

Steam condensate separator

Model 944



The Model 944 steam condensate separator removes condensate from steam lines. The rotating and impact effects separate the heavier particles, such as water, oil, dirt, scale and suspended moisture from the steam, resulting in a cleaner and drier steam.

For steam. Applicable in; ironing machines, laundries and dry cleaners, cooking pots, textile machinery, drying cylinders, autoclaves, steam ovens, distilleries, heat exchangers, food industries, chemical laboratories, etc.

Specifications

- Materials carefully selected for their resistance to wear, temperature and corrosion. They are fully recyclable.
 - Simplicity of construction ensuring minimum maintenance.
 - No breakdowns, long service life due to the absence of moving parts.
 - Easy installation. Simple and quick assembly, compact installation.
 - Reduced weight and size.
 - Internal body design conceived to provide, for its size, high capacity and performance.
 - Minimal pressure loss (except at abnormally high velocities).
 - Helps to eliminate water hammer.
 - Cyclone and impact maximum efficiency for liquid separation.
 - Up to 98-99% dryness.
 - All separators are rigorously tested and verified.
 - Each component is numbered, registered and controlled.
- On request, certifications of materials, castings, tests and performances will be supplied with the valve.



EN ASME/ANSI

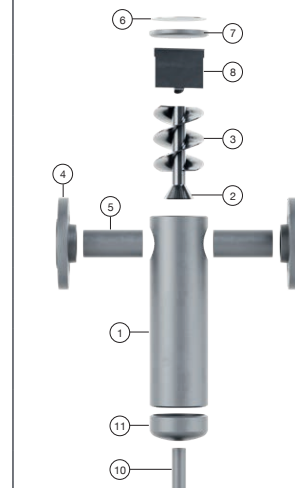
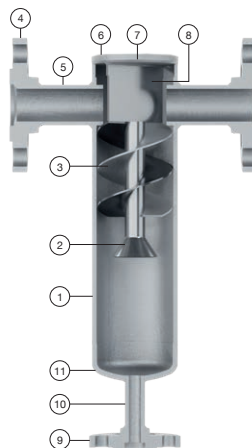
IMPORTANT

We recommend, if applicable, the use of textile thermal and acoustic insulation jackets Model 008.

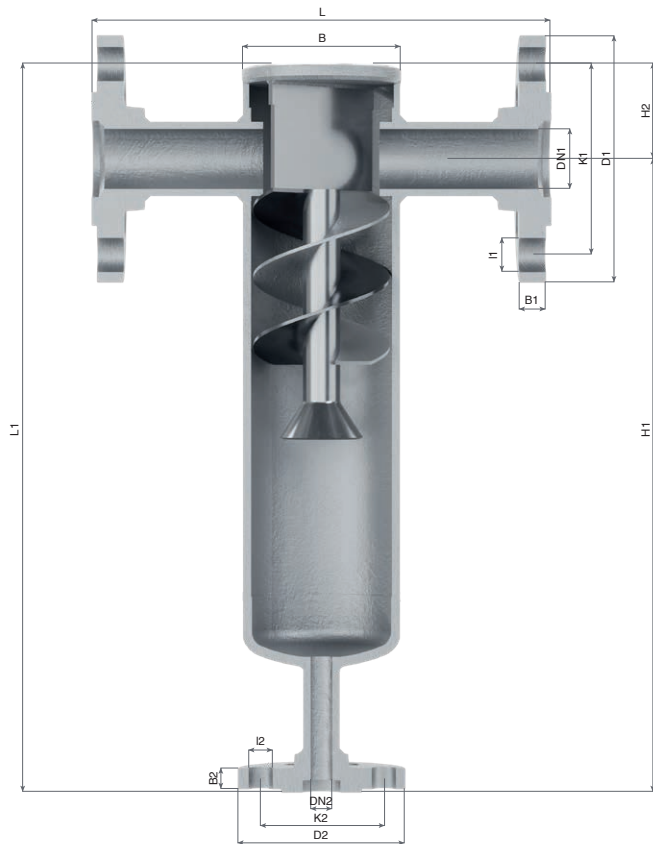
On request:

- Possibility of manufacturing in other types of materials, for special working conditions (high temperatures, fluids, etc.).
- Other connections.
- Degreased and totally free of oil and grease.

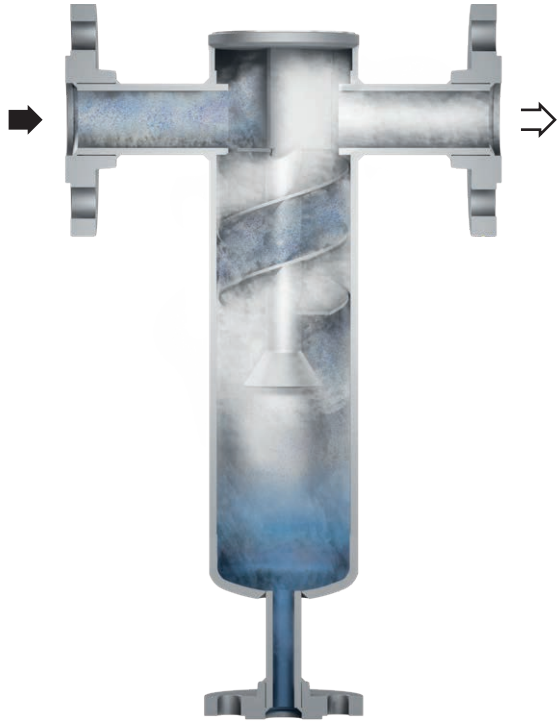
| N°. PIECE | PIECE | MATERIAL | |
|-----------|-----------------------|-----------------------------------|------|
| | | Carbon steel | |
| 1 | Body | Carbon steel (EN-1.0345) | |
| 2 | Nozzle | Carbon steel (EN-1.0345) | |
| 3 | Spiral | Carbon steel (EN-1.0044) | |
| 4 | Flange | Carbon steel (EN-1.0460) | |
| 5 | Extension pipe | Carbon steel (EN-1.0345) | |
| 6 | Characteristics plate | Stainless steel | |
| 7 | Top cap | Carbon steel (EN1.0460/EN-1.0425) | |
| 8 | Separator | Carbon steel (EN-1.0425) | |
| 9 | Purge flange | Carbon steel (EN-1.0460) | |
| 10 | Connection | Carbon steel (EN-1.0345) | |
| 11 | Lower cap | Carbon steel (EN-1.0425) | |
| DN | | 15 to 350 (EN, ANSI) | |
| PN | | 16 | 40 |
| OPERATING | PRESSURE [bar] | 12,3 | 30,7 |
| | MAX. TEMP. [°C] | 250 | |



| CONNECTIONS | I - Flanges PN-16 EN-1092-1 II - Flanges PN-40 EN-1092-1 III - Flanges class 150 lbs ASNE/ANSI B.16.5 IV - Flanges class 300 lbs ASNE/ANSI B.16.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|------|------|------|------|
| | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | | | | | | | | | |
| L | 230 | | | | 230 | | | | 230 | | | | 260 | | | | 260 | | | | 300 | | | | 340 | | | | 380 | | | |
| B | 90 | | | | 90 | | | | 90 | | | | 90 | | | | 115 | | | | 115 | | | | 140 | | | | 220 | | | |
| H1 | 336 | | | | 336 | | | | 336 | | | | 336 | | | | 455 | | | | 455 | | | | 616 | | | | 782 | | | |
| H2 | 52 | | | | 52 | | | | 52 | | | | 52 | | | | 69 | | | | 69 | | | | 81 | | | | 119 | | | |
| L1 | 415 | | | | 415 | | | | 415 | | | | 415 | | | | 524 | | | | 524 | | | | 697 | | | | 847 | | | |
| D1 | 95 | 88,9 | 95,3 | 105 | 98,6 | 117,4 | 115 | 108 | 124 | 140 | 117,4 | 133,4 | 150 | 150 | 127,0 | 155,5 | 165 | 165 | 152,4 | 165,1 | 185 | 185 | 177,8 | 190,5 | 200 | 200 | 190,5 | 209,6 | | | | |
| K1 | 65 | 60,5 | 66,5 | 75 | 69,9 | 82,6 | 85 | 79,3 | 88,9 | 100 | 88,9 | 98,6 | 110 | 110 | 98,6 | 114,3 | 125 | 125 | 120,7 | 127 | 145 | 145 | 139,7 | 149,4 | 160 | 160 | 152,4 | 168,2 | | | | |
| I1 | 14 | 15,9 | 15,9 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 18 | 15,9 | 19,1 | 18 | 19 | 17,3 | 20,6 | 18 | 19 | 19,1 | 19,1 | 18 | 19 | 19,1 | 22,2 | 18 | 19 | 19,1 | 22,2 | | | | |
| B1 | 16 | 11,2 | 14,2 | 18 | 12,7 | 15,8 | 18 | 14,2 | 17,3 | 18 | 15,8 | 19,1 | 18 | 19 | 15,9 | 22,2 | 18 | 19 | 19,1 | 22,1 | 18 | 19 | 22,1 | 25,4 | 20 | 19 | 23,9 | 28,5 | | | | |
| DRILLS N° | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 8 | | | | 8 | | | |
| D2 | 95 | 90 | 95 | 95 | 90 | 95 | 95 | 90 | 95 | 95 | 90 | 95 | 105 | 100 | 115 | 105 | 100 | 115 | 105 | 100 | 115 | 105 | 100 | 115 | 105 | 100 | 115 | | | | | |
| K2 | 65 | 60,3 | 66,7 | 65 | 60,3 | 66,7 | 65 | 60,3 | 66,7 | 65 | 60,3 | 66,7 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | | | | | |
| I2 | 14 | 15,9 | 15,9 | 14 | 15,9 | 15,9 | 14 | 15,9 | 15,9 | 14 | 15,9 | 15,9 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | | | | | |
| B2 | 16 | 11,2 | 14,3 | 16 | 11,2 | 14,3 | 16 | 11,2 | 14,3 | 16 | 11,2 | 14,3 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | | | | | |
| DRILLS N° | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | | | | |
| WEIGHT [kg] | 5,8 | 5,8 | 5,5 | 6,0 | 5,8 | 5,8 | 5,5 | 6,0 | 6,8 | 6,8 | 6,4 | 7,5 | 8,1 | 8,1 | 7,1 | 8,4 | 12,7 | 12,7 | 11,5 | 13,8 | 14,0 | 13,9 | 13,4 | 15,0 | 21,3 | 21,3 | 22,0 | 24,1 | 50,9 | 51,1 | 52,1 | 56,0 |
| CODE 2109-944. | 8024 | 80241 | 80242 | 8024 | 80241 | 80242 | 8104 | 81041 | 81042 | 8144 | 81441 | 81442 | 8124 | 81241 | 81242 | 5204 | 8204 | 82041 | 82042 | 5224 | 8224 | 82241 | 82242 | 5304 | 8304 | 83041 | 83042 | | | | | |



| MODEL | 944 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|------|-------|--------|------|------|-------|--------|------|------|-------|--------|------|------|--------|-------|------|------|--------|--------|------|------|-------|--------|------|------|--------|--------|----|--|--|--|
| DN | 100 | | | | 125 | | | | 150 | | | | 200 | | | | 250 | | | | 300 | | | | 350 | | | | | | | |
| CONNECTIONS | I - Flange PN-16 EN-1092-1 II - Flange PN-40 EN-1092-1 III - Flange class 150 lbs ASNE/ANSI B.16.5 IV - Flange class 300 lbs ASNE/ANSI B.16.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | I | II | III | IV | | | | | | | | | | | | |
| L | 430 | | | | 500 | | | | 550 | | | | 650 | | | | 775 | | | | 900 | | | | 1025 | | | | | | | |
| B | 220 | | | | 273 | | | | 273 | | | | 356 | | | | 406 | | | | 508 | | | | 610 | | | | | | | |
| H1 | 782 | | | | 750 | | | | 750 | | | | 1094 | | | | 1161 | | | | 1781 | | | | 2023 | | | | | | | |
| H2 | 119 | | | | 177 | | | | 177 | | | | 219 | | | | 261 | | | | 324 | | | | 371 | | | | | | | |
| L1 | 847 | | | | 927 | | | | 927 | | | | 1313 | | | | 1421 | | | | 1456 | | | | 1651 | | | | | | | |
| D1 | 220 | 235 | 228,6 | 254 | 250 | 270 | 254,0 | 279,4 | 285 | 300 | 279,4 | 317,5 | 340 | 375 | 342,9 | 381 | 405 | 450 | 406,4 | 444,5 | 460 | 515 | 482,6 | 520,7 | 520 | 580 | 533,4 | 584,2 | | | | |
| K1 | 180 | 190 | 190,5 | 200,15 | 210 | 220 | 215,9 | 234,95 | 240 | 250 | 241,3 | 233,61 | 295 | 320 | 298,45 | 330,2 | 355 | 385 | 361,95 | 357,86 | 410 | 450 | 431,8 | 450,85 | 470 | 510 | 476,25 | 514,35 | | | | |
| I1 | 18 | 23 | 19,05 | 22,23 | 18 | 28 | 22,23 | 22,23 | 22 | 28 | 22,23 | 22,23 | 22 | 31 | 22,23 | 25,4 | 26 | 34 | 25,4 | 28,58 | 26 | 34 | 25,4 | 31,75 | 26 | 36 | 28,58 | 31,75 | | | | |
| B1 | 20 | 19 | 23,8 | 31,75 | 22 | 23,5 | 23,88 | 34,88 | 22 | 26 | 25,4 | 36,58 | 24 | 30 | 28,45 | 41,15 | 26 | 34,5 | 29,97 | 47,5 | 28 | 40 | 31,75 | 50,8 | 30 | 46 | 34,8 | 53,85 | | | | |
| DRILLS N° | 8 | | | | 8 | | | | 8 | | | | 12 | | | | 8 | | | | 12 | | | | 16 | | | | 16 | | | |
| D2 | 105 | 105 | 100 | 115 | 105 | 100 | 115 | 105 | 100 | 115 | 115 | 110 | 125 | 115 | 110 | 125 | 115 | 110 | 125 | 140 | 115 | 135 | 140 | 115 | 135 | | | | | | | |
| K2 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 75 | 69,9 | 82,6 | 85 | 79,4 | 88,9 | 85 | 79,4 | 88,9 | 100 | 88,9 | 98,4 | 100 | 88,9 | 98,4 | 100 | 88,9 | 98,4 | | | | | |
| I2 | 14 | 15,9 | 15,9 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 14 | 15,9 | 19,1 | 18 | 15,9 | 19,1 | 18 | 15,9 | 19,1 | 18 | 15,9 | 19,1 | | | | | |
| B2 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 12,7 | 15,9 | 18 | 14,3 | 17,5 | 18 | 14,3 | 17,5 | 18 | 14,3 | 17,5 | 18 | 14,3 | 17,5 | 18 | 14,3 | 17,5 | | | | | |
| DRILLS N° | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | 4 | | | | | | | |
| CODE 2109-944. | 5404 | 8404 | 84041 | 84042 | 5504 | 8504 | 85041 | 85042 | 5604 | 8604 | 86041 | 86042 | 5804 | 8804 | 88041 | 88042 | 5004 | 8004 | 80041 | 80042 | 5014 | 8014 | 80141 | 80142 | 5034 | 8034 | 80341 | 80342 | | | | |



Operation

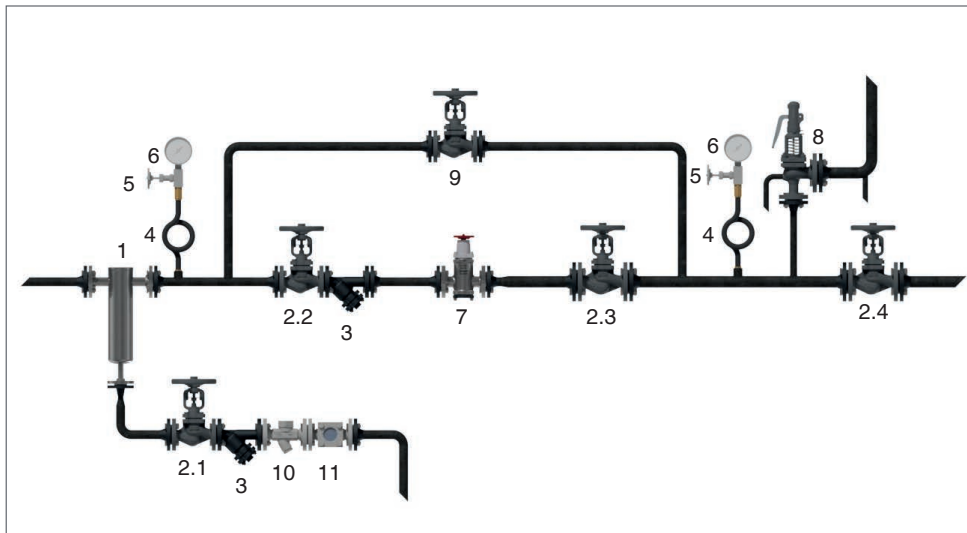
The main use of the separator is to supply dry steam, as well as to improve the quality of the steam.

So, through the inlet line of the separator we get steam, which can arrive with impurities, wet, dirt, etc., it reaches the inside of the body and the first step is found, a fluid separation of the deflector type, a 45° wall where the fluid collides, and the first separation of steam with non-steam is achieved, the second step is of the cyclonic type, We pass the fluid through a fixed helix in a downward spiral, when it reaches the end of the helix the flow is reversed 180 degrees and rises on the other side of the spiral, with the separation of the deflector type and then cyclonic type we get effects of impact and eddies, generating changes of velocity and collisions, which allows us a better efficiency to get a more saturated steam. The reverse flow change prevents unwanted particles from being dragged to the outlet. Thus obtaining an even drier steam at the outlet of the separator.

Installation

- Always install the valve in a horizontal pipe section and as close as possible to the point of consumption.
- Check that the fluid flows in the direction indicated by the arrow on the valve body.
- The inlet and outlet piping must be correctly dimensioned and supported to avoid pressure drops and stresses.

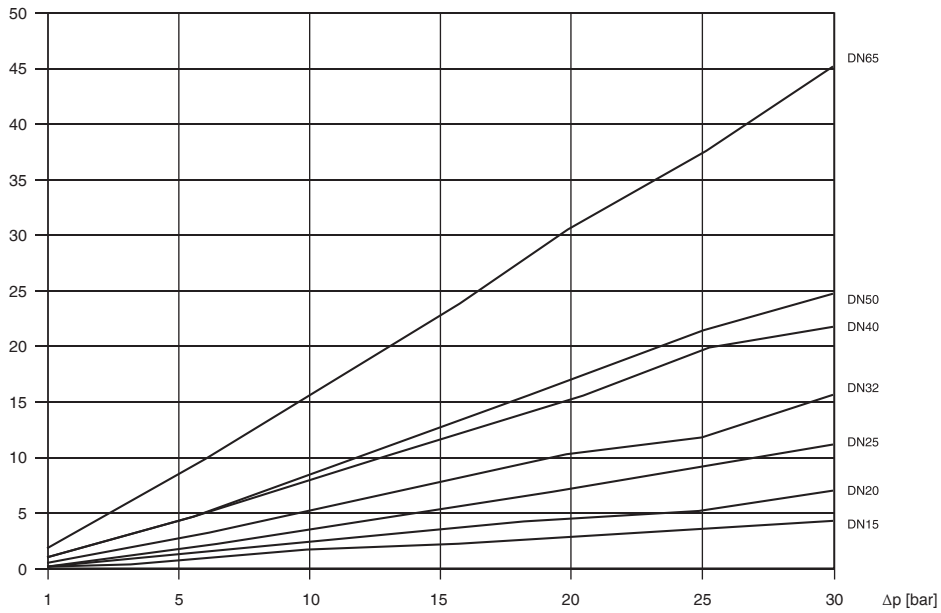
Example of steam installation



- 1 - Condensate separator
- 2 - Shut-off valve
- 3 - Filter
- 4 - Siphon tube
- 5 - Pressure gauge tap
- 6 - Pressure gauge
- 7 - Pressure reducing valve
- 8 - Safety valve
- 9 - Shut-off valve with regulating cone
- 10 - Steam trap
- 11 - Sight glass

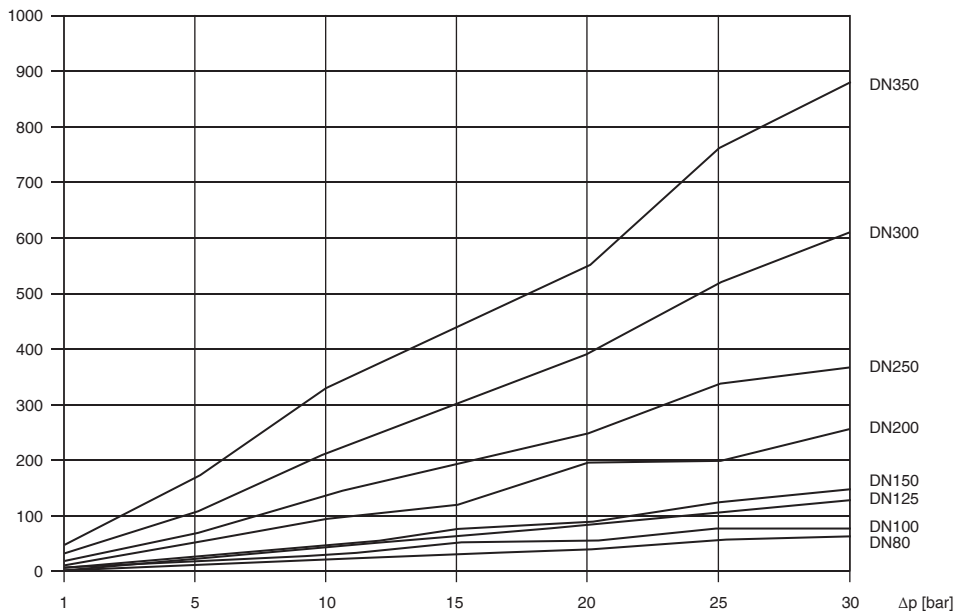
IMPORTANT

- The distance between the pressure reducing valve 7 and the shut-off valves 2.2 and 2.3 must be 8 ÷ 10 times the pipe diameter.
- The installation of separator 1 and steam trap 10 is recommended for wet steam with carry-over.
- It is recommended to equip the reducing unit with a by-pass and a shut-off valve with a regulating cone 9 .



| Ap [bar] | DN15 | DN20 | DN25 | DN32 | DN40 | DN50 | DN65 |
|----------|------|------|------|------|------|------|------|
| 1 | 0,2 | 0,3 | 0,5 | 0,8 | 1,1 | 1,2 | 2,3 |
| 5 | 0,8 | 1,3 | 2,0 | 3,0 | 4,5 | 4,5 | 8,6 |
| 10 | 1,9 | 2,5 | 3,9 | 5,6 | 8,4 | 8,7 | 15,9 |
| 15 | 2,4 | 3,6 | 5,7 | 8,2 | 11,8 | 12,9 | 23,0 |
| 20 | 3,1 | 4,8 | 7,4 | 10,7 | 15,4 | 17,1 | 30,8 |
| 25 | 3,9 | 5,4 | 9,3 | 12,1 | 19,8 | 21,5 | 37,5 |
| 30 | 4,6 | 7,2 | 11,3 | 15,9 | 21,8 | 24,8 | 45,2 |

MASS FLOW RATE [kg/s]
DN-80 DN-350



| Ap [bar] | DN80 | DN100 | DN125 | DN150 | DN200 | DN250 | DN300 | DN350 |
|----------|------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 3,3 | 4,4 | 6,1 | 7,0 | 12,8 | 19,2 | 32,5 | 46,8 |
| 5 | 12,4 | 15,9 | 22,3 | 24,0 | 53,5 | 69,2 | 107,5 | 173,0 |
| 10 | 24,6 | 29,3 | 47,3 | 45,1 | 94,5 | 138,2 | 214,2 | 331,8 |
| 15 | 34,3 | 50,4 | 65,1 | 75,5 | 119,0 | 189,6 | 304,6 | 439,6 |
| 20 | 41,7 | 53,6 | 88,4 | 91,8 | 195,0 | 250,8 | 390,3 | 546,3 |
| 25 | 59,1 | 74,7 | 108,6 | 125,5 | 199,5 | 337,2 | 518,1 | 759,3 |
| 30 | 65,1 | 80,5 | 128,3 | 146,5 | 254,8 | 364,8 | 607,6 | 876,5 |