

Becker* No Bleed Valve Series (NBV)

Eliminate atmospheric bleed when your control valve is full-open and full-closed

The Becker NBV Series from GE Oil & Gas eliminates bleed gas from Becker double-acting control instrumentation when corresponding control valve is at full-open and full-closed positions. This is ideal for monitor regulators and standby regulators that typically remain in the full-open or full-closed positions for extended periods of time. The NBV features bleed shutoff at both ends of valve travel without adjustment. The NBV is the primary choice for non-bleed technology on Becker double-acting control instrumentation. It is compatible with all Becker double-acting Valve Regulator Pilots (VRP) and double-acting High Pressure Positioners (HPP).

Product Features

- No adjustment or calibration
- Simple design - only one moving part
- Modular design eliminates tubing connections
- Easily retrofits to all Becker double-acting control instrumentation
- Compatible with all Becker double-acting control instrumentation
- Minimize leak callouts
- Complies with EPA STAR Program for emissions reduction
- Improves safety by eliminating constant bleed emissions
- Renders monitor, standby, and relief valves
- Non-bleeding



Figure 1 - Model NBV-100

The NBV renders non-bleed all Becker double-acting control instrumentation when the corresponding control valve is at full-open and full-closed positions. The component is simple, reliable and does not require adjustment or calibration.

Available Models	Compatible Instrumentation	Easy Retrofit to Discontinued Instrumentation
NBV-70	VRP Pilot	
NBV-100	VRP-CH Pilot	Model HPP-2
NBV-150	VRP -B-CH Pilot	Model HPP-3
	HPP-4 Positioner	Model HPP-2E
	HPP-5 Positioner	Model HPP_3E
		Model VRP-B



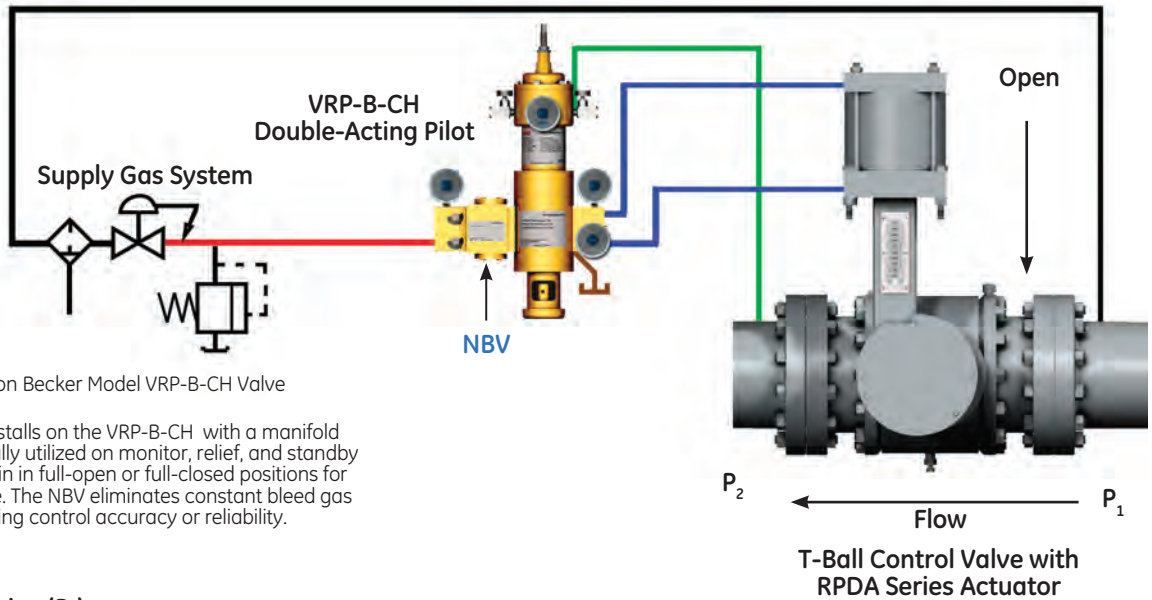


Figure 2 - NBV installed on Becker Model VRP-B-CH Valve Regulator Pilot

The NBV shown easily installs on the VRP-B-CH with a manifold design. The NBV is typically utilized on monitor, relief, and standby control valves that remain in full-open or full-closed positions for extended periods of time. The NBV eliminates constant bleed gas emissions without effecting control accuracy or reliability.

Schematic Legend

- Instrument Drive (P_2)
- Upstream Pressure (P_1)
- Exhaust (Discharge)
- Supply Gas (Regulated)
- Intermediate Pressure (Loading)

Table 1 - NBV Specifications

Model	Operating Pressure Range ³	MAOP	Part No.	Weight	Dimensions	Repair Kit
NBV-70	70 - 100 psig (483 - 689kPa)	250 psig (1723 kPa)	25-8268	2.0 lbs. (0.9 kg)	2.75 x 3.75 x 2.0 in. (70 x 95 x 50 mm)	25-1481
NBV-100	100 - 150 psig (689 - 1034 kPa)	250 psig (1723 kPa)	25-8224	2.0 lbs. (0.9 kg)	2.75 x 3.75 x 2.0 in. (70 x 95 x 50 mm)	25-1481
NBV-150	150 - 200 psig (1034 - 1378 kPa)	250 psig (1723 kPa)	25-8225	2.0 lbs. (0.9 kg)	2.75 x 3.75 x 2.0 in. (70 x 95 x 50 mm)	25-1481
NBV-70-SS1	70 - 100 psig (483 - 689kPa)	250 psig (1723 kPa)	25-8550	6.0 lbs. (2.7 kg)	2.75 x 3.75 x 2.0 in. (70 x 95 x 50 mm)	25-1481
NBV-100-SS1	100 - 150 psig (689 - 1034 kPa)	250 psig (1723 kPa)	25-6112	6.0 lbs. (2.7 kg)	2.75 x 3.75 x 2.0 in. (2.7 kg)	25-1481
NBV-150-SS1	150 - 200 psig (1034 - 1378 kPa)	250 psig (1723 kPa)	25-8551	6.0 lbs. (2.7 kg)	2.75 x 3.75 x 2.0 in. (70 x 95 x 50 mm)	25-1481

Notes

1. "SS" suffix indicates 304 stainless steel (99% passivated) materials of construction on major components
2. When NBV is utilized with Bleed to Pressure* discharge pressure is restricted to less than 90 psig (414 kPa). Typically PS-2 and DPS-2 no bleed sensors are utilized when Bleed to Pressure System* is incorporated.
3. For best performance utilize lowest pressure in operating range. Always make sure actuator has sufficient supply pressure for control valve requirements.

Table 2 - NBV Specifications

Technical Specifications	
Ambient Temperature Range	-20°F to +160°F (-29°C to +71°C)
Inlet Port Size	1/4" O-Ring Seal
Outlet Port Size	1/4" O-Ring
Cv (flow capacity)	0.991
Installation Orientation	Vertical position recommended

Figure 3 - NBV-100 No-Bleed Valve Exploded View

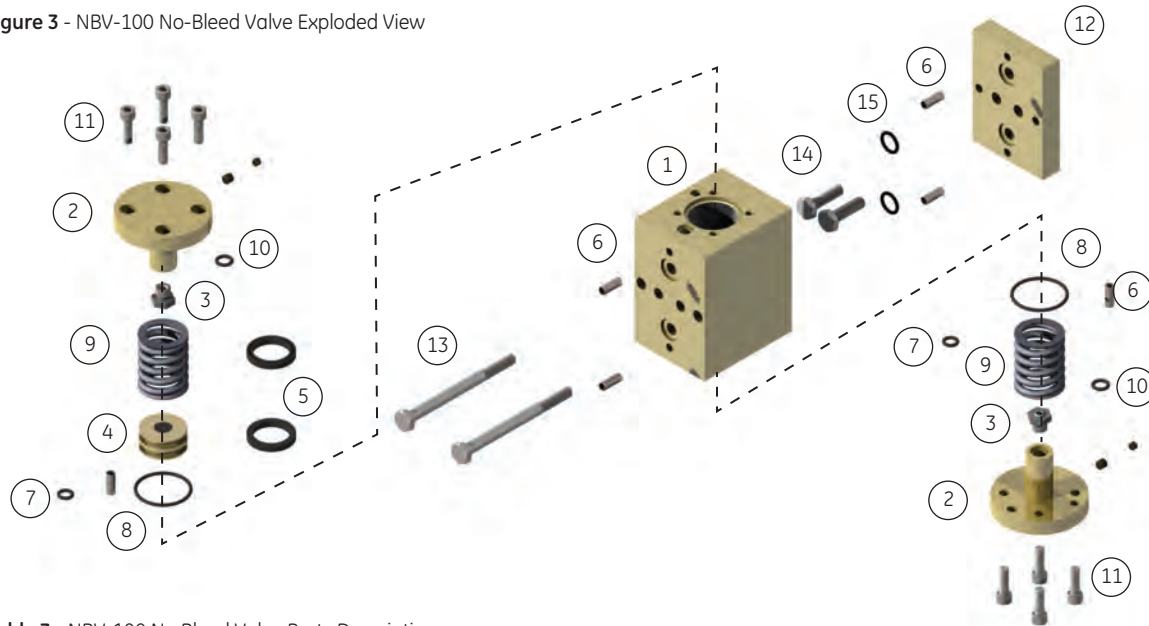
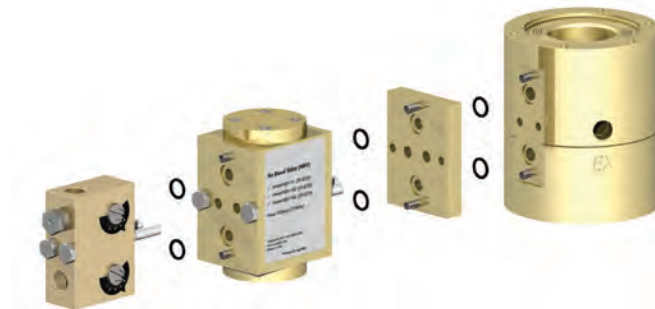


Table 3 - NBV-100 No Bleed Valve Parts Description

Item	Description	Part No.	Qty	Note	Item	Description	Part No.	Qty	Note
1	Cylinder Block	25-8227	1		9	Spring	25-8231	2	2
2	Cap	25-8228	2		10	-010 O-Ring	95-2609	2	
3	1/8 Nozzle	25-1030	2		11	10-32 x 5/8 SHCS	98-2636	8	
4	Piston with Integral Seats	25-8230	1	1	12	NBV Adapter Plate	25-8226	1	
5	U-Cup, 1 x 1/8	95-2668	2		13	1/4-20 x 3 HHCS	98-3031	2	
6	3/16 x 1/2 Roll Pins	98-3089	6		14	1/4-20 x 7/8 HHCS	98-3165	2	
7	-009 O-Ring	95-2599	2		15	-012 O-Ring	95-2615	6	
8	-023 O-Ring	95-2669	2						

Notes

1. Seat portion of piston is non-field serviceable. Repair kit includes complete assembly of piston with integral seats
2. Spring is specific to NBV model. NBV springs are factory matched for each NBV assembly to ensure proper operation. NBV springs should not be maintained as a matched pair.



The NBV eliminates bleed gas when Monitor Ball Valve Regulators are at Full-Open position. Monitor regulators typically remain in the full-open position. An NBV installed on a VRP-CH eliminates bleed gas when the control valve is at the full-open position or full-closed position. The NBV is also ideal for standby and underpressure control valves to eliminate bleed gas when control valves are in an idle scenario. The NBV also simplifies older Becker Control Instrumentation configurations. A Becker VRP can be equipped with an NBV to reduce bleed gas emissions. The NBV greatly reduces control instrumentation tubing and simplifies operation.

Table 4 - Application Guidelines for Becker Control Valves and Actuators Instrumentation

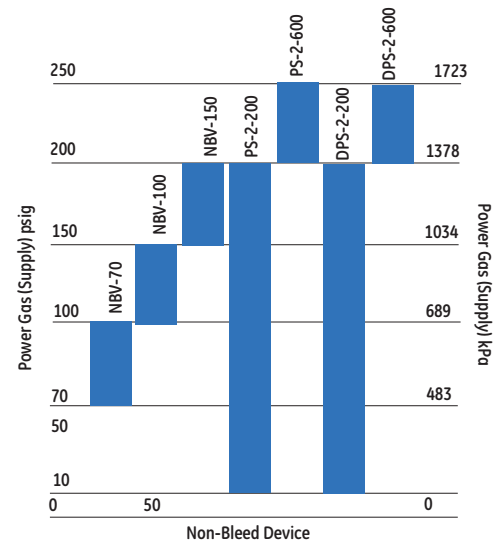
	VRP-CH Pilot	VRP-B-CH Pilot	VRP-SB-CH Pilot	VRP-SB-GAP Pilot	VRP-SB-PID Pilot	HPP-4 Positioner	HPP-5 Positioner	HPP-SB Positioner	DNGP Positioner	NOTES
Instrumentation Options										
Bleed to Pressure System (BPS)	•		•	•		•	•	•	•	1
AB Series Atmospheric Bleed Control	•		•	•		•	•	•	•	1
NBV Series No Bleed Valve	•	•				•	•			2
DPS-2 Series Non-Bleed Sensor	•	•				•	•			3
PS-2 Series Non-Bleed Sensor	•					•				3
SP Series Setpoint Pump	•	•	•	•	•					
RSM Series Remote Setpoint Module	•	•	•	•	•					
Panel Mounting	•	•	•	•	•				•	
Stainless Steel Option	•	•	•	•	•	•	•	•		
VB Series Volume Booster	•		•		•	•		•		4
QEV Series Quick Exhaust Valve				•				•		
I/P Transducer						•	•	•		
SLV Series Signal Lock Valve						•	•	•		

Notes:

1. BPS is limited to pressure systems below 300 psig. Consult GE for assistance.
2. NBV may only be utilized when $P_{Discharge} \leq 60$ psig (414 kPa) and/or $P_{supply} \leq 200$ psig (1378 kPa).
3. PS-2 and DPS-2 non-bleed sensors must be utilized when $P_{Discharge} > 60$ psig (414 kPa) and/or $P_{supply} > 150$ psig (1034 kPa).
4. Volume Boosters are necessary for power plant regulator, surge control applications, or when large model RPDA and LPDA are utilized.

***CAUTION: This information is intended as a guideline for application of Becker Control Valve products. GE strongly recommends consulting Engineering prior to application of any product.**

Table 5 - Power Gas Supply



Notes

1. All non-bleed devices are used with double-acting actuators and double-acting control instrumentation.
2. The NBV series can be used with all Becker pneumatic double-acting instrumentation and requires no adjustment.
3. The PS-2 series can be used with the Becker VRP-CH series and model HPP-4 but requires proper adjustment and additional tubing.
4. The DPS-2 series can be used with all Becker pneumatic double-acting instrumentation but requires proper adjustment and more tubing than the PS-2 series.
5. The PS-2 and DPS-2 series non-bleed sensors have greater sensitivity than the NBV series resulting in activation and deactivation much closer to setpoint.
6. This selection chart shows the power gas pressure range for instrumentation bleeding to atmosphere. Please consult the GE factory for proper selection of non-bleed device if the control instrumentation is bleeding to a pressure system.



GE Oil & Gas

1550 Greenleaf Avenue
 Elk Grove Village, Illinois 60007 USA
 T: +1 847.437.5940 F: +1 847.437.2549
 Toll Free Phone: 800.323.8844
 Email: becker@ge.com

Visit us online at: www.ge.com/oilandgas

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