Replace with
* Gate valves
* Globe valves
* Ball valves
* Utility valves

Multi-balancing E-Z valves

Steel plate formed/Flange type, PN16
for Liquids,Steam,Air,Gas(LPG/ LNG,NH3..)

VBF47.XXX

Type designation
VBF47.125TPBDG

Finishing: G=Galvanized, N= Nickel coating, P=Painted
Flange type: D=DIN ,K=KS, J=JIS, B=BS, I=ISO, X=Option
Plug materials: B=Bonze,S=Sts, T=TFE, G=GTFE, X=option
Plug types: P=Parabolic,F=perForared,R=pRofiled,fLat
Test point: N= none, P= 2 plugs, T=2 test cocks, A,B,C
Port sizes:14,15,20,25,32,40,50,65,80,90=100,91=125,92=150
Medium:1=water 2=Steam/air/Water 3=Oil 4=Gas 5=LNG,6=LPG 7=R22,R104, 8=NH3, 9:Option
Body type: Version number
PN:(Bar): 2=6 Bar 3=10, 4=16, 5=25 6=40
Connection: G= Threaded F=Flange W=wePB
Type of function : B=Balancing
Product group: Valves

General description

Balancing valves with various connection type made with steel or stainless steel plate to meet the wide range of applications. Thanks to the Plate form technologies and the 3-Dimensional robot wePBing equipment specially dev-veloped by ATI control engineers the valves are leak free fail safe functioning. production sizes are of following;

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Standard stroke 20mm : DN 15mm~ 80mm
40mm : DN 100mm~ 200mm
50mm : DN 250mm ~ 400mm

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.

Application

Suitable for control flow rate and balancing of flow lines in heating,ventilating,air conditioning,district heating and other industrial facilities.

Permissible fluids

Hot water Max.: +160℃
Cold water max.:-40℃, closed circuit circulations.
- Water additives(brine),Hydrazine, Phosphate for water treatment purpose
- Glycol for anti-freeze 50% max.
- Saturated steam, supper heated steam press.abs...2Bar
- Hot oil max. 160℃
- Refrigerant R12,R22,R502,R104,NH3,LNG.(spindle heating element required)

Nominal Pressure : PN 16Bar(1600kPa)
Leakage rate : 0.%
Flange type :Any standards ,ISO2084, BS4505

Summary of types

Valve bodies | **Plugs**

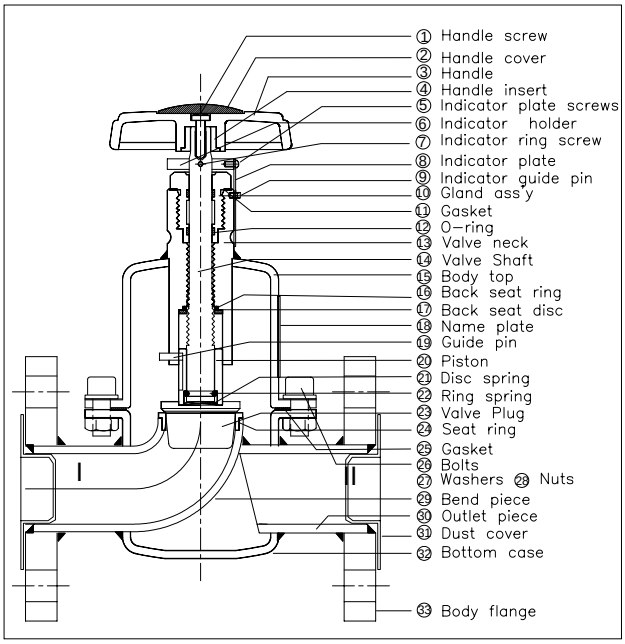
DN Port	Type(Model)	Kvs Values	Range -ability	max.ΔP_{v100} in kPa		stroke	Type of plugs					Plug materials			
mm	**Order number**	**m^3/h**	**K_{vs}/K_{vr}**	**Dir**	**Rev**	**mm**	**Par**	**perF**	**pRo**	**Caged**	**fLat**	**Br**	**Sts**	**Tfe**	**Gtfe**
15	VBF47.113TPBDN	0.9	>50	600	780	20	0	0				0			
15	VBF47.114TPBDN	1.9	>50	600	780	20	0	0				0			
15	VBF47.115TPBDN	3	>50	600	780	20	0	0				0			
20	VBF47.120TPBDN	5	>100	600	780	20	0	0				0			
25	VBF47.125TPBDN	7.5	>100	600	780	20	0	0	0			0			
32	VBF47.132TPBDN	12	>100	600	780	20	0	0	0			0			
40	VBF47.140TPBDN	19	>100	600	780	20	0	0	0			0			
50	VBF47.150TPBDN	31	>100	600	780	20	0		0			0			
65	VBF47.165TPBDN	49	>100	350	450	40	0		0			0			
80	VBF47.180TPBDG	78	>100	250	325	40	0		0			0			
100	VBF47.190TPBDG	124	>100	150	195	40	0		0			0			
125	VBF47.191TPBDG	200	>100	100	130	40	0		0			0			
150	VBF47.192TPBDG	300	>100	70	90	40	0		0			0			
200	VBF47.193TPBDG	500	>100	50	65	50	0		0			0			
250	VBF47.194TPBDG	780	>100	30	50	50	0		0			0			
300	VBF47.195TPBDG	1250	>100	30	50	50	0		0			0			

*Notes:100kPa=1Bar=10mWG | max.$\Delta P_{v100=}$ = Maximum differential pressure across the open valve
ΔP_{v100} =Differential pressure across fully open valve in full load
ΔPmax = Max.permissible differential pressure across closed valve.
K_{vs} =Nominal flow value of valves in m^3/h at nominal stroke and a pressure drop of 1 Bar.
K_{vr} =Smallest flow value in m^3/h for pressure drop of 1 Bar at which the flow characteristic tolerance are still maintained

Design feature

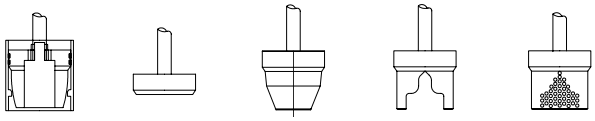
Valve handles have a round and soft edges for protecting skins of hands. The operating forces are a minimum so it's easy to handle. So called " EASY VALVE " [E-Z]

- Gland seal stuffing box can be replaced without draining nor shut down the flow line system thanks to the Back-seat mechanism.
- Spindle are made of STS for rust-free operation.
- Various materials are ready for plugs.

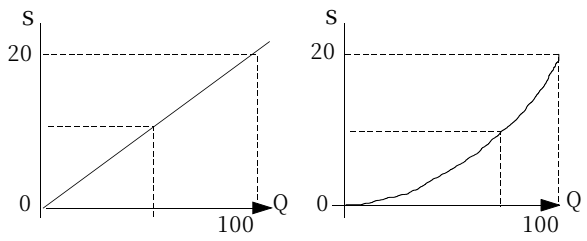


Various plugs available

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



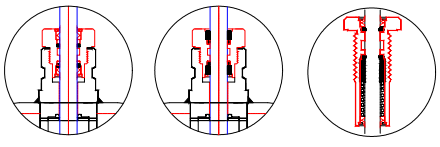
Caged Liquids | Flat disc Liquids | Parabolic | Perforated Steam/air/Gas | Profiled



Linear | Equal %

Various gland seal unit

Sealing gland assemblies are ready for specific medium and pressure requirement. Options are also available.



a b c d

a=Standard b=Gases c=High press./Temp d= Options

Application advice

For basic information and further details refer to the data sheet of Hydronic balancing and engineering- TI4002...

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 you'd better install in suction(return) side.

* For use in hydronic system

- When use with chilled water system the drain and cocks should be faced to the downward for draining or condensate drips.

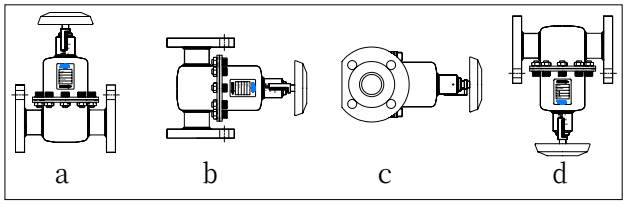
- Before installation you should check the pressure rating and permissible temperature.

- For more information on selecting valve sizes refer to the valve selections and and sizing..

- This valve can be used for following fuctions:
  - tight shut off
  - regulating
  - presetting
  - measuring
  - filling
  - draining
  - commissioning

Mounting and installaltion advices

Can be installed in any position.



Flow direction

I ▶◀ II Direct flow

For liquid: Direct flow is recommended

Commissioning advice

a. Do not remove valve handle except for replacing gland seal assembly.

b. Be care for not to scratch the valve spindle or any intend to bend.

c. Be sure the operating pressure and temperature are within the nominal values.

d. Check the differential pressure expected in the process to avoid noise.

Accessaries

Pressure test points and drain cocks are ready for shipment

- Test cocks
- Drain and test cocks
- Commissioning valve
- Drain valve
- Fill cock
- Pressure gauges

Hint for correct sizing of valve

Example : Given data : ΔP=0.35 Bar K_v=13

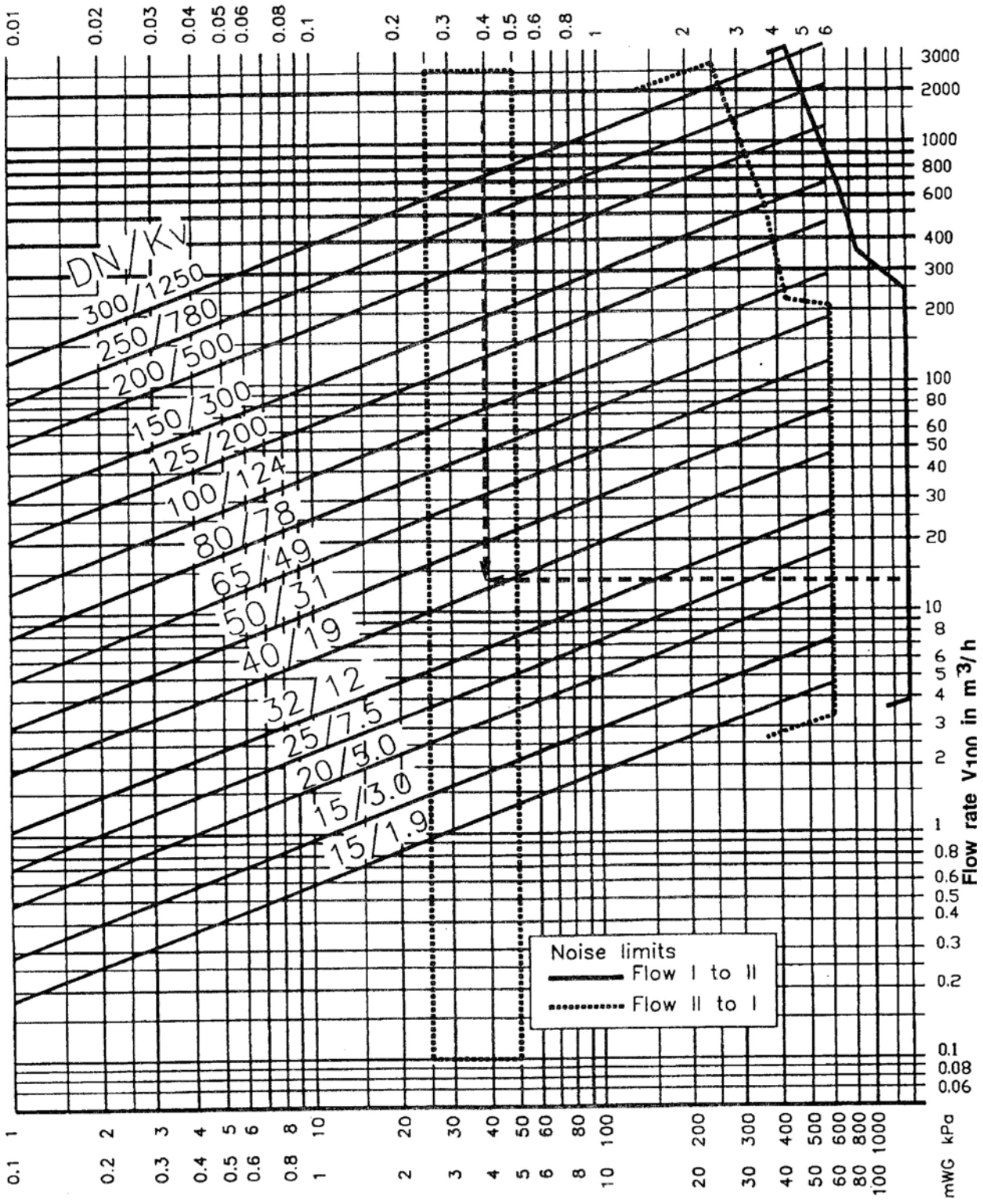
a. Trace down to the vertical line 0.35 Bar of ΔP to an intersecting point with horizontal line of Kv flow rate of 13 m^3/h

b. Select K_v=19 of DIN40 between the line of Kv_y=31 and the line of Kv_x=19

The answer is type :VBF47.140 ;40mm(1-1/4")

Valve type:VBF47..

Pressure drop ΔP_{v100} in Bar

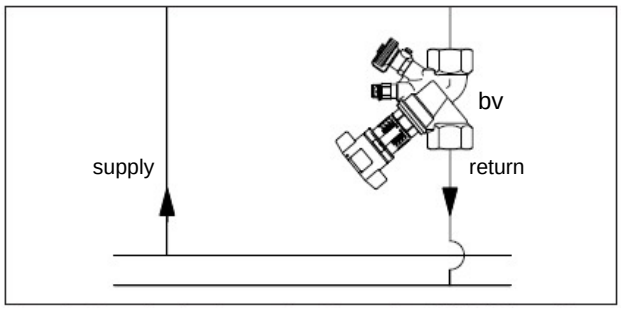


Recommended selection in ΔP_{v100} =0.3Bar

1m3/h=0.278kg/s water at 20℃

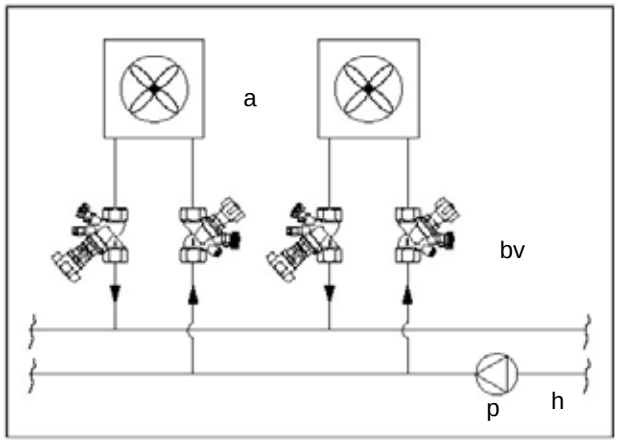
Installation example 1

Scheme of a simplest installation of closed loop circulation system. Two pipe heating system



Installation example 2

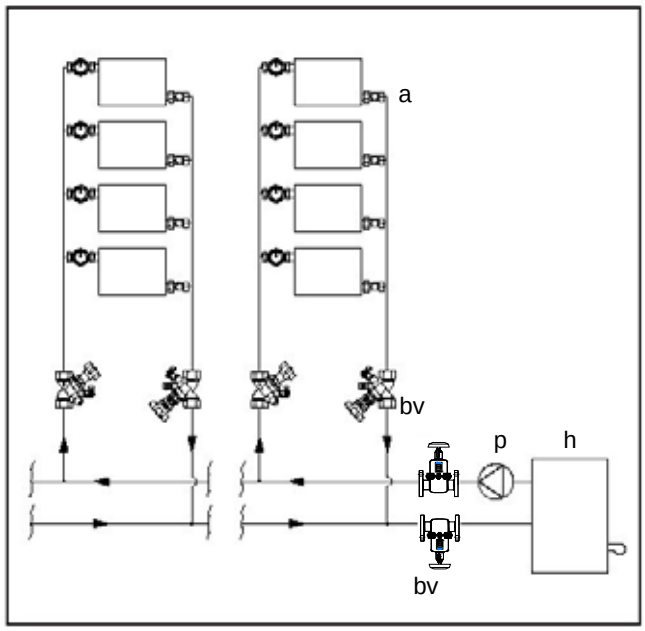
Scheme of an air heating installation in which the flow rate is constant. After flushing or blow out the system the preset double regulating and commissioning valve provide static hydronic balancing.



a : fan coil units or heat loads
h : heat source
P : circulation pump
bv : Balancing valves

Installation example 3

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



a : radiators or heat loads
h : boiler/or chiller
P : circulation pump
bv : Balancing valves

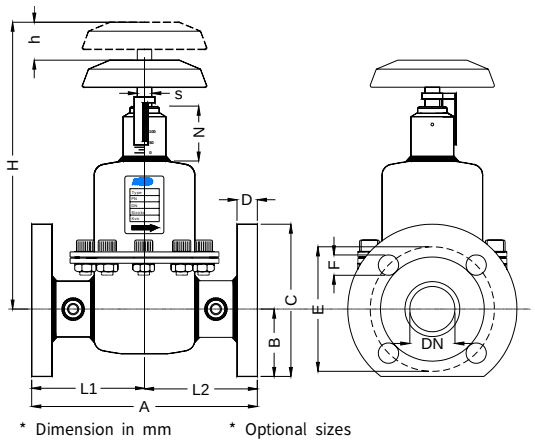
Installation example N..

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

Dimension

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

*1000Nf = 100Kf



* Dimension in mm * Optional sizes

DIN												Wt
mm	Inch	A	B	C	D	E	F	H	h	N	S	Kg
15	1/2"	130	50	100	10	20	12x4	200	20	44	12	
15	1/2"	130	50	100	10	20	12x4	200	20	44	12	
15	1/2"	130	50	100	10	20	12x4	200	20	44	12	
20	3/4"	130	50	100	10	20	12x4	200	20	44	12	
25	1"	160	80	115	16	20	14x4	200	20	44	12	
32	1 1/4"	200	100	150	18	20	18x4	200	20	44	12	
40	1 1/2"	200	100	150	18	20	18x4	200	20	44	13	
50	2"	230	115	165	20	20	18x4	200	20	44	13	
65	2 1/2"	290	145	185	20	40	18x4	250	30	36	14	
80	3"	310	155	200	22	40	18x8	296	30	36	14	
100	4"	350	175	220	24	40	18x8	342	30	36	16	
125	5"	400	200	250	26	40	18x8	360	30	36	16	
150	6"	480	240	285	26	40	22x8	400	40	32	18	
200	8"	600	305	345	29	50	22x12	420	40	30	20	
250	10"	720	370	400	29	50	22x12	460	50	30	20	
300	12"	*										
350	14"	*										
400	15"	*										