## Fixed Orifice DZR Brass Commissioning Set

# Description

Fixed orifice DZR brass commissioning set
Threaded F/F (ISO 228/1 for DN15 and DN20, ISO7/1 Rp above)
Design according BS7350
Tolerance on nominal $K_{VS}$ ±3% (test according BS7350)

PN25 (Max 25bar up to 100°C, max 20bar at 130°C)

**Working conditions:**
Water: -10°C to +130°C
below 0°C only for water with added antifreezing fluids
over 100°C only for water with added anti-boiling fluids

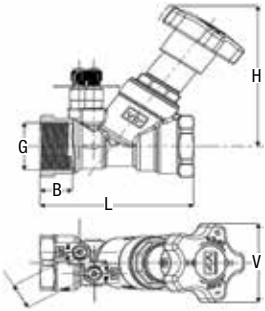
## Materials of Construction

| N. | Part | Material | Norm |
|---|---|---|---|
| 1 | Venturi insert | DZR Brass | EN12164 CW602N |
| 2 | Body | DZR Brass | EN12165 CW602N |
| 3 | Balancing cone | DZR Brass | EN12164 CW602N |
| 4 | Gasket disc | PTFE | – |
| 5 | Disc[1] | DZR Brass | EN12164 CW602N |
| 6 | Disc O-ring[1] | EPDM Perox | – |
| 7 | Disc stem | DZR Brass | EN12164 CW602N |
| 8 | Stem O-ring | EPDM Perox | – |
| 9 | Union[1] | DZR Brass | EN12165 CW602N |
| 10 | Stem | Brass | EN12164 CW617N |
| 11 | Bonnet | DZR Brass | EN12164 CW602N |
| 12 | Stop spring ring | Spring steel | – |
| 13 | Screw | Steel | – |
| 14 | Handwheel | ABS (blue) | – |
| 15 | Nut | Zinc plated steel | EN10025 Fe42 |
| 16 | Test point | DZR Brass[2] | EN12164 CW602N |

*[1]Only on DN32, DN40 and DN50*
*[2]Test points with EPDM gaskets and polypropylene ties*

## Dimensions and Flow Data

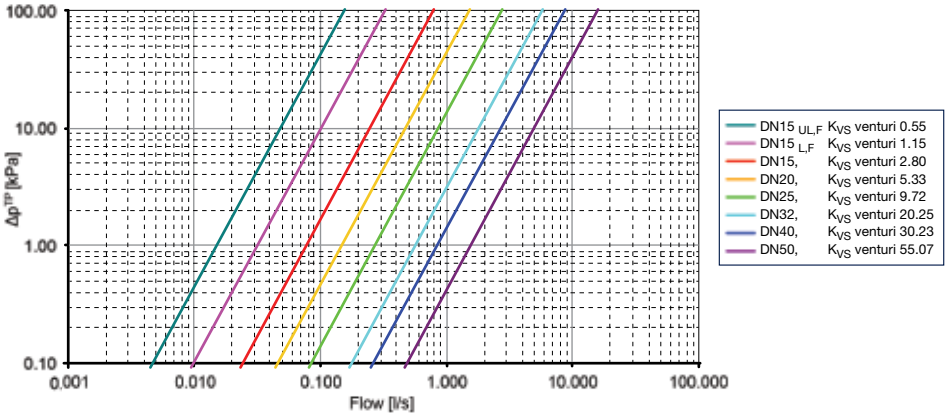
| | G[1] | H mm | L mm | B mm | ØV mm | I mm | Wgt kg | Flow range l/s | Product Codes |
|---|---|---|---|---|---|---|---|---|---|
| **$015_{ULF}$** | ½" | 103.0 | 87.8 | 17.5 | 70 | 22 | 0.558 | 0.017-0.045 | 37000011 |
| **$015_{LF}$** | ½" | 103.0 | 87.8 | 17.5 | 70 | 22 | 0.556 | 0.031-0.074 | 37000022 |
| **015** | ½" | 103.0 | 87.8 | 17.5 | 70 | 22 | 0.550 | 0.062-0.148[2] | 37000033 |
| **020** | ¾" | 103.0 | 95.9 | 19.0 | 70 | 22 | 0.620 | 0.138-0.325[2] | 37000044 |
| **025** | 1" | 103.0 | 100.0 | 22.5 | 70 | 22 | 0.751 | 0.258-0.603[2] | 37000055 |
| **032** | 1¼" | 123.3 | 117.5 | 24.8 | 70 | 22 | 1.191 | 0.540-1.250[2] | 37000066 |
| **040** | 1½" | 125.4 | 127.0 | 24.8 | 70 | 22 | 1.446 | 0.810-1.880[2] | 37000077 |
| **050** | 2" | 135.6 | 145.3 | 29.2 | 70 | 22 | 2.064 | 1.520-3.510[2] | 37000088 |




*[1]ISO 228/1 for DN15 and DN20, ISO7/1 Rp above*
*[2]Suggested flow range applicability (BS7350).*

*If used with measuring manometers different from those proposed by BSS please verify that sensibility of the measuring device is compatible with indicated minimum flow (see flow measurement paragraph)*

# Flow Measurement




Formula linking flow Q (in l/s) and Δp measured at test points (in kPa).

Minimum flow that can be measured for each diameter may be calculated by using in the formula minimum Δp that can be measured by used manometer.

Valves are anyway designed for best performances when used on range previously suggested and as indicated by BS7350.

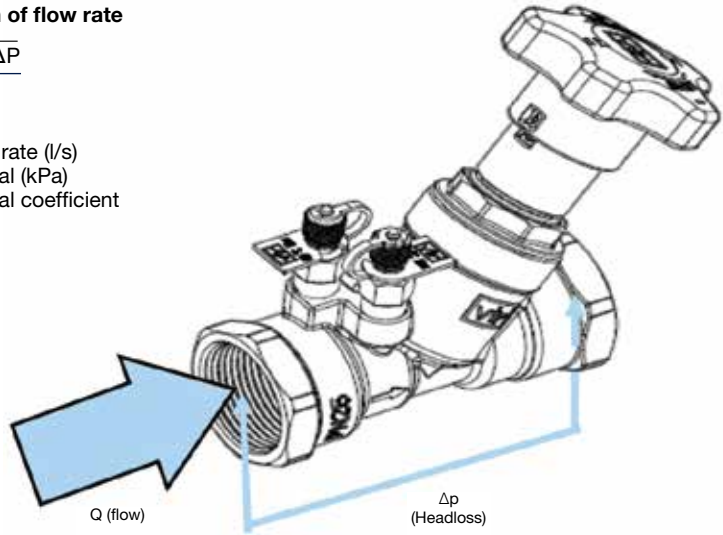
## Headloss Calculation

| Handwheel position | Kv (m3/h @ 1bar) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $015_{ULF}$ | $015_{LF}$ | 015 | 020 | 025 | 032 | 040 | 050 |
| **0.5** | 0.153 | 0.138 | 0.41 | 0.41 | 1.47 | 2.56 | 2.72 | 5.36 |
| **0.7** | 0.178 | 0.161 | 0.41 | 0.47 | 1.73 | 2.92 | 3.12 | 6.54 |
| **1.0** | 0.245 | 0.248 | 0.53 | 0.58 | 2.09 | 3.42 | 3.69 | 8.35 |
| **1.3** | 0.286 | 0.341 | 0.62 | 0.70 | 2.44 | 3.88 | 4.29 | 10.54 |
| **1.5** | 0.307 | 0.381 | 0.70 | 0.78 | 2.70 | 4.18 | 4.82 | 12.37 |
| **1.7** | 0.335 | 0.433 | 0.78 | 0.86 | 3.01 | 4.54 | 5.71 | 14.39 |
| **2.0** | 0.385 | 0.507 | 0.86 | 0.97 | 3.57 | 5.42 | 7.78 | 17.45 |
| **2.3** | 0.442 | 0.579 | 0.95 | 1.08 | 4.18 | 6.76 | 10.45 | 20.20 |
| **2.5** | 0.447 | 0.602 | 1.02 | 1.20 | 4.57 | 7.92 | 12.29 | 21.73 |
| **2.7** | 0.456 | 0.643 | 1.14 | 1.40 | 4.87 | 9.05 | 14.13 | 23.06 |
| **3.0** | 0.487 | 0.716 | 1.38 | 1.94 | 5.27 | 10.56 | 16.34 | 24.84 |
| **3.3** | 0.500 | 0.747 | 1.63 | 2.54 | 5.61 | 11.58 | 17.88 | 26.44 |
| **3.5** | 0.514 | 0.771 | 1.76 | 2.93 | 5.74 | 12.06 | 18.63 | 27.44 |
| **3.7** | 0.515 | 0.800 | 1.83 | 3.24 | 5.88 | 12.40 | 19.17 | 28.42 |
| **4.0** | 0.522 | 0.824 | 1.89 | 3.51 | 6.14 | 12.54 | 19.59 | 29.72 |
| **4.4** | 0.523 | 0.852 | 1.92 | 3.67 | 6.24 | – | – | – |

### Calculation of flow rate

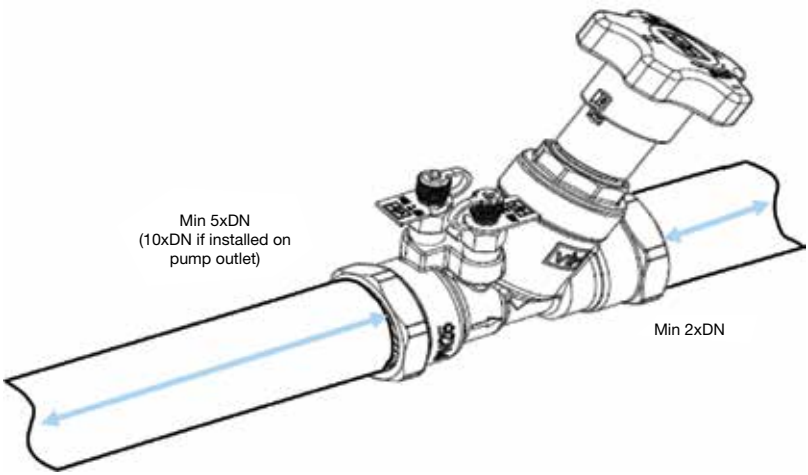
$$Q = \frac{Kvs\sqrt{\Delta P}}{36}$$

where
Q = flow rate (l/s)
ΔP = Signal (kPa)
Kvs = Signal coefficient

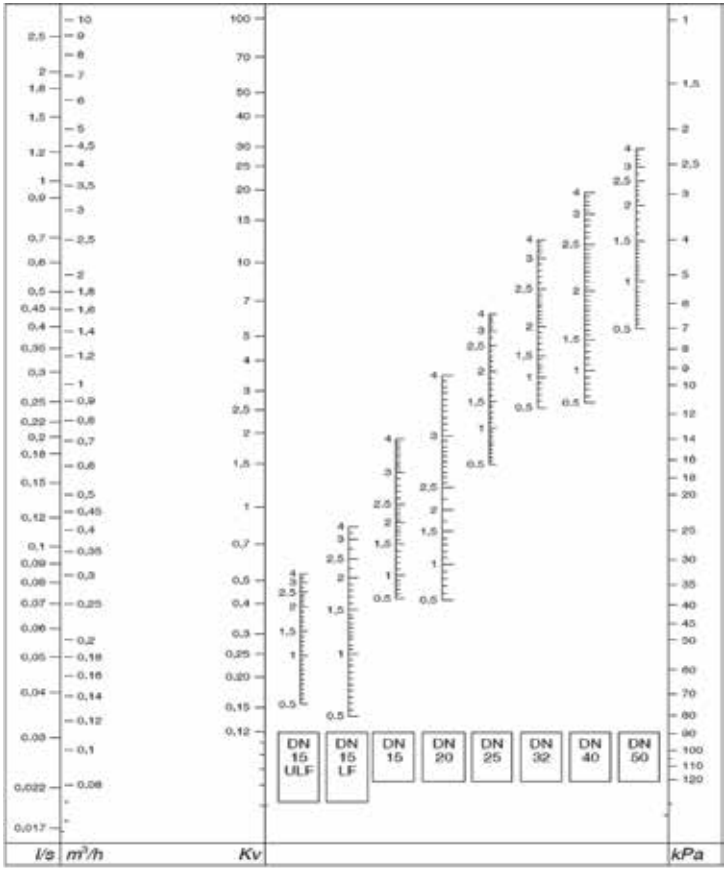


## Installation

To obtain the best performances valve must be installed on a pipe with its same nominal size preceded and followed by straight pipe lengths as per figure indications.

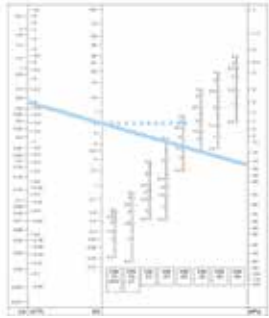


# Presetting of 9515




By using diagram above is possible to esteem the presetting position of the valve with given design flowrate and headloss:

1) draw a straight line joining design flowrate and design headloss;
2) determine design Kv value as intersection of drawn line and Kv axis;
3) draw a straight horizontal line from intersection previously identified and the specific valve DN Axis;
4) intersection determines handwheel position to use for presetting.



In the example for a design flowrate of 2m3/h and design Δp 15kPa handwheel position of 2,9 is determined for a DN25 valve