

- Replace _____
- * Gate valves
 - * Globe valves
 - * Ball valves
 - * Utility valves

Manual-balancing valves

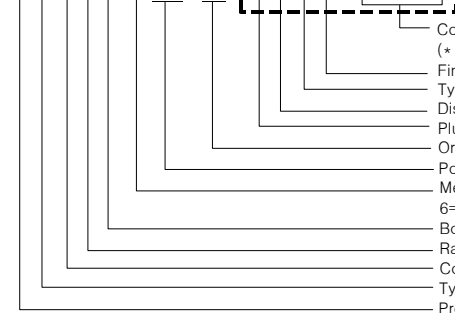
Bronze casting/Thread type, PN25
 for Tap water, hot water, chilled water, Air

VBG52.XXX

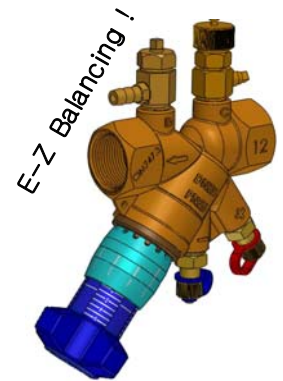
Type designation

VBG52.120-12 PBSS-0000

Can be replaced by Type tail code eg: Type A



- Code of test point (Tail code) : 0=none, A= B= cocks (* see type selection)
- Finishing: S=Standard, N= Nickel plated, P=Painted
- Type of port:S=Standard RPT, D=DIN Flange, X=Option
- Disk materials: B=Brass, R=bRonz, S=Sts, T=TFE, G=GTFE,
- Plug types: P=Parabolic, F=perForared, R=pRofiled, fLat
- Orifice sizes(dia/mm: 0= No ring, 06,08,10,12,14,15,16,18,20,22,25,32,40,50
- Port sizes:13,15,20,25,32,40,50,65
- Medium:1=water/Brine,2=Tap water,3=Steam/air,4=Oil 5=Gas
- 6=LNG,7=LPG, 8=R22,R104, 8=NH3, 9:Option
- Body type: Version Nr.1=DZR Brass, 2=Full Bronze,3=bronze body+brass bonnet
- Rated pressure PN:(Bar): 2=6 Bar 3=10, 4=16, 5=25 6=40
- Connection: G= Threaded F=Flange W=weld
- Type of function : B=Balancing
- Product group: Valves



General description

Double regulating and commissioning valves is used for balancing hydronic circuits. This type of valves with various connection type made with bronze casting to meet the wide range of applications. Thanks to the automated bronze casting lines the quality proven products assure no leakage from the body and maintain fail safe functioning. Production sizes are of following:

Standard port size : DN 10mm~ 65mm

Standard orifice size: 06~40mm diameter

With minimum force the handle can be operated.

Ordering method

See the summary of types. and type designation.

*Optional type can be made upon contract.

*Quick ordering method; Port 20mm ,Kvs=5.71 can be selected as Order No.= **VBG52.120-00D**

Application

Suitable for control flow rate,commissioning and balancing of flow lines in heating,ventilating,air conditioning,district

Summary of types

Valve bodies

Plugs

DN Port	Type(Model)	Tail code	Type	Kvs Values	stroke	Type of plugs					Plug materials							
						Par	perF	pRo	Caged	fLat	Bra	bRo	Sts	Tfe	Gtfe			
mm	Type number	Order No		m³/h	K_v/K_w	mm												
*10	VBG52.11005-PBSSAA000	VBG52.110-05D		1.25	>50	12	P	F	R	C	L	B	R	S	T	G		
10	VBG52.11000-PBSSAA000	VBG52.110-00D		2.88	>50	12	P	F	R	C	L	B	R	S	T	G		
*15	VBG52.11508-PBSSAA000	VBG52.115-08D		1.80	>50	12	P	F	R	C	L	B	R	S	T	G		
15	VBG52.11500-PBSSAA000	VBG52.115-00D		3.88	>50	12	P	F	R	C	L	B	R	S	T	G		
*20	VBG52.12010-PBSSAA000	VBG52.120-10D		3.50	>100	12	P	F	R	C	L	B	R	S	T	G		
*20	VBG52.12012-PBSSAA000	VBG52.120-12D		4.10	>100	12	P	F	R	C	L	B	R	S	T	G		
20	VBG52.12000-PBSSAA000	VBG52.120-00D		5.71	>100	12	P	F	R	C	L	B	R	S	T	G		
*25	VBG52.12516-PBSSAA000	VBG52.125-16D		7.50	>100	15	P	F	R	C	L	B	R	S	T	G		
25	VBG52.12500-PBSSAA000	VBG52.125-00D		8.89	>100	15	P	F	R	C	L	B	R	S	T	G		
*32	VBG52.13224-PBSSAA000	VBG52.132-24D		16.60	>100	15	P	F	R	C	L	B	R	S	T	G		
32	VBG52.13200-PBSSAA000	VBG52.132-00D		19.45	>100	15	P	F	R	C	L	B	R	S	T	G		
*40	VBG52.14028-PBSSAA000	VBG52.140-28D		23.00	>100	20	P	F	R	C	L	B	R	S	T	G		
40	VBG52.14000-PBSSAA000	VBG52.140-00D		27.50	>100	20	P	F	R	C	L	B	R	S	T	G		
*50	VBG52.15038-PBSSAA000	VBG52.150-38D		47.40	>100	20	P	F	R	C	L	B	R	S	T	G		
50	VBG52.15000-PBSSAA000	VBG52.150-00D		50.65	>100	20	P	F	R	C	L	B	R	S	T	G		
65	VBG52.16500-PBSSAA000	VBG52.165-00D		60.25	>100	20	P	F	R	C	L	B	R	S	T	G		

* Orifice version (reduced flow control)

*Notes : 100kPa=1Bar=10mWG | max.ΔP_{100%} = Maximum differential pressure across the open valve

ΔP_{100%} =Differential pressure across fully open valve in full load ΔPmax = Max.permissible differential pressure across closed valve.

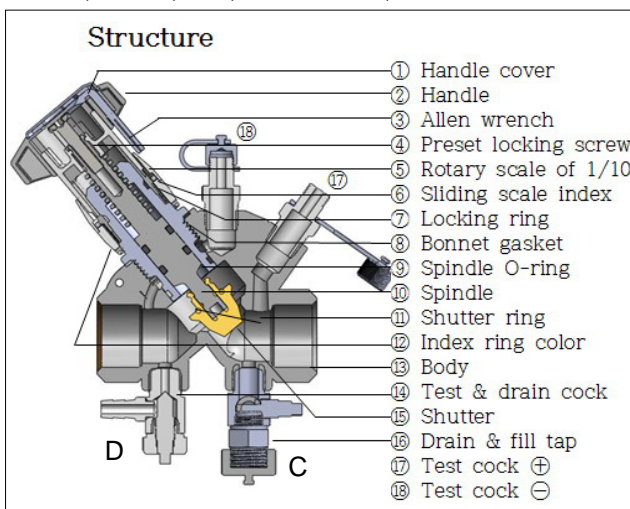
K_v =Nominal flow value of valves in m³/h at nominal stroke and a pressure drop of 1 Bar.

K_w =Smallest flow value in m³/h for pressure drop of 1 Bar at which the flow characteristic tolerance are still maintained

Design feature

Valve handle have a round and soft edges for protecting skins of hands. The operating forces are a minimum so it's easy to handle. So called " EASY BALANCING valve " [E-Z]

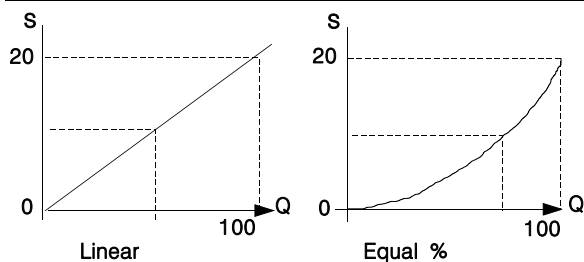
- Oblique spindle operation ensure minimum pressure loss.
 - Spindle are made of brass for rust-free operation.
 - Spindle lubrication is separated from flow media
 - Dry spindle screw guarantee long life
 - Prove free from oil and dirt contamination
 - Linear flow characteristic
 - Soft seat prove 0%/insure tight shut off
 - Interchangable valve disk
 - Stainless steel orifice ring insertion
 - Silk print on 4-face linear scales
 - 1/10 turn rotary scale insures fine setting
 - Built-in allen wrench for preset locking
 - Vairious connection styles
 - Various materials are ready for plugs.
- Brass, Bronze, STS, TFE imbeded,etc..



Various plugs available

Valve plugs are ready to meet the specific requirement of control and application

Flat disk	Parabolic	perForated	pRofiled	Caged
Shut off	shut off regulating balancing for liquids	shut off regulating balancing for liquids for steam	shut off regulating balancing for liquids for steam	shut off regulating balancing for liquids for steam



Selection of valve plug or disk

Selection of plugs are very important. So consult with control engineer or mechanical engineers.

Special spindle assemblies

Spindle and disk assembly for portable water application is completely free from brass. Plugs are available with stainless steel ,bronze, brass with Non-electrode Nickel or stainless plating.

Technical data

Adjusting part

Handle cap	Nylon 66+fg
Handle	Nylon 66+fg
Slide guide	Nylon 66+fg
Locking screw	Carbon steel
Allen wrench	Carbon steel
Rotary index scale	HOSTAFORM(POM)
Rotary index key	HOSTAFORM(POM)
Handle lock ring	SUS 303
Vertical scale	4 faces silk prints
Rotary scale	1/10 turn silk prints
Stroke	10- 20mm :12mm
	25-65 :15-20mm

Flow part

Body	Cast Bronze
Bonnet	Cast Bronze
Disk/Plug	Brass/Bronze/SUS
Disk pad	PU/POM/PC
Spindle/General	Brass
Tap water	Nickel plated/Brz/SUS
Spindle snap ring	SUS 303
Spindle spring	SUS 303
Gland seal	EPDM
Bonnet gasket	EPDM
Media temp.	Water,Brines
Flow media	Glycol 50% solution
	16- 25bar(1600kPa)
Press. Nominal	0 % (shut off)
Leakage rate	see data sheet
Flow characteristics	(PI-VBG43K)

Accessories

Nipples	Brass/(Nickel plated)
Plugs/disks	Silicon rubber(Inj)
Captie	Silicon band(inj)
Packing pad	EPDM (injection)
Sealants	EPOXY

Application advice

For basic information and further details refer to the data sheet of Hydronic balancing and engineering- TI-VBX4002

Valves shall be installed in both inlet and outlet of hydronic equipment such as heat exchanger, fan coil unit, AHU batteries ,pumps and etc.. Some cases when only require for one end we would recommend to install in the suction(return) side.

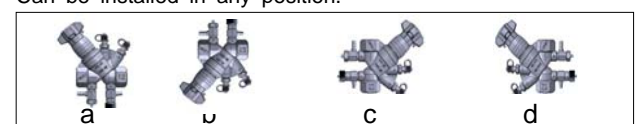
- Before installation you should check the pressure rating and permissible temperature. For more information on selecting valve sizes refer to the [Hints for correct sizing of valve].

- This valve can be used for following fuctions:

- tight shut off and fine tuning.
- regulating and balancing
- fine flow control
- presetting balancing
- measuring differential pressure
- filling closed circuits
- draining the system
- commissioning hydronic system

Mounting and installaiton advices

Can be installed in any position.



Flow direction



For liquid: Direct flow is recommended

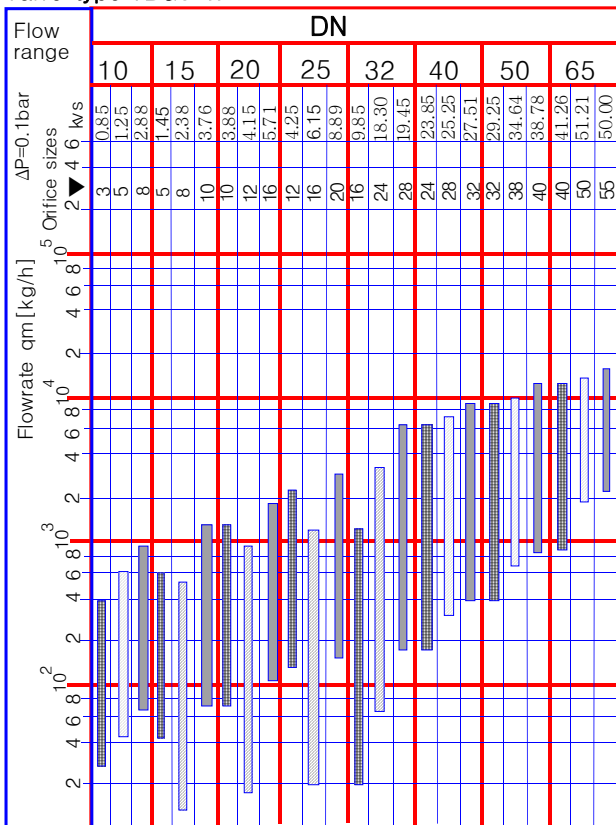
Commissioning advice

- Do not remove valve handle except for replacing gland seal assembly.
- Follow instruction on commissioning manual(CI) in the box.
- Be sure the operating pressure and temperature are within the nominal values.
- Use differential pressure test unit and select the appropriated scale number and set to the designed flow rates for each circuit.
- Commissioning and preset information is included in individual product box.

Hint for correct sizing of valve

Example : See the chart below for selecting proper size of balancing valves.

Valve type: VBG52..



Recommended selection in $\Delta P_{v100} = 0.3\text{Bar}$
 $1\text{m}^3/\text{h} = 0.278\text{kg/s}$ water at 20°C

Selection of orifice rings

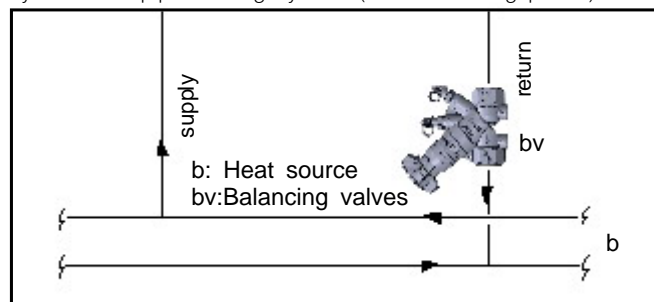
To make more precise control of flow balance of a closed circuit orifice ring can be inserted into the slot in the inlet port of the balancing valves

Orifice ring is required to reduce flow rate to meet the proper designed control range of the circuits.

DN	10	15	20	25	32	40	50	65
hole Φ	3	5	10	12	16	24	32	40
hole Φ	5	8	12	16	24	28	38	50
hole Φ	8	10	16	20	28	32	40	55

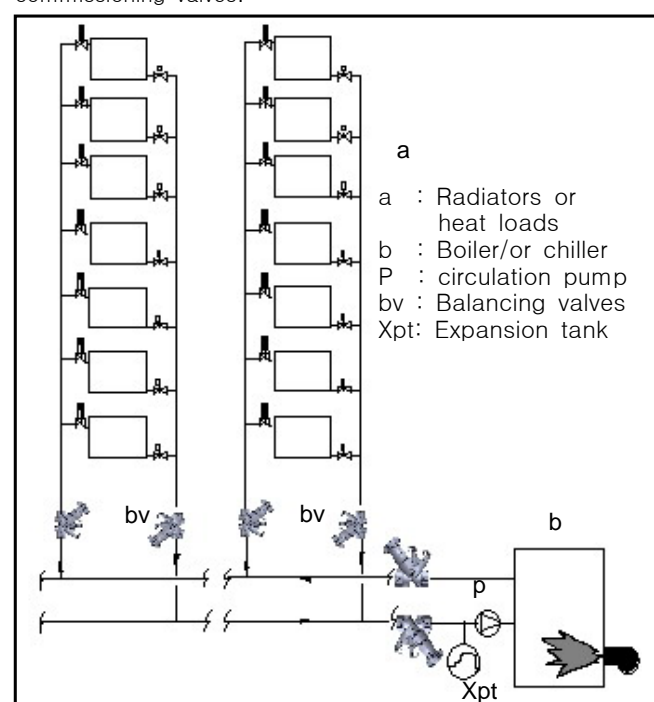
Installation example 1

Scheme of a simplest installation of closed loop circulation system. Two pipe heating system (District heating plants)



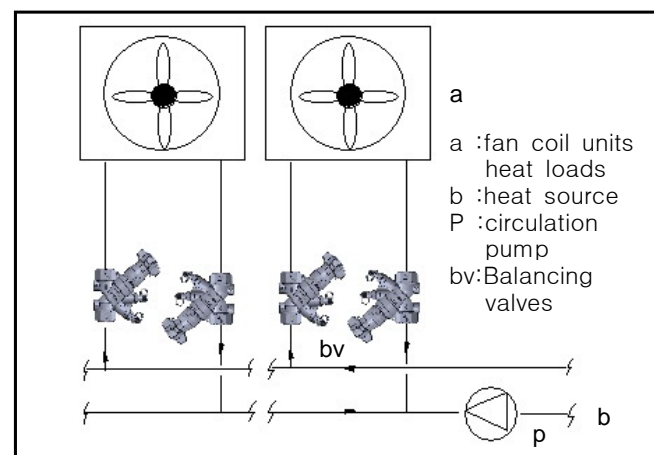
Installation example 2

Scheme of a two pipe heating system which has to be regulated to a pre-calculated design points by use of commissioning valves.



Installation example 3

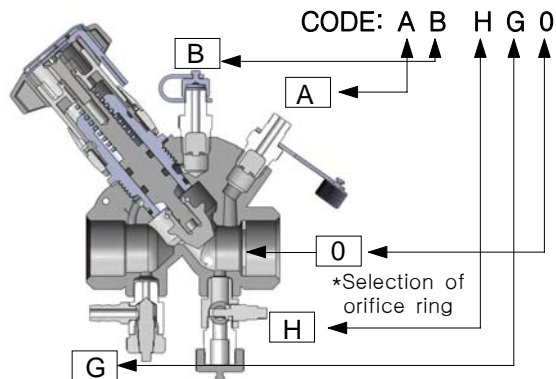
Scheme of an air heating installation in which the flow rate is constant. After flushing or blow out the system the preset double regulating and commissioning valve provide static hydraulic balancing



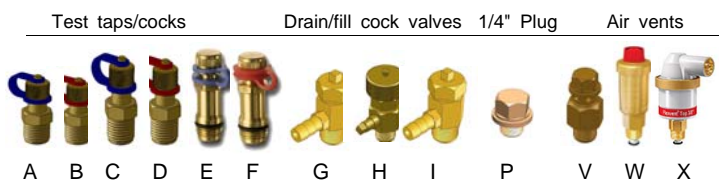
Installation example N..

For more example of installation refer to data sheet of -Hydraulic balancing and engineering-

A hint for type selection



















Accessories

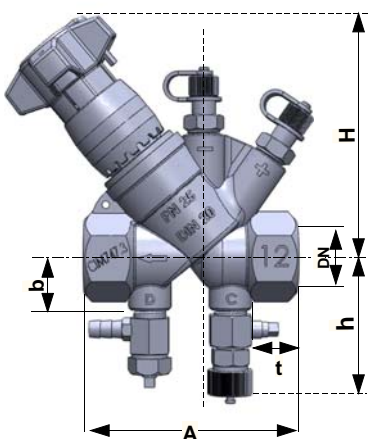


Pressure test points and drain cocks are ready for shipment

- Test cocks
- Drain and test cocks
- Commissioning valve
- Drain valve
- Pressure gauges
- Manual air vents
- Automatic air vents
- Tube fittings

<p>Type A CODE:00000 Function devices - no plugs - no orifice</p>  <p>Functions - Preset balancing - Regulating - Shut off</p>	<p>Type B : CODE:PP000 Function devices - 2 top plugs</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring</p>	<p>Type C : CODE:VP000 Function devices - 1 top plugs - 1 air vent</p>  <p>Functions - Preset balancing - Regulating - Shut off - Air venting</p>	<p>Type D : CODE:AB000 Function devices - 2 top taps</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring</p>
<p>Type E : CODE:00PP0 Function devices - 2 bottom plugs</p>  <p>Functions - Preset balancing - Regulating - Shut off - measuring</p>	<p>Type F : CODE:00VP0 Function devices - 1 air vent - 1 plug</p>  <p>Functions - Preset balancing - Regulating - Shut off - air venting</p>	<p>Type G : CODE:00GG0 Function devices - 2 universal cocks</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring - drain & filling</p>	<p>Type H : CODE:00AB0 Function devices - 2 test taps</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring</p>
<p>Type I : CODE:PPPP0 Function devices - 4 plugs</p>  <p>Functions - Preset balancing - Regulating - Shut off - measuring(*) - Air venting(*)</p>	<p>Type J : CODE:VPPP0 Function devices - 1 air vent - 3 plugs</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring(*) - Drain/Fill(*)</p>	<p>Type K : CODE:ABPP0 Function devices - 2 test taps - 2 bottom plugs</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring - Drain/fill(*)</p>	<p>Type L : CODE:ABHP0 Function devices - 2 test taps - 1 drain cock</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring - Fill and drain</p>
<p>Type M : CODE:APGB0 Function devices - 2 test taps - 1 air vent - 1 uni-cock</p>  <p>Functions - Preset balancing - Regulating - Shut off - measuring - air venting - Drain/fill</p>	<p>Type N: CODE:ABVP0 Function devices - 2 test taps - 1 air vent - 1 plug</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring - air venting</p>	<p>Type O: CODE:ABGP0 Function devices - 2 test taps - 1 uni-cock - 1 plug</p>  <p>Functions - Preset balancing - Regulating - Shut off - Measuring</p>	<p>Type P : CODE:ABGH0 Function devices - 2 test taps - 1 uni-cock - 1 drain/fill cock</p>  <p>Functions - Preset flow - Regulating - Shut off - Measuring - Fill and drain</p>

Dimension



DIN											Wt
mm	Inch	A	b	C	D	+	-	H	h	t	Kg
10	Rp 3/8"	73	18	1/4"	1/4"	1/4"	1/4"	98	40	10.1	0.64
15	Rp 1/2"	80	18	1/4"	1/4"	1/4"	1/4"	100	40	13.2	0.63
15	Rp 1/2"	80	18	1/4"	1/4"	1/4"	1/4"	100	40	13.2	0.62
20	Rp 3/4"	84	23	1/4"	1/4"	1/4"	1/4"	110	42	14.5	0.82
25	Rp 1"	98	25	1/4"	1/4"	1/4"	1/4"	110	45	16.8	0.90
32	Rp 1 1/4"	110	32	1/4"	1/4"	1/4"	1/4"	200	48	19.1	1.35
40	Rp 1 1/2"	120	34	1/4"	1/4"	1/4"	1/4"	200	52	19.1	1.70
50	Rp 2"	150	37	1/4"	1/4"	1/4"	1/4"	200	55	25.7	2.90
65	Rp 2 1/2"	152	42	1/4"	1/4"	1/4"	1/4"	250	58	26.0	5.65

* Dimension in mm

*1000Nf = 100Kf

We reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet.