IMI TA

STAD



Balancing valves

DN 15-50

Engineering
GREAT Solutions

IMI Hydronic Engineering

STAD

The STAD balancing valve delivers accurate hydronic performance in an impressive range of applications. Ideally suited for use on the secondary side in heating and cooling systems, and tap water systems.



Key features

> **Handwheel**
Equipped with a digital read-out, the handwheel ensures accurate and straightforward balancing. Positive shut-off function for easy maintenance.

> **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
Tap water systems

Functions:
Balancing
Pre-setting
Measuring
Shut-off
Draining (optional)

Dimensions:
DN 10-50

Pressure class:
PN 20

Temperature:
Max. working temperature: 120°C.
For higher temperatures (max. 150°C), please contact the nearest sales office.
NOTE! DN 25-50 with smooth ends max working temperature 120°C.
Min. working temperature: -20°C

Material:
The valves are made of AMETAL®
Seat seal: Stem with EPDM O-ring
Spindle seal: EPDM O-ring
Handwheel: Polyamide and TPE.
Smooth ends:
Nipple: AMETAL®
Sealing (DN 25-50): EPDM O-ring

AMETAL® is the dezincification resistant alloy of IMI Hydronic Engineering.

Marking:
Body: TA, PN 20/150, DN and inch size.
Handwheel: Valve type and DN.

Measuring points

Measuring point are self-sealed. Remove the cap and insert the probe through the seal.

Draining

Valves with draining for G1/2 or G3/4 hose connection. Valves without draining have a sleeve. This sleeve can temporarily be removed and a draining kit is fitted, which is available as an accessory.

Sizing

When Δp and the design flow are known, use the formula to calculate the Kv value or use the diagram.

$$Kv = 0{,}01\frac{q}{\sqrt{\Delta p}} \qquad q\ l/h,\ \Delta p\ kPa$$

$$Kv = 36\frac{q}{\sqrt{\Delta p}} \qquad q\ l/s,\ \Delta p\ kPa$$

Kv values

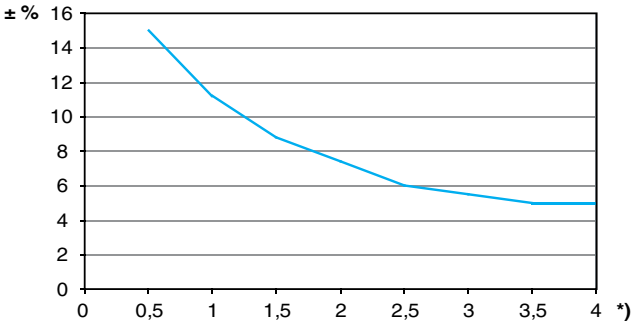
Turns	DN 10/09	DN 15/14	DN 20	DN 25	DN 32	DN 40	DN 50
0.5	-	0.127	0.511	0.60	1.14	1.75	2.56
1	0.090	0.212	0.757	1.03	1.90	3.30	4.20
1.5	0.137	0.314	1.19	2.10	3.10	4.60	7.20
2	0.260	0.571	1.90	3.62	4.66	6.10	11.7
2.5	0.480	0.877	2.80	5.30	7.10	8.80	16.2
3	0.826	1.38	3.87	6.90	9.50	12.6	21.5
3.5	1.26	1.98	4.75	8.00	11.8	16.0	26.5
4	1.47	2.52	5.70	8.70	14.2	19.2	33.0

Measuring accuracy

The zero position is calibrated and must not be changed.

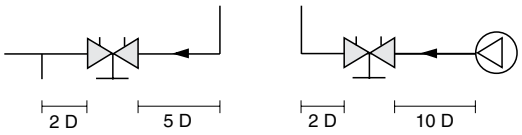
Deviation of flow at different settings
The curve (Fig. 4) is valid for valves with normal pipe fittings (Fig. 5). Try also to avoid mounting taps and pumps, immediately before the valve.
The valve can be installed with the opposite flow direction. The specified flow details are also valid for this direction although tolerances can be greater (maximum 5% more).

Fig. 4



*) Setting, No. of turns.

Fig. 5



Correction factors

The flow calculations are valid for water (+20°C). For other liquids with approximately the same viscosity as water (≤20 cSt = 3°E=100S.U.), it is only necessary to compensate for the specific density. However, at low temperatures, the viscosity increases and laminar flow may occur in the valves. This causes a flow deviation that increases with small valves, low settings and low differential pressures. Correction for this deviation can be made with the software TA Select or directly in our balancing instruments.

Setting

Setting of a valve for a particular pressure drop, e g corresponding to 2.3 turns on the graph, is carried out as follows:

1. Close the valve fully (Fig 1).
2. Open the valve 2.3 turns (Fig. 2).
3. Using a 3 mm Allen key, turn the inner spindle clockwise until stop.
4. The valve is now set.

To check the setting: Close the valve, the indicator shows 0.0. Open it to the stop position. The indicator then shows the set value, in this case 2.3 (Fig. 2).

Diagrams showing the pressure drop for each valve size at different settings and flow rates are available to help determine the correct valve size and pre-setting (pressure drop).

Four turns corresponds to fully opened valve (Fig. 3). Opening it further will not increase the capacity.

Fig. 1
Valve closed



Fig. 2
The valve is set at 2.3



Fig. 3
Fully open valve



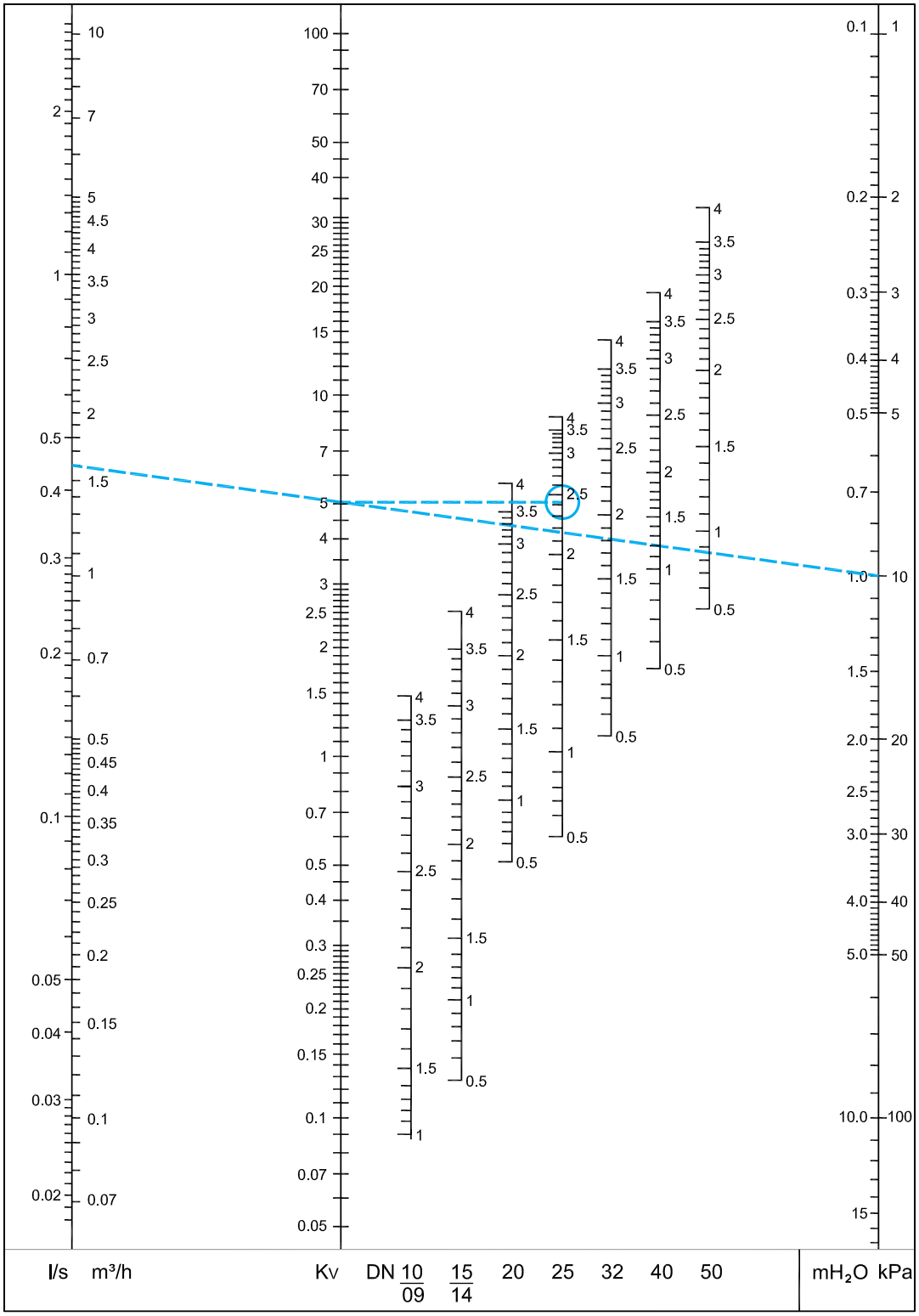
Diagram example

Wanted:
Presetting for DN 25 at a desired flow rate of 1,6 m^3/h and a pressure drop of 10 kPa.

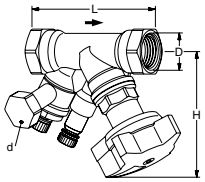
Solution:
Draw a straight line joining 1,6 m^3/h and 10 kPa. This gives Kv=5. Now draw a horizontal line from Kv=5.
This intersects the bar for DN 25 which gives 2,35 turns.

NOTE:
If the flow rate is out of the scale in the diagram, the reading can be made as follows:
Starting with the example above, we get 10 kPa, Kv=5 and flow-rate 1.6 m^3/h.
At 10 kPa and Kv=0,5 we get the flow-rate 0,16 m^3/h, and at Kv=50, we get
16 m^3/h. That is, for a given pressure drop, it is possible to read 10 times or 0.1 times the flow and Kv-values.

Diagram

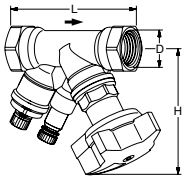


Articles



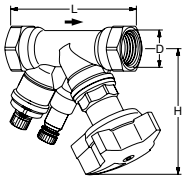
Female threads
Thread according to ISO 228. Thread length according to ISO 7/1.
With drain

DN	D	L	H	Kvs	Kg	EAN	Article No
d = G1/2							
10/09*	G3/8	83	100	1,47	0,65	7318792758904	52 151-209
15/14*	G1/2	90	100	2,52	0,68	7318792759000	52 151-214
20*	G3/4	97	100	5,70	0,77	7318792759109	52 151-220
25	G1	110	105	8,70	0,93	7318792759208	52 151-225
32	G1 1/4	124	110	14,2	1,3	7318792759307	52 151-232
40	G1 1/2	130	120	19,2	1,6	7318792759406	52 151-240
50	G2	155	120	33,0	2,4	7318792759505	52 151-250
d = G3/4							
10/09*	G3/8	83	100	1,47	0,65	7318792760204	52 151-609
15/14*	G1/2	90	100	2,52	0,68	7318792760303	52 151-614
20*	G3/4	97	100	5,70	0,77	7318792760402	52 151-620
25	G1	110	105	8,70	0,93	7318792760501	52 151-625
32	G1 1/4	124	110	14,2	1,3	7318792760600	52 151-632
40	G1 1/2	130	120	19,2	1,6	7318792760709	52 151-640
50	G2	155	120	33,0	2,4	7318792760808	52 151-650



Female threads
Thread according to ISO 228. Thread length according to ISO 7/1.
Without drain (can be installed during operation)

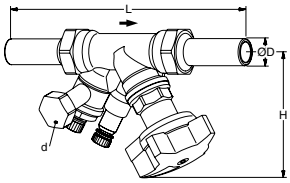
DN	D	L	H	Kvs	Kg	EAN	Article No
10/09*	G3/8	83	100	1,47	0,58	7318792042706	52 151-009
15/14*	G1/2	90	100	2,52	0,62	7318792758003	52 151-014
20*	G3/4	97	100	5,70	0,72	7318792758102	52 151-020
25	G1	110	105	8,70	0,88	7318792758201	52 151-025
32	G1 1/4	124	110	14,2	1,2	7318792758300	52 151-032
40	G1 1/2	130	120	19,2	1,4	7318792758508	52 151-040
50	G2	155	120	33,0	2,3	7318792758607	52 151-050



Female threads
Thread according to ISO 7 (≈ BS 21)
Without drain (can be installed during operation)

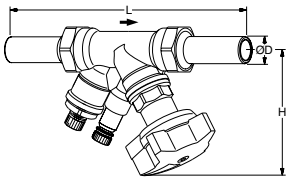
DN	D	L	H	Kvs	Kg	EAN	Article No
15/14	Rc1/2	90	100	2,52	0,62	7318793923400	52 251-014
20	Rc3/4	97	100	5,70	0,72	7318793923509	52 251-020
25	Rc1	110	105	8,70	0,88	7318793923608	52 251-025
32	Rc1 1/4	124	110	14,2	1,2	7318793923707	52 251-032
40	Rc1 1/2	130	120	19,2	1,4	7318793923806	52 251-040
50	Rc2	155	120	33,0	2,3	7318793923905	52 251-050

→ = Flow direction
Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.
*) Can be connected to smooth pipes by KOMBI compression coupling.



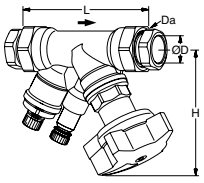
Smooth ends
With drain

DN	D	L	H	Kvs	Kg	EAN	Article No
d = G1/2							
10/09	12	141	100	1,47	0,71	7318793931405	52 451-209
15/14	15	154	100	2,52	0,78	7318793931504	52 451-214
20	22	179	100	5,70	0,93	7318793931603	52 451-220
25	28	208	105	8,70	1,2	7318793931702	52 451-225
32	35	233	110	14,2	1,7	7318793931801	52 451-232
40	42	260	120	19,2	2,1	7318793931900	52 451-240
50	54	305	120	33,0	3,2	7318793932006	52 451-250
d = G3/4							
10/09	12	141	100	1,47	0,71	7318793932105	52 451-609
15/14	15	154	100	2,52	0,78	7318793932204	52 451-614
20	22	179	100	5,70	0,93	7318793932303	52 451-620
25	28	208	105	8,70	1,2	7318793932402	52 451-625
32	35	233	110	14,2	1,7	7318793932501	52 451-632
40	42	260	120	19,2	2,1	7318793932600	52 451-640
50	54	305	120	33,0	3,2	7318793932709	52 451-650



Smooth ends
Without drain (can be installed during operation)

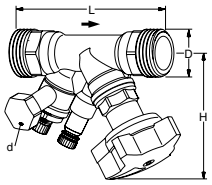
DN	D	L	H	Kvs	Kg	EAN	Article No
10/09	12	141	100	1,47	0,64	7318793932808	52 451-009
15/14	15	154	100	2,52	0,72	7318793932907	52 451-014
20	22	179	100	5,70	0,88	7318793933003	52 451-020
25	28	208	105	8,70	1,1	7318793933102	52 451-025
32	35	233	110	14,2	1,6	7318793933201	52 451-032
40	42	260	120	19,2	1,9	7318793933300	52 451-040
50	54	305	120	33,0	3,1	7318793933409	52 451-050



With KOMBI compression couplings (not mounted)
Without drain (can be installed during operation)

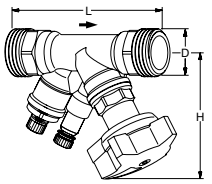
DN	Da	D	L	H	Kvs	Kg	EAN	Article No
15/14	G1/2	12 mm x 2 / 15 mm x 2	90	100	2,52	0,76	7318793857903	52 151-314
20	G3/4	18 mm x 2 / 22 mm x 2	97	100	5,70	0,96	7318793858009	52 151-320

→ = Flow direction
Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.
*) Can be connected to smooth pipes by KOMBI compression coupling.



Male threads (STADA)
Thread according to ISO 228. Thread length according to DIN 3546.
With drain

DN	D	L	H	Kvs	Kg	EAN	Article No
d = G1/2							
10/09	G1/2	105	100	1,47	0,70	7318792763403	52 152-209
15/14	G3/4	114	100	2,52	0,73	7318792763502	52 152-214
20	G1	125	100	5,70	0,88	7318792763601	52 152-220
25	G1 1/4	142	105	8,70	1,2	7318792763700	52 152-225
32	G1 1/2	160	110	14,2	1,6	7318792763809	52 152-232
40	G2	170	120	19,2	2,2	7318792763908	52 152-240
50	G2 1/2	200	120	33,0	3,3	7318792764004	52 152-250
d = G3/4							
10/09	G1/2	105	100	1,47	0,70	7318792764103	52 152-609
15/14	G3/4	114	100	2,52	0,73	7318792764202	52 152-614
20	G1	125	100	5,70	0,88	7318792764301	52 152-620
25	G1 1/4	142	105	8,70	1,2	7318792764400	52 152-625
32	G1 1/2	160	110	14,2	1,6	7318792764509	52 152-632
40	G2	170	120	19,2	2,2	7318792764608	52 152-640
50	G2 1/2	200	120	33,0	3,3	7318792764707	52 152-650

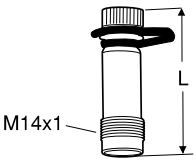


Male threads (STADA)
Thread according to ISO 228. Thread length according to DIN 3546.
Without drain (can be installed during operation)

DN	D	L	H	Kvs	Kg	EAN	Article No
10/09	G1/2	105	100	1,47	0,61	7318792762703	52 152-009
15/14	G3/4	114	100	2,52	0,66	7318792762802	52 152-014
20	G1	125	100	5,70	0,81	7318792762901	52 152-020
25	G1 1/4	142	105	8,70	1,1	7318792763007	52 152-025
32	G1 1/2	160	110	14,2	1,5	7318792763106	52 152-032
40	G2	170	120	19,2	2,1	7318792763205	52 152-040
50	G2 1/2	200	120	33,0	3,2	7318792763304	52 152-050

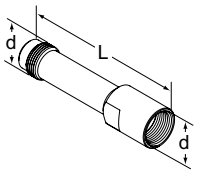
→ = Flow direction
Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.
*) Can be connected to smooth pipes by KOMBI compression coupling.

Accessories



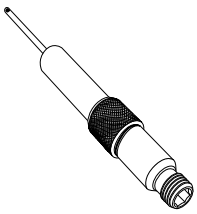
Measuring points
Max 120°C (intermittent 150°C)

L	EAN	Article No
44	7318792813207	52 179-014
103	7318793858108	52 179-015



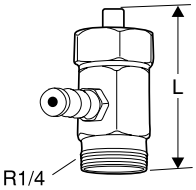
Extension for measuring point M14x1
Suitable when insulation is used.

d	L	EAN	Article No
M14x1	71	7318793969507	52 179-016



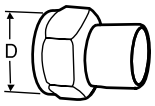
Measuring point
Extensions 60 mm (not for 52 179-000/ -601)
Can be installed without draining of the system.

L	EAN	Article No
60	7318792812804	52 179-006



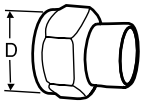
Measuring point
For older STAD and STAF
Max 150°C

L	EAN	Article No
30	7318792812408	52 179-000
90	7318792814303	52 179-601



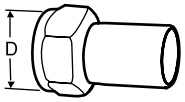
Welding connection
Swivelling nut
Max 120°C

Valve DN	D	Pipe DN	EAN	Article No
10	G1/2	10	7318792748400	52 009-010
15	G3/4	15	7318792748509	52 009-015
20	G1	20	7318792748608	52 009-020
25	G1 1/4	25	7318792748707	52 009-025
32	G1 1/2	32	7318792748806	52 009-032
40	G2	40	7318792748905	52 009-040
50	G2 1/2	50	7318792749001	52 009-050



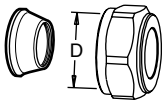
Soldering connection
Swivelling nut
Max 120°C

Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	10	7318792749100	52 009-510
10	G1/2	12	7318792749209	52 009-512
15	G3/4	15	7318792749308	52 009-515
15	G3/4	16	7318792749407	52 009-516
20	G1	18	7318792749506	52 009-518
20	G1	22	7318792749605	52 009-522
25	G1 1/4	28	7318792749704	52 009-528
32	G1 1/2	35	7318792749803	52 009-535
40	G2	42	7318792749902	52 009-542
50	G2 1/2	54	7318792750007	52 009-554



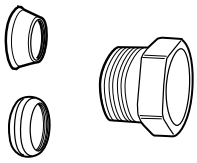
Connection with smooth end
For connection with press coupling
Swivelling nut
Max 120°C

Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	12	7318793810502	52 009-312
15	G3/4	15	7318793810601	52 009-315
20	G1	18	7318793810700	52 009-318
20	G1	22	7318793810809	52 009-322
25	G1 1/4	28	7318793810908	52 009-328
32	G1 1/2	35	7318793811004	52 009-335
40	G2	42	7318793811103	52 009-342
50	G2 1/2	54	7318793811202	52 009-354



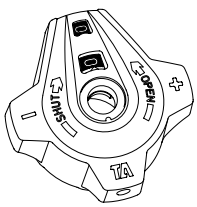
Compression connection
Max 100°C
Support bushes shall be used, for more information see catalogue leaflet FPL.

Valve DN	D	Pipe Ø	EAN	Article No
10	G1/2	8	7318793620002	53 319-208
10	G1/2	10	7318793620101	53 319-210
10	G1/2	12	7318793620200	53 319-212
10	G1/2	15	7318793620309	53 319-215
10	G1/2	16	7318793620408	53 319-216
15	G3/4	15	7318793705006	53 319-615
15	G3/4	18	7318793705105	53 319-618
15	G3/4	22	7318793705204	53 319-622
20	G1	28	7318793705402	53 319-928



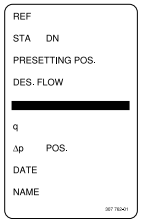
KOMBI compression coupling
Max.: 100°C
(See catalogue leaflet KOMBI.)

Male pipe threads on thrust screw	For pipes, diameter	EAN	Article No
G3/8	8	7318792874505	53 235-103
G3/8	10	7318792874604	53 235-104
G3/8	12	7318792874703	53 235-107
G1/2	10	7318792874901	53 235-109
G1/2	12	7318792875007	53 235-111
G1/2	14	7318792875106	53 235-112
G1/2	15	7318792875205	53 235-113
G1/2	16	7318792875304	53 235-114
G3/4	15	7318792875403	53 235-117
G3/4	18	7318792875601	53 235-121
G3/4	22	7318792875700	53 235-123



Handwheel
Complete

EAN	Article No
7318792834905	52 186-003



Identification tag

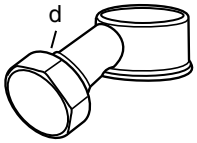
Incl 1 pc per valve

	EAN	Article No
	7318792779206	52 161-990



Allen key

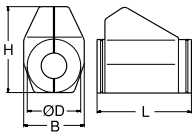
[mm]		EAN	Article No
3	Pre-setting	7318792836008	52 187-103
5	Draining	7318792836107	52 187-105



Draining kit

Can be installed during operation

d	EAN	Article No
G1/2	7318792814907	52 179-990
G3/4	7318792815003	52 179-996



Insulation

For heating/cooling
See catalogue leaflet Prefab insulations for complete details.

For DN	L	H	D	B	EAN	Article No
10-20	155	135	90	103	7318792839108	52 189-615
25	175	142	94	103	7318792839306	52 189-625
32	195	156	106	103	7318792839504	52 189-632
40	214	169	108	113	7318792839702	52 189-640
50	245	178	108	114	7318792839900	52 189-650

The products, texts, photographs, graphics and diagrams in this document may be subject to alteration by IMI Hydronic Engineering without prior notice or reasons being given. For the most up to date information about our products and specifications, please visit www.imi-hydronic.com.