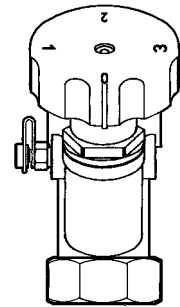
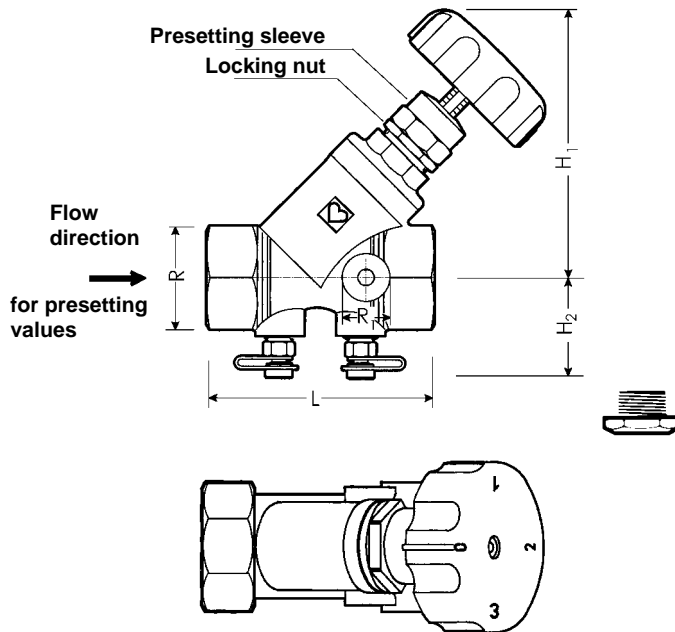


STRÖMAX-M

Circuit Regulating Valve for Differential Pressure Measurement, Inclined Model, with Measuring Valves

Data Sheet for
4117 M
Edition 1203 (1203)



4117 M 1/2, 3/4

Dimensions 1/2 and 3/4 without threaded plug right bottom side, one measuring valve is fitted on one side.

| Order no. | R Connection | R1 | L | H1 open | H2 |
|--------------------------|--------------|-----|-----|---------|----|
| 1 4117 51 (DN 15) | 1/2 | 1/4 | 65 | 86 | 49 |
| 1 4117 52 (DN 20) | 3/4 | | 75 | 92 | 52 |
| 1 4117 53 (DN 25) | 1 | | 90 | 105 | 56 |
| 1 4117 54 (DN 32) | 1 1/4 | | 110 | 118 | 60 |
| 1 4117 55 (DN 40) | 1 1/2 | | 120 | 127 | 62 |
| 1 4117 56 (DN 50) | 2 | 3/8 | 150 | 155 | 69 |
| 1 4117 57 (DN 65) | 2 1/2 | | 180 | 205 | 78 |
| 1 4117 58 (DN 80) | 3 | | 210 | 226 | 83 |

Order Numbers

| | |
|--------------------|--|
| 4117 M | STRÖMAX-M Circuit Control Valves with Measuring Valves Inclined brass version, socket x socket, O-ring spindle seal, presetting by limitation of valve lift outside the water chamber. |
| DN 15-DN 20 | 2 bore holes of 1/4 with measuring valves, 1 bore hole of 1/4 closed with screw plug 1 0273 09 |
| DN 25-DN 50 | 2 bore holes of 1/4 with measuring valves, 2 bore holes of 1/4 closed with screw plug 1 0273 09 |
| DN 65-DN 80 | 2 bore holes of 1/4 with measuring valves, 2 bore holes of 3/8 closed with screw plug 1 0273 00 |

Drain cocks must be ordered separately.

Models

| | |
|------------------------------|--|
| 4217 GM DN 15-DN 80 | STRÖMAX-GM-Circuit Regulating Valve for differential pressure measurement, screw-down-model, with measuring valves |
| 4218 MFS DN 50-DN 200 | STRÖMAX-MFS-Circuit Regulating Valve for differential pressure measurement, flanged version, inclined-model, with measuring valves |
| 4218 GMF DN 25-DN 80 | STRÖMAX-GMF-Circuit Regulating Valve for differential pressure measurement, flanged version, screw-down-model, with measuring valves |

Other Regulating Valves Valves with Measuring Valves

| | |
|--|---|
| 2 measuring valves are fitted and are sealed at the factory. | |
| 1 0284 01 1/4 | Quick measuring valve for HERZ-STRÖMAX Circuit Regulating Valve, blue cap, for pressure absorption device |
| 1 0284 02 1/4 | Quick measuring valve for HERZ-STRÖMAX Circuit Regulating Valve, red cap, for pressure absorption device |

Measuring valves

We reserve the right to alter the specification without prior notice.

For models 4117 M until year of construction 2003

| | | |
|------------|----------------|--|
| 270 | 1/4–3/8 | Draining valve with handle |
| 272 | 1/4–3/8 | Screw plug |
| 275 | 1/4–3/8 | Draining valve with handle and hose connection |

For models 4117 M as of 2003 - new design

| | | |
|------------|----------------|---|
| 271 | 1/4 | Draining valve with handle |
| 273 | 1/4–3/8 | Screw plug |
| 276 | 1/4–3/8 | Draining valve with handle and swivelling hose connection |

Hose connection 1 **6206** 01 has to be ordered separately.

Draining Fittings to be ordered separately

Maximum operating temperature 110 °C
Maximum operating pressure 10 bar

Hot water quality according to ÖNORM H 5195 and. VDI-guideline 2035.

When using HERZ-compression unions for copper and steel pipes, observe the permissible temperatures and pressures as specified in EN 1254-2:1998 Table 5. A maximum operating temperature of 95 °C and maximum operating pressure of 10 bar applies for plastic pipe connections, if permitted by the pipe manufacturer.

Operating data

HERZ-Compression Union

Circuit Regulating Valves R=12 (DN 15) are fitted with special sockets or with a directly connection for compression unions.

You can use dimensions DN 20 and DN 25 also by means of an adapter for a compression union.

Pipe Connection with Compression Union

| | | | | | | | | |
|--|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | | 8 | 10 | 12 | 14 | 15 | 16 | 18 |
| Valve DN | | 15 | | | | | | |
| Adapter Order no. | | 1 6266 01 | 1 6266 01 | | | | 1 6266 01 | 1 6266 01 |
| Compr.union Order no. | | 1 6274 18 | 1 6274 00 | 1 6292 12 | 1 6292 14 | 1 6292 01 | 1 6274 04 | 1 6274 04 |
| Compr.union soft seal Order no. Optional | | | | | | | 1 6275 04 | 1 6276 18 |

| | | | | | | | | |
|--|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | | 8 | 10 | 12 | 14 | 15 | 16 | 18 |
| Valve DN | | 20 | | | | | | |
| Adapter Order no. | | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 |
| Compr.union Order no. | | 1 6274 18 | 1 6274 00 | 1 6274 01 | 1 6274 02 | 1 6274 03 | 1 6274 04 | 1 6274 04 |
| Compr.union soft seal Order no. Optional | | | | 1 6276 12 | | 1 6276 15 | | 1 6276 18 |

| | | | | | | | | | |
|-----------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | | 8 | 10 | 12 | 14 | 15 | 16 | 18 | 22 |
| Valve DN | | 25 | | | | | | | |
| Adapter Order no. | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | 1 6266 03 |
| Compr.union Order no. | 1 6274 18 | 1 6274 00 | 1 6274 01 | 1 6274 02 | 1 6274 03 | 1 6274 04 | 1 6276 18 | 1 6273 01 | |

In case of installation of soft steel or copper pipes with compression unions, we recommend the use of support sleeves. The thread of the locking nut (male or female thread) as well as the olive must be lubricated with silicone oil. We draw attention to our instructions for installation.

Inclined circuit regulating valves R=1/2 (DN 15) are suitable for installations with plastic pipes. Adapter and plastic pipe connections can be fitted to the special sockets. For models and dimensions please refer to the HERZ-catalogue.

| | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 14x2 | 16x2 | 16x2,2 | 17x2 | 17x2,5 |
| Valve DN | 15 | | | | |
| Adapter Order no. | | | 1 6266 01 | 1 6266 01 | 1 6266 01 |
| Compr.union Order no. | 1 6092 02 | 1 6092 01 | 1 6097 12 | 1 6097 04 | 1 6097 05 |
| Compr.union soft seal Order no. Optional | | | 1 6098 12 | 1 6098 04 | 1 6098 05 |

| | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 18x2 | 18x2,5 | 20x2 | 20x2,5 | 20x3,5 |
| Valve DN | 15 | | | | |
| Adapter Order no. | 1 6266 01 | 1 6266 01 | 1 6266 01 | 1 6266 01 | 1 6266 01 |
| Compr.union Order no. | 1 6097 07 | 1 6097 06 | 1 6097 08 | 1 6097 11 | 1 6097 10 |
| Compr.union soft seal Order no. Optional | 1 6098 07 | 1 6098 06 | 1 6098 08 | 1 6098 11 | 1 6098 10 |

| | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 14x2 | 16x2 | 16x2,2 | 17x2 | 17x2,5 |
| Valve DN | 20 | | | | |
| Adapter Order no. | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 |
| Compr.union Order no. | 1 6097 02 | 1 6097 03 | 1 6097 12 | 1 6097 04 | 1 6097 05 |
| Compr.union soft seal Order no. Optional | 1 6098 02 | 1 6098 03 | 1 6098 12 | 1 6098 04 | 1 6098 05 |

| | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 18x2 | 18x2,5 | 20x2 | 20x2,5 | 20x3,5 |
| Valve DN | 20 | | | | |
| Adapter Order no. | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 | 1 6266 20 |
| Compr.union Order no. | 1 6097 07 | 1 6097 06 | 1 6097 08 | 1 6097 11 | 1 6097 10 |
| Compr.union soft seal Order no. Optional | 1 6098 07 | 1 6098 06 | 1 6098 08 | 1 6098 11 | 1 6098 10 |

| | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 14x2 | 16x2 | 16x2,2 | 17x2 | 17x2,5 |
| Valve DN | 25 | | | | |
| Adapter Order no. | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 |
| Compr.union Order no. | 1 6097 02 | 1 6097 03 | 1 6097 12 | 1 6097 04 | 1 6097 05 |
| Compr.union soft seal Order no. Optional | 1 6098 02 | 1 6098 03 | 1 6098 12 | 1 6098 04 | 1 6098 05 |

| | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Pipe Ø D mm | 18x2 | 18x2,5 | 20x2 | 20x2,5 | 20x3,5 | 25x3,5 | 26x3 |
| Valve DN | 25 | | | | | | |
| Adapter Order no. | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | P 1928 05 | 1 6266 03 | 1 6266 03 |
| Compr.union Order no. | 1 6097 07 | 1 6097 06 | 1 6097 08 | 1 6097 11 | 1 6097 10 | 1 6198 00 | 1 6198 01 |
| Compr.union soft seal Order no. Optional | 1 6098 07 | 1 6098 06 | 1 6098 08 | 1 6098 11 | 1 6098 10 | | |

Flow directions

The valve is suitable for flow in either direction thanks to the pivoting, non-removable cone. The flow diagrams are applicable for the flow direction indicated on the drawing.

Seat seal

The temperature-resistant and permanently elastic soft seal is corrosion-resistant, permits operation with low shutting forces and is approved for a maximum operating temperature of 150 °C.

Spindle seal

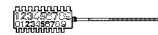
The O-ring seal ensures lasting tightness and ease of valve operation. The O-ring chamber can be replaced. Order number 1 **6705 00**

Pre-setting

To avoid leakage of water presetting is carried out by limitation of valve lift outside the water chamber.

Pre-setting marker

The pre-setting marker (1 **6517 05**) is fastened as a tag above the valve or pipe. The setting of the respective valve is marked by cutting or breaking off the teeth at the figures for full and partial turns. This permits checking and/or restoration of the original pre-setting made on the occasion of system set-up after servicing without having to rely on documentation.



Special Design Features

For insulation purposes and to avoid loss of heat we recommend the fitting of thermal insulation shells.

These consist of two interlocking half shells and the spindle seal. The parts are closed by overlapping and held together by means of tightening straps. The thermal insulation shells can be removed and reused at any time (e.g. pre-setting at a later date).

Thermal insulation shells can be used for max. 120 °C operating temperature.

For models and dimensions please refer to HERZ-catalogue.

Thermal Insulation Shells Code no. 4095

The STRÖMAX-M circuit control valve is equipped with two measuring valves, one before and one after the valve seat. The differential pressure can be measured using a suitable measuring instrument which permits calculation of the flow rate as a function of the respective presenting step. The HERZ-measuring computer (1 **8902 00**) permits direct flow rate reading (consult the equipment manual).

Differential Pressure Measurement

The two measuring valves installed are equipped with a soft seal.

Warning: Opening of the measuring valves is permitted only when a measuring instrument is connected. Otherwise, hot water may cause injury.

The HERZ-measuring computer has suitable couplings with O-ring seals and securing screws, ensuring perfect fastening on the measuring valves.

Prior to measuring, the couplings must be attached and secured. Only afterwards is it permitted to open the measuring valve by approximately half a turn using the HERZ-universal key (1 **6640 00**) or an 8 mm open-end wrench.

After measuring, first shut the measuring valve and only then remove the couplings from the measuring valve.

Measuring Valve Operation

1. The STRÖMAX-M valve is delivered with fully opened presetting (max. flow).
2. After connecting the HERZ-differential manometer and adjusting to the correct regulating step (see equipment manual) loosen the locking nut and without adjusting the spindle turn the presetting sleeve to the right by hand to its limit.
3. Fix the presetting sleeve with locking nut.
4. Remove the measuring instrument according to the operating instructions.

When the valve is closed the adjusted presetting step can now be seen.

Pre-setting, adjustment and fixing with measuring instrument

1. Close the valve.
2. Unscrew the locking nut (below the presetting sleeve).
3. Turn the presetting sleeve to the desired position on the spindle scale. The presetting value should be determined from the diagram overleaf.
4. Fix the presetting sleeve at the desired value by means of the locking nut.

CAUTION: The valve must be closed during the setting!

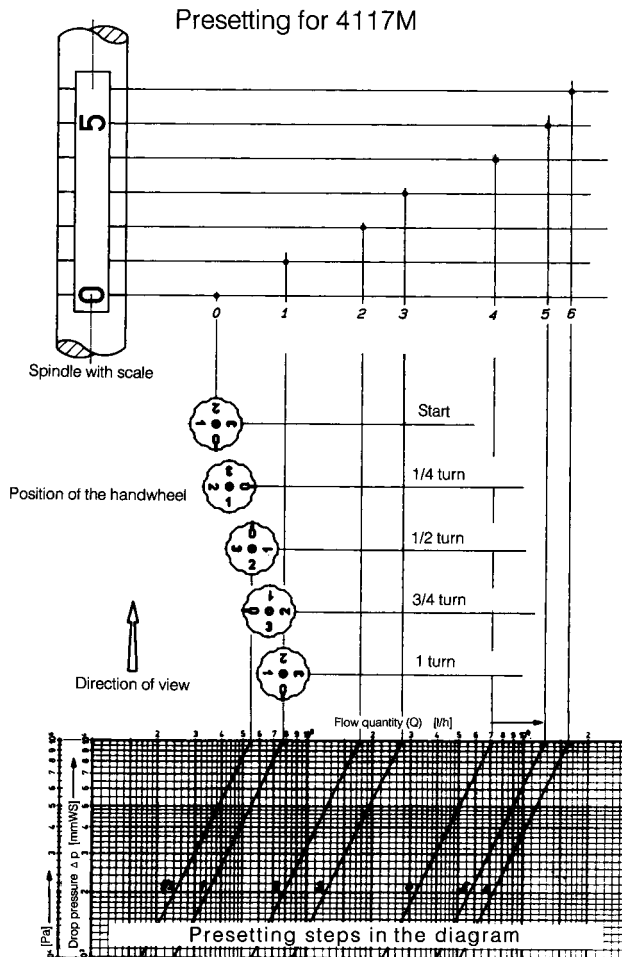
Presetting by means of the presetting sleeve

The presetting steps match the turns of the handwheel. One turn corresponds to one presetting step. If you cannot see the presetting steps on the scale you can adjust by counting the turns (starting from the closed value).

Handling

1. Close the valve.
2. Unscrew the locking nut.
3. By counting the turns of the handwheel preset to the desired position.
4. Fix the presetting sleeve with the locking nut.

Presetting by means of the handwheel



- 1 **4095** Thermal heat shells – for order numbers please refer to the HERZ catalogue
- 1 **6517 05** Pre-setting marker
- 1 **8900 03** HERZ-Measuring computer for one-hand operation
- 1 **8903 00** HERZ-Measuring computer Flow plus

Accessories

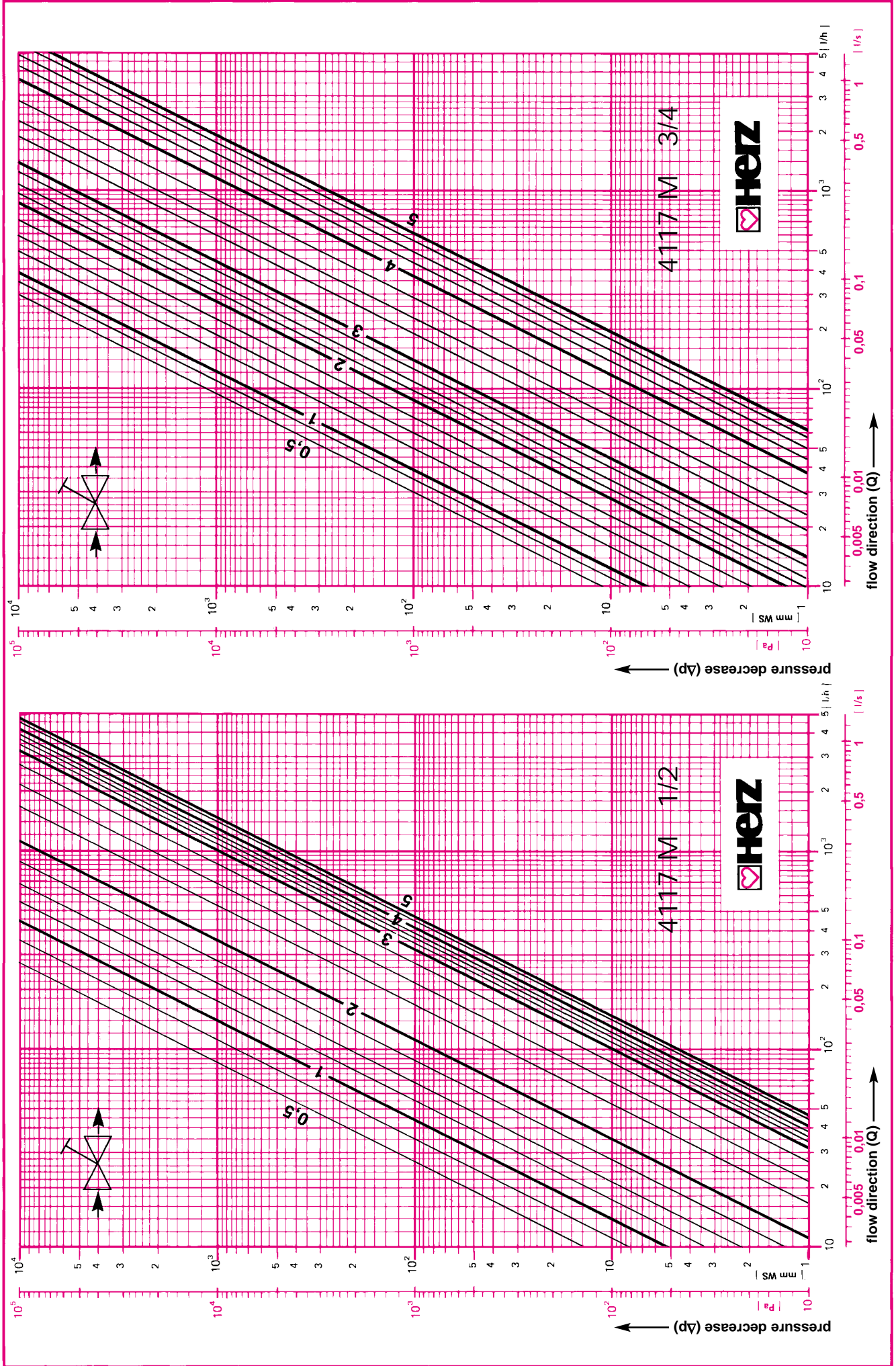
For models 4117 M until year of construction 2003

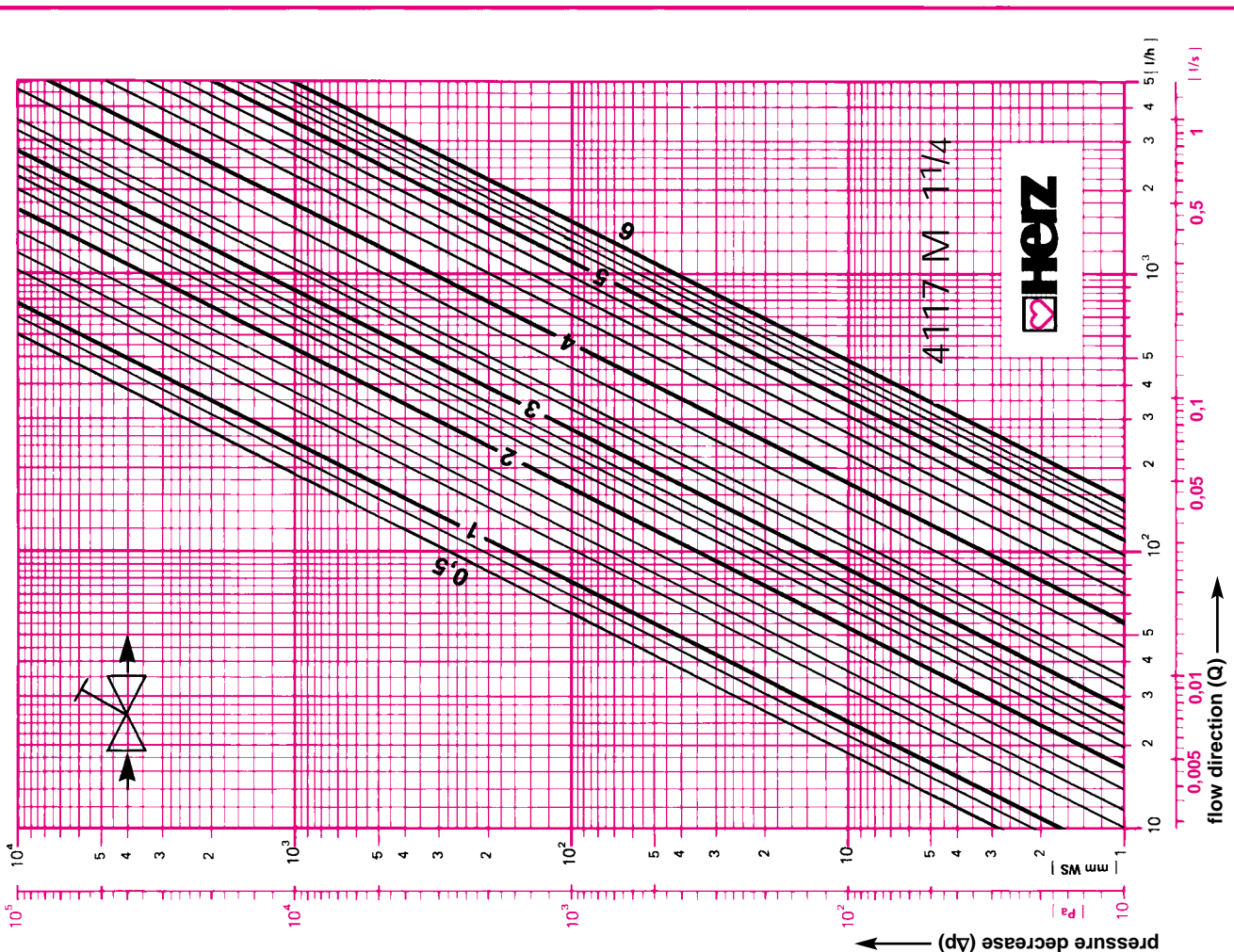
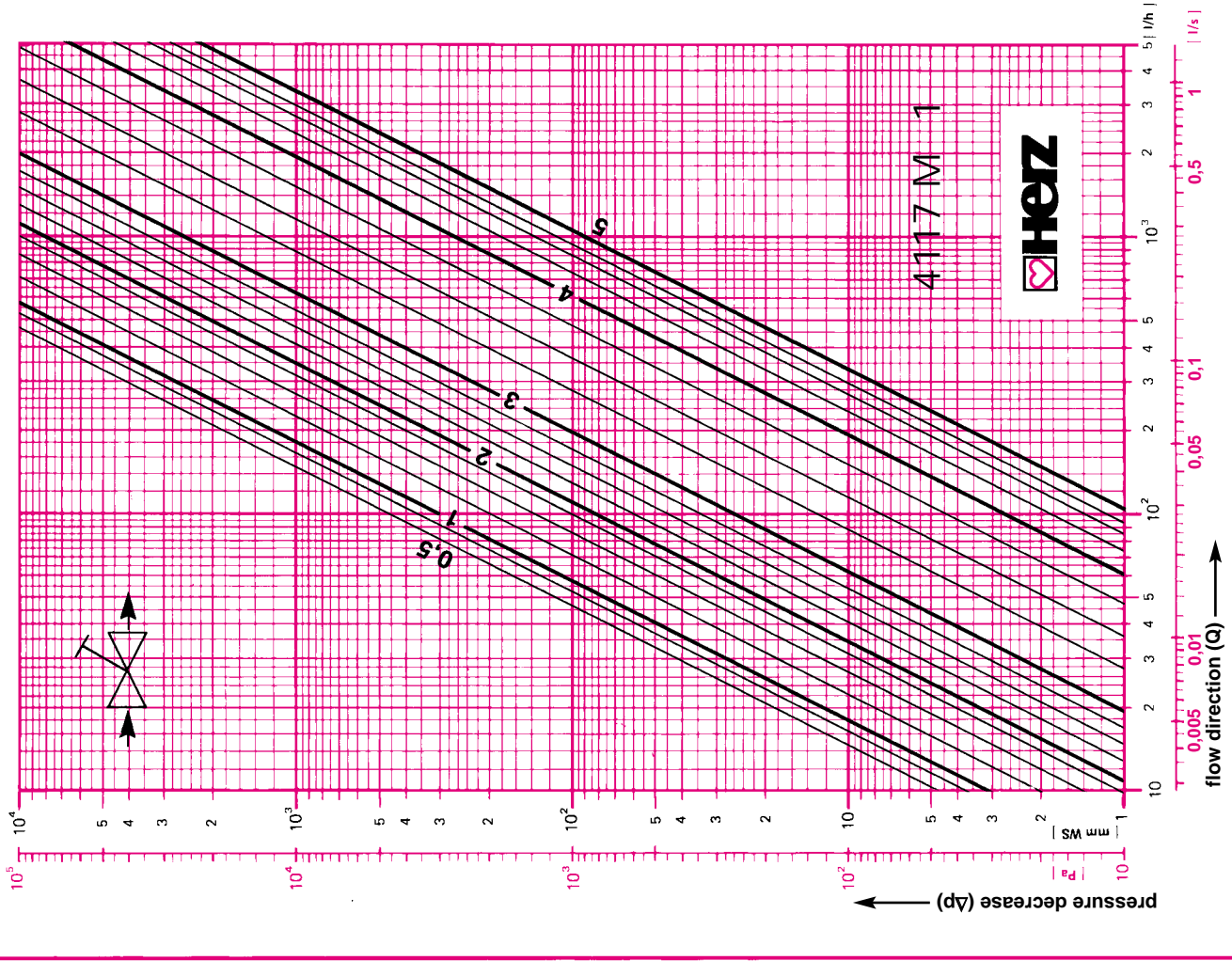
- 1 **0280 09** Measuring valve, straight model
- 1 **0282 09** Measuring valve, angle model
- 1 **6388 00-08** STRÖMAX-M- upper part – for order numbers please refer to the HERZ-catalogue
- 1 **6518 00** Hand wheel
- 1 **6705 00** O-ring set
- 1 **6640 00** HERZ-universal key

For models 4117 M as of 2003 - new design

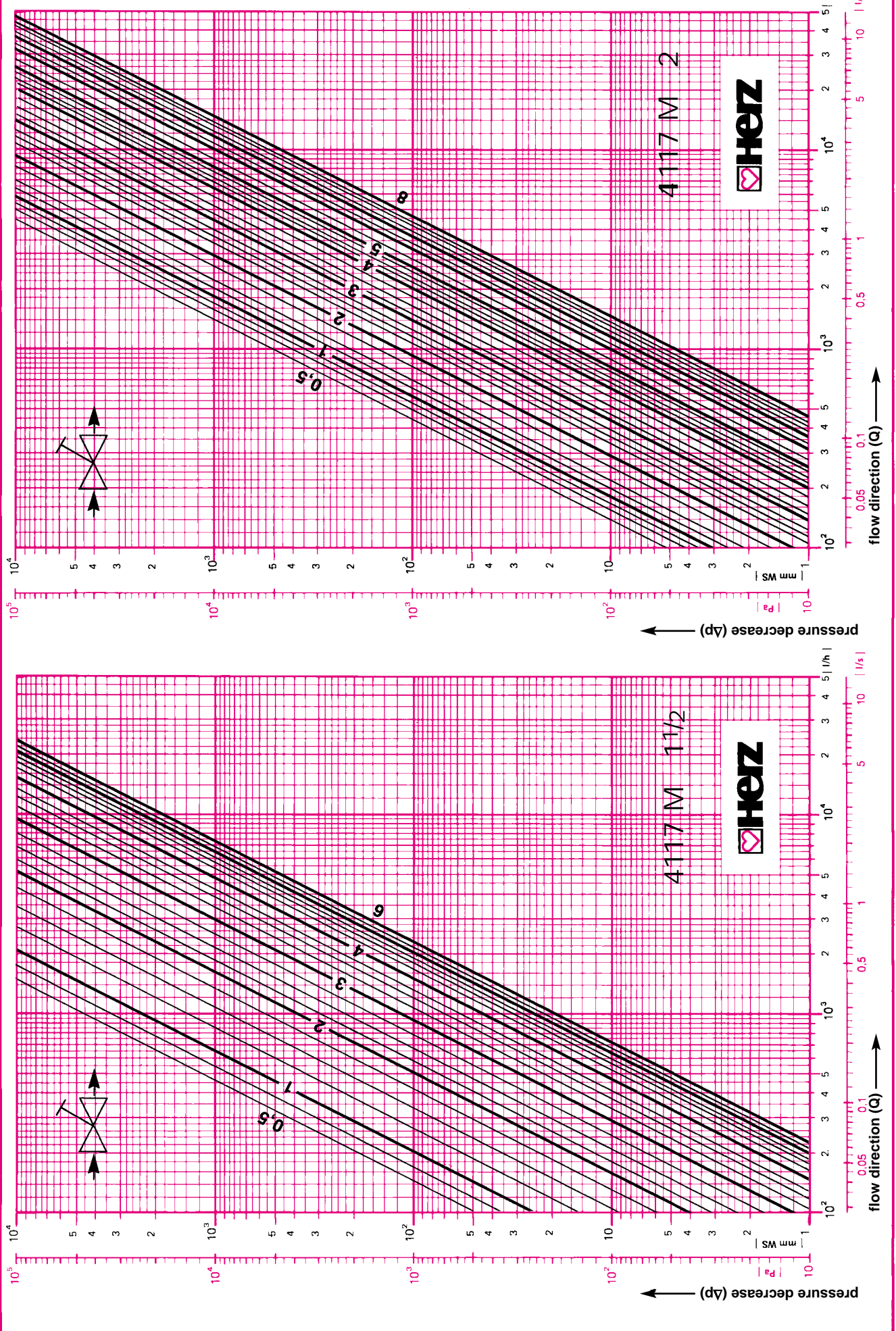
- 1 **0284 01** 1/4 Quick measuring valve for HERZ-STRÖMAX Circuit Regulating Valve, blue cap, for pressure absorption device
- 1 **0284 02** 1/4 Quick measuring valve for HERZ-STRÖMAX Circuit Regulating Valve, red cap, for pressure absorption device
- 1 **6388 50-58** STRÖMAX-M- upper part - for order numbers please refer to the HERZ-catalogue
- 1 **6518 00** Hand wheel
- 1 **6705 00** O-ring set

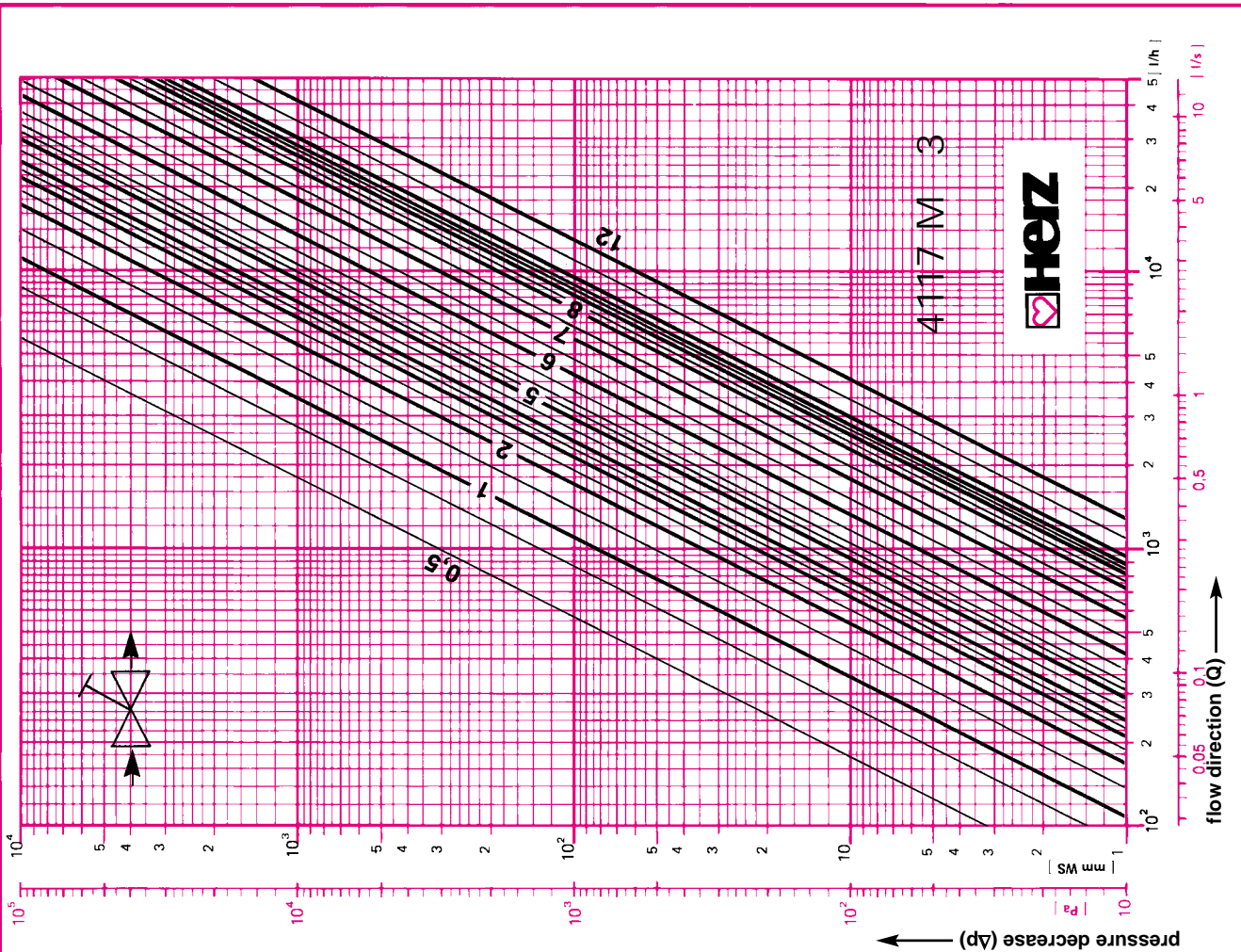
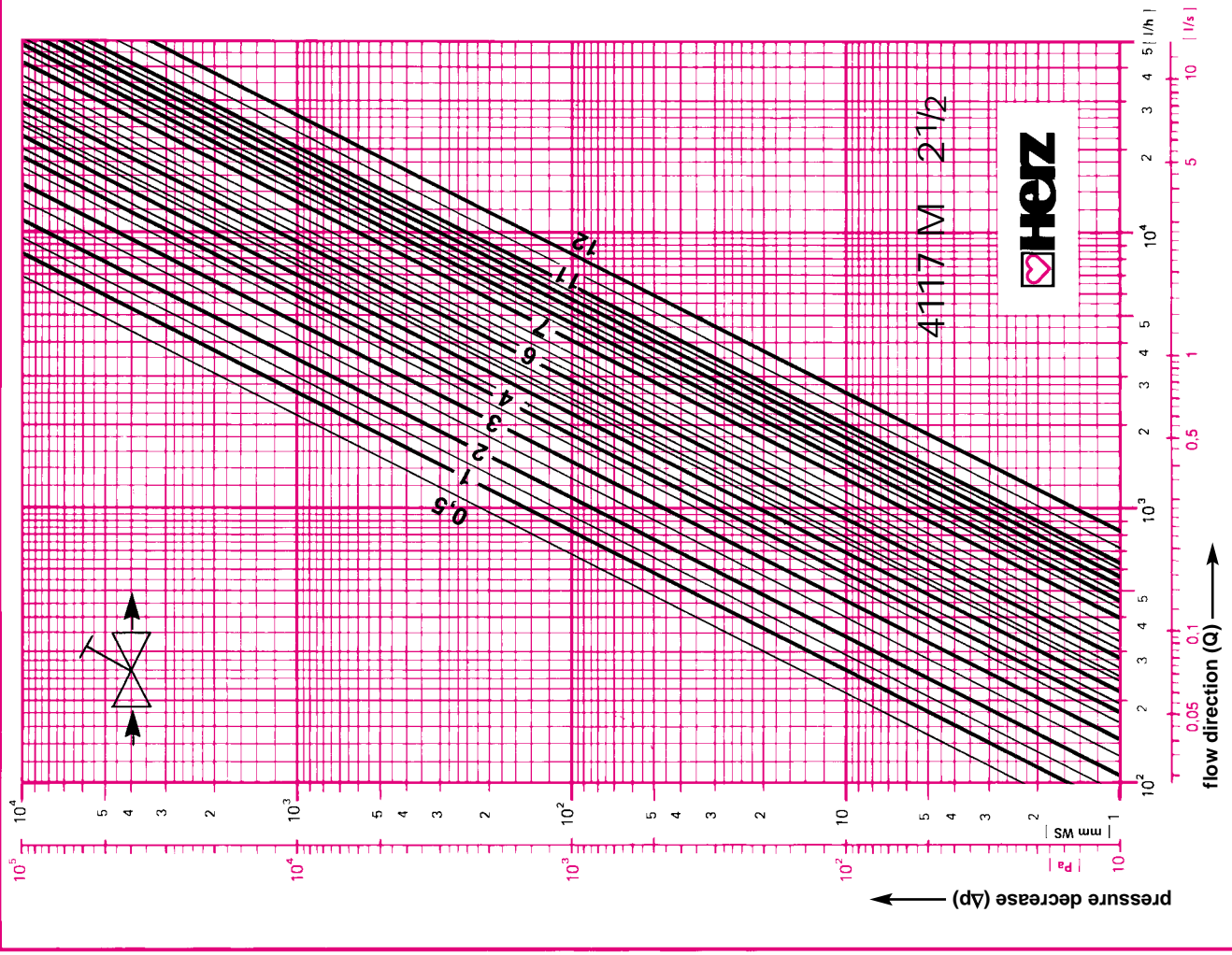
Spare Parts





Presetting values with HERZ Differential Manometer





Presetting values with HERZ-Differential Manometer

| presetting-level | 4117 M-1/2 | | 4117 M-3/4 | | 4117 M-1 | | 4117 M-1 1/4 | |
|------------------|--------------|-----------------------------|------------|-----------------------------|--------------|-----------------------------|--------------|-----------------------------|
| | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 |
| 0,5 | 0,27 | 1388 | 0,3 | 3726 | 0,47 | 3957 | 0,63 | 6748 |
| 0,75 | 0,35 | 826 | 0,35 | 2738 | 0,52 | 3233 | 0,71 | 5270 |
| 1 | 0,44 | 535 | 0,39 | 2205 | 0,57 | 2662 | 0,79 | 4262 |
| 1,25 | 0,55 | 335 | 0,51 | 1289 | 0,71 | 1734 | 1,03 | 2532 |
| 1,5 | 0,67 | 225 | 0,61 | 901 | 0,85 | 1210 | 1,21 | 1826 |
| 1,75 | 0,87 | 134 | 0,73 | 629 | 1 | 874 | 1,45 | 1278 |
| 2 | 1,09 | 85,7 | 0,87 | 445 | 1,15 | 664 | 1,75 | 878 |
| 2,25 | 1,63 | 38,1 | 0,98 | 349 | 1,32 | 501,8 | 2,04 | 645,6 |
| 2,5 | 2,18 | 21,3 | 1,1 | 277 | 1,5 | 388,6 | 2,3 | 507,9 |
| 2,75 | 2,68 | 14,09 | 1,25 | 215 | 1,73 | 292 | 2,55 | 413 |
| 3 | 3,19 | 9,92 | 1,39 | 173 | 1,98 | 224 | 2,81 | 340,7 |
| 3,25 | 3,44 | 8,55 | 1,89 | 93,9 | 2,82 | 110 | 3,4 | 232,4 |
| 3,5 | 3,69 | 7,43 | 2,30 | 63,4 | 3,7 | 63,86 | 3,66 | 200,9 |
| 3,75 | 3,85 | 6,83 | 2,95 | 38,5 | 4,95 | 35,68 | 4,7 | 121,6 |
| 4 | 4,1 | 6,03 | 3,68 | 24,7 | 6,2 | 22,7 | 5,73 | 81,9 |
| 4,25 | 4,35 | 5,35 | 4,37 | 17,56 | 7,4 | 15,96 | 7,25 | 51,1 |
| 4,5 | 4,59 | 4,8 | 5,03 | 13,26 | 8,6 | 11,82 | 8,69 | 35,6 |
| 4,75 | 4,66 | 4,66 | 5,6 | 10,7 | 9,5 | 9,69 | 10,1 | 26,3 |
| 5 | 4,75 | 4,49 | 6,12 | 8,96 | 10,4 | 8,1 | 11,44 | 20,53 |
| 5,25 | | | | | | | 12,6 | 16,9 |
| 5,5 | | | | | | | 13,86 | 13,98 |
| 5,75 | | | | | | | 14,85 | 12,18 |
| 6 | | | | | | | 15,97 | 10,53 |
| presetting-level | 4117 M-1 1/2 | | 4117 M-2 | | 4117 M-2 1/2 | | 4117 M-3 | |
| | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 | kv-Value | Zeta-Value acc. to DIN 2440 |
| 0,5 | 1,44 | 2410 | 4,38 | 653 | 6,85 | 750 | 5,55 | 2215 |
| 0,75 | 1,72 | 1689 | 5,05 | 490 | 7,50 | 625 | 8,47 | 951 |
| 1 | 2 | 1250 | 5,73 | 380,5 | 8,16 | 528,2 | 11,38 | 526,8 |
| 1,25 | 2,7 | 686 | 6,38 | 307 | 8,73 | 462 | 12,7 | 423 |
| 1,5 | 3,41 | 430 | 7,03 | 253 | 9,30 | 407 | 14 | 348 |
| 1,75 | 4,2 | 283 | 8,2 | 186 | 10,2 | 335 | 15,5 | 284 |
| 2 | 4,99 | 200,7 | 9,35 | 142,9 | 11,2 | 282,9 | 17,02 | 235,5 |
| 2,25 | 5,84 | 146,5 | 10,72 | 108 | 12 | 244 | 18 | 211 |
| 2,5 | 6,69 | 111,7 | 12,09 | 85,5 | 12,8 | 213 | 19 | 189 |
| 2,75 | 7,94 | 79,3 | 13,08 | 73,04 | 13,7 | 189 | 20,04 | 170 |
| 3 | 9,2 | 59,3 | 14,07 | 63,10 | 14,45 | 168,4 | 21,09 | 153,4 |
| 3,25 | 10,68 | 43,8 | 15,4 | 52,7 | 15,6 | 144 | 21,68 | 145 |
| 3,5 | 12,2 | 33,74 | 16,74 | 44,6 | 16,8 | 125 | 22,26 | 138 |
| 3,75 | 13,6 | 27,02 | 18,42 | 36,83 | 17,5 | 116 | 23,35 | 125 |
| 4 | 15 | 22,2 | 20,1 | 30,90 | 18,1 | 107,2 | 24,43 | 114,3 |
| 4,25 | 16,53 | 18,29 | 20,85 | 28,75 | 18,8 | 99,3 | 25,5 | 105 |
| 4,5 | 18,06 | 15,32 | 21,6 | 26,78 | 19,5 | 92,2 | 26,6 | 96,4 |
| 4,75 | 19,07 | 13,74 | 24,01 | 21,68 | 20,8 | 81,7 | 28,2 | 85,8 |
| 5 | 20,1 | 12,4 | 26,43 | 17,9 | 21,96 | 72,93 | 29,8 | 76,9 |
| 5,25 | 21,04 | 11,29 | 27,6 | 16,40 | 23,1 | 65,9 | 31,7 | 67,9 |
| 5,5 | 22 | 10,33 | 28,75 | 15,12 | 24,3 | 59,7 | 33,7 | 60,1 |
| 5,75 | 22,77 | 9,64 | 30,6 | 13,35 | 26,6 | 49,63 | 37,3 | 49,0 |
| 6 | 23,5 | 9,02 | 32,4 | 11,9 | 28,97 | 41,91 | 40,86 | 40,86 |
| 6,25 | | | 33,33 | 11,25 | 31,58 | 35,27 | 44,3 | 34,75 |
| 6,5 | | | 34,27 | 10,64 | 34,2 | 30,07 | 47,8 | 29,9 |
| 6,75 | | | 36,11 | 9,58 | 37,24 | 25,36 | 52,38 | 24,87 |
| 7 | | | 37,9 | 8,68 | 40,28 | 21,68 | 56,99 | 21,01 |
| 7,25 | | | 40,3 | 7,69 | 42,71 | 19,28 | 60,7 | 18,52 |
| 7,5 | | | 42,69 | 6,86 | 45,14 | 17,26 | 64,44 | 16,43 |
| 7,75 | | | 45,29 | 6,09 | 46,52 | 16,25 | 68,1 | 14,71 |
| 8 | | | 47,89 | 5,45 | 47,9 | 15,33 | 71,8 | 13,23 |
| 8,25 | | | | | 49,4 | 14,41 | 73,1 | 12,77 |
| 8,5 | | | | | 50,84 | 13,61 | 74,4 | 12,32 |
| 8,75 | | | | | 52,65 | 12,69 | 78,1 | 11,18 |
| 9 | | | | | 54,46 | 11,86 | 81,75 | 10,21 |
| 9,25 | | | | | 54,92 | 11,66 | 82,16 | 10,11 |
| 9,5 | | | | | 55,38 | 11,47 | 82,57 | 10,01 |
| 9,75 | | | | | 57,09 | 10,79 | 86,37 | 9,15 |
| 10 | | | | | 58,8 | 10,17 | 90,17 | 8,39 |
| 10,25 | | | | | 59,8 | 9,84 | 90,27 | 8,37 |
| 10,5 | | | | | 60,79 | 9,52 | 90,38 | 8,35 |
| 10,75 | | | | | 63,42 | 8,74 | 92,7 | 7,94 |
| 11 | | | | | 66,05 | 8,06 | 95 | 7,56 |
| 11,5 | | | | | 73,53 | 6,51 | 111,3 | 5,51 |
| 11,75 | | | | | 78,87 | 5,65 | 122 | 4,58 |
| 12 | | | | | 84,2 | 4,96 | 133,2 | 3,85 |