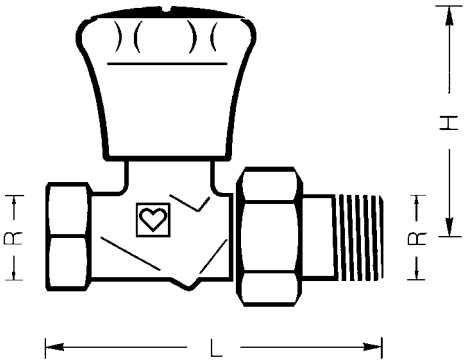
HERZ-DR-T-90

Radiator Control Valves with Pre-Setting Function by Means of Double Cone, Suitable for Conversion to Thermostatic Operation

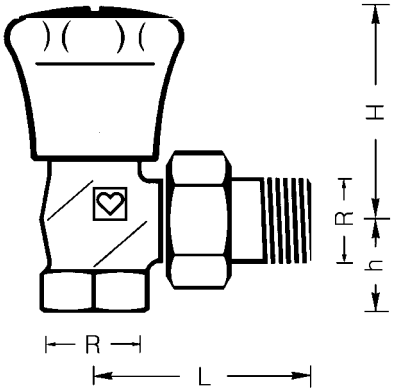
Standard Sheet for

6823/6824

Edition 1000 (0999)

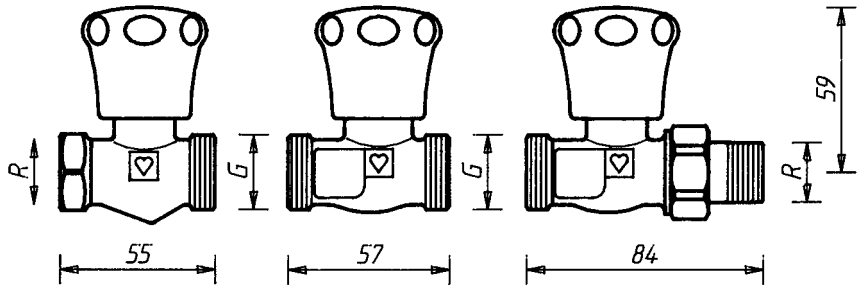


6823

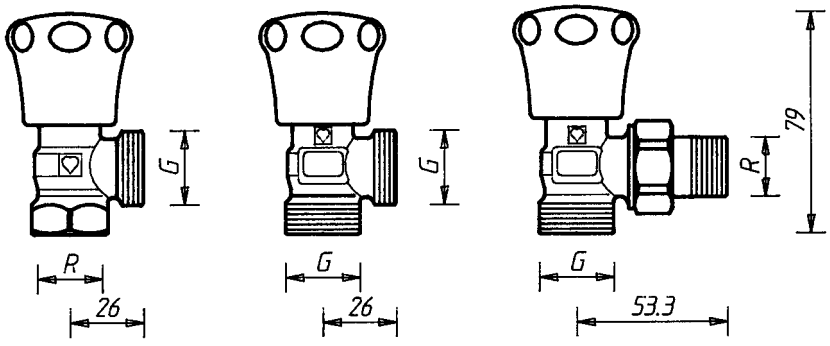


6824

Special Models



1 **6823** 71 | 1 **6837** 91 | 1 **6833** 81



1 **6824** 71 | 1 **6824** 37 | 1 **6848** 01

R = R 1/2"
G = G 3/4

Article number	Models	DN	R Connection	Ø	L	H max.	h	Order Number
6823	Straight model	10	3/8"	12	75	61	–	1 **6823** 90
		15	1/2"	15	83	61	–	1 **6823** 91
		20	3/4"	18	98	61	–	1 **6823** 92
6824	Angle model	10	3/8"	12	49	59	20	1 **6824** 90
		15	1/2"	15	54	56	23	1 **6824** 91
		20	3/4"	18	63	56	26	1 **6824** 92

Dimensions in mm

We reserve the right to make modifikations necessitatet by technological progress

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Models

All models are nickel plated, with white screw disk, handwheel protection caps.

Universal models with special socket for threaded pipe and compression union. Subsequent conversion to thermostatic operation is possible while the system is under pressure.

HERZ-DR-T-90

6823	**3/8" – 3/4"**	Straight model
6824	**3/8" – 3/4"**	Angle model

HERZ-DR-T-90 Models for Public Buildings

1 **6823** 80	3/8"	Model for public buildings with lockshield
1 **6823** 81	1/2"	Universal models in straight versions
1 **6823** 82	3/4"	
1 **6824** 80	3/8"	Angle models for public buildings
1 **6824** 81	1/2"	
1 **6824** 82	3/4"	

HERZ-DR-T-90 Special Designs

HERZ-DR-T-90-Valves in Special Models, Dimension 1/2"

1 **6823** 71	Straight model, universal socket x male thread G 3/4 with cone seal
1 **6837** 91	Straight model, 2 x male thread G 3/4, with cone seal
1 **6833** 81	Straight model, radiator connection with cone seal, pipe connection male thread G 3/4
1 **6824** 71	Angle model, universal socket x male thread G 3/4", with cone seal
1 **6824** 37	Angle model, 2 x male thread G 3/4, with cone seal
1 **6848** 01	Angle model, radiator connection with cone seal, pipe connection male thread G 3/4

Standard Models with Threaded Sockets 1" – 1 1/4"

6823	**1" – 1 1/4"**	Straight model
6824	**1" – 1 1/4"**	Angle model
6823 F	**1"**	Straight model for public buildings
6824 F	**1"**	Angle model for public buildings

A separate standard sheet is available for these models.

Operating Data

Maximum operating temperature 110 °C
Maximum operating pressure 10 bar

Hot water quality according to Austrian standard ÖNORM H 5195 and/or VDI-guideline 2035.

HERZ-Compression Union

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 80 °C and maximum operating pressure of 4 bar applies for plastic pipe connections, if permitted by the pipe manufacturer.

Field of Application

Hot water heating systems where high-precision adjustment and minimum cost are required. Installation in air conditioning systems for exact adjustment of cooling and heating units, also suitable as circuit control valves.

Radiator Connection

Iron pipe connection 6210 with cone seal, installed.

It is recommended to use the HERZ-assembley key 6680.

Further Connection Options

Please refer to the HERZ catalogue for order numbers

Instead of the radiator connection and an male threads G 3/4.

6210	1/2"	Iron pipe connection, lengths 26 mm and 35 mm
6211	1/2"	Reducing connection, 1/2" x 3/8"
6213	3/8"	Reducing connection, 3/8 x 1/2"
6218	3/8"-3/4"	Long threaded bush, without nut, can be shortened to compensate for differences in structural dimensions, lengths 3/8" x 40: 1/2" x39, 42 and 76; 3/4" x 70 mm
6218	1/2"	Threaded bush, without nut, lengths 36, 48 and 76 mm.
6235	3/8"-3/4"	Soldering connection 3/8" x 12; 1/2" x 12, 15 and 18; 3/4" x 18 mm.
6249	3/8" – 3/4"	Connection elbow for iron pipes, without nut, with cone seal
6274	G 3/4	Compression union for copper and thin-walled steel pipes, external pipe diameters 8, 10, 12, 14, 15, 16, 18 mm
6275	G 3/4	HERZ compression union with soft seal for copper and thin-walled steel pipes, particularly suitable for hard special steel pipes and pipes with hard-galvanised surfaces. For external pipe diameters 12, 14, 15 mm
6098	G 3/4	HERZ compression union for PE-X-, PB and plastic composite pipes.

For use on the socket side of the valve:

6219	1/2" – 3/4"	Reduction socket, brass version, for connecting pipe and valve, female thread (pipe) x male thread (valve) 1" x 1/2", 1 1/4" x 1/2", 1" x 3/4", 1 1/4" x 3/4"
6066	M 22 x 1.5	Plastic pipe connection for PE-X-, PB and plastic composite pipes, for use with adapter 1 **6272** 01 (R 1/2 x M 22 x 1.5)
6098	G 3/4	Plastic pipe connection for PE-X, PB and plastic composite pipes, for use with adapter 1 **6266** 01 (R 1/2 x G 3/4)

Pipe Connection Universal Models

The universal models are equipped with special socket offering the option of connecting either a threaded pipe or a calibrated soft-steel or copper pipe, the latter two by means of compression union. The compression union be ordered separately.

When using R = 1/2" valves for external pipe diameters of 10, 12, 14, 16 and 18 mm use adapter, Art. No. 6272, between valve and compression union.

Pipe Ø D mm		12	10	12	14	15	16	18	18
Valve	R =	3/8"	1/2"						3/4"
Adapter	Order No.		1 **6272** 01	1 **6272** 01	1 **6272** 01		1 **6272** 01	1 **6272** 11	
Compr. Union	Order No.	1 **6292** 00	1 **6284** 00	1 **6284** 01	1 **6284** 03	1 **6292** 01	1 **6284** 05	1 **6289** 01	1 **6292** 02

When installing soft-steel and copper pipes with HERZ compression unions, we recommend the use of support sleeves. For perfect installation, use silicon oil to lubricate the thread of the locking nut (male and female thread), as well as the olive. Refer to our instructions.

Pre-Setting

Pre-setting by means of telescopic flow restriction cone permits the flow rate to be reduced to approximately 1% while the full main spindle lift is available at any time. The pre-setting key Art. No. **6800 (yellow shaft)** is required for pre-setting.

The inside flow restriction cone can be adjusted by means of a pre-setting spindle. The cone is adjustable at the pre-setting spindle in order to rule out any undesired change of flow rate due to the effects of foreign bodies.

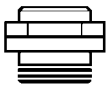
Pre-Setting Operation

1. Remove the handwheel disk with integrated fastening screw and remove the handwheel.
2. Insert the shaft of the pre-setting key into the main control spindle and press the measuring sleeve against the front area of the spindle.
3. The scale on the key shaft makes it possible to perform the following pre-setting operations:
    1. Turning the key head clockwise reduces the flow rate to a minimum by screwing in the inside spindle with pre-setting cone.
    2. Turning the key head counterclockwise increases the flow rate from minimum to maximum.
4. After adjustment re-install the handwheel and disk screw.

Spindle Seal

The spindle seal is an O-Ring located in brass chamber, which can be replaced while the system is in operation. This O-Ring guarantees minimum maintenance requirements and ease of operation.

O-Ring set (20 O-Ring screws with O-Ring): **6810**



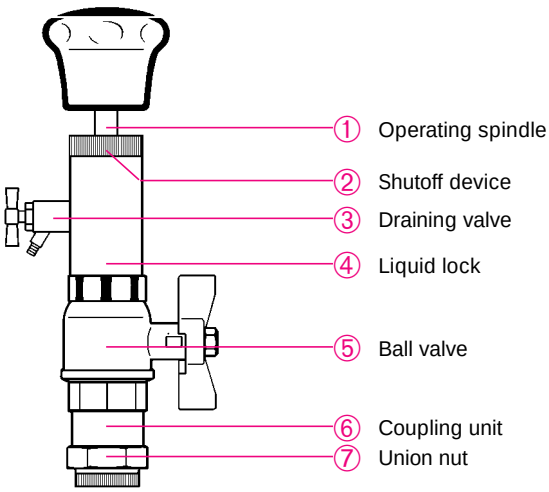
Special Design Features

The following operations may be carried out while the system is under pressure and in operation using the HERZ changing tool:

- conversion to thermostatic operation
- spindle seal replacement
- replacement of the upper part of the value
- cleaning the valve seat

The detailed procedure is shown in the table on page 5.

HERZ-Universal Tool Designation of Components



Lockshield Model for Public Buildings

The lockshield of the model for public buildings serves for locking the control spindle in any desired position. In this way, unauthorized persons cannot operate the valve.

Operation and Setting

1. Remove fastening screw.
2. Remove lockshield.
3. Turn the lockshield around and use it to adjust the spindle at any desired position.
4. Put the lockshield in place in such a way that the spindle is not turned and that it meshes with the hexagon socket of the O-Ring nut.
5. Re-install fastening screw.

Locking by means of the lockshield does not affect any previous pre-setting steps.

Replacing the Handwheel with a Lockshield

The handwheel of the universal model can be replaced with the lockshield, Art. No. **6512** (screw included).

1. Remove handwheel.
2. Install lockshield as described.

HERZ-DR-T-90 Thermostatic Valves

HERZ-DR-T-90 universal models can be converted to thermostatic operation by installing a HERZ thermostatic upper part and a HERZ thermostat while a heating system is in operation. The thermostatic upper part replaces the HERZ-DR-T-90 valve upper part.

The following upper parts are available:

- HERZ-Thermostatic upper part
- HERZ-Thermostatic upper part with pre-setting function
- HERZ-Thermostatic upper part with fixed k_v-values

For detailed information on thermostats and upper parts see the HERZ standard sheets.

During conversion take into account the following:

- Conversion should only take place when the valve is mounted on the intake side and so that the heating water flows properly.
- The valve resistence after conversion is given in the HERZ-standard diagrams for HERZ-TS-90, HERZ-TS-90-V, HERZ-TS-98.V and HERZ-TS-90-k_v which is contained in the standard sheets for the respective models.
- The HERZ-thermostatic head should be in a horizontal position in order to ensure optimum room temperature control with minimum interference.
- The installation of the HERZ thermostat must be performed according to the HERZ instructions for installation.

Accessories

1 **6365** ..	HERZ thermostatic upper part with fixed k_v-values
1 **6367** 97	HERZ thermostatic upper part with continuous, concealed pre-setting
1 **6367** 98	HERZ thermostatic upper part with continuous, pre-setting readout.
1 **6390** ..	HERZ thermostatic upper part For order numbers please refer to the HERZ catalogue
1 **6680** 00	HERZ assembly key for radiator connections
1 **6800** 00	HERZ-DR-T-90 pre-setting key
1 **7780** 00	HERZ changing tool for thermostatic upper parts

Spare Parts

1 **6310**	HERZ-DR-T-90 upper part For order numbers please refer to the HERZ catalogue
1 **6510** 90	Handwheel with screw disk
1 **6512** 90	Lockshield with fastening screw
1 **6810** 90	HERZ-DR-T-90 O-ring set

Flow Diagrams on Pages 7 – 12

The diagrams serve to determine the valve resistance values and show the individual pre-setting steps.

k_v- and Zeta-Values on Page 6

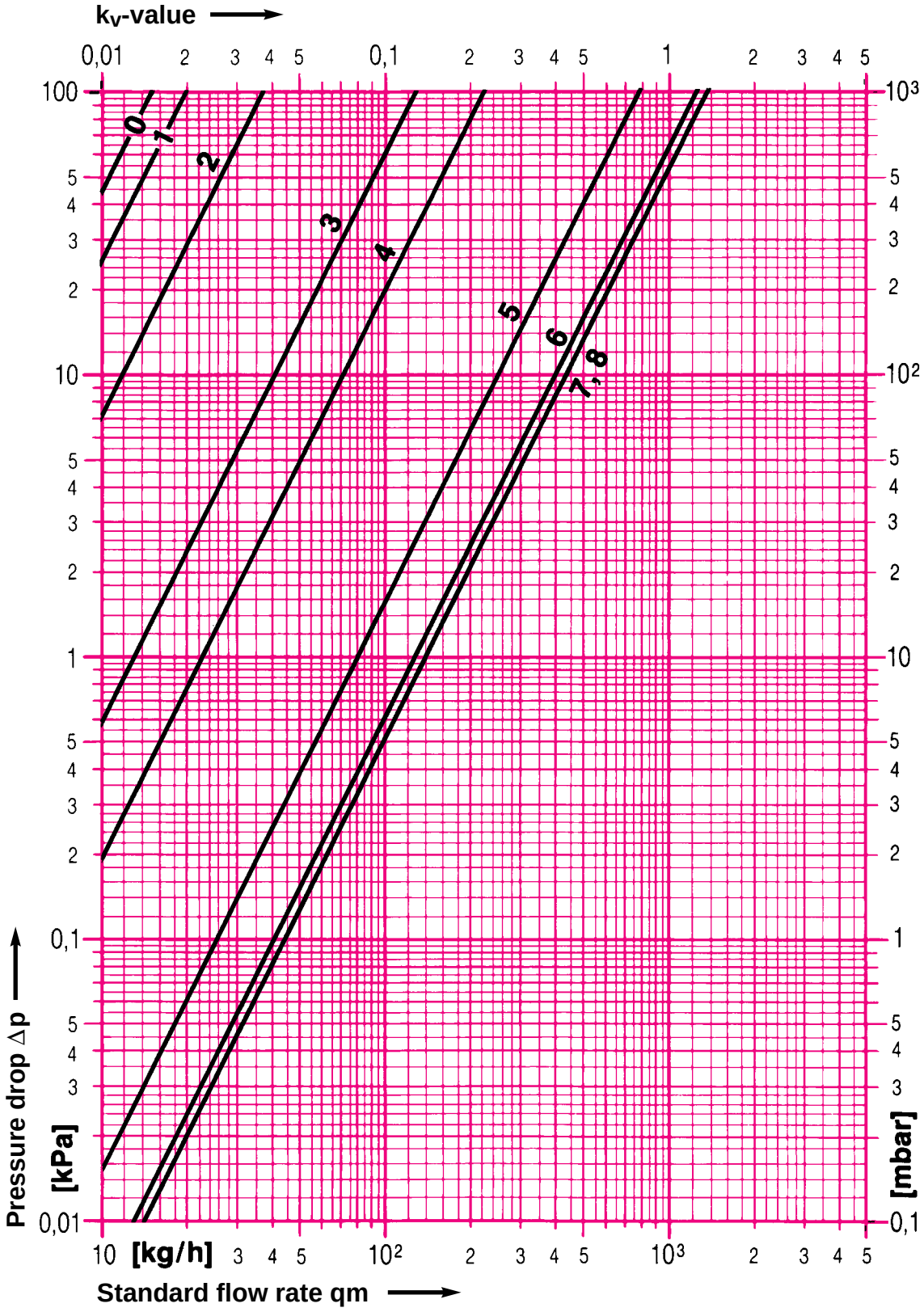
k_v- and zeta values are shown in an overview table on page 6.

O-Ring Replacement	Removal of HERZ-DR-T-90-Valve Upper Part	Conversion to Thermostatic Operation
Close valve spindle by turning clockwise up to the stop	Open valve spindle by turning counterclockwise up to the stop	
Unscrew handwheel disk, remove handwheel		
Slacken O-Ring screw by turning counterclockwise with 18 mm key	Slacken upper part by turning counterclockwise with 18 mm key	
Connect the coupling unit ⑥ of the HERZ-Tool plus liquid lock ④ with screw connection		
Tighten union nut ⑦ and shutoff device ② manually		
Shut draining valve ③		
Open ball valve ⑤		
Slide operating spindle ① towards the valve until the hexagon holding chuck meshes in the O-Ring nut	at the valve upper part	
Unscrew O-Ring nut or upper part by turning counterclockwise		
Move the operating spindle ① slowly away from the valve up to the stop. The rubber rings holds the upper part in the holding chuck and in doing so transports it into the liquid lock chamber ④		
Shut ball valve ⑤		
Open draining valve ③ over a collecting vessel and drain the liquid lock ④		
Unscrew shutoff device ② by turning counterclockwise and pull the operating spindle ① plus upper part out of the liquid lock		
Replace the O-Ring screw in the holding chuck with a new one.	Clean valve upper part in the holding chuck or replace with a new one.	Replace valve upper part in the holding chuck with a thermostatic upper part.
Insert operating spindle ① plus upper part into the liquid lock and tighten the shutoff device ② manually by turning clockwise.		
Shut draining valve ③ and open ball valve ⑤		
Slide the operating spindle ① slowly in towards the valve up to the stop.		
Install and tighten O-Ring nut by turning clockwise	Install and tighten valve upper part by turning clockwise	Install and tighten thermostatic upper part by turning clockwise
Open draining valve ③ over a collecting vessel and drain the liquid lock ④		
Unscrew the coupling unit ⑥ plus liquid lock ④ from the valve		
Tighten O-Ring screw with 18 mm key; maximum thigtening torque: 15 Nm	Tighten valve upper part with 18 mm key; maximum thigtening torque: 15 Nm	Tighten thermostatic upper part with 18 mm key; maximum thigtening torque: 20 Nm
Install handwheel and handwheel disk		Install the thermostatic head

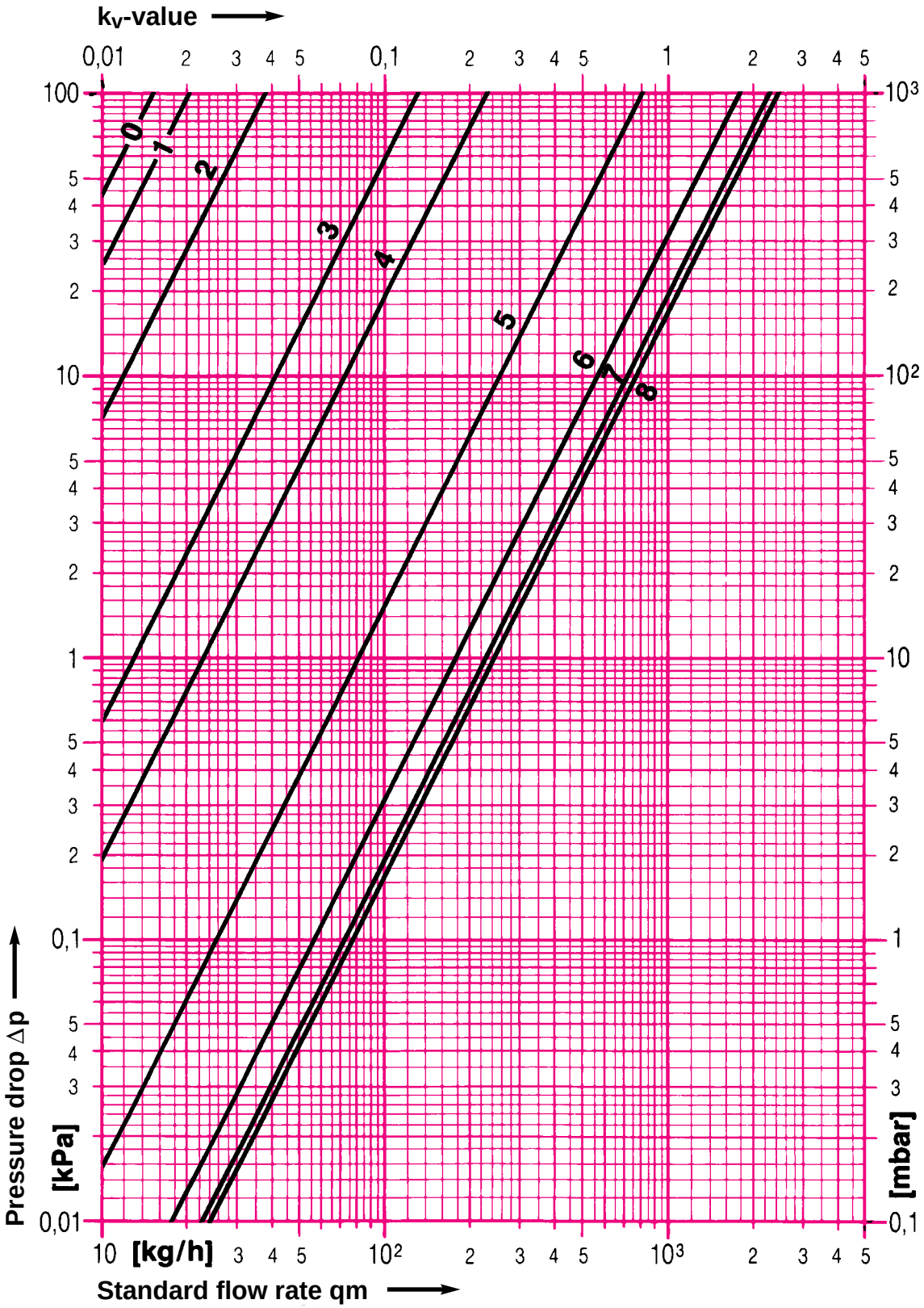
HERZ-DR-T-90-Pre-Setting Values

Pre-Setting Step	6823 – 3/8"		6824 – 3/8"	
	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440
0	0.015	168000	0.015	168000
1	0.02	95000	0.02	95000
2	0.037	27700	0.037	27700
3	0.13	2250	0.13	2250
4	0.23	720	0.23	720
5	0.8	59	0.8	59
6	1.3	22	1.8	12
7	1.4	20	2.3	7
8	1.4	20	2.45	6
Pre-Setting Step	6823 – 1/2"		6824 – 1/2"	
	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440
0	0.015	458000	0.015	458000
1	0.027	141300	0.027	141300
2	0.04	64375	0.04	64375
3	0.15	4577	0.15	4577
4	0.28	1310	0.28	1310
5	0.8	161	0.8	161
6	1.45	49	1.8	32
7	1.9	29	2.6	15
8	2	26	3.15	10
Pre-Setting Step	6823 – 3/4"		6824 – 3/4"	
	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440	k_V-Value	Zeta-Value with Reference to Pipe According to DIN 2440
0	0.022	706600	0.022	706600
1	0.03	380000	0.03	380000
2	0.045	168900	0.045	168900
3	0.13	20236	0.13	20236
4	0.25	5470	0.25	5470
5	0.9	422	0.9	422
6	1.6	134	1.8	166
7	2	86	2.6	51
8	2.2	71	3.15	34

HERZ Standard Diagram	HERZ-DR-T-90
Art. No. 6823	Dim. DN 10 R=3/8"

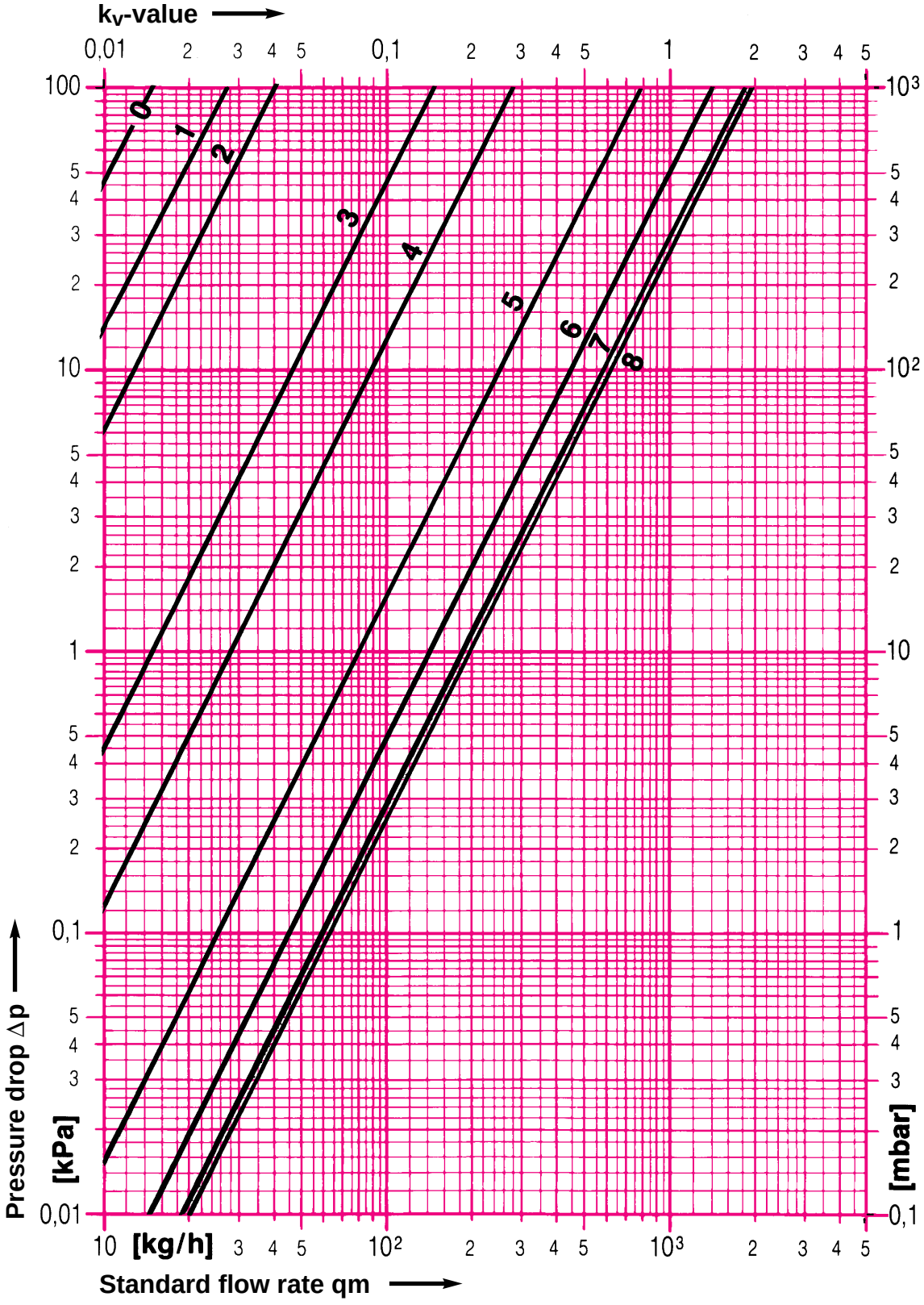


HERZ Standard Diagram	HERZ-DR-T-90
Art. No. 6824	Dim. DN 10 R=3/8"

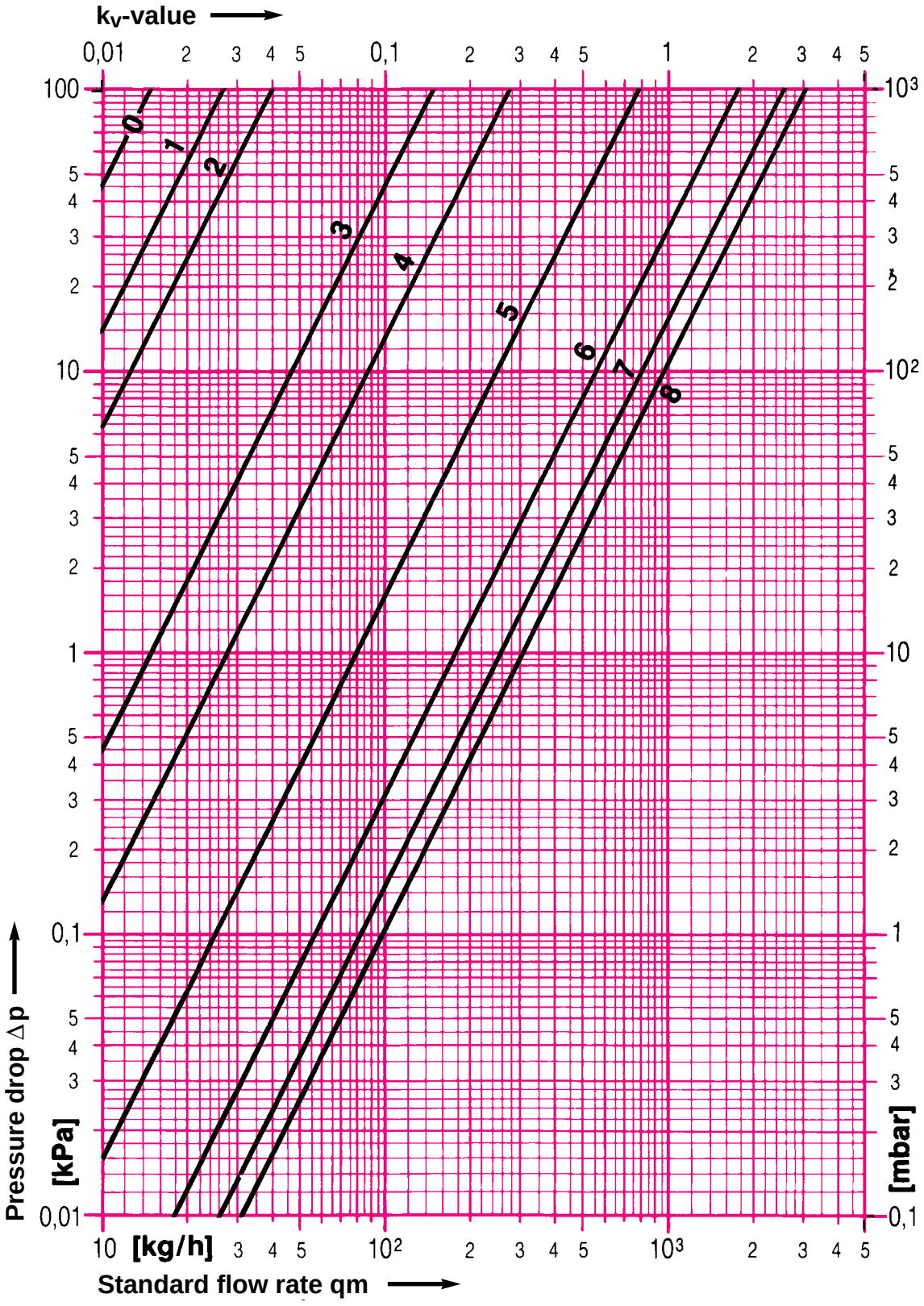


We reserve the right to make modifications.

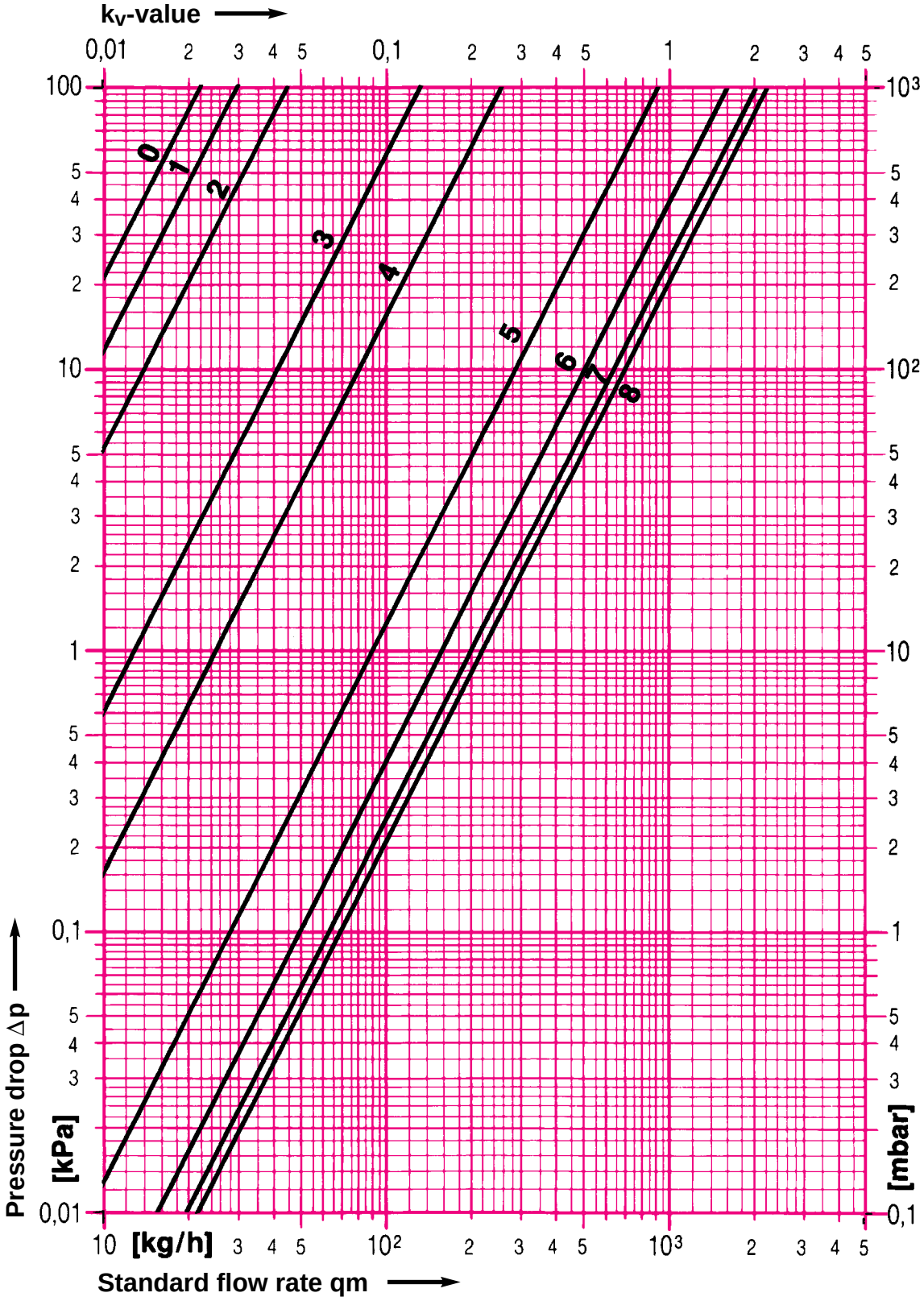
HERZ Standard Diagram	HERZ-DR-T-90
Art. Nr. 6823	Dim. DN 15 R=1/2"



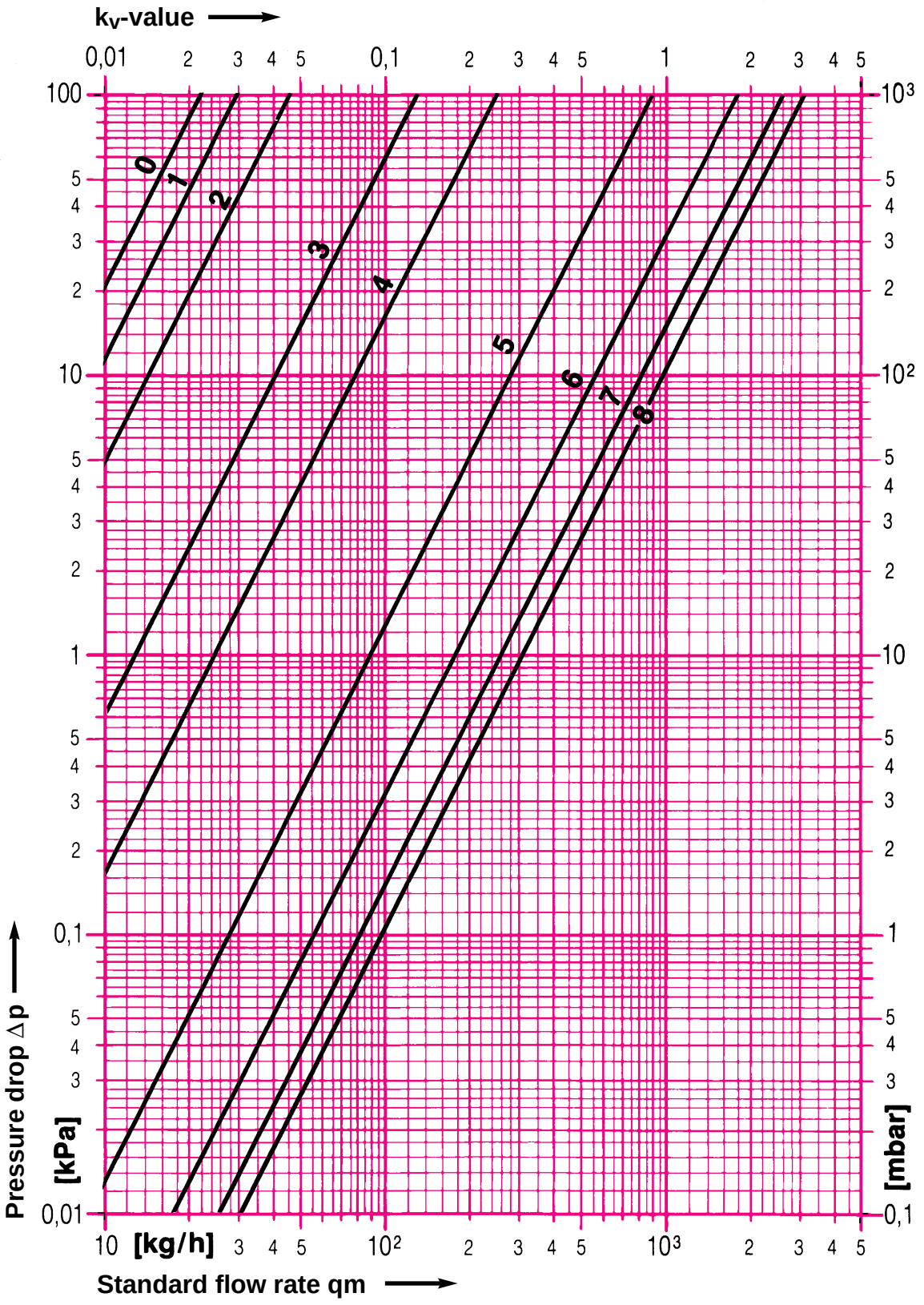
HERZ Standard Diagram	HERZ-DR-T-90
Art. Nr. 6824	Dim. DN 15 R=1/2"



HERZ Standard Diagram	HERZ-DR-T-90
Art. Nr. 6823	Dim. DN 20 R=3/4"



HERZ Standard Diagram	HERZ-DR-T-90
Art. Nr. 6824	Dim. DN 20 R=3/4"



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