Climate
Control

IMI TA

STAG

Balancing valves

With grooved ends – DN 65-300

Breakthrough
engineering for
a better world

STAG

A grooved end, ductile iron balancing valve that delivers accurate hydronic performance in an impressive range of applications. STAG is ideal for use mainly on the secondary side in heating and cooling systems.

Key features

Handwheel
Equipped with a digital read-out, the handwheel ensures accurate and straightforward balancing.
Handwheel for DN 65-150 with side reading makes the read-out easy from any angle.

Accurate and precise
Provides high accuracy of measurement.

Self-sealing measuring points
For simple, accurate balancing.

Positive shut-off function
For easy maintenance.

Technical description

Applications:
Heating and cooling systems.

Functions:
Balancing
Pre-setting
Measuring
Shut-off (The balancing cone for valves DN 100-300 is pressure released).

Dimensions:
DN 65-300

Pressure class:
Class 150

Temperature:
Max. working temperature: 120°C
Min. working temperature: -10°C

Media:
Water or neutral fluids, water-glycol mixtures (0-57%).

Material:
Body: Ductile iron EN-GJS-400-15.
DN 65-150: Bonnet, cone and spindle of AMETAL®.
DN 200-300: Bonnet and cone of ductile iron EN-GJS-400-15. Spindle of AMETAL®.
Cone (DN 100-300): PTFE coated.
Seals: EPDM.
Slip washer: PTFE.
Bonnet bolts: Surface treated steel.
Measuring points: AMETAL® and EPDM.
Handwheel: DN 65-150 polyamide, DN 200-300 aluminium.

AMETAL® is the dezincification resistant alloy of IMI.

Surface treatment:
DN 65-200: Epoxy painting.
DN 250-300: Duasolid painting.

Marking:
Body: TA, Class 150, inch size, flow direction arrow, material and casting date (year, month, day).
CE-marking:
CE: DN 65-150
CE 0409*: DN 200-300
*) Notified body.

Face to face length:
ISO 5752 series 1, EN 558-1 series 1.

Measuring points

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

Sizing

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

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

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

Kv values

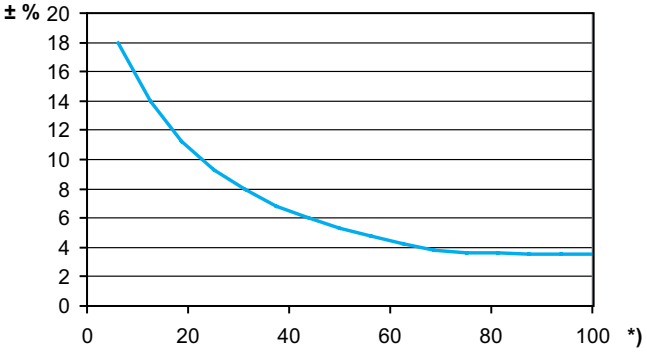
Turns	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200	DN 250	DN 300
0.5	1,02	2,33	2,54	5,99	5,39	-	-	-
1	2,39	4,25	5,59	10,9	13,3	-	-	-
1.5	3,77	6,20	8,64	15,7	22,8	-	-	-
2	5,18	8,47	11,5	21,5	41	40	90	-
2.5	6,52	11,4	15,5	29,1	65,7	50	110	-
3	8,18	15	26,2	37,5	92,6	65	140	150
3.5	11,6	20,8	42,8	54,2	127	90	195	230
4	18,6	29,9	66	85,2	176	120	255	300
4.5	29,9	43,3	91,7	118	214	165	320	370
5	39,6	57,5	108	148	249	225	385	450
5.5	47,9	69,6	119	168	281	285	445	535
6	57,5	81,2	136	198	307	340	500	620
6.5	66,3	92,8	151	232	332	400	545	690
7	74,2	104	164	255	353	435	590	750
7.5	80	114	174	275	374	470	660	815
8	85	123	185	294	400	515	725	890
9	-	-	-	-	-	595	820	970
10	-	-	-	-	-	650	940	1040
11	-	-	-	-	-	710	1050	1120
12	-	-	-	-	-	765	1185	1200
13	-	-	-	-	-	-	-	1320
14	-	-	-	-	-	-	-	1370
15	-	-	-	-	-	-	-	1400
16	-	-	-	-	-	-	-	1450

NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAG, DN 65-150, is named STAG*.

Measuring accuracy

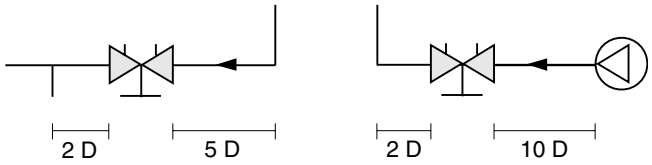
The handwheel zero position is calibrated and must not be changed.

Deviation of flow at different settings
The curve holds for valves with the correct flow direction, straight pipe distances (Fig. 1) and normal pipe fittings.

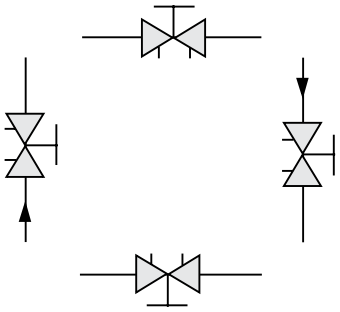


*) Setting (%) of fully open valve.

Fig. 1



D = Valve DN



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 HySelect or directly in our balancing instruments.

Setting

It is possible to read the set value on the handwheel.
The number of turns between the fully open and closed positions is:
8 turns for DN 65-150,
12 turns for DN 200-250 and
16 turns for DN 300.

Initial 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 to 2.3 turns (Fig. 2).
3. Using an Allen key, turn the inner spindle clockwise until the stop position.
4. The valve is now set.

To check the setting of a valve, first close the valve, then open it to the stop position; the indicator then shows the presetting number, in this case 2.3 (Fig. 2).

Example DN 65

Fig. 1 Valve closed

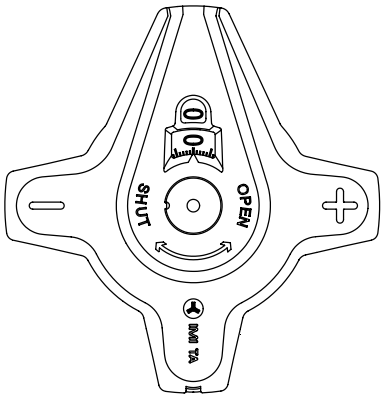


Fig. 2a The valve is set at 2.3

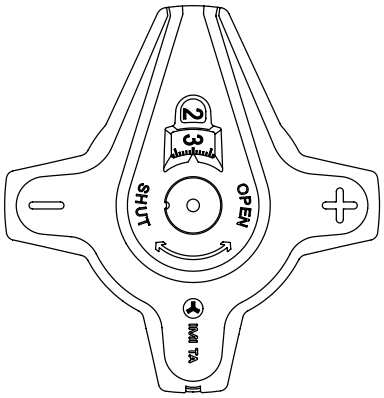
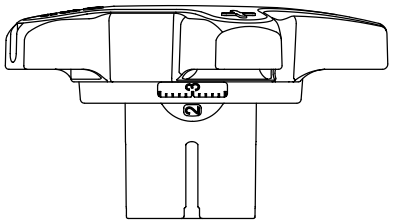


Fig. 2b Setting 2.3 side view



Example DN 200

Fig. 1 Valve closed

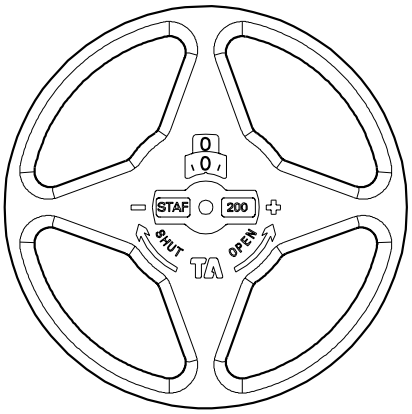
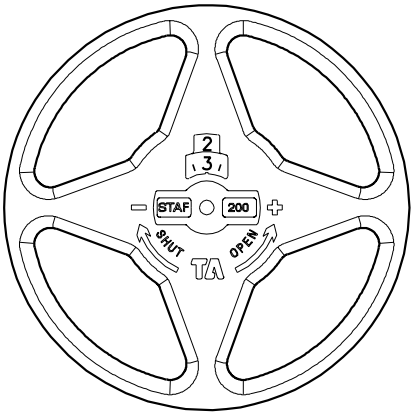
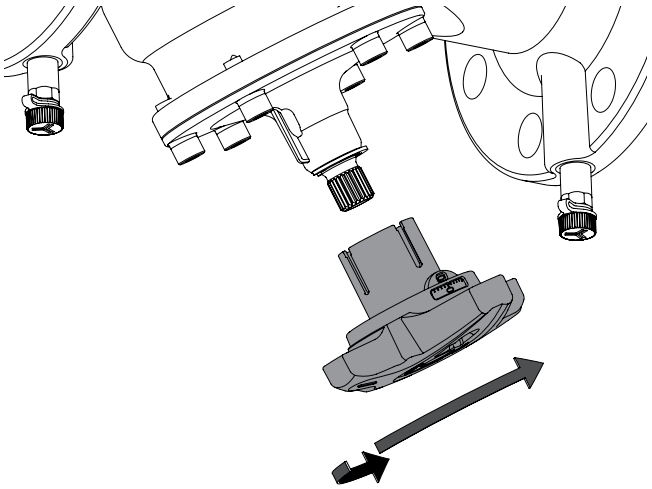


Fig. 2 The valve is set at 2.3



Change of handwheel position DN 65-150

The handwheel on DN 65-150 have a reading on the side as well as on the top of the handwheel to make it easier to read. The handwheel can be rotated to have the side view reading in three different positions.



Spindle extension DN 65-150

The spindle can be extended on DN 65-150 to make more room for insulation if needed. An extension kit is included with the DN 65-150 valves.

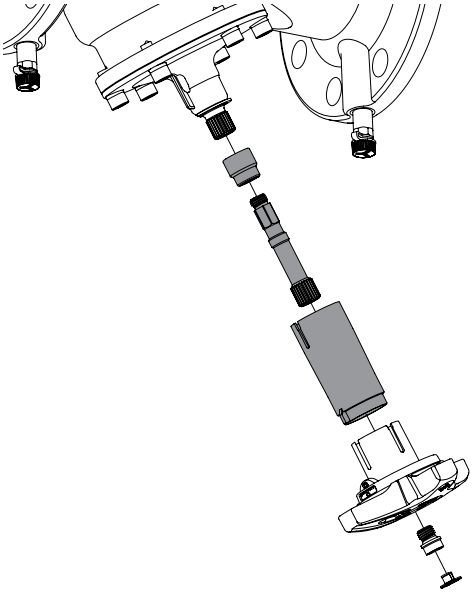


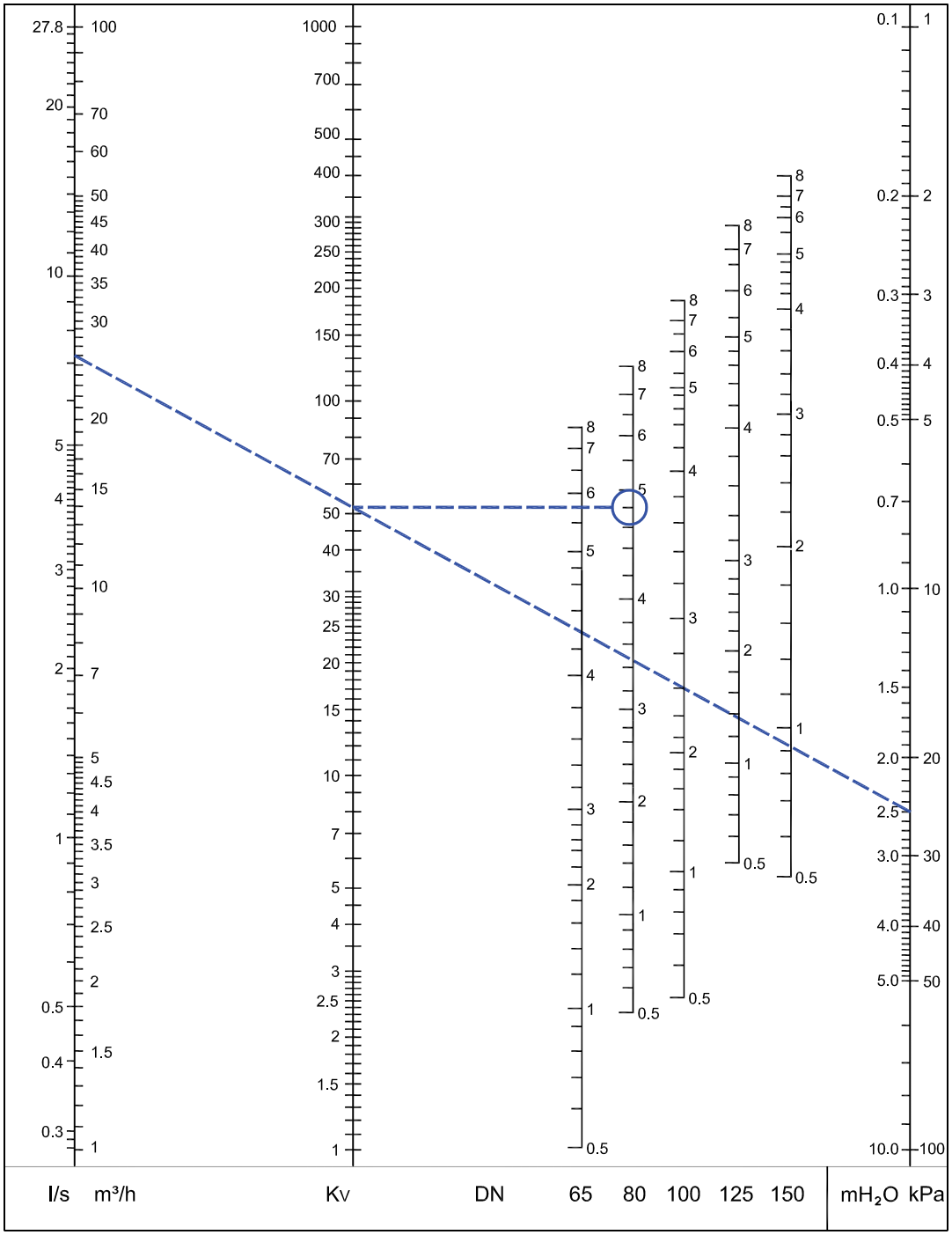
Diagram example

Wanted:
Presetting for DN 80 at a desired flow rate of 26 m^3/h and a pressure drop of 25 kPa.

Solution:
Draw a straight line joining 26 m^3/h and 25 kPa. This gives Kv=52.
Now draw a horizontal line from Kv=52.
This intersects the bar for DN 80 at the desired presetting of 4.8 turns.

NOTE:
If the flow rate falls outside the scale in the diagram, the reading can be made as follows:
Starting with the example above, we get 25 kPa, Kv = 52 and flowrate 26 m^3/h. At 25 kPa and Kv = 5.2 we get the flow-rate 2,6 m^3/h, and at Kv = 520, we get 260 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.

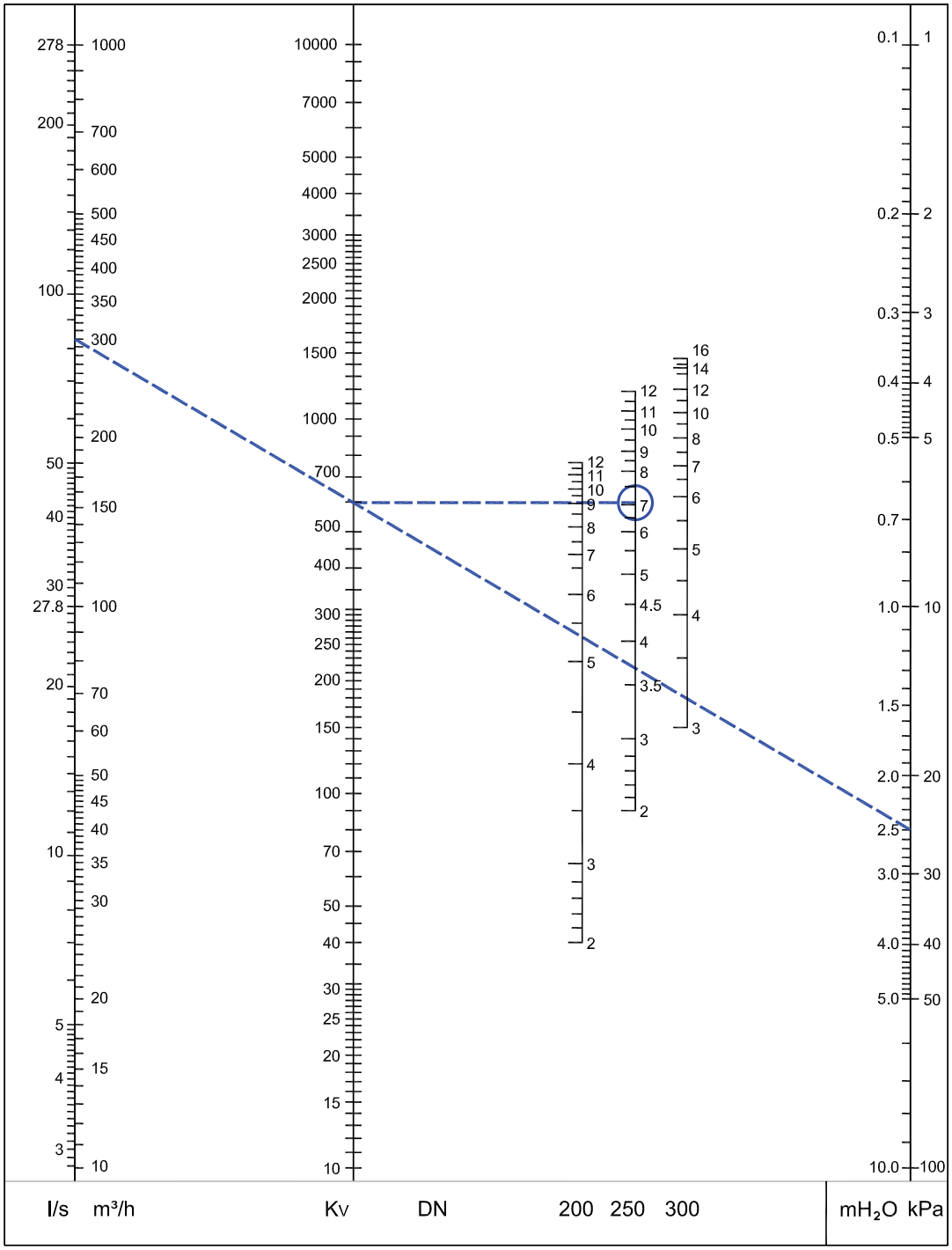
Diagram DN 65-150



Recommended area: See Fig. 3 under “Measuring accuracy”.

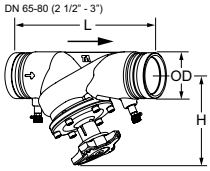
NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAG, DN 65-150, is named STAG*.

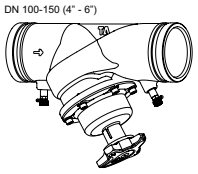
Diagram DN 200-300

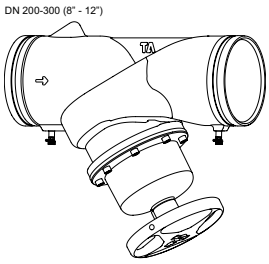


Recommended area: See Fig. 3 under “Measuring accuracy”.

Articles







Bolted bonnet
Measuring points on body
Spindle extension for DN 65-150 is included.

Class 150, ISO 4200

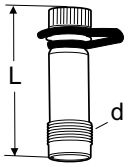
DN	D	L	H	H [1]	Kvs	Kg	EAN	Article No
65	73,0	290	163	223	85	5,4	5902276805332	52 188-073
65	76,1	290	163	223	85	5,4	5902276805349	52 188-076
80	88,9	310	172	232	123	7,5	5902276805356	52 188-089
100	114,3	350	223	283	185	12,3	5902276805363	52 188-114
125	139,7	400	259	319	294	20,1	5902276805370	52 188-140
125	141,3	400	259	319	294	20,1	5902276805387	52 188-141
150 [2]	165,1	480	273	333	400	29,2	5902276805394	52 188-165
150	168,3	480	273	333	400	29,2	5902276805400	52 188-168
200	219,1	600	430	-	765	63,5	7318792832703	52 183-219
250	273	730	420	-	1185	92	7318792832802	52 183-273
300	323,9	850	480	-	1450	127	7318792832901	52 183-324

1) Height with spindle extension
2) Not conforming to ISO 4200.
→ = Flow direction

Kvs = m^3/h at a pressure drop of 1 bar and fully open valve.

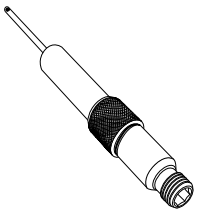
NOTE: In softwares (HySelect, HyTools) and balancing instrument (TA-SCOPE) the STAG, DN 65-150, is named STAG*.

Accessories



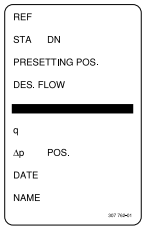
Measuring point
AMETAL®/EPDM

d	L	EAN	Article No
DN 65-300			
R3/8	45	7318792813009	52 179-008
R3/8	101	7318792814501	52 179-608



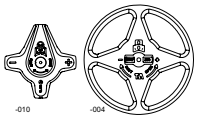
Measuring point, extension 60 mm
(not for 52 179-000/-601)
Can be installed without draining of the system.
AMETAL®/Stainless steel/EPDM

L	EAN	Article No
60	7318792812804	52 179-006



Identification tag

EAN	Article No
7318792779206	52 161-990



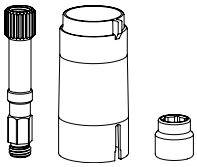
Handwheel

DN	EAN	Article No
65-150	5902276808968	52 186-010
200-300	7318792835001	52 186-004

Allen key

For locking of setting.

[mm]	For DN	EAN	Article No
3	65-150	7318792836008	52 187-103
5	200-300	7318792836107	52 187-105



Spindle extension

Spare part.
Included in valves DN 65-150.

For DN	EAN	Article No
65-150	5902276808951	52 186-015