1 | 2760,6 |
| | 3,0 | 340,6 | 722,7 | 1040,7 | 1736,4 | 1736,4 | 3194,6 |
| | 3,5 | 389,8 | 826,6 | 1190,3 | 1985,9 | 1985,9 | 3636,1 |
| | 4,0 | 436,0 | 924,5 | 1331,3 | 2221,2 | 2221,2 | 4085,1 |
| | 4,5 | 480,4 | 1018,7 | 1466,9 | 2447,4 | 2447,4 | 4541,5 |
| | 5,0 | 524,9 | 1112,9 | 1602,5 | 2673,7 | 2673,7 | 4967,8 |
| | 5,5 | 569,3 | 1207,0 | 1738,1 | 2899,9 | 2899,9 | 5388,2 |
| | 6,0 | 613,7 | 1301,2 | 1873,7 | 3126,1 | 3126,1 | 5808,5 |
| | 6,5 | 658,1 | 1395,4 | 2009,3 | 3352,3 | 3352,3 | 6228,9 |
| | 7,0 | 702,5 | 1489,5 | 2144,9 | 3578,6 | 3578,6 | 6649,2 |
| | 7,5 | 746,9 | 1583,7 | 2280,5 | 3804,8 | 3804,8 | 5815,3 |
| | 8,0 | 791,3 | 1677,9 | 2416,1 | 4031,0 | 4031,0 | 6161,1 |
| | 8,5 | 835,7 | 1772,0 | 2551,7 | 4257,3 | 4257,3 | 6506,9 |
| | 9,0 | 880,1 | 1866,2 | 2687,3 | 4483,5 | 4483,5 | 6852,6 |
| | 9,5 | 924,5 | 1960,3 | 2822,9 | 4709,7 | 4709,7 | 7198,4 |
| | 10,0 | 969,0 | 2054,5 | 2958,5 | 4936,0 | 4936,0 | 7544,2 |
| | 11,0 | 1057,8 | 2242,8 | 3229,7 | 5388,4 | 5388,4 | 8235,7 |
| | 12,0 | 1146,6 | 2431,2 | 3500,9 | 5840,9 | 5840,9 | 8927,3 |
| | 13,0 | 1235,4 | 2619,5 | 3772,1 | 6293,4 | 6293,4 | 9618,8 |
| | 14,0 | 1324,2 | 2807,8 | 4043,3 | 6745,8 | 6745,8 | 10310,4 |
| | 15,0 | 1413,1 | 2996,2 | 4314,5 | 7198,3 | 7198,3 | 11001,9 |
| | 16,0 | 1501,9 | 3184,5 | 4585,7 | 7650,8 | 7650,8 | 11693,5 |
| | 17,0 | 1590,7 | 3372,8 | 4856,9 | 8103,2 | 8103,2 | 12385,0 |
| | 18,0 | 1679,5 | 3561,2 | 5128,1 | 8555,7 | 8555,7 | 13076,6 |
| | 19,0 | 1768,4 | 3749,5 | 5399,3 | 9008,1 | 9008,1 | 13768,1 |
| | 20,0 | 1857,2 | 3937,8 | 5670,5 | 9460,6 | 9460,6 | 14459,7 |
| | 21,0 | 1946,0 | 4126,1 | 5941,7 | 9913,1 | 9913,1 | 15151,2 |
| 22,0 | 2034,8 | 4314,5 | 6212,9 | 10365,5 | 10365,5 | 15842,8 | |
| 23,0 | 2123,6 | 4502,8 | 6484,0 | 10818,0 | 10818,0 | 16534,3 | |
| 24,0 | 2212,5 | 4691,1 | 6755,2 | 11270,5 | 11270,5 | 17225,9 | |
| 25,0 | 2301,3 | 4879,5 | 7026,4 | 11722,9 | 11722,9 | 17917,4 | |
| 26,0 | 2390,1 | 5067,8 | 7297,6 | 12175,4 | 12175,4 | 18609,0 | |
| 27,0 | 2478,9 | 5256,1 | 7568,8 | 12627,9 | 12627,9 | 19300,5 | |
| 28,0 | 2567,7 | 5444,5 | 7840,0 | 13080,3 | 13080,3 | 19992,1 | |
| 29,0 | 2656,6 | 5632,8 | 8111,2 | 13532,8 | 13532,8 | 20683,6 | |
| 30,0 | 2745,4 | 5821,1 | 8382,4 | 13985,2 | 13985,2 | 21375,2 | |
| 32,0 | 2923,0 | 6197,8 | 8924,8 | 14890,2 | 14890,2 | | |
| 34,0 | 3100,7 | 6574,4 | 9467,2 | 15795,1 | 15795,1 | | |
| 36,0 | 3278,3 | 6951,1 | 10009,6 | 16700,0 | 16700,0 | | |
| 38,0 | 3456,0 | 7327,8 | 10552,0 | 17605,0 | 17605,0 | | |
| 40,0 | 3633,6 | 7704,4 | 11094,4 | 18509,9 | 18509,9 | | |
| 42,0 | 3811,2 | 8081,1 | 11636,8 | 19414,8 | 19414,8 | | |
| 44,0 | 3988,9 | 8457,7 | 12179,2 | 20319,7 | 20319,7 | | |
| 46,0 | 4166,5 | 8834,4 | 12721,6 | 21224,7 | 21224,7 | | |
| 48,0 | 4344,2 | 9211,1 | 13263,9 | 22129,6 | 22129,6 | | |
| 50,0 | 4521,8 | 9587,7 | 13806,3 | 23034,5 | 23034,5 | | |

| Series 812: Blowing-off rates at 10% above set pressure | | | | | | | |
|---|-----|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Nominal diameter DN | | 15 | 20 | 25 | 32 | 40 | 50 |
| | | d0= 0,551 inch (14 mm) | d0= 0,787 inch (20mm) | d0= 0,945 inch (24mm) | d0= 1,220 inch (31mm) | d0= 1,220 inch (31mm) | d0= 1,890 inch (48mm) |
| Set pressure psi(g) | | l | l | l | l | l | l |
| Air l | 15 | 110,8 | 226,1 | 325,5 | 543,1 | 543,1 | 984,8 |
| SCFM | 30 | 161,6 | 329,8 | 474,8 | 792,2 | 792,2 | 1436,5 |
| | 40 | 198,8 | 405,8 | 584,4 | 974,9 | 974,9 | 1767,8 |
| | 50 | 236,1 | 481,8 | 693,9 | 1157,6 | 1157,6 | 2099,1 |
| | 60 | 273,4 | 557,9 | 803,4 | 1340,3 | 1340,3 | 2430,4 |
| | 70 | 310,6 | 633,9 | 912,9 | 1523,0 | 1523,0 | 2761,6 |
| | 87 | 374,0 | 763,2 | 1099,0 | 1833,6 | 1833,6 | 3324,8 |
| | 90 | 385,2 | 786,0 | 1131,9 | 1888,4 | 1888,4 | 3424,2 |
| | 100 | 422,4 | 862,1 | 1241,4 | 2071,1 | 2071,1 | 3755,5 |
| | 110 | 459,7 | 938,1 | 1350,9 | 2253,8 | 2253,8 | 4086,7 |
| | 120 | 496,9 | 1014,2 | 1460,4 | 2436,5 | 2436,5 | 4418,0 |
| | 130 | 534,2 | 1090,2 | 1569,9 | 2619,2 | 2619,2 | 4749,3 |
| | 140 | 571,5 | 1166,2 | 1679,4 | 2801,9 | 2801,9 | 5080,6 |
| | 150 | 608,7 | 1242,3 | 1788,9 | 2984,6 | 2984,6 | 5411,8 |
| | 160 | 646,0 | 1318,3 | 1898,4 | 3167,3 | 3167,3 | 5743,1 |
| | 170 | 683,2 | 1394,4 | 2007,9 | 3350,0 | 3350,0 | 6074,4 |
| | 180 | 720,5 | 1470,4 | 2117,4 | 3532,7 | 3532,7 | 6405,7 |
| | 190 | 757,8 | 1546,5 | 2226,9 | 3715,4 | 3715,4 | 6736,9 |
| | 200 | 795,0 | 1622,5 | 2336,4 | 3898,1 | 3898,1 | 7068,2 |
| | 210 | 832,3 | 1698,6 | 2445,9 | 4080,8 | 4080,8 | 7399,5 |
| | 220 | 869,6 | 1774,6 | 2555,4 | 4263,5 | 4263,5 | 7730,8 |
| | 230 | 906,8 | 1850,6 | 2664,9 | 4446,2 | 4446,2 | 8062,1 |
| | 240 | 944,1 | 1926,7 | 2774,4 | 4628,9 | 4628,9 | 8393,3 |
| | 250 | 981,3 | 2002,7 | 2883,9 | 4811,6 | 4811,6 | 8724,6 |
| | 260 | 1018,6 | 2078,8 | 2993,4 | 4994,3 | 4994,3 | 9055,9 |
| | 270 | 1055,9 | 2154,8 | 3102,9 | 5177,0 | 5177,0 | 9387,2 |
| | 280 | 1093,1 | 2230,9 | 3212,5 | 5359,7 | 5359,7 | 9718,4 |
| | 290 | 1130,4 | 2306,9 | 3322,0 | 5542,4 | 5542,4 | 10049,7 |
| | 300 | 1167,6 | 2383,0 | 3431,5 | 5725,1 | 5725,1 | 10381,0 |
| | 320 | 1242,2 | 2535,0 | 3650,5 | 6090,5 | 6090,5 | 11043,5 |
| | 340 | 1316,7 | 2687,1 | 3869,5 | 6455,8 | 6455,8 | 11706,1 |
| | 360 | 1391,2 | 2839,2 | 4088,5 | 6821,2 | 6821,2 | 12368,6 |
| | 380 | 1465,7 | 2991,3 | 4307,5 | 7186,6 | 7186,6 | 13031,2 |
| | 400 | 1540,3 | 3143,4 | 4526,5 | 7552,0 | 7552,0 | 13693,7 |
| | 420 | 1614,8 | 3295,5 | 4745,5 | 7917,4 | 7917,4 | 14356,3 |
| | 435 | 1670,7 | 3409,6 | 4909,8 | 8191,5 | 8191,5 | 14853,2 |
| | 460 | 1763,8 | 3599,7 | 5183,5 | 8648,2 | 8648,2 | |
| | 480 | 1838,4 | 3751,8 | 5402,5 | 9013,6 | 9013,6 | |
| | 500 | 1912,9 | 3903,8 | 5621,5 | 9379,0 | 9379,0 | |
| | 550 | 2099,2 | 4284,1 | 6169,1 | 10292,5 | 10292,5 | |
| | 600 | 2285,5 | 4664,3 | 6716,6 | 11206,0 | 11206,0 | |
| | 650 | 2471,8 | 5044,5 | 7264,1 | 12119,5 | 12119,5 | |
| | 700 | 2658,1 | 5424,7 | 7811,6 | 13032,9 | 13032,9 | |
| | 725 | 2751,3 | 5614,9 | 8085,4 | 13489,7 | 13489,7 | |

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