

Balancing Valve

VA-30
VA-31

Design Features:

- Only one valve for 5 functions: Presetting, Measuring, Isolating, Filling & Draining.
- Oblique Valve Design enhances Higher Flow Rate & Minimizes Pressure Drop.
- Infinitely adjustable Hand Wheel with concealed Memory feature for Precise & temper proof balancing.
- Numeric Display of the Pre-setting depending upon the position of the Hand Wheel.
- Non Rising Stem with maintenance free stem seal due to double O-Ring.
- Special Seating of PTFE/EPDM to ensure Zero Leakage and Shut off; Safe & Reliable.
- Higher Rangeability of the Flow Rate.
- Near Linear Flow Characteristics allows for better Valve Authority.
- Pressure Test Points available for different flow testing equipments

Conformity to Standards and Codes:

Design: BS 7350

Face to Face: Screwed Ends – Mfg. Std.
Flanged Ends – BS 7350

End Connection: Screwed Ends to Suit BS
21BSP/BSPT, ASME B1.20.0
NPT, DN259/2999, ISO228

Flanged Drilling to Suit BS EN 1092 PN10/16,
ASME B16.5 #150, BS10 Table D/E

Range :

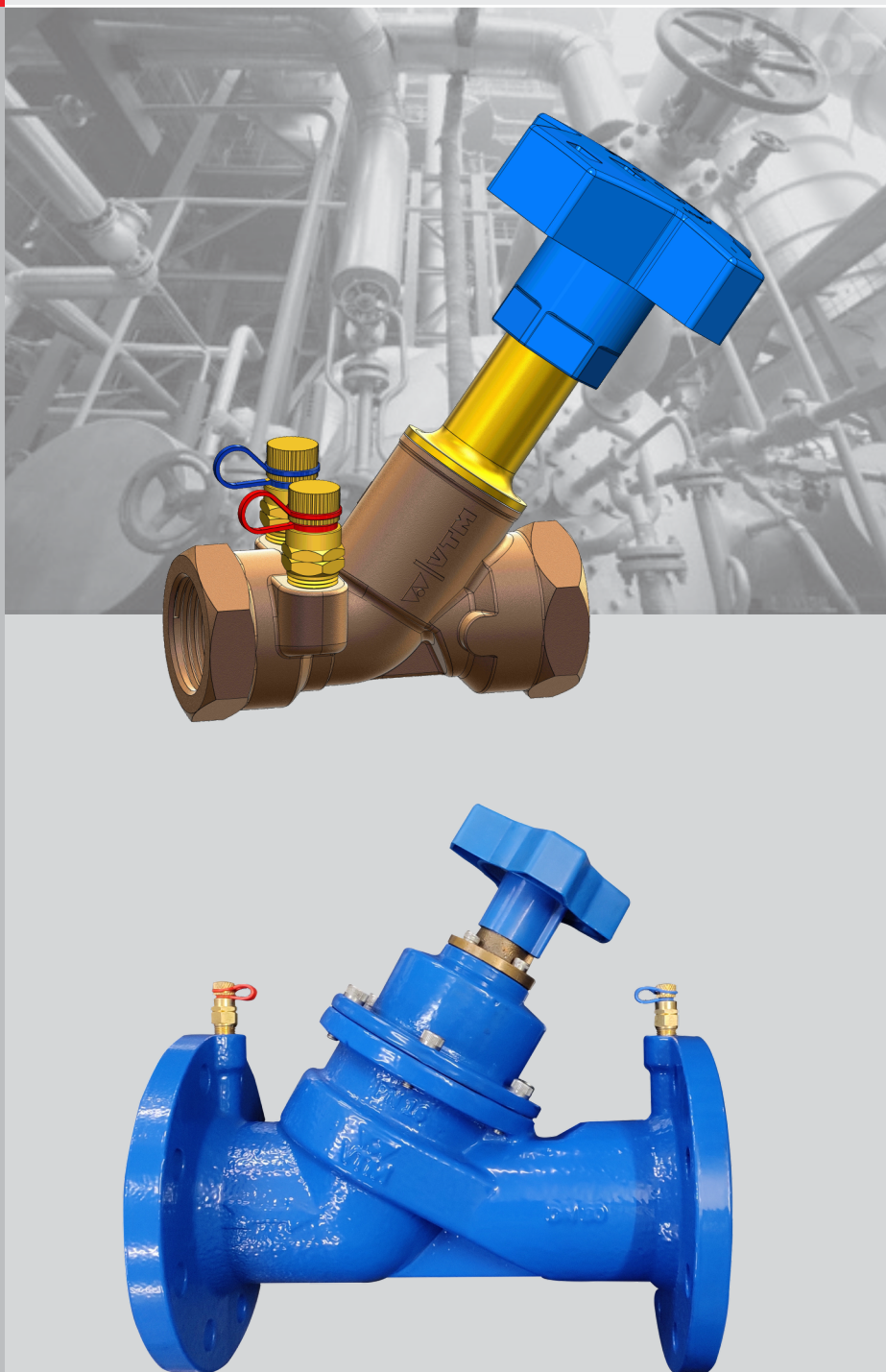
Screwed Ends - 15mm (1/2") to 50mm (2")

Flanged Ends – 65mm (2.1/2") to 300mm (12")

Valve Testing: BS 6755-1

Typical Application:

- Heating & Cooling Systems
- Tap Water Systems
- Water Supply & Distribution Systems
- Hydronic Balancing Systems



INDUSTRIAL VALVES & CONTROLS

DOC. NO. : VAV-C-1019; REV. NO. : 04; REV. DATE : 09-06-2022



12
months
GUARANTEE

www.vtm-valves.com

SCREWED END BALANCING VALVE (FODRV)

VA-30

PART LIST

S.No.	PART NAME	MATERIAL	SPECIFICATION	QTY.
1.	BODY	BRONZE	BSEN 1982 CC491K	1
2.	BONNET	HIGH TENSILE BRASS/BRONZE	IS 319 Gr.1/BS 2874 Gr. CZ 121/ BSEN 1982 CC491K	1
3.	STEM	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
4.	DRIVE NUT	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
5.	HANDWHEEL RETAINER	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
6.	ORIFICE RING	HIGH TENSILE BRASS	IS 319 Gr.1/2874 Gr. CZ 121	1
7.	O-RING	RUBBER	EPDM	2
8.	SNAP RING	MILD STEEL	ASTM A105(CHROME PLATED)	1
9.	SOCKET SCREW	CARBON STEEL	ASTM A307 Gr. B	1
10.	TEST POINT	HIGH TENSILE BRASS	BS 2874 Gr. CZ 121/BS 2874 Gr.CZ 132/BSEN 12165 CW602N/IS 319 Gr.1	2
11.	HANDWHEEL	PLASTIC	NYLON 6(15%GLASS RE-INFORCED)	1

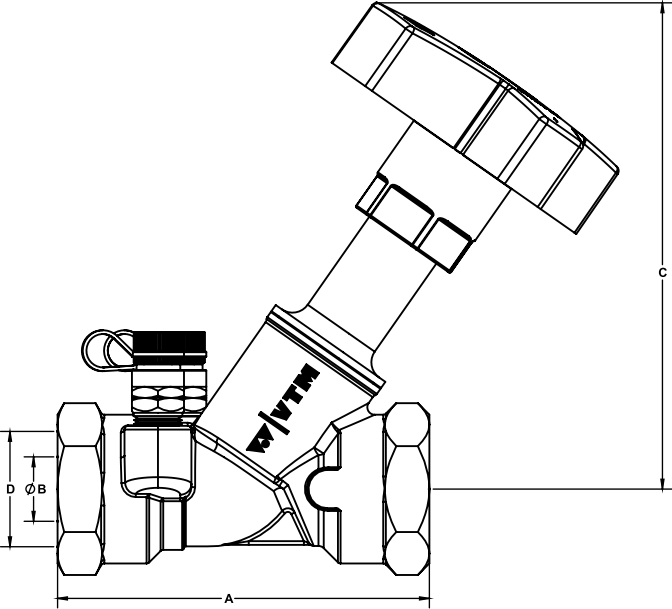
Note: 1. Above Part list table is for 15MM & 20MM Size.
2. Contact Factory for other Technical Detail/Special Grade Material.

S.No.	PART NAME	MATERIAL	SPECIFICATION	QTY.
1.	BODY	BRONZE	BSEN 1982 CC491K	1
2.	BONNET	HIGH TENSILE BRASS/BRONZE	IS 319 Gr. 1/BS 2874 Gr. CZ 121/ BS EN 1982 CC491K	1
3.	STEM	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
4.	DRIVE NUT	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
5.	HANDWHEEL RETAINER	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
6.	ORIFICE RING	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
7.	DISC	HING TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
8.	BALANCING CONE	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
9.	STEM & DISC LOCK	HIGH TENSILE BRASS	IS 319 Gr.1/BS 2874 Gr. CZ 121	1
10.	SEAT	PTFE	PTFE	1
11.	O-RING	RUBBER	EPDM	2
12.	SNAP RING	MILD STEEL	ASTM A105(CHROME PLATED)	1
13.	SOCKET SCREW	CARBON STEEL	ASTM A307 Gr. B	1
14.	TEST POINT	HIGH TENSILE BRASS	BS 2874 Gr. CZ 121/BS 2874 Gr. CZ 132/BSEN 12165 CW602N/IS 319 Gr. 1	2
15.	HANDWHEEL	PLASTIC	NYLON 6(15%GLASS RE-INFORCED)	1

Note: 1. Above Part list table is for 25MM to 50MM Size.
2. Contact Factory for other Technical Detail/Special Grade Material.

TEST PRESSURE

RATING	HYDROULLIC	
	SHELL (BAR)	SEAT (BAR)
PN 25	38.0	28.0



DIMENSIONS

SIZE		SCREWED ENDS			
NPS	DN	A	B	C	D
½"	15MM	87	8	110	BSP-1/2"
¾"	20MM	95	12.7	110	BSP-¾"
1"	25MM	100	16.5	133	BSP-1"
1.1/4"	32MM	114	22.5	133	BSP-1.1/4"
1.1/2"	40MM	125	28.5	148	BSP-1.1/2"
2"	50MM	146	37.5	148	BSP-2"

Note: 1.Dimensions are in mm unless otherwise specified.

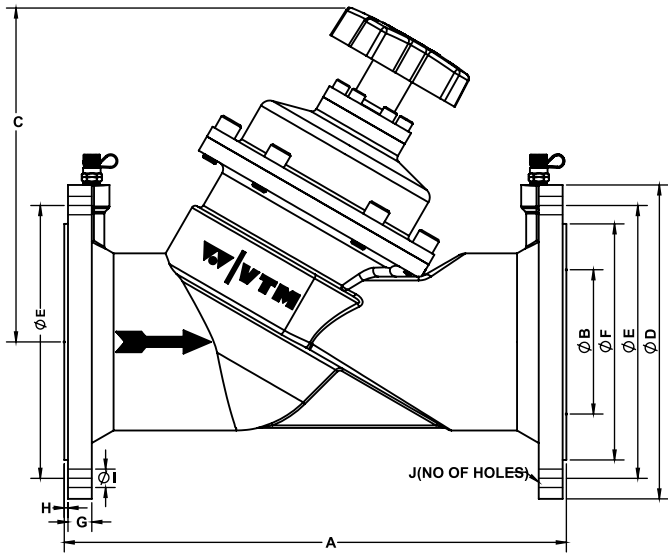
Kvs VALUE

SIZE		KV _s
NPS	DN	
½"	15MM	2.15
¾"	20MM	5.70
1"	25MM	8.41
1.1/4"	32MM	16.13
1.1/2"	40MM	23.21
2"	50MM	47.68

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

Where Q=Flow rate (l/s)
Δp is Pressure Drop in kpa
kvs=Flow coefficient

FLANGED END BALANCING VALVE (VODRV)



PART LIST

S.No.	PART NAME	MATERIAL	SPECIFICATION	QTY.
1.	BODY	CAST IRON/ DUCTILE IRON	BS 1452 GR.220/IS 210 Gr.220ASTM A536 GR. 60-40-18/ IS 1865 Gr. SG 400/18	1
2.	BONNET	CAST IRON/ DUCTILE IRON	BS 1452 GR.220/IS 210 Gr.220 ASTM A536 GR. 60-40-18/ IS 1865 Gr. SG 400/18	1
3.	BALANCING CONE CUM DISC	CAST ALLOY STEEL	ASTM A217 Gr.CA15	1
4.	STEM	BRASS	IS 319 Gr.1/BS 2874 GR.CZ121	1
5.	BONNET COVER	BRASS	IS 319 Gr.1/BS 2874 GR.CZ121	1
6.	MEMORY DEVICE	BRASS	IS 319 Gr.1/BS 2874 GR.CZ121	1
7.	STOP PIN	STAINLESS STEEL	ASTM A276 GR. 410	1
8.	STEM SCREW	BRASS	IS 319 Gr.1/BS 2874 GR.CZ121	1
9.	BODY/DISC O- RING	RUBBER	EPDM	1
10.	BODY/BONNET FLAT-RING	RUBBER	EPDM	1
11.	BONNET/STEM O-RING	RUBBER	EPDM	2
12.	STEM/MEMORY DEVICE O-RING	RUBBER	EPDM	2
13.	SEAT	RUBBER	EPDM	1
14.	TEST POINT	BRASS	BS 2874 Gr. CZ 121/BS 2874 Gr. CZ 132/BSEN 12165 CW602N/IS 319 Gr.1	2
15.	HAND WHEEL	PLASTIC&DUCTI LE IRON	NYLON & ASTM A356 GR. 60-40-18/IS1865 Gr. SG 400/18	1

Note: 1. Optional Material is for PN25 Rating of the Balancing Valve.
2. Contact Factory for other Technical Detail/Special Grade Material.

TEST PRESSURE

RATING	HYDROULLIC	
	SHELL (BAR)	SEAT (BAR)
PN 16	24,0	17,6

DIMENSIONS

SIZE		FLANGED ENDS									
NPS	DN	A	B	C	D	E	F	G	H	I	J
2,1/2"	65MM	290	65	220	185	145	122	15	3	18	4
3"	80MM	310	80	290	200	160	138	17	3	18	8
4"	100MM	350	100	410	220	180	158	17	3	18	8
5"	125MM	400	125	450	250	210	188	19	3	18	8
6"	150MM	480	150	490	285	240	212	19	3	22	8
8"	200MM	600	200	590	340	295	268	21	3	22	12
10"	250MM	730	250	760	405	355	320	23	3	26	12
12"	300MM	850	300	820	460	410	378	24	4	26	12

Note: 1. All Dimensions are in mm unless otherwise specified.
2. Flange dimensions in BS EN 1092 (PN16) in table. Same are available in other standard on request.

Cv VALUE (AT 1 PSI PRESSURE DROP & FLOW RATE IN GPM)

NO.OF TURN	2.1/2"	3"	4"	5"	6"	8"	10"	12"
0.5	2.26	3.0	3.45	4.80	7.3	-	-	-
1.0	3.66	4.8	7.87	12.73	13.6	-	-	-
1.5	5.34	8.6	13.07	21.64	25.4	-	-	-
2.0	7.07	11.6	19.14	31.46	46.2	46.1	103.0	-
2.5	10.74	16.1	33.63	50.61	74.9	57.5	129.0	-
3.0	18.81	24.6	51.27	85.81	115.9	75.0	162.5	175.0
3.5	31.63	36.7	76.57	123.02	158.0	115.8	227.0	267.5
4.0	49.19	48.4	98.63	149.15	199.0	138.5	292.5	347.5
4.5	53.77	62.4	116.44	172.54	242.0	192.0	372.0	429.0
5.0	60.18	73.4	130.76	201.01	280.8	261.2	448.0	523.0
5.5	66.09	81.7	143.91	224.81	325.0	331.4	517.0	622.0
6.0	70.83	91.7	155.0	247.86	361.5	393.4	581.0	720.8
6.5	74.83	101.0	173.29	265.51	393.6	464.2	633.0	798.2
7.0	78.32	110.4	186.61	284.07	425.0	506.0	684.5	870.0
7.5	81.40	117.9	196.93	301.63	455.0	545.3	766.8	946.0
8.0	84.48	124.1	205.42	316.61	488.0	596.9	842.0	1033
9.0	-	-	-	-	-	691.0	952.4	1124
10.0	-	-	-	-	-	755.0	1092	1207
11.0	-	-	-	-	-	824.3	1217	1298
12.0	-	-	-	-	-	886.5	1376	1393
13.0	-	-	-	-	-	-	-	1532
14.0	-	-	-	-	-	-	-	1588
15.0	-	-	-	-	-	-	-	1624
16.0	-	-	-	-	-	-	-	1683

Note: 1. $C_v = Q / \sqrt{\Delta p}$ where Q is discharge in GPM & Δp is Pressure Drop in PSI
2. Flow Rate tolerance is $\pm 5\%$.
3. Contact Factory for Pressure Drop Curves.

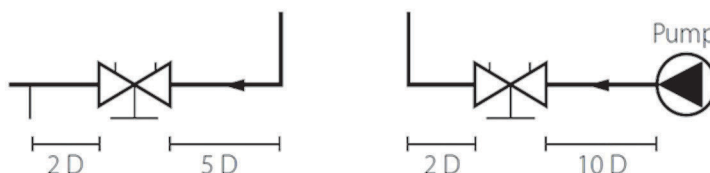
VA-31

VALVE SELECTION GUIDE

Nominal Size Inches mm	Actual Outside Dia. Inches mm	Absolute Min Flow GPM@3kpa	Nominal Range of Flow GPM@6kpa	Absolute Max. Flow GPM@60kpa
2 1/2 65	3.09 78.50	1.5	38.4 – 99.8	291.0
3" 80	3.74 95.0	1.55	31.3 - 131.0	411.0
4" 100	4.567 116.0	2.0	67.0 - 202.0	652.0
5" 125	5.55 141.0	4.25	90.0 - 325.0	1025.0
6" 150	6.78 172.4	5.30	182.0 - 452.0	1432.0
8" 200	8.78 223.2	30.2	368.0 - 822.0	2602.0
10" 250	10.88 276.4	70.8	541.0 - 1302.0	4042.0
12" 300	12.750 324.0	116.0	963.0 - 1505.0	4955.0

Note: Sizing Balancing Valve based on the minimum or maximum flow rates is not recommended. Valve should be sized using nominal Flow Rate only.

PREFERRED INSTALLATION POSITIONS:



GUARANTEE

All valves are guaranteed against any manufacturing defects for a period of 12 months from date of supply, provided the valves have not been misused, damaged or installed for services they are not recommended. The company shall be liable to furnish part / parts thereof or full valve as the company may deem fit.

V.A. VALVES

ISO 9001:2015 CERTIFIED

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