IMI TA

# TA-FUS1ON-P

## Combined control & balancing valves

Pressure independent combined balancing and control valves with independent EQM characteristics

Engineering GREAT Solutions

IMI Hydronic Engineering

# TA-FUS1ON-P

These innovative pressure independent balancing and control valves for heating and cooling systems combine the key hydronic functions of balancing and control in one valve. Adjustable max. flow and inherent independent EQM characteristics allow correct valve sizing and optimum system controllability. The measuring points enable accurate measurement of flow, differential pressure, temperature and available differential pressure.

## Key features

> **Adjustable max. flow**
Adjustable Kvs technology allows setting to design flow.

> **Independent, inherent EQM characteristic**
Proper EQM valve characteristic and high authority for all settings.

> **Self-sealing measuring points**
Simple and accurate measurement for balancing, trouble shooting and power measurement.

> **Actuators**
Valves and actuators supplied together ensuring optimum control performance and simplified selection.

## Technical description – Valve

**Application:**
Heating and cooling systems.

**Functions:**
Control (EQM)
Differential pressure control
Pre-setting (max. flow)
Measuring (ΔH, T, q)
Shut-off (for isolation during system maintenance)
Flushing (of the system)

**Dimension:**
DN 32-150

**Pressure class:**
DN 32-50: PN 16
DN 65-150: PN 16 and PN 25

**Differential pressure (ΔpV):**
Max. differential pressure ($\Delta pV_{max}$):
800 kPa = 8 bar
Min. differential pressure ($\Delta pV_{min}$):
DN 32-50: 15 kPa = 0,15 bar
DN 65-80: 25 kPa = 0,25 bar
DN 100-125: 30 kPa = 0,30 bar
DN 150: 40 kPa = 0,40 bar
(Valid for position 10, fully open. Other positions will require lower differential pressure, check with the software HySelect.)
$\Delta pV_{max}$ = The maximum allowed pressure drop over the valve, to fulfill all stated performances.
$\Delta pV_{min}$ = The minimum recommended pressure drop over the valve, for proper differential pressure control.

**Recommended flow range:**
The flow ($q_{max}$) can be set within the range [$m^3/h$]:
DN 32: 0,88 - 4,21
DN 40: 1,01 - 6,19
DN 50: 2,71 - 11,1
DN 65-2: 9,40 - 24,2
DN 80-2: 13,6 - 36,8
DN 100: 27,8 - 68,0
DN 125: 45,6 - 120
DN 150: 78,1 - 207
$q_{max}$ = $m^3/h$ at each setting and fully open valve plug.

**Lift:**
20 mm

**Rangeability:**
>100 (for all recommended settings)

**Leakage rate:**
Tight sealing

**Characteristics:**
Independent EQM.

**Temperature:**
Max. working temperature:
DN 32-150: 120°C
DN 65-150 with double secured measuring points: 150°C
Min. working temperature: -20°C

**Media:**
Water or neutral fluids, water-glycol mixtures.
(For other media contact IMI Hydronic Engineering.)

**Material:**
DN 32-50:
Valve body: AMETAL®
Valve plug: AMETAL®
Seat seal: EPDM/Stainless steel
Spindle seal: EPDM O-ring
O-rings: EPDM
Valve insert: AMETAL®/PPS/PTFE
Δp insert: Stainless steel/PPS
Membrane: HNBR
Springs: Stainless steel
Spindle: Stainless steel
DN 65-150:
Valve body: Ductile iron EN-GJS-400
O-rings: EPDM
Valve plug: Stainless steel
Seat seals: EPDM/Stainless steel
Plug mechanisms: Stainless steel and brass
Membrane: EPDM
Δp spring: Stainless steel. DN 150 painted steel.
Screws and nuts: Stainless steel

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

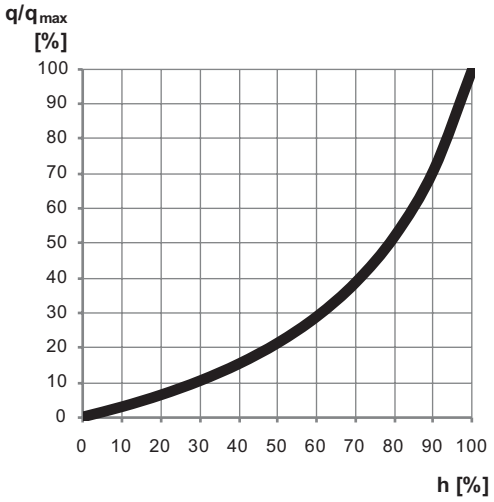
**Surface treatment:**
DN 32-50: Non treated
DN 65-150: Electrophoretic painting.

**Marking:**
DN 32-50: TAH, IMI, DN, PN, DR, serial No and flow direction arrow.
DN 65-150: TAH, IMI, DN, PN, Kvs, $T_{min}/_{max}$, serial number, valve body material and flow direction arrow, label.
CE-marking:
DN 65-125: CE
DN 150: CE 0062 *
*) Notified body.

**Connection:**
DN 32-50:
Female thread according to ISO 228.
Thread length according to ISO 7-1.
Male thread according to ISO 228.
DN 65-150:
Flanges according to EN-1092-2, type 21.
Face to face length according to EN 558 series 1.

## Valve characteristics

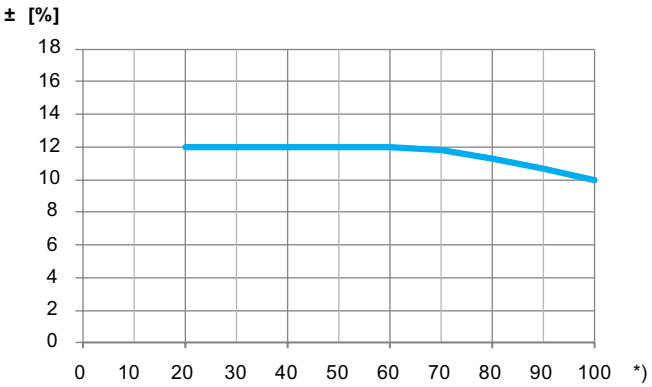
Nominal valve characteristic for all recommended settings.



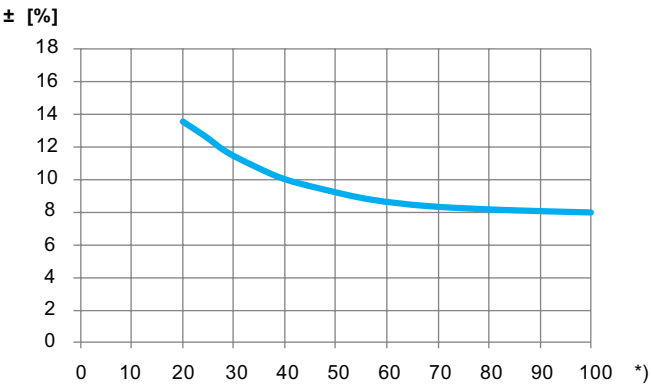
## Measuring accuracy

**Maximum flow deviation at different settings**

**DN 32-50**




**DN 65-150**




*) 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

A wide range of high performance proportional actuators are available from IMI Hydronic Engineering (e.g. 24V, 100-240V, 230V, fail safe) to provide accurate modulating or 3-point control, when used together with combined balancing and control valves. See “Selection tables”.

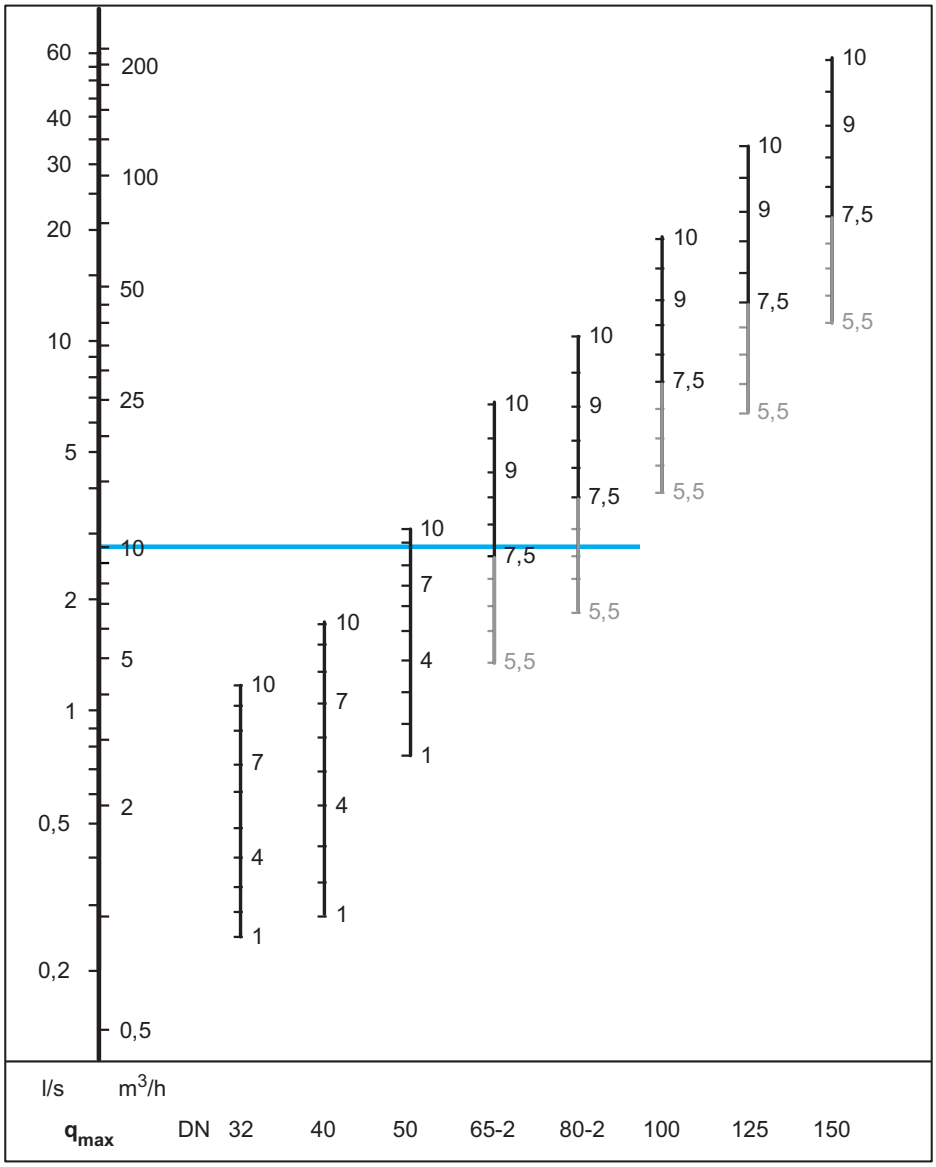
For more details on actuators, see separate technical leaflets or contact IMI Hydronic Engineering.

## Sizing

**Example**
Flow is 10 m³/h, available ΔpV is 20 kPa and control signal (input signal) is 0-10 VDC.

1. Go to sizing diagram.
2. Draw a straight horizontal line from 10 m³/h, which will cross the setting bars for all valves which fit the application. In this case DN 50 setting 8,8, DN 65-2 setting 7,7.
3. Check that the available ΔpV is within the working range (between min. and max. allowed ΔpV). In this case, the ΔpV is 20 kPa which is out of range for DN 65 (min. ΔpV=25 kPa valid for setting 10, other settings will require slightly lower ΔpV, this can be checked with the software HySelect).
4. Choose the smallest option (with some safety margin). In this case DN 50 is preferable.
5. Go to the selection tables to select the correct valve and actuator combination. In this case article number 322202-50911 (24 V).

**Sizing diagram**




| DN | Differential pressure ΔpV [kPa] | |
|---|---|---|
| | Min. | Max. |
| **32-50** | 15 | 800 |
| **65-80** | 25 | 800 |
| **100-125** | 30 | 800 |
| **150** | 40 | 800 |

DN 65-150: Recommended setting range 7.5–10.

## Selection tables

**Maximum recommended pressure drop (ΔpV) for valve and actuator combination**
The maximum recommneded pressure drop over the valve and actuator combination for close off ($\Delta pV_{close}$) and to fulfill all stated performances ($\Delta pV_{max}$).

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

| DN | TA-Slider 750<br>TA-MC100FSE/FSR<br>[kPa] |
|---|---|
| **32** | 800 |
| **40** | 800 |
| **50** | 800 |
| **65** | 800 |
| **80** | 800 |
| **100** | 800 |
| **125** | 800 |
| **150** | 800 |

The codes in the selection tables are for different sets of valve size (DN) and type of actuator. Valves and actuators supplied together ensures optimum control and simplified selection. For other combinations order valve and actuator separately, see “Articles – Valves” and “Articles – Actuators”.

For more details on actuators, see separate technical leaflets or contact IMI Hydronic Engineering.

**Article number: 322202-xxxxx / 22202-xxxxxx**
To get the complete article number, simply add the code stated below according to your required set.
Example: 322202-50711

**With standard actuators**

| | | | TA-Slider 750 | |
|---|---|---|---|---|
| | | **Input signal:** | 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off | |
| | | **Output signal:** | 0(2)-10 VDC | |
| | | **Supply voltage:** | 24 VAC | 100-240 VAC |
| | | **Fail safe:** | No | |
| **DN** | **PN** | **Flow range [m³/h]** | **322202-** | |
| **32** | 16 | 0,88 - 4,21 | 50711 | 50721 |
| **40** | 16 | 1,01 - 6,19 | 50811 | 50821 |
| **50** | 16 | 2,71 - 11,1 | 50911 | 50921 |
| **65-2** | 16 | 9,40 - 24,2 | 51011 | 51021 |
| **65-2** | 25 | 9,40 - 24,2 | 61011 | 61021 |
| **80-2** | 16 | 13,6 - 36,8 | 51111 | 51121 |
| **80-2** | 25 | 13,6 - 36,8 | 61111 | 61121 |
| **100** | 16 | 27,8 - 68,0 | 51211 | 51221 |
| **100** | 25 | 27,8 - 68,0 | 61211 | 61221 |
| **125** | 16 | 45,6 - 120 | 51311 | 51321 |
| **125** | 25 | 45,6 - 120 | 61311 | 61321 |
| **150** | 16 | 78,1 - 207 | 51411 | 51421 |
| **150** | 25 | 78,1 - 207 | 61411 | 61421 |

DN 32-50: Female threaded
DN 65-150: Flanged

**With fail safe actuators**

| | | | TA-MC100FSE | TA-MC100FSE | TA-MC100FSR | TA-MC100FSR |
|---|---|---|---|---|---|---|
| | | **Input signal:** | 0(2)-10 VDC, 0(4)-20 mA, 3-point | 3-point | 0(2)-10 VDC, 0(4)-20 mA, 3-point | 3-point |
| | | **Output signal:** | 0(2)-10 VDC, 0(4)-20 mA | 0-10 VDC | 0(2)-10 VDC, 0(4)-20 mA | 0-10 VDC |
| | | **Supply voltage:** | 24 VAC | 230 VAC | 24 VAC | 230 VAC |
| | | **Fail safe:** | Extending (closing) | | Retracting (opening) | |
| **DN** | **PN** | **Flow range [m³/h]** | **22202-** | | | |
| **32** | 16 | 0,88 - 4,21 | 081032 | 101032 | 091032 | 111032 |
| **40** | 16 | 1,01 - 6,19 | 081040 | 101040 | 091040 | 111040 |
| **50** | 16 | 2,71 - 11,1 | 081050 | 101050 | 091050 | 111050 |
| **65-2** | 16 | 9,40 - 24,2 | 082065 | 102065 | 092065 | 112065 |
| **65-2** | 25 | 9,40 - 24,2 | 083065 | 103065 | 093065 | 113065 |
| **80-2** | 16 | 13,6 - 36,8 | 082080 | 102080 | 092080 | 112080 |
| **80-2** | 25 | 13,6 - 36,8 | 083080 | 103080 | 093080 | 113080 |
| **100** | 16 | 27,8 - 68,0 | 082100 | 102100 | 092100 | 112100 |
| **100** | 25 | 27,8 - 68,0 | 083100 | 103100 | 093100 | 113100 |
| **125** | 16 | 45,6 - 120 | 082125 | 102125 | 092125 | 112125 |
| **125** | 25 | 45,6 - 120 | 083125 | 103125 | 093125 | 113125 |
| **150** | 16 | 78,1 - 207 | 082150 | 102150 | 092150 | 112150 |
| **150** | 25 | 78,1 - 207 | 083150 | 103150 | 093150 | 113150 |

DN 32-50: Female threaded
DN 65-150: Flanged

## $q_{max}$ values

| | Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
| **DN 32** | 880 | 1 030 | 1 210 | 1 440 | 1 730 | 2 180 | 2 590 | 3 170 | 3 730 | 4 210 |
| **DN 40** | 1 010 | 1 240 | 1 560 | 1 990 | 2 460 | 3 040 | 3 790 | 4 610 | 5 410 | 6 190 |
| **DN 50** | 2 710 | 3 320 | 4 050 | 4 900 | 5 890 | 6 910 | 7 850 | 8 910 | 10 200 | 11 100 |

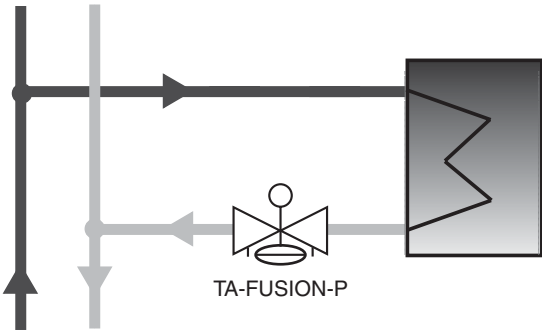
| | Position | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *5.5* | *6* | *6.5* | *7* | **7.5** | **8** | **8.5** | **9** | **9.5** | **10** |
| **DN 65-2** | *4 850* | *5 880* | *6 900* | *8 190* | 9 400 | 11 400 | 13 600 | 15 900 | 19 500 | 24 200 |
| **DN 80-2** | *6 650* | *8 150* | *9 400* | *11 100* | 13 600 | 16 200 | 19 400 | 23 800 | 29 500 | 36 800 |
| **DN 100** | *14 000* | *16 600* | *19 700* | *23 400* | 27 800 | 32 900 | 39 500 | 46 000 | 56 500 | 68 000 |
| **DN 125** | *23 000* | *27 600* | *33 000* | *39 300* | 45 600 | 55 100 | 66 600 | 80 600 | 98 500 | 120 000 |
| **DN 150** | *40 200* | *47 500* | *56 200* | *66 200* | 78 100 | 93 800 | 113 000 | 137 000 | 170 000 | 207 000 |

$q_{max}$ = l/h at each setting and fully open valve plug.

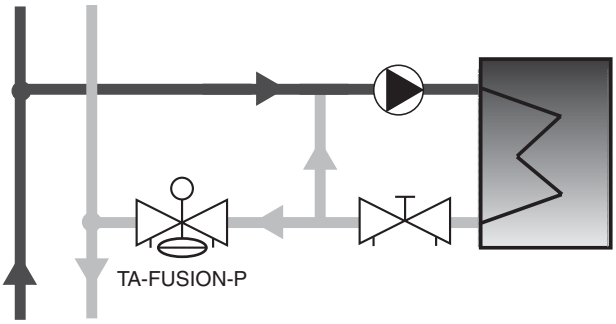
DN 65-150: Recommended setting range 7.5–10.

## Installation

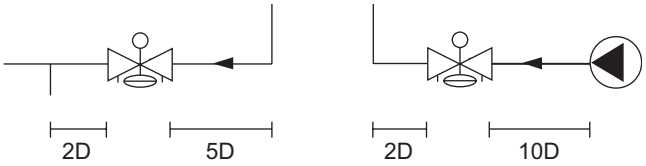
**Application examples**
2-way direct circuit



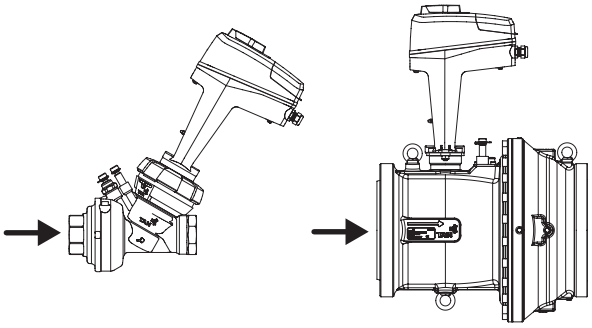

Injection circuit



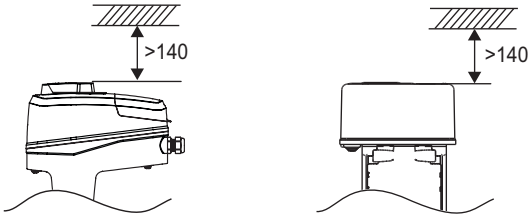

**Normal pipe fittings**
Avoid mounting taps and pumps immediately before or after the valve.
Installation recommendation for accurate measurement due to distortion of fully developed turbulent flow profile.




**Flow direction**
DN 32-50 DN 65-150



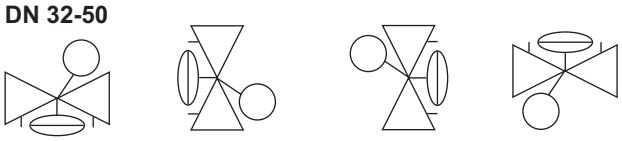
**Installation of actuator**
Approx. 140 mm of free space is required above the actuator.



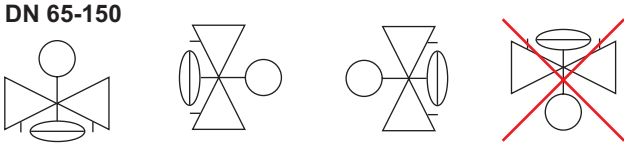

**Ingress protection**
IP54
**Note:** Read carefully the installation instruction of the actuator.

**TA-Slider 750**

**DN 32-50**

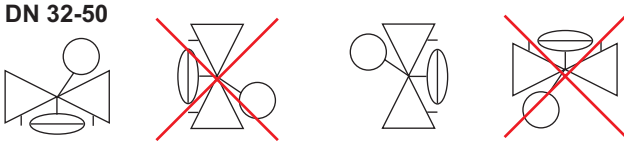


**DN 65-150**

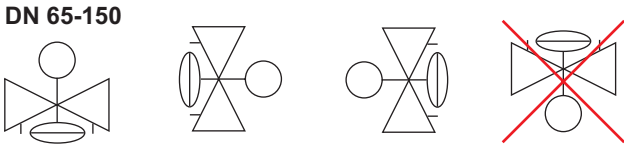


**TA-MC100 FSE/FSR**

**DN 32-50**

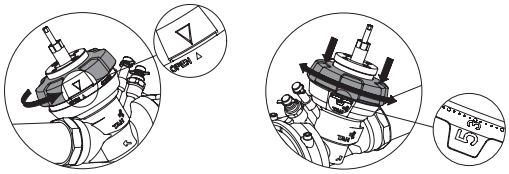


**DN 65-150**



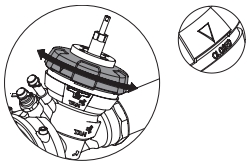
## Operating function DN 32-50

### Setting



1. Open the valve **fully** with the handwheel.
2. Press the handwheel downwards and turn to desired value, e.g. 5.3.

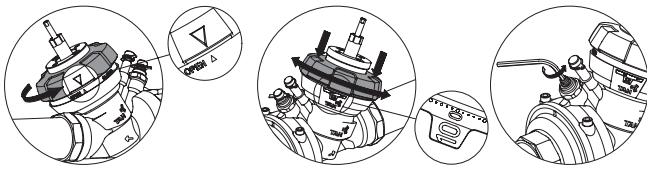
### Shut-off



1. Turn the handwheel to “Closed”.

Turn the handwheel to “Open” when re-opening the valve.

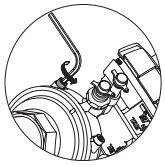
### Flushing of the system



1. Open the valve fully with the handwheel.
2. Open the setting fully (position 10).
3. Deactivate the Δp part by opening the flushing spindle fully (anticlockwise).

After flushing, close the flushing spindle and set the valve to previous setting.

### Venting



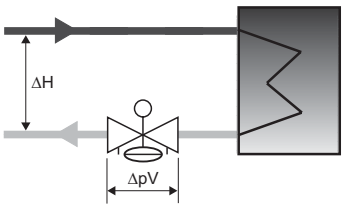
1. To vent the membrane chamber, open the topmost venting screw. **NOTE!** Max. 2 turns opening.

### Measuring q

Connect IMI Hydronic Engineering balancing instrument to the measuring points. Input the valve type, size and setting and the actual flow is displayed.

### Measuring ΔH

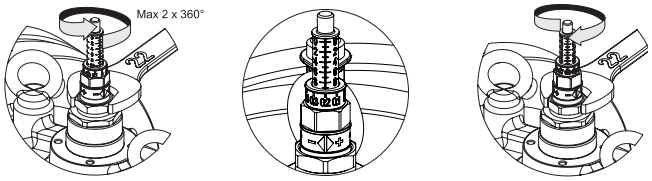
Close the valve according to “Shut-off”, deactivate the Δp part according to “Flushing”.
Connect IMI Hydronic Engineering balancing instrument to the measuring points and measure.
**Important!** The valve must be re-opened **fully and the Δp part activated** after the measurement is completed.




**NOTE!**
Ensure that the actuator is disengaged from the valve spindle during all operating functions described above, except venting.

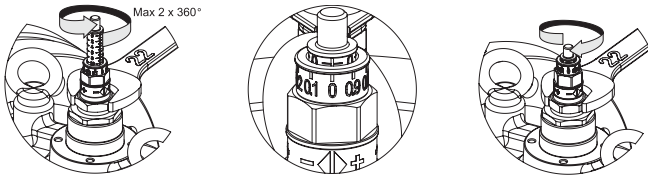
## Operating function DN 65-150

### Setting




1. Release the fixing nut.
2. Turn the setting screw to desired value on the scale, e.g. 9.2.
3. Tighten the fixing nut.

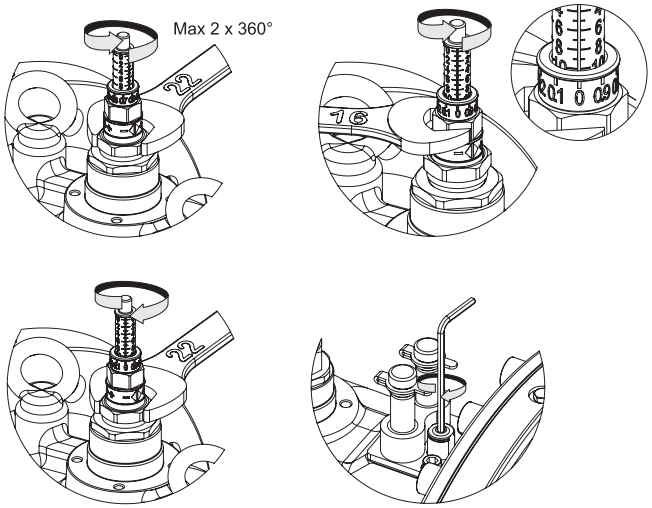
### Shut-off




1. Release the fixing nut.
2. Turn the setting screw clockwise to stop (position 0 ±0.5). The presetting is visible on the setting scale.
3. Tighten the fixing nut.

Open to **previous setting** when re-opening the valve.

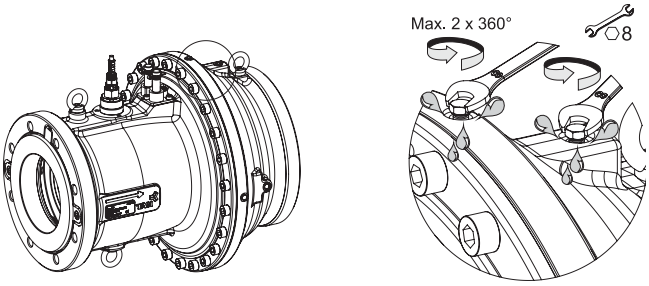
### Flushing of the system




1. Release the fixing nut.
2. Turn the setting screw to fully open (position 10).
3. Tighten the fixing nut.
4. Deactivate the Δp part by closing the flushing spindle fully (clockwise).

After flushing, open the flushing spindle and set the valve to previous setting.

### Venting



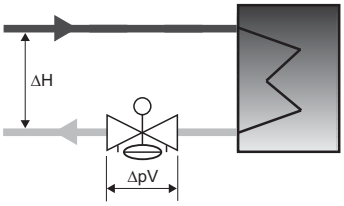

1. To vent the membrane chamber, open the topmost venting screw. **NOTE!** Max. 2 turns opening.

### Measuring q

Connect IMI Hydronic Engineering balancing instrument to the measuring points. Input the valve type, size and setting and the actual flow is displayed.

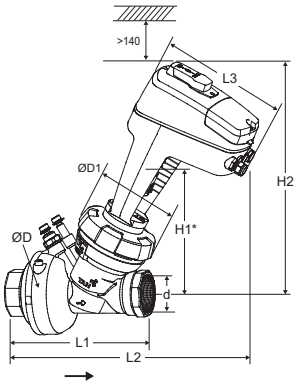
### Measuring ΔH

Close the valve according to “Shut-off”, deactivate the Δp part according to “Flushing”.
Connect IMI Hydronic Engineering balancing instrument to the measuring points and measure.
**Important!** The valve must be re-opened to **previous setting and the Δp part activated** after the measurement is completed.




**NOTE!**
Ensure that the actuator is disengaged from the valve spindle during all operating functions described above, except venting.

## Articles – Sets



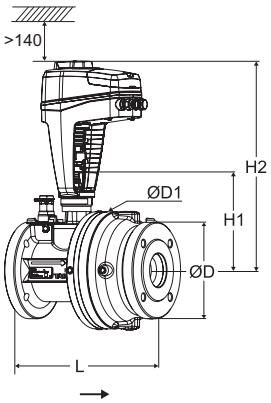

**DN 32-50 Female threads** Threads according to ISO 228
**TA-Slider 750** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off

**24 VAC/VDC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 410 | 209 | 186 | 361 | 4,21 | 8,2 | 5902276884054 | 322202-50711 |
| 40 | G1 1/2 | 130 | 128 | 218 | 410 | 209 | 186 | 361 | 6,19 | 8,2 | 5902276884115 | 322202-50811 |
| 50 | G2 | 130 | 128 | 226 | 415 | 209 | 190 | 365 | 11,1 | 8,7 | 5902276884177 | 322202-50911 |

**100-240 VAC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 410 | 209 | 186 | 361 | 4,21 | 8,2 | 5902276884085 | 322202-50721 |
| 40 | G1 1/2 | 130 | 128 | 218 | 410 | 209 | 186 | 361 | 6,19 | 8,2 | 5902276884146 | 322202-50821 |
| 50 | G2 | 130 | 128 | 226 | 415 | 209 | 190 | 365 | 11,1 | 8,7 | 5902276884207 | 322202-50921 |




**DN 65-80 With flanges** Flanges according to EN-1092-2, type 21.
**TA-Slider 750** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off

**24 VAC/VDC**

| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 401 | 24,2 | 47 | 5902276884238 | 322202-51011 |
| 80-2 | 200 | 278 | 310 | 205 | 401 | 36,8 | 54 | 5902276884252 | 322202-51111 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 401 | 24,2 | 47 | 5902276884337 | 322202-61011 |
| 80-2 | 200 | 278 | 310 | 205 | 401 | 36,8 | 54 | 5902276884351 | 322202-61111 |

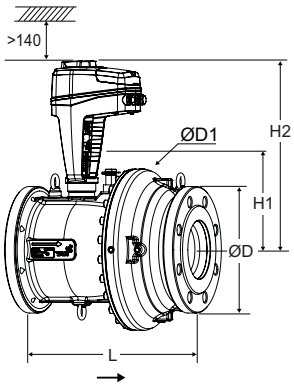
**100-240 VAC**

| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 401 | 24,2 | 47 | 5902276884245 | 322202-51021 |
| 80-2 | 200 | 278 | 310 | 205 | 401 | 36,8 | 54 | 5902276884269 | 322202-51121 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 401 | 24,2 | 47 | 5902276884344 | 322202-61021 |
| 80-2 | 200 | 278 | 310 | 205 | 401 | 36,8 | 54 | 5902276884368 | 322202-61121 |

*) Height to the spindle top.
→ = Flow direction

**For maximum $\Delta pV_{close}$, see "Selection tables".**

Valve and actuator are individually packaged for easy handling on site.




**DN 100-150 With flanges** Flanges according to EN-1092-2, type 21.
**TA-Slider 750** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point, on-off

**24 VAC/VDC**

| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 100 | 220 | 310 | 350 | 221 | 403 | 68,0 | 61 | 5902276893292 | 322202-51211 |
| 125 | 250 | 344 | 400 | 221 | 403 | 120 | 84 | 5902276893308 | 322202-51311 |
| 150 | 285 | 380 | 480 | 251 | 420 | 207 | 120 | 5902276893315 | 322202-51411 |
| **PN 25** | | | | | | | | | |
| 100 | 235 | 310 | 350 | 221 | 403 | 68,0 | 61 | 5902276893445 | 322202-61211 |
| 125 | 270 | 344 | 400 | 221 | 403 | 120 | 84 | 5902276893322 | 322202-61311 |
| 150 | 300 | 380 | 480 | 251 | 420 | 207 | 120 | 5902276893339 | 322202-61411 |

**100-240 VAC**

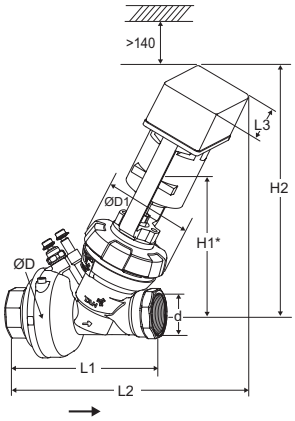
| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 100 | 220 | 310 | 350 | 221 | 403 | 68,0 | 61 | 5902276893346 | 322202-51221 |
| 125 | 250 | 344 | 400 | 221 | 403 | 120 | 84 | 5902276893353 | 322202-51321 |
| 150 | 285 | 380 | 480 | 251 | 420 | 207 | 120 | 5902276893360 | 322202-51421 |
| **PN 25** | | | | | | | | | |
| 100 | 235 | 310 | 350 | 221 | 403 | 68,0 | 61 | 5902276893377 | 322202-61221 |
| 125 | 270 | 344 | 400 | 221 | 403 | 120 | 84 | 5902276893384 | 322202-61321 |
| 150 | 300 | 380 | 480 | 251 | 420 | 207 | 120 | 5902276893391 | 322202-61421 |

*) Height to the spindle top.
→ = Flow direction

**For maximum $\Delta pV_{close}$, see "Selection tables".**

Valve and actuator are individually packaged for easy handling on site.

## Articles – Fail-safe sets, extending (closing)



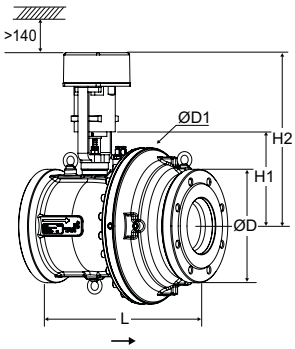

**DN 32-50 Female threads** Threads according to ISO 228
**TA-MC100FSE** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point

**24 VAC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 379 | 141 | 186 | 356 | 4,21 | 9,3 | 5901688821459 | 22202-081032 |
| 40 | G1 1/2 | 130 | 128 | 218 | 379 | 141 | 186 | 356 | 6,19 | 9,3 | 5901688821497 | 22202-081040 |
| 50 | G2 | 130 | 128 | 226 | 383 | 141 | 190 | 360 | 11,1 | 9,8 | 5901688821534 | 22202-081050 |

**230 VAC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 379 | 141 | 186 | 356 | 4,21 | 9,3 | 5901688821473 | 22202-101032 |
| 40 | G1 1/2 | 130 | 128 | 218 | 379 | 141 | 186 | 356 | 6,19 | 9,3 | 5901688821510 | 22202-101040 |
| 50 | G2 | 130 | 128 | 226 | 383 | 141 | 190 | 360 | 11,1 | 9,8 | 5901688821558 | 22202-101050 |




**DN 65-150 With flanges** Flanges according to EN-1092-2, type 21.
**TA-MC100FSE** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point

**24 VAC**

| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821916 | 22202-082065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822036 | 22202-082080 |
| 100 | 220 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822333 | 22202-082100 |
| 125 | 250 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822456 | 22202-082125 |
| 150 | 285 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823750 | 22202-082150 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821954 | 22202-083065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822074 | 22202-083080 |
| 100 | 235 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822371 | 22202-083100 |
| 125 | 270 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822494 | 22202-083125 |
| 150 | 300 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823767 | 22202-083150 |

**230 VAC**

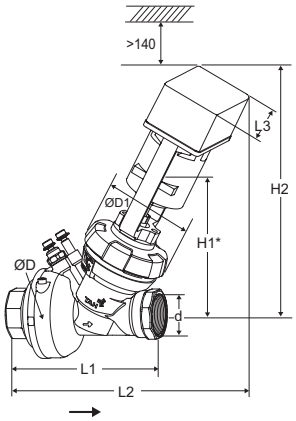
| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821930 | 22202-102065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822050 | 22202-102080 |
| 100 | 220 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822357 | 22202-102100 |
| 125 | 250 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822470 | 22202-102125 |
| 150 | 285 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823798 | 22202-102150 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821978 | 22202-103065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822098 | 22202-103080 |
| 100 | 235 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822395 | 22202-103100 |
| 125 | 270 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822517 | 22202-103125 |
| 150 | 300 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823804 | 22202-103150 |

*) Height to the spindle top. → = Flow direction

**For maximum $\Delta pV_{close}$, see "Selection tables".**

Valve and actuator are individually packaged for easy handling on site.

## Articles – Fail-safe sets, retracting (opening)



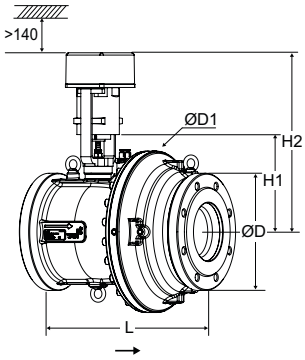

**DN 32-50 Female threads** Threads according to ISO 228
**TA-MC100FSR** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point

**24 VAC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 379 | 141 | 186 | 356 | 4,21 | 9,3 | 5901688821466 | 22202-091032 |
| 40 | G1 1/2 | 130 | 128 | 218 | 379 | 141 | 186 | 356 | 6,19 | 9,3 | 5901688821503 | 22202-091040 |
| 50 | G2 | 130 | 128 | 226 | 383 | 141 | 190 | 360 | 11,1 | 9,8 | 5901688821541 | 22202-091050 |

**230 VAC**

| DN | d | D | D1 | L1 | L2 | L3 | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 379 | 141 | 186 | 356 | 4,21 | 9,3 | 5901688821480 | 22202-111032 |
| 40 | G1 1/2 | 130 | 128 | 218 | 379 | 141 | 186 | 356 | 6,19 | 9,3 | 5901688821527 | 22202-111040 |
| 50 | G2 | 130 | 128 | 226 | 383 | 141 | 190 | 360 | 11,1 | 9,8 | 5901688821565 | 22202-111050 |




**DN 65-150 With flanges** Flanges according to EN-1092-2, type 21.
**TA-MC100FSR** Input signal: 0(2)-10 VDC, 0(4)-20 mA, 3-point

**24 VAC**

| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821923 | 22202-092065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822043 | 22202-092080 |
| 100 | 220 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822340 | 22202-092100 |
| 125 | 250 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822463 | 22202-092125 |
| 150 | 285 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823774 | 22202-092150 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821961 | 22202-093065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822081 | 22202-093080 |
| 100 | 235 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822388 | 22202-093100 |
| 125 | 270 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822500 | 22202-093125 |
| 150 | 300 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823781 | 22202-093150 |

**230 VAC**

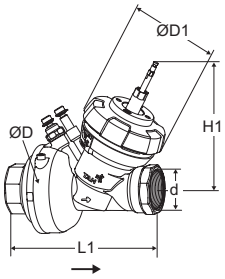
| DN | D | D1 | L | H1* | H2 | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821947 | 22202-112065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822067 | 22202-112080 |
| 100 | 220 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822364 | 22202-112100 |
| 125 | 250 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822487 | 22202-112125 |
| 150 | 285 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823811 | 22202-112150 |
| **PN 25** | | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 382 | 24,2 | 48 | 5901688821985 | 22202-113065 |
| 80-2 | 200 | 278 | 310 | 205 | 382 | 36,8 | 55 | 5901688822104 | 22202-113080 |
| 100 | 235 | 310 | 350 | 221 | 387 | 68,0 | 62 | 5901688822401 | 22202-113100 |
| 125 | 270 | 344 | 400 | 221 | 387 | 120 | 85 | 5901688822524 | 22202-113125 |
| 150 | 300 | 380 | 480 | 251 | 404 | 207 | 121 | 5901688823828 | 22202-113150 |

*) Height to the spindle top. → = Flow direction

**For maximum $\Delta pV_{close}$, see "Selection tables".**

Valve and actuator are individually packaged for easy handling on site.

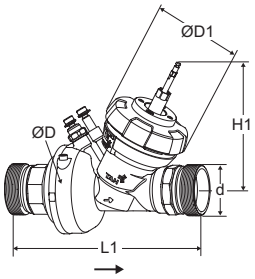
## Articles – Valves




### Female thread

Threads according to ISO 228

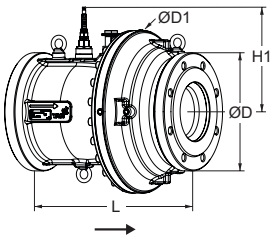
| DN | d | D | D1 | L1 | H1* | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 32 | G1 1/4 | 130 | 128 | 213 | 186 | 4,21 | 6,6 | 7318798638903 | 22202-001032 |
| 40 | G1 1/2 | 130 | 128 | 218 | 186 | 6,19 | 6,6 | 7318798639009 | 22202-001040 |
| 50 | G2 | 130 | 128 | 226 | 190 | 11,1 | 7,1 | 7318798639108 | 22202-001050 |




### Male thread

Threads according to ISO 228

| DN | d | D | D1 | L1 | H1* | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | | |
| 32 | G1 1/2 | 130 | 128 | 273 | 186 | 4,21 | 7,2 | 7318794016507 | 22202-005032 |
| 40 | G2 | 130 | 128 | 280 | 186 | 6,19 | 7,2 | 7318794016606 | 22202-005040 |
| 50 | G2 1/2 | 130 | 128 | 294 | 190 | 11,1 | 8,1 | 7318794016705 | 22202-005050 |




### Flanged

Flanges according to EN-1092-2, type 21.

| DN | D | D1 | L | H1* | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 24,2 | 45 | 5901688827581 | 22202-002065 |
| 80-2 | 200 | 278 | 310 | 205 | 36,8 | 52 | 5901688827611 | 22202-002080 |
| 100 | 220 | 310 | 350 | 221 | 68,0 | 59 | 3831112529427 | 22202-002100 |
| 125 | 250 | 344 | 400 | 221 | 120 | 82 | 3831112529441 | 22202-002125 |
| 150 | 285 | 380 | 480 | 251 | 207 | 118 | 3831112529489 | 22202-002150 |
| **PN 25** | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 24,2 | 45 | 5901688827598 | 22202-003065 |
| 80-2 | 200 | 278 | 310 | 205 | 36,8 | 52 | 5901688827628 | 22202-003080 |
| 100 | 235 | 310 | 350 | 221 | 68,0 | 59 | 3831112529434 | 22202-003100 |
| 125 | 270 | 344 | 400 | 221 | 120 | 82 | 3831112529465 | 22202-003125 |
| 150 | 300 | 380 | 480 | 251 | 207 | 118 | 3831112529496 | 22202-003150 |

**Max. 150°C (double secured measuring points)**

| DN | D | D1 | L | H1* | $q_{max}$ [m³/h] | Kg | EAN | Article No |
|---|---|---|---|---|---|---|---|---|
| **PN 16** | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 24,2 | 45 | 5902276893407 | 32202-021007 |
| 80-2 | 200 | 278 | 310 | 205 | 36,8 | 52 | 5902276893414 | 32202-021107 |
| 100 | 220 | 310 | 350 | 221 | 68,0 | 59 | 3831112528116 | 32202-021207 |
| 125 | 250 | 344 | 400 | 221 | 120 | 82 | 3831112528147 | 32202-021307 |
| 150 | 285 | 380 | 480 | 251 | 207 | 118 | 3831112528178 | 32202-021400 |
| **PN 25** | | | | | | | | |
| 65-2 | 185 | 224 | 290 | 205 | 24,2 | 45 | 5902276893421 | 32202-021008 |
| 80-2 | 200 | 278 | 310 | 205 | 36,8 | 52 | 5902276893438 | 32202-021108 |
| 100 | 235 | 310 | 350 | 221 | 68,0 | 59 | 3831112528123 | 32202-021208 |
| 125 | 270 | 344 | 400 | 221 | 120 | 82 | 3831112528154 | 32202-021308 |
| 150 | 300 | 380 | 480 | 251 | 207 | 118 | 3831112528185 | 32202-021408 |

→ = Flow direction

## Articles – Actuators

**TA-Slider 750, TA-MC100FSE/FSR**
(Available as sets with TA-FUSION)
For more details on actuators, see separate technical leaflets or contact IMI Hydronic Engineering.

| Type | Supply voltage | EAN | Article No |
|---|---|---|---|
| TA-Slider 750 | 24 VAC/VDC | 5901688828458 | 322226-10110 |
| TA-Slider 750 | 100-240 VAC | 5902276883620 | 322226-40110 |
| | | | |
| TA-MC100FSE | 24 VAC | 3831112512122 | 61-100-101 |
| TA-MC100FSE | 230 VAC | 3831112512139 | 61-100-102 |
| TA-MC100FSR | 24 VAC | 3831112512146 | 61-100-201 |
| TA-MC100FSR | 230 VAC | 3831112512153 | 61-100-202 |

**Adapter for actuator to be ordered separately, when valve (DN 65-150) and actuator are ordered separately.**

**TA-Slider 750 Plus**
The Plus version has the following additional functions;
- Binay input, relays, output signal in mA
- BUS communication for ModBus, BACnet or KNX (with or without binay input, relays, output signal in mA)

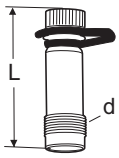
The Plus version of the TA-Slider actuator to be ordered separately. See separate technical leaflet TA-Slider 750.

## Adapters for actuators

| | Valve DN | EAN | Article No |
|---|---|---|---|
| **For recommended actuators** | | | |
| TA-Slider 750 | 32-50 | | *) |
| TA-Slider 750/1250 | 65-150 | 3831112529748 | 22413-001055 |
| TA-MC100FSE/FSR | 32-50 | | *) |
| TA-MC100FSE/FSR | 65-150 | 3831112529748 | 22413-001055 |
| **For other actuators** | | | |
| JC VA1125-GGA-1 | 32-50 | 3831112531635 | 22412-000001 |
| JC VA1125-GGA-1 | 65-150 | 3831112531628 | 22413-000001 |
| JC VA7810-GGA-12 | 32-50 | 3831112531642 | 22412-000002 |
| JC VA7810-GGA-12 | 65-150 | 3831112531659 | 22413-000002 |
| Sauter AVM322 | 32-50 | 3831112532342 | 22412-000004 |
| Sauter AVM322 | 65-150 | 3831112532359 | 22413-000004 |
| Sauter AVM234, AVN, AVF | 32-50 | 3831112531680 | 22412-000003 |
| Sauter AVM234, AVN, AVF | 65-150 | 3831112512214 | 22413-000003 |
| Siemens SAX, SQV91 | 32-50 | 3831112531611 | 22214-000002 |
| Siemens SAX, SQV91 | 65-150 | 3831112530928 | 22214-000001 |

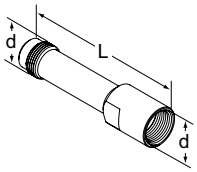
*) Integrated in the valve.

## Accessories



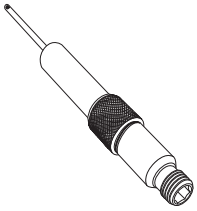

### Measuring point
For DN 65-150.

| d | L | EAN | Article No |
|---|---|---|---|
| M14x1 | 44 | 7318792813207 | 52 179-014 |
| M14x1 | 103 | 7318793858108 | 52 179-015 |



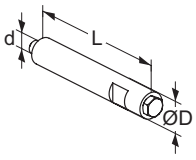

### Extension for measuring point M14x1
Suitable when insulation is used.
For DN 65-150.

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



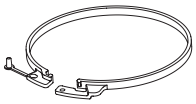
### Measuring point
Extensions 60 mm.
Can be installed without draining of the system.
For all dimensions.

| L | EAN | Article No |
|---|---|---|
| 60 | 7318792812804 | 52 179-006 |



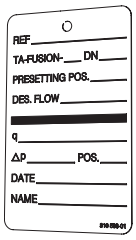

### Venting extension
Suitable when insulation is used.

| d | D | L | EAN | Article No |
|---|---|---|---|---|
| M6 | 12 | 70 | 3831112531727 | 52 759-220 |



### Tamper proof ring
For locking of set $Kv_{max}$.

| For DN | EAN | Article No |
|---|---|---|
| 32-50 | 7318794001800 | 22107-000001 |

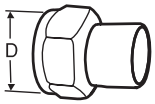



### Identification tag

| EAN | Article No |
|---|---|
| 7318794001701 | 22107-000002 |

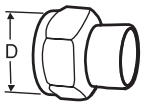
### Insulation
See related insulation instruction under “Products & Solutions” on www.imi-hydronic.com or contact IMI Hydronic Engineering.

## Connections for DN 32-50



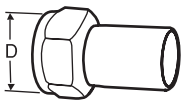

**Welding connection**
Swivelling nut
Max 120°C

| Valve DN | D | Pipe DN | EAN | Article No |
|---|---|---|---|---|
| 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 |
|---|---|---|---|---|
| 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 |
|---|---|---|---|---|
| 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 |