Climate
Control

IMI TA

MD 01, 02, 03

Fixed orifices

Flow measuring orifice

Breakthrough
engineering for
a better world

MD 01, 02, 03

Flow measuring orifice with self-sealed measuring points.

Key features

Self-sealing measuring points
For simple, accurate balancing.

AMETAL®
Dezincification resistant alloy that guarantees a longer valve lifetime, and lowers the risk of leakage.

Technical description

Application:
Heating and cooling systems
Tapwater systems

Function:
Measuring

Dimensions:
MD 01: DN 15-50
MD 02, 03: DN 15

Pressure class:
PN 20

Temperature:
Max. working temperature: 120°C
Min. working temperature: -20°C

Material:
Body: AMETAL®
Measuring points: AMETAL®
Sealing (measuring points): EPDM
KOMBI compression coupling:
Thrust screw: Nickel plated brass
Cone: Brass

AMETAL® is the dezincification resistant alloy of IMI.

Marking:
TA, DN, PN and flow direction arrow.
Identification rings on measuring points.

General

The MD 01, 02 and 03 are manufactured in accordance with BS 7350.

Measuring accuracy

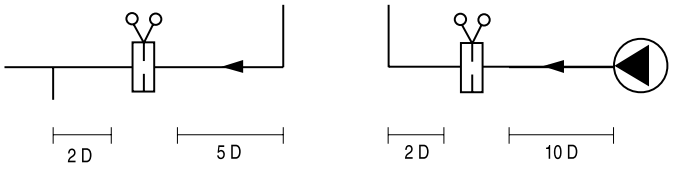
Flow measurement deviation in orifice is less than ±5%.

Dimensioning

Select the flow rate for the fixed orifice with the nearest Kvs value to get Δp signal >1 kPa <10 kPa.

Installation

Install flow measuring device in accordance to the flow direction arrow on the body.
To ensure flow measurement accuracy it is essential that the piping in the inlet and outlet sides is straight and has a minimum length equivalent to X pipe diameters at inlet and X pipe diameters at outlet as shown:



Flow rate definition

When flow rates generate the following pressure differential of 1 kPa then the flows are classified as follows.

Standard flow

DN 15	0.062 l/s
DN 20	0.13 l/s
DN 25	0.24 l/s
DN 32	0.46 l/s
DN 40	0.68 l/s
DN 50	1.30 l/s

Ultra low flow

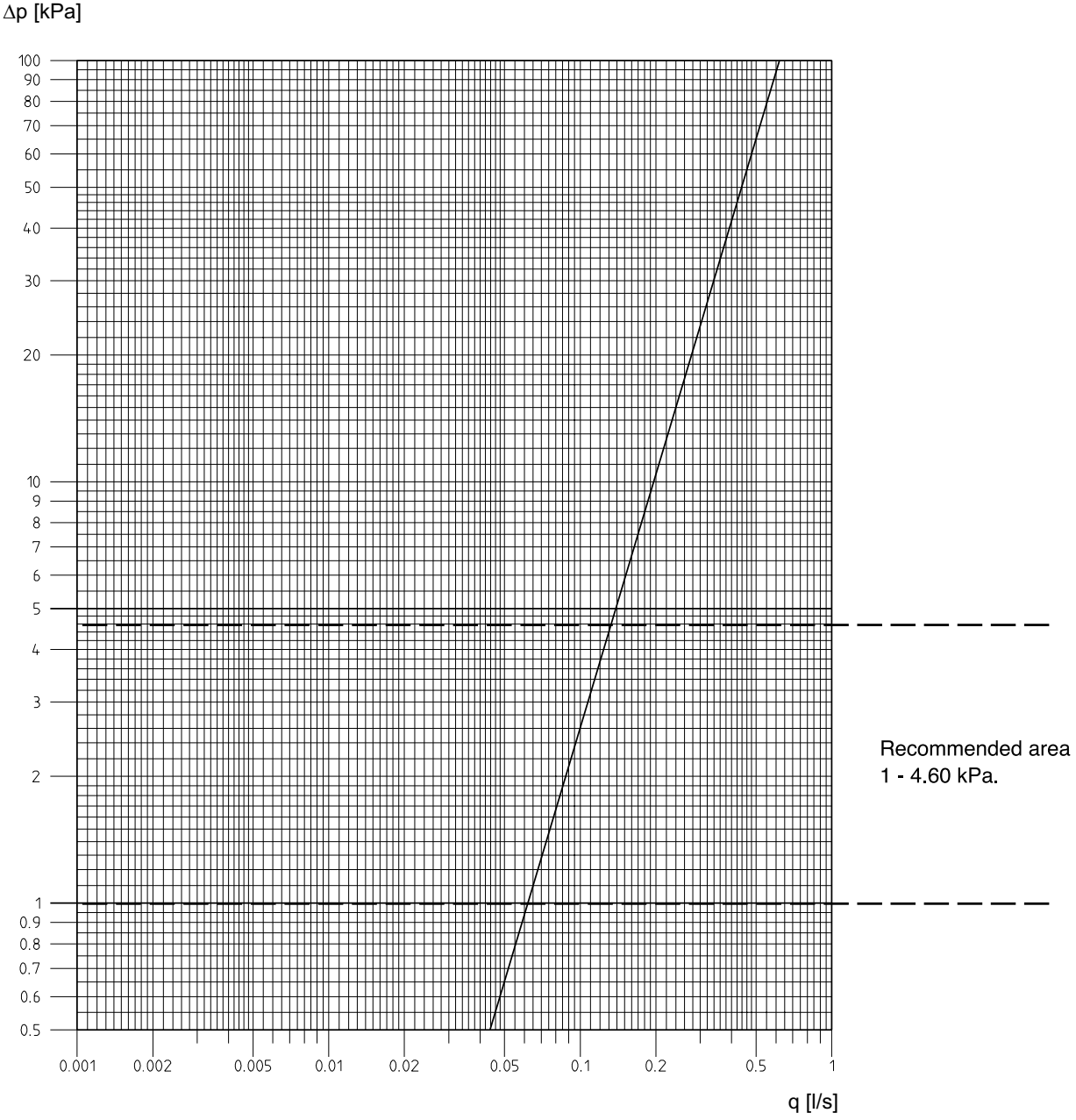
DN 15	0.015 l/s

Low flow

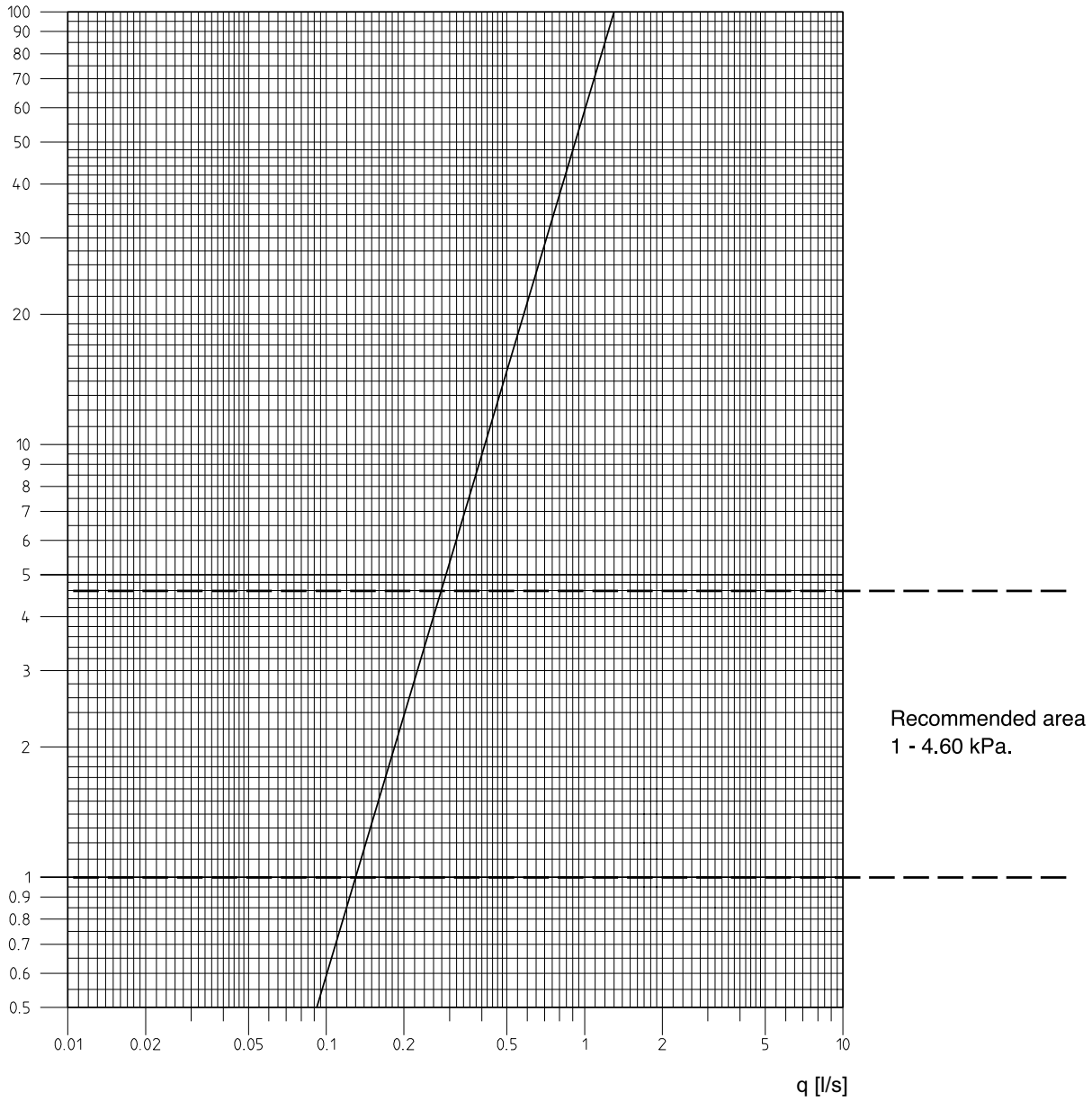
DN 15	0.030 l/s

Diagram MD 01 – Standard flow

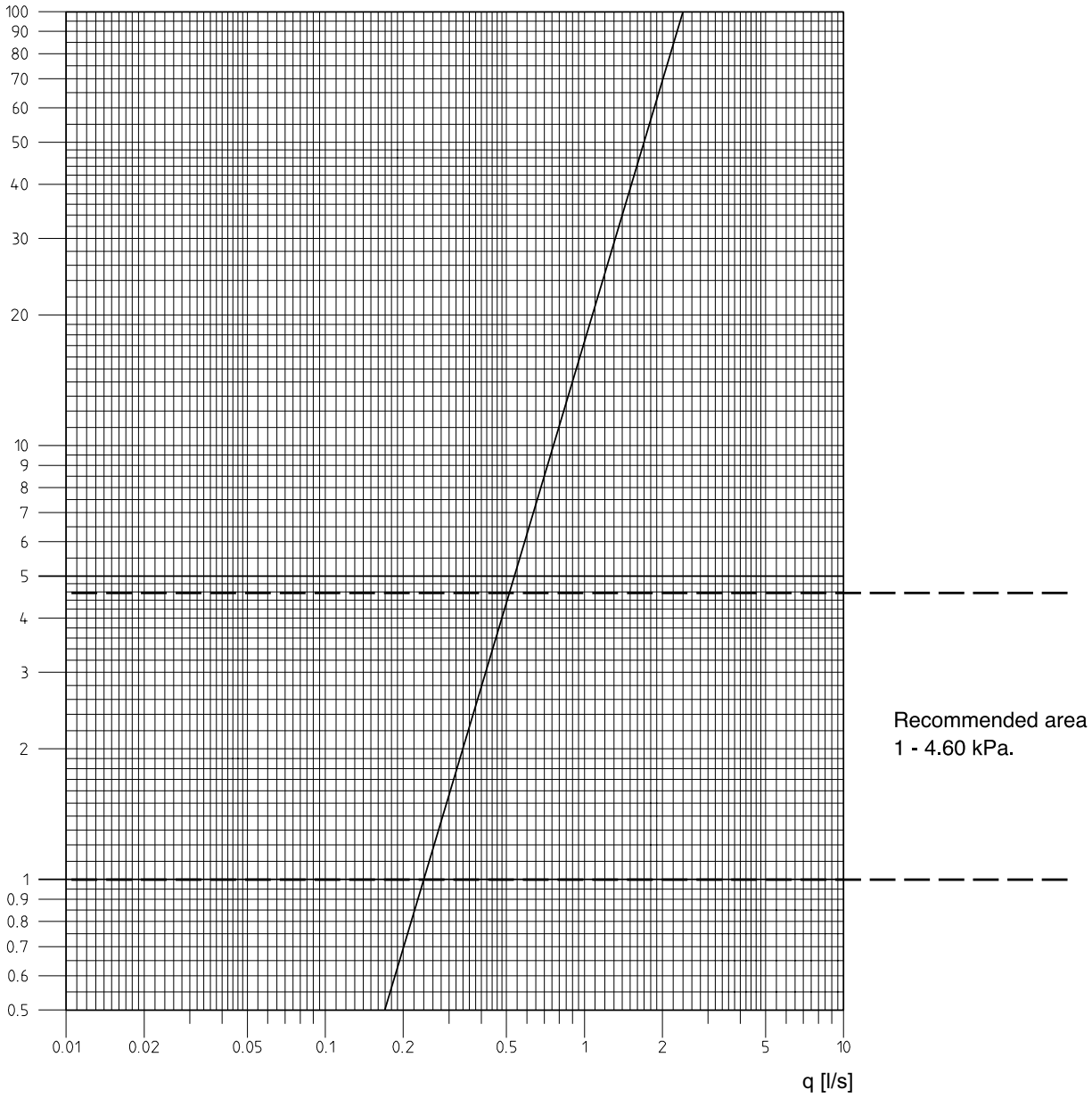
DN 15



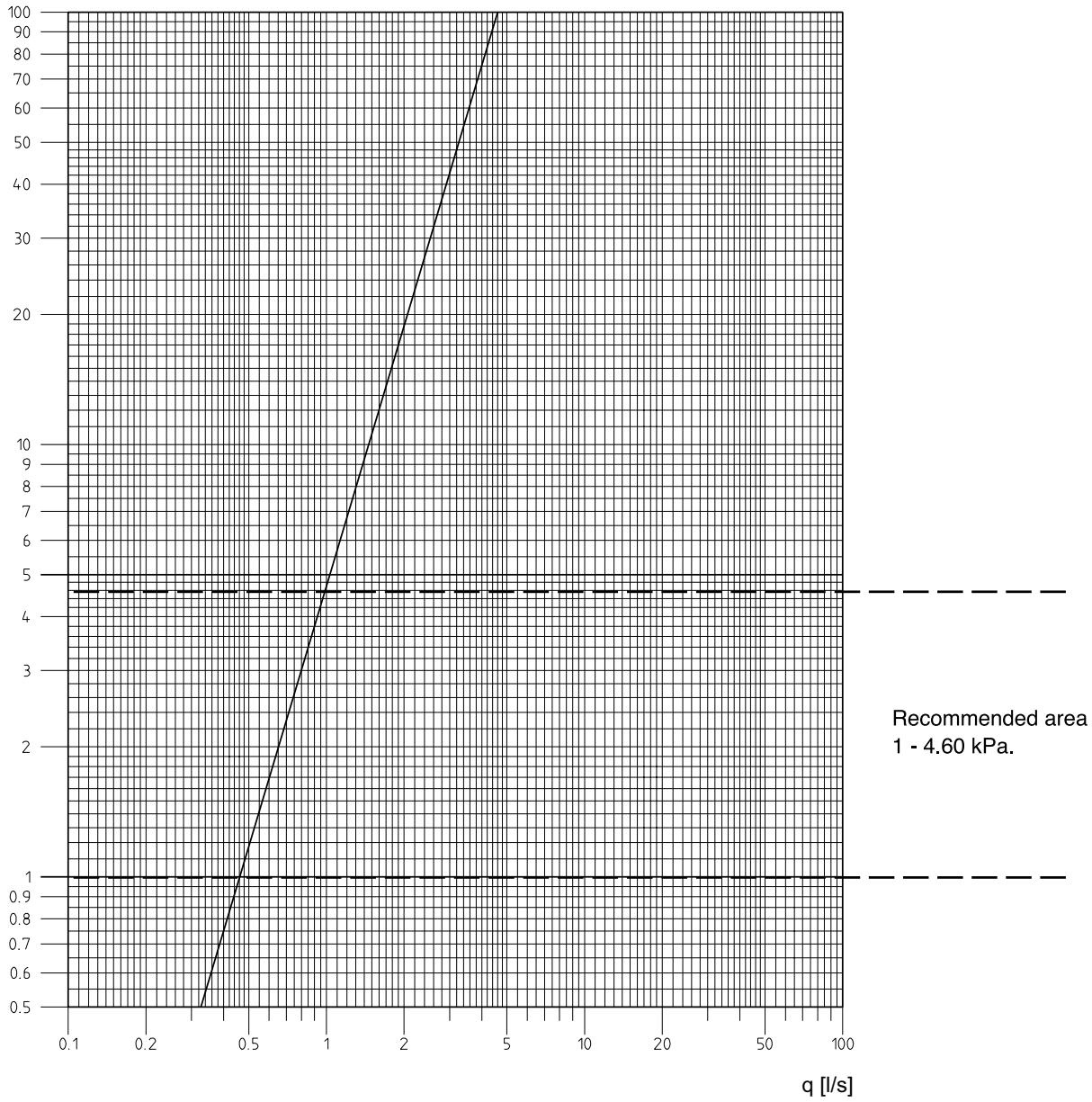
DN 20


Δp [kPa]
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.01
0.02
0.05
0.1
0.2
0.5
1
2
5
10
q [l/s]
Recommended area
1 - 4.60 kPa.

DN 25

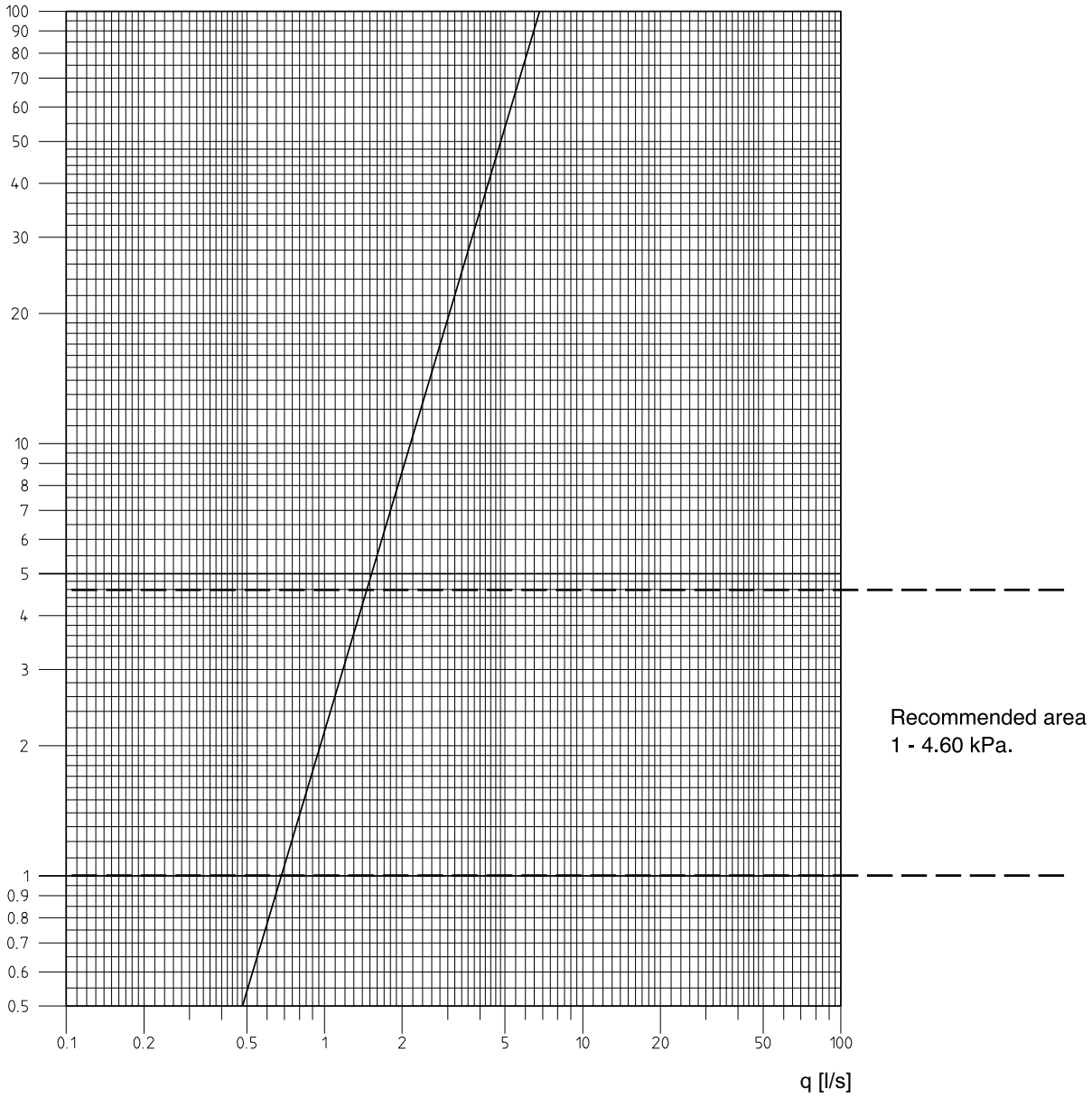

Δp [kPa]
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.01
0.02
0.05
0.1
0.2
0.5
1
2
5
10
q [l/s]
Recommended area
1 - 4.60 kPa.

DN 32


Δp [kPa]
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.1
0.2
0.5
1
2
5
10
20
50
100
q [l/s]
Recommended area
1 - 4.60 kPa.

DN 40

Δp [kPa]


100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.1
0.2
0.5
1
2
5
10
20
50
100
q [l/s]
Recommended area
1 - 4.60 kPa.

DN 50

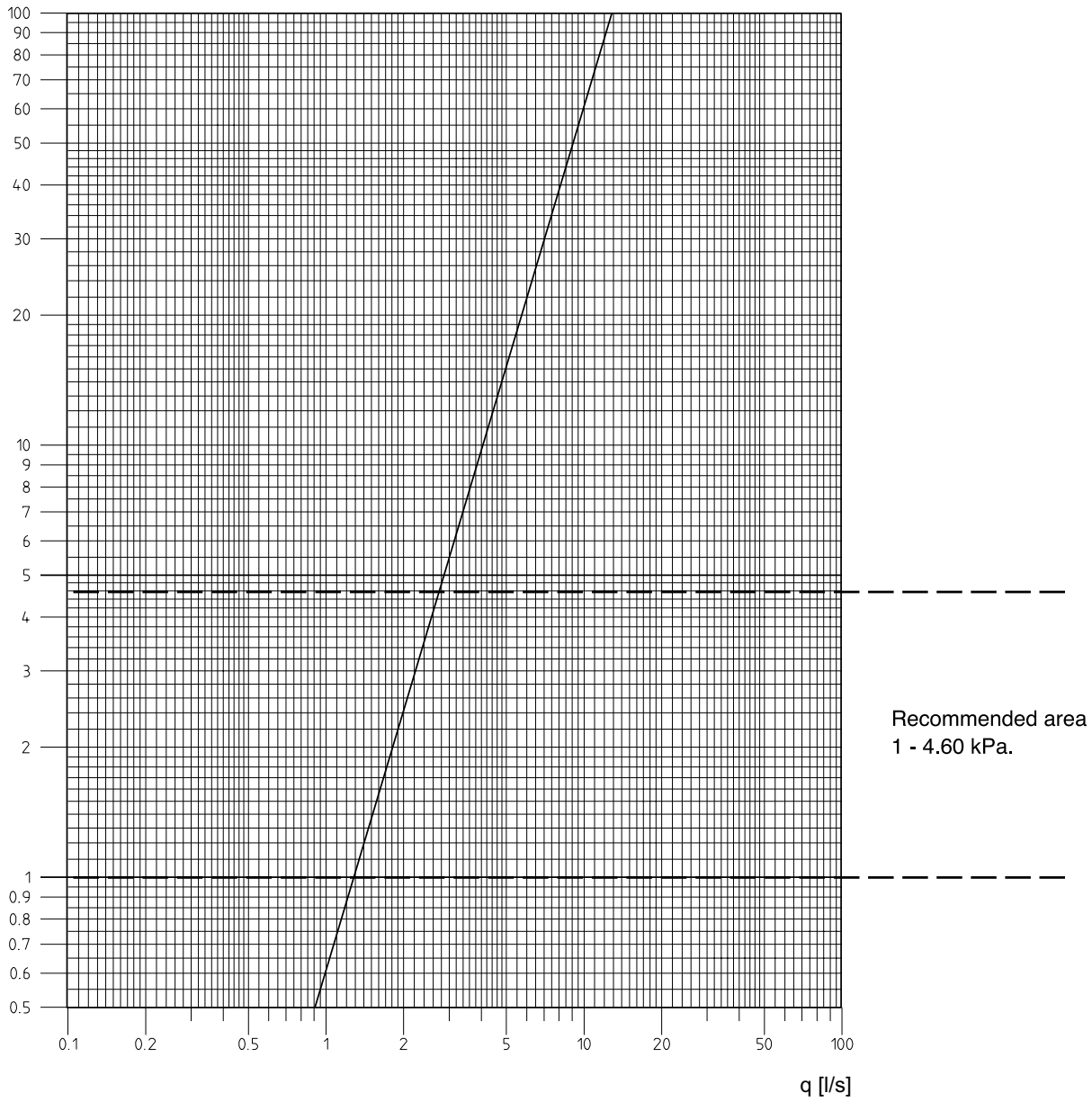

Δp [kPa]
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
0.9
0.8
0.7
0.6
0.5
0.1
0.2
0.5
1
2
5
10
20
50
100
q [l/s]
Recommended area
1 - 4.60 kPa.

Diagram MD 02 – Ultra low flow

DN 15

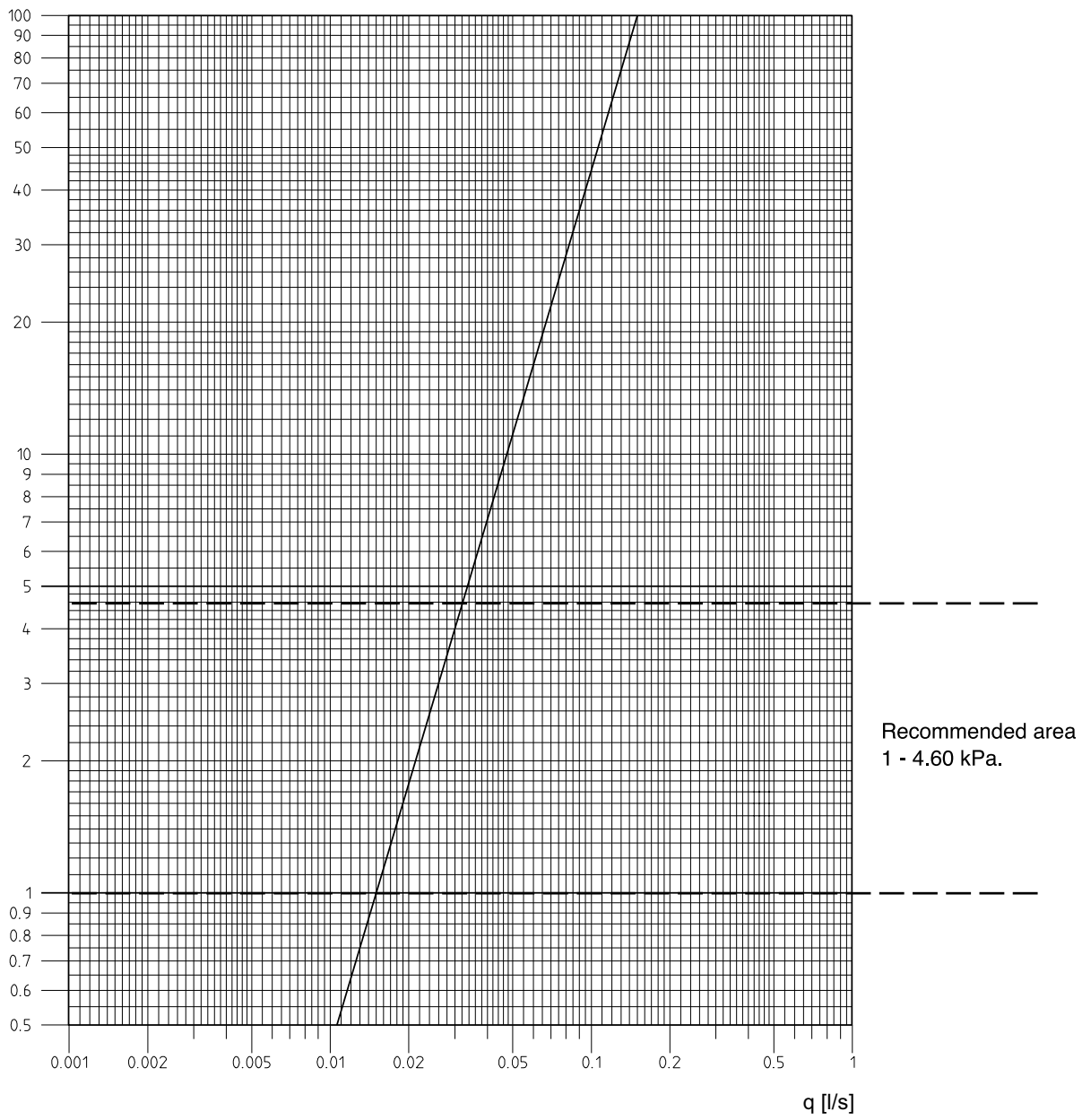
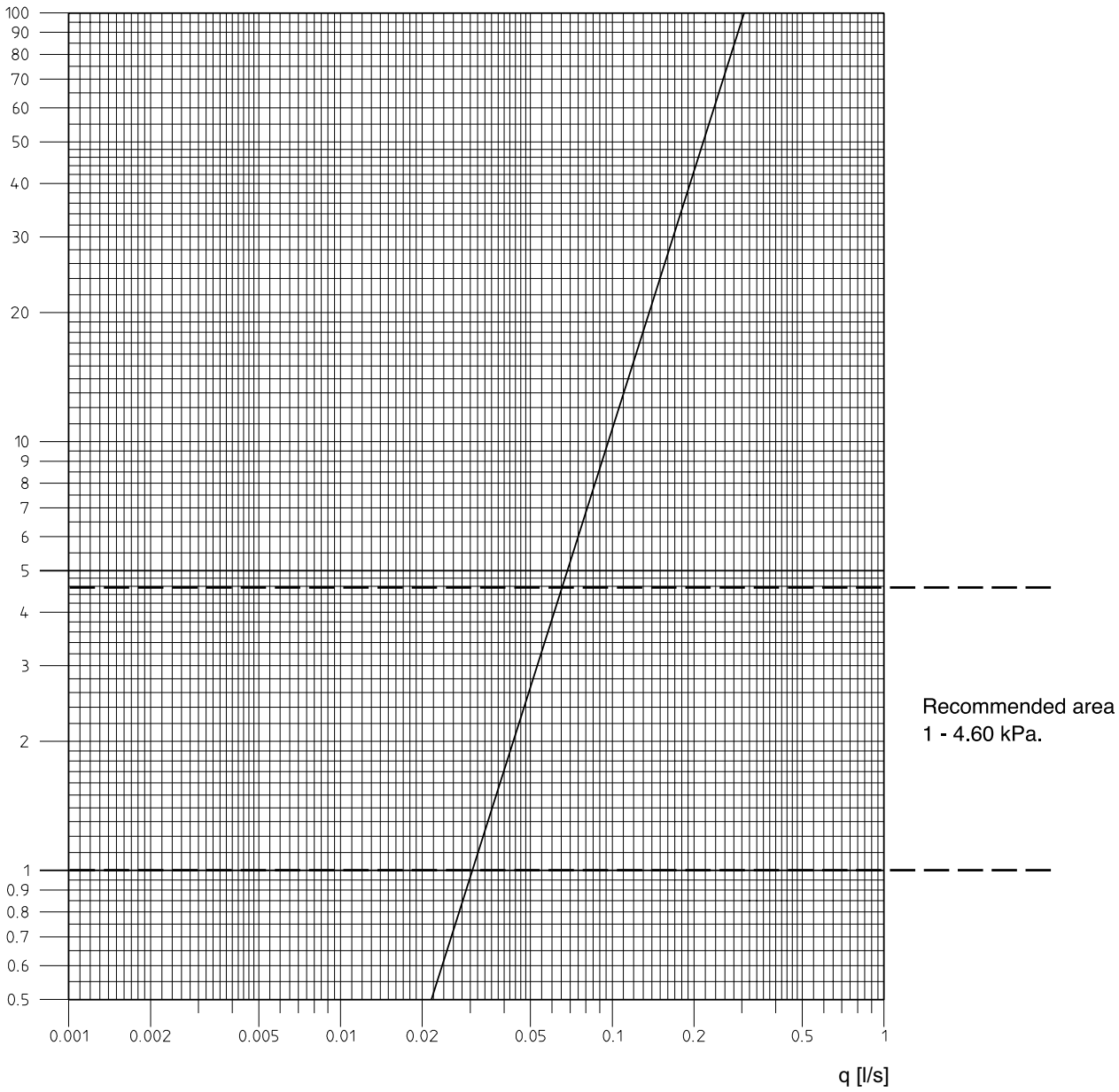
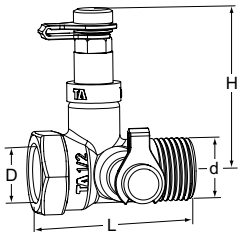


Diagram MD 03 – Low flow

DN 15

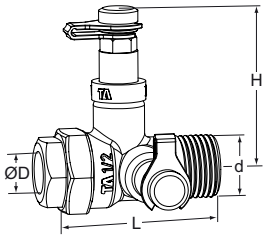


Articles



MD 01 – For standard flow rates

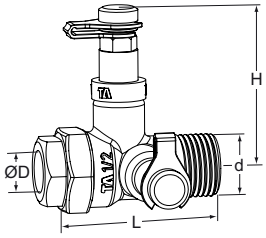
DN	L	H	D	d	Kv_{signal}	Kv_{max}	Article No
15	55	54	Rc1/2	R1/2	2.23	2.8	52 176-115
20	58	56	Rc3/4	R3/4	4.68	6.1	52 176-120
25	66	59	Rc1	R1	8.64	11.9	52 176-125
32	72	66	Rc1 1/4	R1 1/4	16.6	23.4	52 176-132
40	72	69	Rc1 1/2	R1 1/2	24.5	36.2	52 176-140
50	82	74	Rc2	R2	46.1	71.6	52 176-150



MD 02 – For ultra low flow rates

With KOMBI

DN	L	H	ØD	d	Kv_{signal}	Kv_{max}	Article No
15	55	54	15	R1/2	0.54	0.6	52 176-215



MD 03 – For low flow rates

With KOMBI

DN	L	H	ØD	d	Kv_{signal}	Kv_{max}	Article No
15	55	54	15	R1/2	1.10	1.26	52 176-315

Kvs = Kv signal. This is refering to the measuring points.
Kv_{max} = This Kv is for the pressure drop in the system.

Pipe threads according to ISO 7/1.

KOMBI is a compression method of connecting BS-EN 1057 copper tube to a BS-EN ISO 228 threaded end.

Flanged version, see catalogue leaflet on MDFO.