Climate
Control

IMI TA

TA-Nano Plus

Combined control & balancing valves for small terminal units

Pressure independent balancing and control valve (PIBCV)

Breakthrough
engineering for
a better world

TA-Nano Plus

The pressure-independent balancing and control valve TA-Nano Plus ensures optimum performance over a long life. Adjustable maximum flow enables design flow and eliminates overflows for accurate hydronic control. The TA-Nano Plus together with our balancing instruments enables advanced measuring and diagnostics.

Key features

Smallest PIBCV in the market fitting within the most constrained area
Slim and compact shape simplifies installation.

Precise hydronic balancing
Smoothly adjustable setting of max. flow prevents over flow through terminal unit.

Full control of the system
Exact flow measuring and unique diagnostic functions for ultimate energy savings and highly reliable system.

Precise setting and ease of commissioning
Valve position visible when actuator is mounted, easy valve identification with colour coding.

High reliability
High resistance to corrosion using AMETAL®, strong resistance to dirt and completely tight valve.

Technical description

Application:
Heating and cooling systems.

Functions:
Control
Pre-setting (max. flow)
Differential pressure control
Measuring (ΔH, T, q)
Flushing
Isolation (for use during system maintenance – see also Leakage rate)

Dimensions:
DN 10-25

Pressure class:
PN 25

Differential pressure (ΔpV):
Max. differential pressure (ΔpV_{max}):
600 kPa = 6 bar
Min. differential pressure (ΔpV_{min}):
DN 10 NF/15 LF/15 NF: 15 kPa = 0.15 bar
DN 15 HF: 20 kPa = 0.20 bar
DN 20 NF: 18 kPa = 0.18 bar
DN 20 HF: 30 kPa = 0.30 bar
DN 25 NF: 25 kPa = 0.25 bar

(Valid for position 10, fully open. Other positions will require lower differential pressure, check with the software HySelect.)
ΔpV_{max} = The maximum allowed pressure drop over the valve to fulfill all stated performances.
ΔpV_{min} = The minimum recommended pressure drop over the valve, for proper differential pressure control.

Flow range:
The flow (q_{max}) can be set within the range:
DN 10 NF: 19 - 190 l/h
DN 15 LF: 29 - 290 l/h
DN 15 NF: 55 - 550 l/h
DN 15 HF: 105 - 1050 l/h
DN 20 NF: 110 - 1100 l/h
(DN 20 HF: 160 - 1600 l/h)
(DN 25 NF: 220 - 2200 l/h)
q_{max} = l/h at each setting and fully open valve plug.
LF = Low flow
NF = Normal flow
HF = High flow

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

Note: If the medium temperature is below 2 °C, then ice forming on the spindle must be prevented. Therefore valves should be insulated with vapor tight insulation (stem extension can be used). IMI valves were tested for performance and durability with mono-ethylene as well as mono-propylene glycol up to a concentration of 57%.

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

Lift:
4 mm

Leakage rate:
Tight sealing (Class VI according to EN 60534-4).

Characteristics:
Linear, best suited for on/off control.

Material:
Valve body: AMETAL®
Valve insert: AMETAL® and PPS
Valve plug: PPS
Spindle: Stainless steel
Spindle seal: EPDM O-ring
Δp insert: Brass CW614
Membrane: EPDM
Springs: Stainless steel
O-rings: EPDM
Setting wheel: PA

Measuring points: AMETAL®
Sealings: EPDM
Caps: Polyamide and TPE

AMETAL® is the dezincification resistant alloy of IMI.

Marking:
IMI, PN, DN and flow direction arrow.
Insert: TA-Nano, DN (+LF/NF/HF)
LF: Red insert.
NF: White insert.
HF: Grey insert.

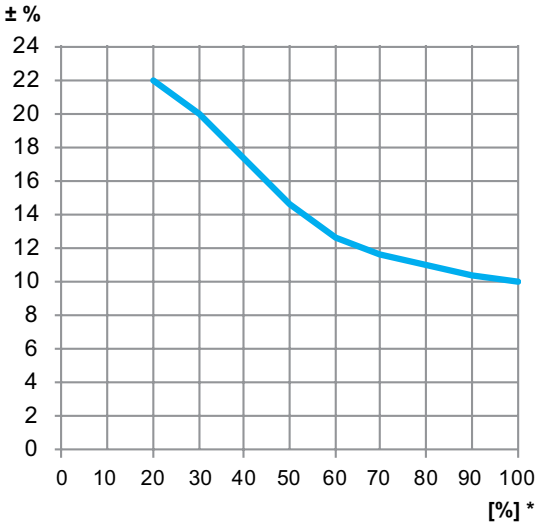
Connection:
External thread according to ISO 228.
Internal thread according to ISO 7.

Connection to actuator:
M30x1.5

Actuators:
See separate technical documentation on EMO T, EMO TM, TA-TRI and TA-Slider 160.

Measuring accuracy

Maximum flow deviation at different settings



*) Setting (%) of fully open valve.

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.

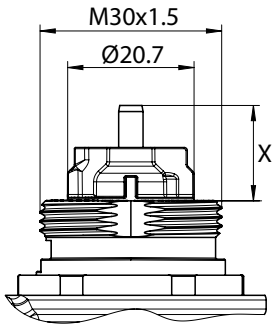
Noise

In order to avoid noise in the installation, the valve must be correctly installed and the water de-aerated.

Actuators

The valve is developed to work together with recommended actuators according to table. Care should be taken by the user to ensure that actuators not manufactured by IMI are fully compatible to provide optimal control from the valve. Failure to do so may provide unsatisfactory results.
See separate catalogue leaflets for more details about the actuators.

Actuators of other brands require;
Working range: X (closed - fully open) = 11,7 - 15,7
Closing force: Min. 100 N



Maximum recommended pressure drop (ΔpV) for valve and actuator combination
The maximum recommended pressure drop over a valve and actuator combination for close off (ΔpV_{close}) and to fulfill all stated performances (ΔpV_{max}).

DN	EMO T/EMO TM/TA-TRI/TA-Slider [kPa]
10	600
15	
20	
25	

ΔpV_{close} = The maximum pressure drop that the valve can close against from an opened position, with a specified force (actuator) without exceeding stated leakage rate.
ΔpV_{max} = The maximum allowed pressure drop over the valve to fulfill all stated performances.

Sizing

1. Choose the smallest valve size that can obtain the design flow with some safety margin, see "q_{max} values". The setting should be as open as possible.
2. Check that the available ΔpV is within the working range ΔpV_{min} (according to DN) - 600 kPa.

q_{max} values

Low flow (LF)

Normal flow (NF)

High flow (HF)

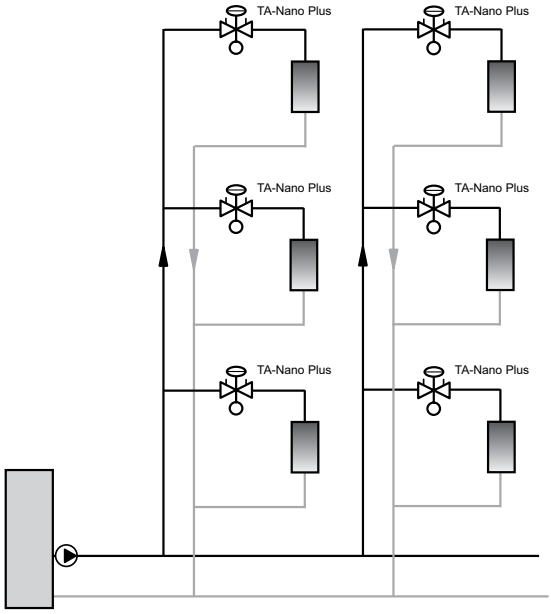
	Position									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
DN 10 NF	19	38	57	76	95	114	133	152	171	190
DN 15 LF	29	58	87	116	145	174	203	232	261	290
DN 15 NF	55	110	165	220	275	330	385	440	495	550
DN 15 HF	105	210	315	420	525	630	735	840	945	1050
DN 20 NF	110	220	330	440	550	660	770	880	990	1100
(DN 20 HF) *	160	320	480	640	800	960	1120	1280	1440	1600
(DN 25 NF) *	220	440	660	880	1100	1320	1540	1760	1980	2200

q_{max} = l/h at each setting and fully open valve plug.
LF = Low flow
NF = Normal flow
HF = High flow

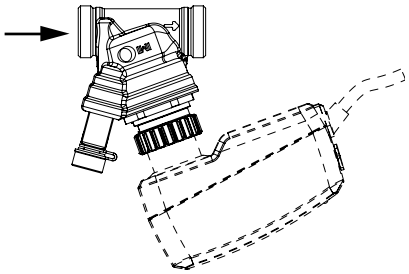
*) Launch Sep -25, values not yet verified.

Installation

Application example

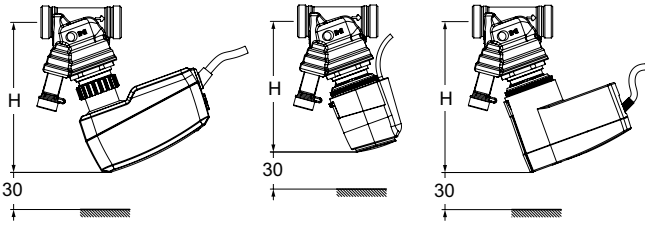


Flow direction



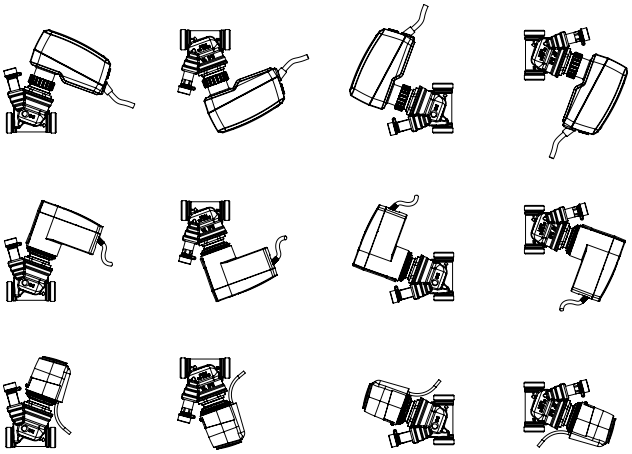
Installation of actuator

Note: Free space is required above the actuator for easy mounting/dismounting.



	TA-Slider 160 H	EMO T/TM H	TA-TRI H
DN 10-25	122	122	106

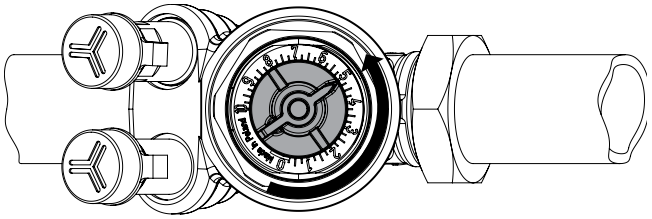
TA-Nano + TA-Slider / EMO T/TM / TA-TRI



IP54 IP54 IP 54 IP54

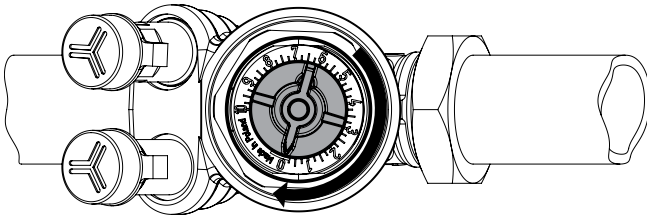
Operating function

Setting



1. Turn the setting wheel to desired value, e.g. 5.0.

Shut-off



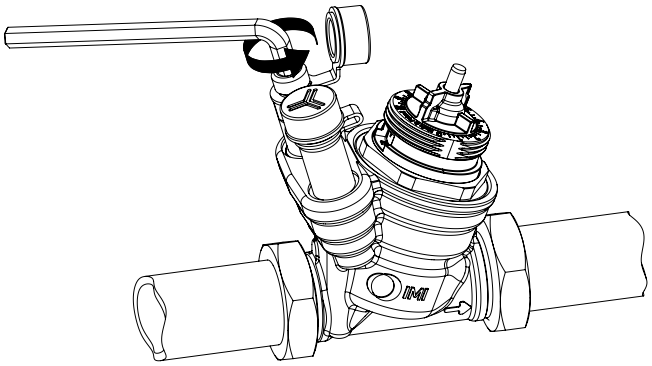
1. Turn the setting wheel clockwise to 0.

Measuring q
1. Remove the installed actuator.
2. Connect the IMI TA balancing instrument to the measuring points.
3. Input the valve type, size and setting and the actual flow is displayed.

Measuring ΔH
1. Remove any actuator.
2. Close the valve according to “Shut-off”.
3. Connect IMI TA balancing instrument to the measuring points and measure.

Important! Reopen the valve to previous setting after the measurement is completed.

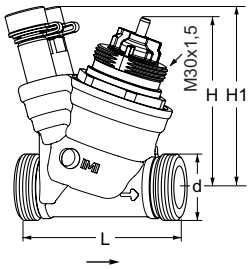
Flushing



1. Remove any actuator.
2. Open the valve fully, setting 10.
3. Bypass the Δp-part by inserting a 5 mm Allen key in red measuring point and open ≈1 turn anticlockwise.
4. Increase pump head to flush the valve.

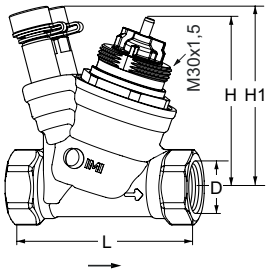
Important! Set the valve to previous setting and close the bypass spindle after the flushing is completed.

Articles



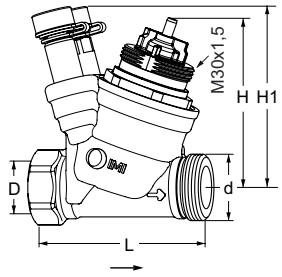
External thread
Threads according to ISO 228.

DN	d	L	H	H1	q_{max} [l/h]	Kg	Article No	
10 NF	G1/2	65	68	72	190	0,43	322213-10110	Launch Sep -25
15 LF	G3/4	65	68	72	290	0,47	322213-10015	Launch Sep -25
15 NF	G3/4	65	68	72	550	0,47	322213-10115	Launch Sep -25
15 HF	G3/4	65	68	72	1050	0,47	322213-10215	Launch Sep -25
20 NF	G1	75	68	72	1100	0,51	322213-10120	Launch Sep -25
20 HF	G1	75	68	72	(1600)	0,51	322213-10220	Launch Sep -25
25 NF	G1 1/4	82	68	72	(2200)		322213-10125	Launch Sep -25



Internal thread
Threads according to ISO 7.

DN	D	L	H	H1	q_{max} [l/h]	Kg	Article No	
15 LF	G1/2	75	68	72	290	0,51	322213-11015	Launch Sep -25
15 NF	G1/2	75	68	72	550	0,51	322213-11115	Launch Sep -25
15 HF	G1/2	75	68	72	1050	0,51	322213-11215	Launch Sep -25
20 NF	G3/4	75	68	72	1100	0,52	322213-11120	Launch Sep -25
20 HF	G3/4	75	68	72	(1600)	0,52	322213-11220	Launch Sep -25
25 NF	G1	90	68	72	(2200)		322213-11125	Launch Sep -25

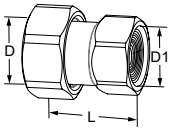


Internal thread x External thread
Threads according to ISO 7 x Threads according to ISO 228.

DN	D	d	L	H	H1	q_{max} [l/h]	Kg	Article No	
15 LF	G1/2	G3/4	70	68	72	290	0,49	322213-14015	Launch Sep -25
15 NF	G1/2	G3/4	70	68	72	550	0,49	322213-14115	Launch Sep -25
15 HF	G1/2	G3/4	70	68	72	1050	0,49	322213-14215	Launch Sep -25

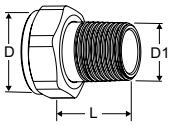
LF = Low flow
NF = Normal flow
HF = High flow
*) Connection to actuator.
→ = Flow direction

Connections



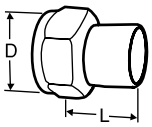
With internal thread
Threads according to ISO 228. Thread length according to ISO 7-1.
Swivelling nut.
Brass

For DN	D	D1	L*	Article No
10	G1/2	G3/8	29,5	52 009-810
10	G1/2	G1/2	34,5	52 009-910
15	G3/4	G1/2	31,5	52 009-815
15	G3/4	G3/4	36,5	52 009-915
20	G1	G3/4	33,5	52 009-820
20	G1	G1	39,5	52 009-920
25	G1 1/4	G1	39	52 009-825
25	G1 1/4	G1 1/4	43	52 009-925



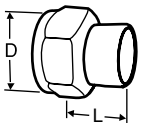
With external thread
Threads according to ISO 7-1.
Swivelling nut.
Brass

For DN	D	D1	L*	Article No
10	-	-	-	-
15	G3/4	R1/2	29	0601-02.350
20	G1	R3/4	32,5	0601-03.350
25	G1 1/4	R1	35	0601-04.350



Welding connection
Swivelling nut.
Brass/Steel 1.0045 (EN 10025-2)

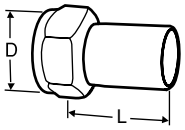
For DN	D	Pipe DN	L*	Article No
10	G1/2	10	30	52 009-010
15	G3/4	15	36	52 009-015
20	G1	20	40	52 009-020
25	G1 1/4	25	40	52 009-025



Soldering connection
Swivelling nut.
Brass/gunmetal CC491K (EN 1982)

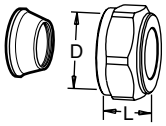
For DN	D	Pipe Ø	L*	Article No
10	G1/2	10	10	52 009-510
10	G1/2	12	11	52 009-512
15	G3/4	15	13	52 009-515
15	G3/4	16	13	52 009-516
20	G1	18	15	52 009-518
20	G1	22	18	52 009-522
25	G1 1/4	28	21	52 009-528

*) Fitting length (from the gasket surface to the end of the connection).



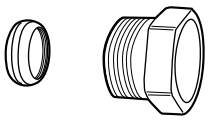
Connection with smooth end
For connection with press coupling.
Swivelling nut.
Brass/AMETAL®

For DN	D	Pipe Ø	L*	Article No
10	G1/2	12	35	52 009-312
15	G3/4	15	39	52 009-315
20	G1	18	44	52 009-318
20	G1	22	48	52 009-322
25	G1 1/4	28	53	52 009-328



Compression connection
Support bushes shall be used, for more information see catalogue leaflet FPL.
Should not be used with PEX pipes.
Brass/AMETAL®
Chrome plated

For DN	D	Pipe Ø	L**	Article No
10	G1/2	10	17	53 319-210
10	G1/2	12	17	53 319-212
10	G1/2	15	20	53 319-215
10	G1/2	16	25	53 319-216
15	G3/4	22	27	53 319-622

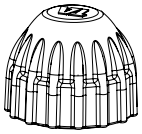


KOMBI compression coupling
Max.: 100°C
Thrust screw: AMETAL® or brass, nickel plated.
Cone: Brass
(For more information see catalogue leaflet KOMBI.)

Male pipe threads on thrust screw	For pipes, diameter	Article No
G1/2	10	53 235-109
G1/2	12	53 235-111
G1/2	14	53 235-112
G1/2	15	53 235-113
G1/2	16	53 235-114
G3/4	15	53 235-117
G3/4	18	53 235-121
G3/4	22	53 235-123

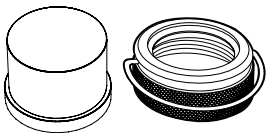
*) Fitting length (from the gasket surface to the end of the connection).
**) Over all length L refers to unassembled coupling.

Accessories



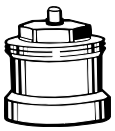
Protection cap
For TA-Nano, TA-COMPACT-P/-DP, TA-Modulator (DN 10-20), TBV-C/-CM.

Colour	Article No
Red	52 143-100



Tamper proof cover
Set containing plastic cover and locking ring for valves with connection M30x1.5 to thermostatic head/actuator.
Prevents manipulation of setting.

	Article No
	52 164-100



Spindle extension
Recommended together with the insulation to minimize the risk of condensation at the valve-actuator interface.
M30x1,5.

Type	L	Article No
Plastic, black	30	2002-30.700

Insulation
For heating and non-condensing cooling applications.
Material: EPP.
Fire class: E (EN 13501-1), B2 (DIN 4102).

TA-Nano Plus UK ed. pre-launch 04.2025