Block-and-bleed valve 2-valve manifold Models IV20 and IV21

Applications

- Shut off and vent pressure measuring instruments
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Process industry: Oil & gas, petrochemical, chemical industries, power generation, water and wastewater

Special features

- Low-wear design due to non-rotating spindle tip in the bonnet
- Low torque and smooth operation of valve handle even at high pressure
- Enhanced safety due to blow-out proof bonnet design
- Customer-specific combination of valves and instruments (hook-up) on request

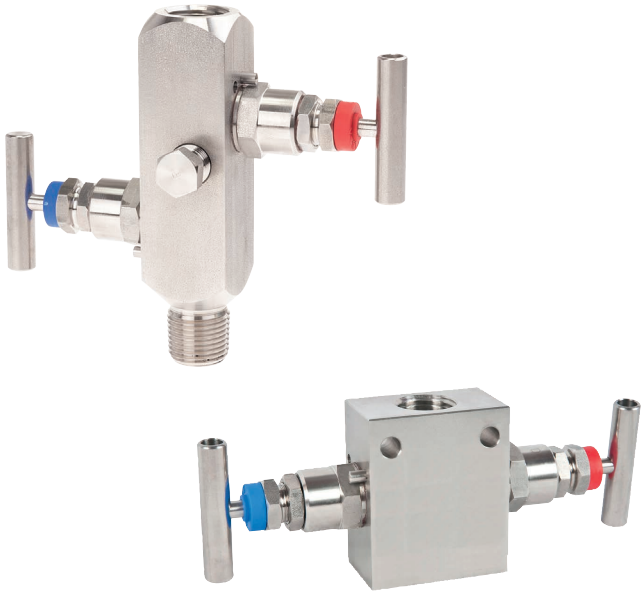


Fig. left: Model IV20, square version
Fig. right: Model IV21, flat version

Description

With 2-valve manifolds, the block-and-bleed version is standard. The shut-off valve separates the process from measuring instruments such as pressure gauges, switches or transmitters. By closing this valve the instrument can be safely dismounted for services like recalibration or replacement. The vent valve allows the safe venting of the instrument, prior to the dismounting or for zero point check.

Through the non-rotating spindle tip, the wear of the sealing elements is reduced. This results, particularly with frequent opening and closing, in a noticeable increase in the service life.

Through the blow-out proof design of the valve, working safety is improved, especially in applications with high pressure loading.

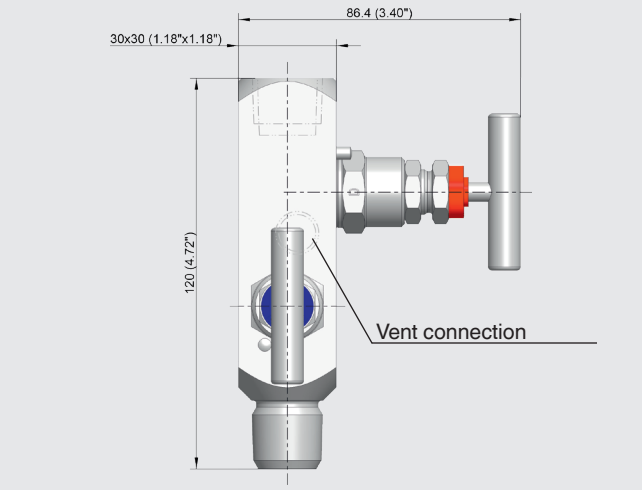
As an option, WIKA offers the professional assembly of valves and pressure measuring instruments and also other accessories into a ready-to-install solution, also known as a hook-up. To ensure the performance of the complete system, an additional leak test is carried out on the hook-up.

Data sheets showing similar products and accessories:
Needle valve and multiport valve; models IV10 and IV11; see data sheet AC 09.22
Valve manifold for differential pressure measuring instruments, models IV30, IV31, IV50 and IV51; see data sheet AC 09.23

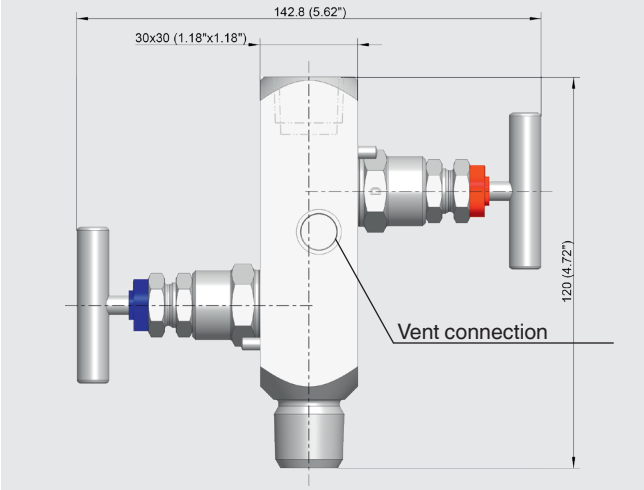
Dimensions in mm (in)

Model IV20, square version

Valve position: Angled



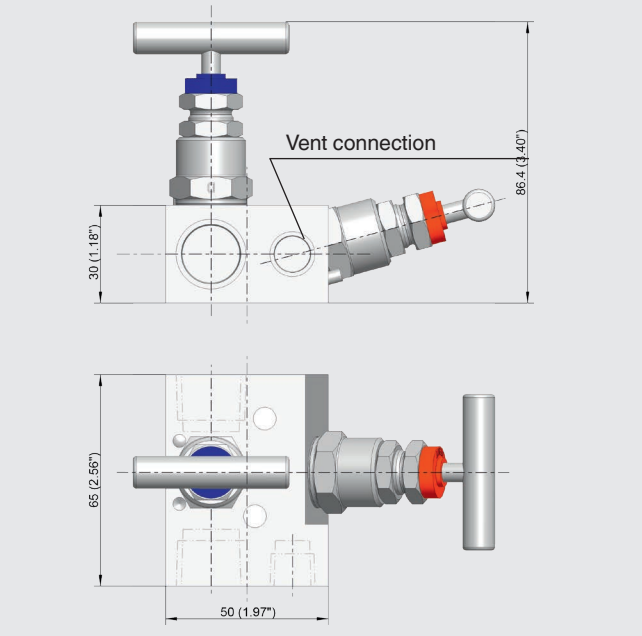
Valve position: In-line



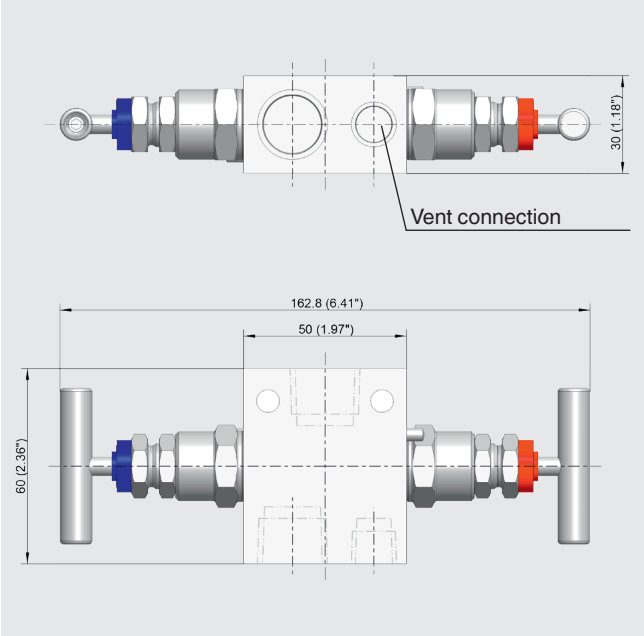
Plug screw for venting connection is included in delivery, though not pre-fitted.

Model IV21, flat version

Valve position: Angled

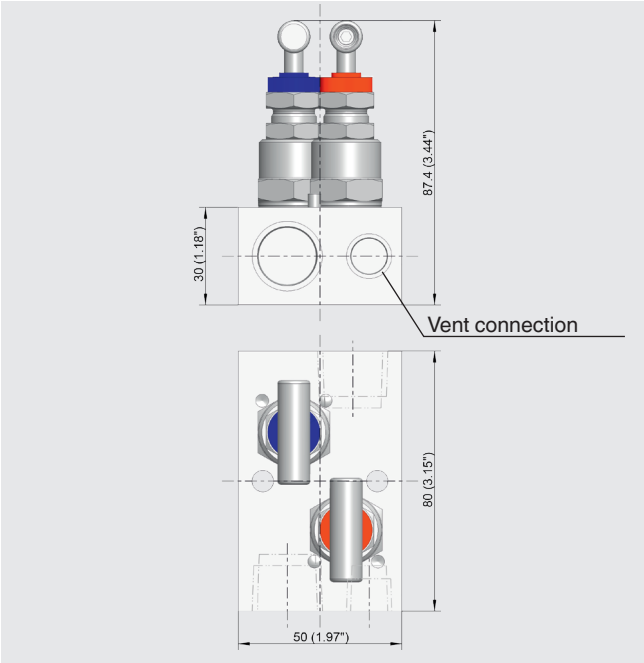


Valve position: In-line



Plug screw for venting connection is included in delivery, though not pre-fitted.

Valve position: Side-by-side



Plug screw for venting connection is included in delivery, though not pre-fitted.

Manufacturer's information and certificates

Logo	Description
-	**PMI [1] test certificate** Valve body
-	**Certificate for proof pressure** Tested with 1.5 times permissible operating pressure, shell test per API 598, and with 1.1 times permissible operating pressure, seat test per API 598

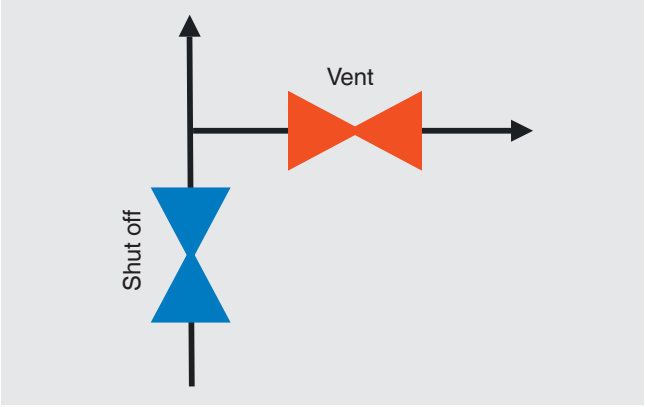
1) Positive material identification

Certificates

- NACE 3.1 material certificate for the valve body (MR0103/MR0175)
- NACE 3.1 material certificate for the wetted parts (MR0103/MR0175)

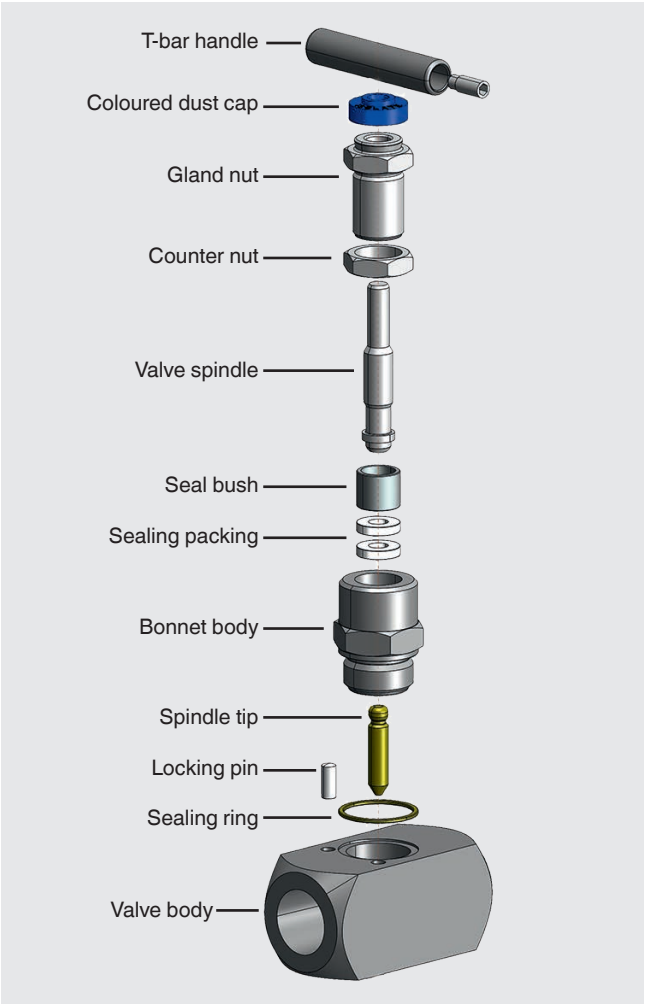
Specifications

Functional diagram



Bonnet design

Standard version

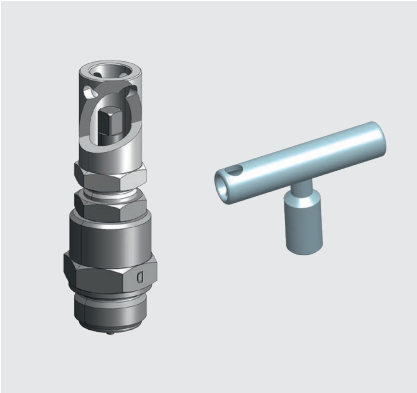


Specification	
Dust cap colour code	Blue: Shut off Red: Vent
Spindle tip	Non-rotating, low-wear
Valve seat	Metal seat
Valve bore size	4 mm (0.16)

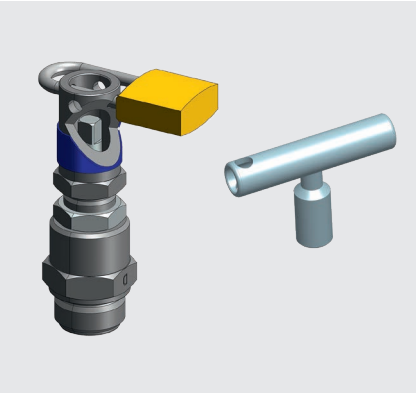
Material	Standard	Option
Wetted parts		
Valve body	Stainless steel 316/316L	■ Monel® 400 ■ Hastelloy® 276 ■ Others on request
Bonnet body		
Spindle tip		
Sealing packing	PTFE	Graphite
Non-wetted parts		
Handle	Stainless steel 304	
Gland nut	Stainless steel 316/316L	
Counter nut		
Valve spindle		
Seal bush		

Bonnet options

Anti-tamper version

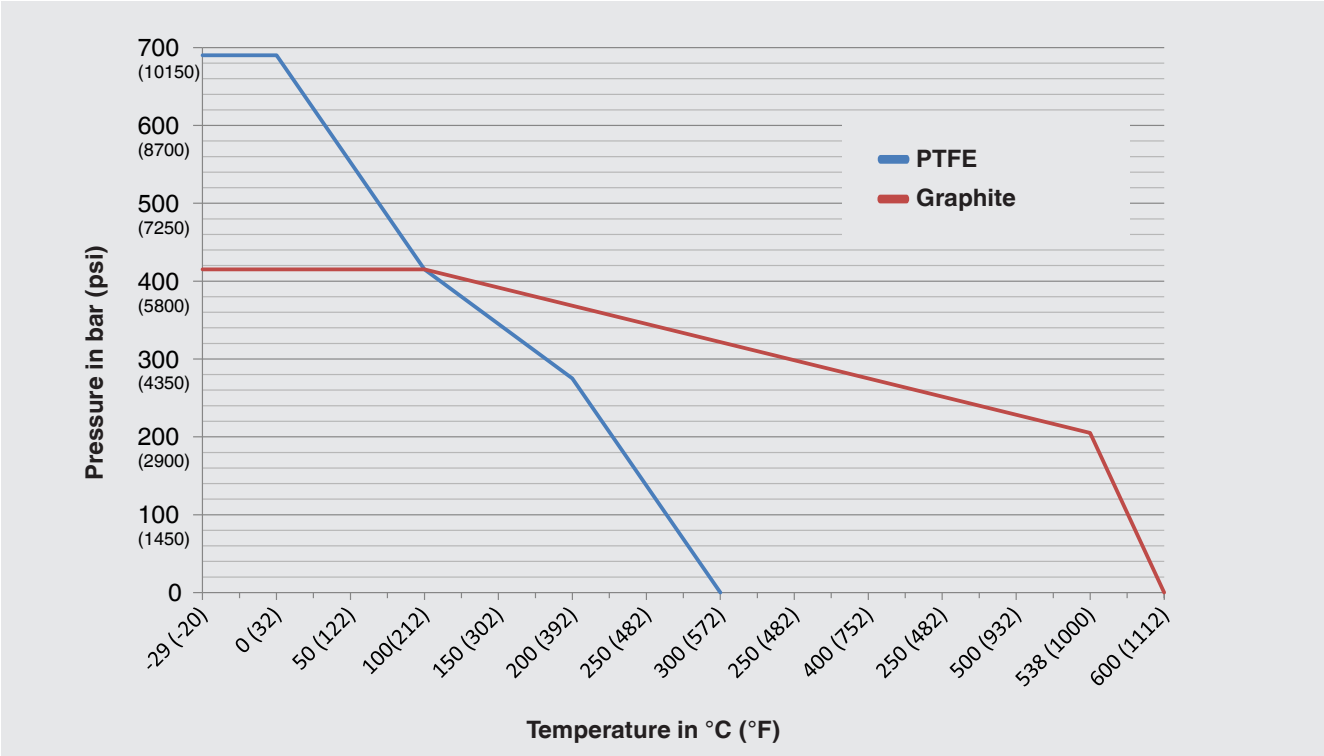


Anti-tamper version with padlock



Extended handle version

Pressure-temperature diagram



Sealing material	Max. pressure depending on the temperature
PTFE	689 bar at 38 °C (10,000 psi at 100 °F)
	276 bar at 210 °C (4,000 psi at 400 °F)
Graphite	414 bar at 38 °C (6,000 psi at 100 °F)
	209 bar at 538 °C (3,030 psi at 1,000 °F)

Ordering information

Block-and-bleed valve, models IV20 and IV21		Code	
Version	■ Model IV20, square version ■ Model IV21, flat version	20 21	
Valve position (see dimensions on page 3)	■ Angled ■ In-line ■ Side-by-side [1]	1 2 3	
Process connection / instrument connection	■ ½ NPT male / ½ NPT female ■ ½ NPT female / ½ NPT female ■ ¼ NPT male / ¼ NPT female ■ ¼ NPT female / ¼ NPT female ■ G ½ male / G ½ female	N1 N3 N4 N5 G1	
Material of wetted parts (body, bonnet, spindle tip)	■ Stainless steel 316/316L ■ Monel 400 ■ Hastelloy 276	S1 MO HC	●
Mounting	■ Without mounting holes [2] ■ Suitable for mounting bracket, with mounting holes [3] [4]	D R	
Vent connection	■ ¼ NPT female, plug screw is included in delivery, though not pre-fitted.	N	
Permissible operating pressure	■ ≤ 6,000 psi (420 bar) ■ ≤ 10,000 psi (689 bar)	L M	●
Material of the sealing packing / permissible temperature range (see diagram on page 5)	■ PTFE / -73 ... +210 °C (-100 ... +400 °F) ■ Graphite / -54 ... +538 °C (-65 ... +1,000 °F)	P G	●
Bonnet design (see page 4 ff.)	■ Standard version ■ Extended handle version	S E	●
Bonnet options	■ Without ■ Anti-tamper version without padlock, vent ■ Anti-tamper version without padlock, vent, shut off ■ Anti-tamper version without padlock, shut off and vent ■ Anti-tamper version with padlock, vent ■ Anti-tamper version with padlock, shut off ■ Anti-tamper version with padlock, shut off and vent ■ Small T-bar handle ■ T-bar handle from stainless steel 316L	ZZ 1Z 2Z 4Z 11 22 44 8Z 9Z	●
Special design feature	■ Without ■ For oxygen, oil and grease free	Z H	●
Certificate option 1 [5]	■ NACE 3.1 material certificate for the valve body (MR0103/MR0175) ■ NACE 3.1 material certificate for the wetted parts (MR0103/MR0175)	M N	●
Certificate option 2 [6]	■ Without ■ PMI test certificate for the valve body	Z P	●
Certificate option 3 [5]	■ Without ■ Proof pressure test certificate with 1.5 times permissible operating pressure,shell test per API 598, and with 1.1 times permissible operating pressure, seat test per API 598	Z 5	●

1) Only with process connection / instrument connection “N3”, “N5”
2) Standard for model IV20
3) Option only for model IV21 with process connection / instrument connection x “N3”, “N5”
4) Option only for model IV20 with process connection / instrument connection x “N1”, “N3”
5) Issued per order item
6) Issued per piece

● Standard

Order code

IV											
Version	Valve position	Process connection / instrument connection	Material of wetted parts	Mounting	Vent connection	Permissible operating pressure	Material of the sealing packing	Bonnet design	Bonnet options	Special design feature	Certificates 1, 2, 3

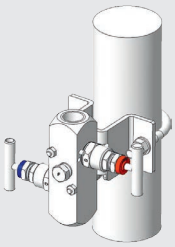
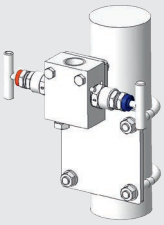
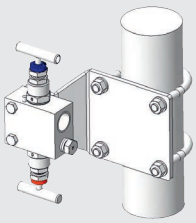
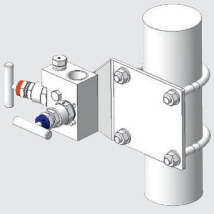
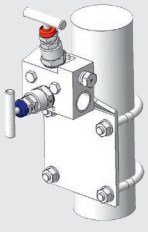
Order numbers

Standard bonnet; material of the valve body: 316/316L; sealing: PTFE; permissible operating pressure: 6,000 psi (420 bar)

Model	Valve position	Process connection / instrument connection	Order number
IV20	Angled	½ NPT male / ½ NPT female	14275441
	In-line	½ NPT male / ½ NPT female	14275303
		½ NPT female / ½ NPT female	14275313
IV21	Angled	½ NPT female / ½ NPT female	14275332
	In-line	½ NPT female / ½ NPT female	14275407

Accessories

Only for versions with mounting option “D”: Suitable for mounting bracket, with mounting holes

Instrument mounting bracket			
For model		**Position of the measuring instrument**	**Order number**
IV20		Vertical	14252307
IV21, valve position: In-line		Vertical	14147672
		Horizontal	
IV21, valve position: Angled		Vertical	14252309
		Horizontal	

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