

**Control Devices
Safety and Vacuum Relief Valves**

NBR Series Low Pressure Safety Valves

Applications

- Low Pressure, High Volume Blowers and Compressors
- Bulk Hauling Tanks, Trailers and Rail Cars
- Powdered Solids/Bulk Handling
- Pneumatic Conveying Equipment

Specifications

- Available 3 to 15 PSI
- Temperature Range: -20° F to 400° F
- Cast Iron Body
- Brass Inlet Fittings (Inlet, Piston, Spring Guide and Cap)
- Stainless Steel Spring and Set Screw
- Unique Seat Design Minimizes Leakage
- T-Handle for Manual Testing



Inlet/ Outlet	Part No.
2"	NBR20-OTXXX
2-1/2"	NBR25-OTXXX
3"	NBR30-OTXXX

NVR Series Vacuum Relief Valves

Applications

- High Flow Vacuum Applications
- Bulk Hauling Tanks, Trailers and Rail Cars
- Powdered Solids/Bulk Handling
- Pneumatic Conveying Equipment

Specifications

- Available 2" Hg to 25" Hg
- Temperature Range: -20° F to 400° F
- Cast Iron Body and Inlet
- Brass Internals (Piston, Spring Guide, Cap) and Outlet
- Stainless Steel Spring and Set Screw
- Unique Seat Design Minimizes Leakage



Inlet/ Outlet	Part No.
2"	NVR20-OAXXX
2-1/2"	NVR25-OAXXX
3"	NVR30-OAXXX

**Control Devices
NBR Series Low Pressure Safety Valve
Capacity Chart**

Inlet /Outlet	Part No.	Part No.	Part No.
	NBR20-OTXX	NBR25-OTXXX	NBR30-OTXXX
	2"NPT	2-1/2 NPT	3" NPT
PSIG	SCFM		
3	350	685	802
4	463	804	1007
5	590	933	1200
6	700	989	1332
7	711	1051	1468
8	730	1100	1601
9	754	1150	1730
10	771	1193	1862
11	790	1332	1932
12	812	1458	2002
13	830	1589	2075
14	842	1722	2149
15	856	1862	2223

- Notes
 1. Allow 1-2 weeks for delivery
 2. When ordering replace the XXX with the desired pressure setting 15 psi = 015 (pressure settings must be in whole numbers)
 3. Consult Midwest Control for capacities above 15 psi

**Control Device
NVR Series Vacuum Relief Valve
Capacity Chart**

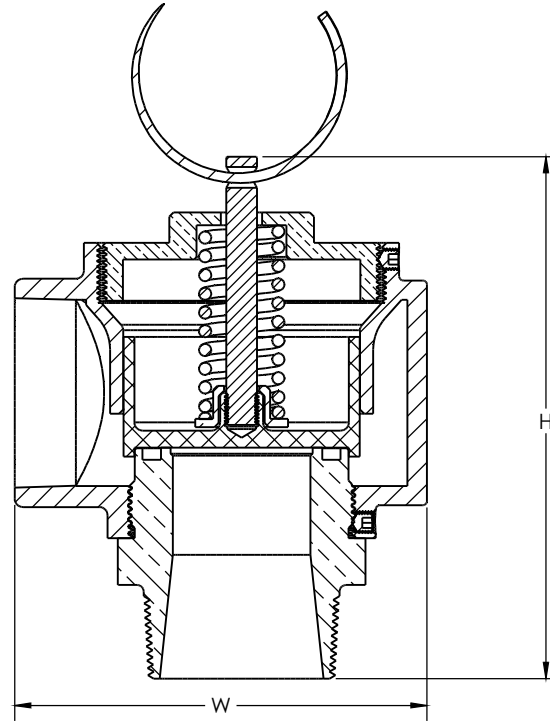
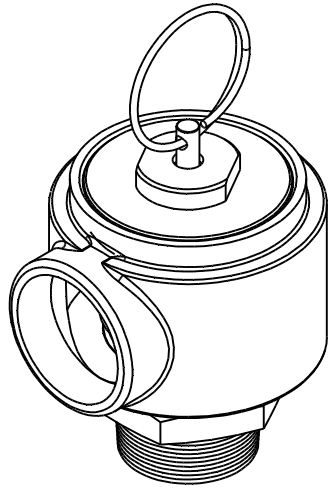
Inlet/Outlet	Part No.	Part No.	Part No.
	NVR20-0AXXX	NVR25-0AXXX	NVR30-0AXXX
	2"NPT	2-1/2 NPT	3" NPT
Relief Valve Set @ " Hg	SCFM		
2	268	300	650
3	307	375	749
4	339	430	902
5	356	450	1043
6	363	462	1061
7	371	475	1080
8	377	487	1101
9	384	499	1119
10	391	510	1138
11	399	522	1157
12	406	535	1173
13	413	548	1187
14	422	561	1204
15	430	574	1224
16	430	574	1224
17	430	574	1224
18	430	574	1224
19	430	574	1224
20	430	574	1224
21	430	574	1224
22	430	574	1224
23	430	574	1224
24	430	574	1224
25	430	574	1224

- Notes
 1. Allow 1-2 weeks for delivery
 2. When ordering replace the XXX with the desired vacuum setting 20"Hg = 020 (vacuum settings must be in whole numbers)

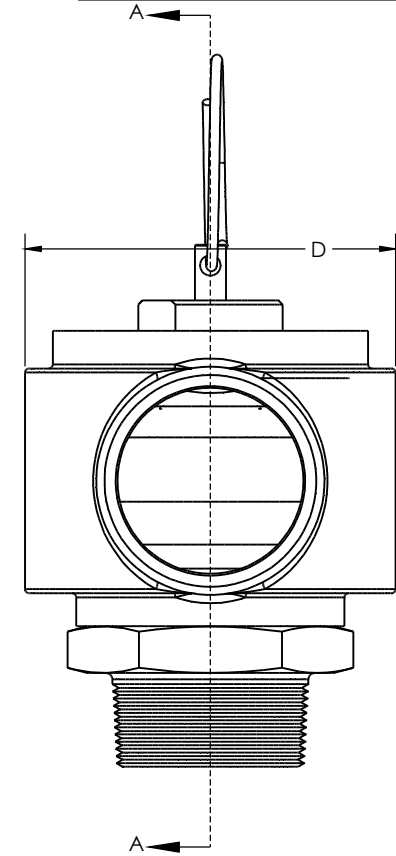
Capacity Chart

REVISIONS			
REV.	DESCRIPTION	DATE	ECN NO.
A	RELEASE TO PRODUCTION	10/04/16	17-332
B	ADDED P/N TABLE	07/27/17	17-399

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SECTION A-A
SCALE 1 : 1.5



P/N	THREAD (NPT)	D	H	W	WEIGHT (LBS)
NBR20	2	4.5	6.3	5.0	9
NBR25	2 1/2	5.0	7.8	5.7	13
NBR30	3	6.1	8.7	6.9	17
NBR40	4	6.5	10.4	8.4	26

- NOTES:
1. PRESSURE RANGE 1-15 PSI
 2. TEMPERATURE RANGE -20-400°F
 3. INLET/OUTLET THREADS 2, 2 1/2, 3, 4 NPT
 4. MATERIALS OF CONSTRUCTION
 - INLET, PISTON, STEM, WASHER, CAP: BRASS
 - BODY: CAST IRON
 - SPRING, SET SCREWS, PULL RINGS: STAINLESS STEEL

ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	QTY REQD.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:		CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE		
FRACTIONS	DECIMALS	ANGLES	APPROVALS	DATE
± .000	± .000	± 1°	DRAWN	10/04/16
± .000±.005			CHECKED	
MATERIAL	RESP ENG			
SEE NOTES				
FINISH	MFG ENG			
DO NOT SCALE DRAWING	MASS	8.546 LBS	SIZE B	DWG. NO. NBR20
			SCALE 1:2	REV B
				SHEET 1 OF 1

ASSEMBLY DRAWING,
BLOWER RELIEF



MODEL: **NBR**

SAFETY RELIEF VALVE

DESCRIPTION

The NBR Safety Relief Valve is a direct acting, spring loaded relief valve. It is designed to protect pressurized systems from damage due to over pressurization.

INSTALLATION

The NBR Safety Relief Valve may be installed in any orientation. Position valve so pull ring or pin can be accessed for testing. Do not use reducing fittings between the NBR Safety Relief Valve and pressurized system. Do not install shutoff valves between the NBR Safety Relief Valve and pressurized system.

OPERATION

The NBR Safety Relief Valve is normally held closed by the force of the compression spring above the piston while control pressure is applied under the piston. When the controlling pressure exceeds the spring pressure, the piston is lifted off its seat, allowing flow through the discharge. Valve will reseal at 50 to 60 percent of the opening pressure.

ADJUSTMENT PROCEDURE

It is not recommended to adjust the set pressure of the NBR Safety Relief Valve.

DISASSEMBLY

It is not recommended to disassemble the NBR Safety Relief Valve.

INSPECTION

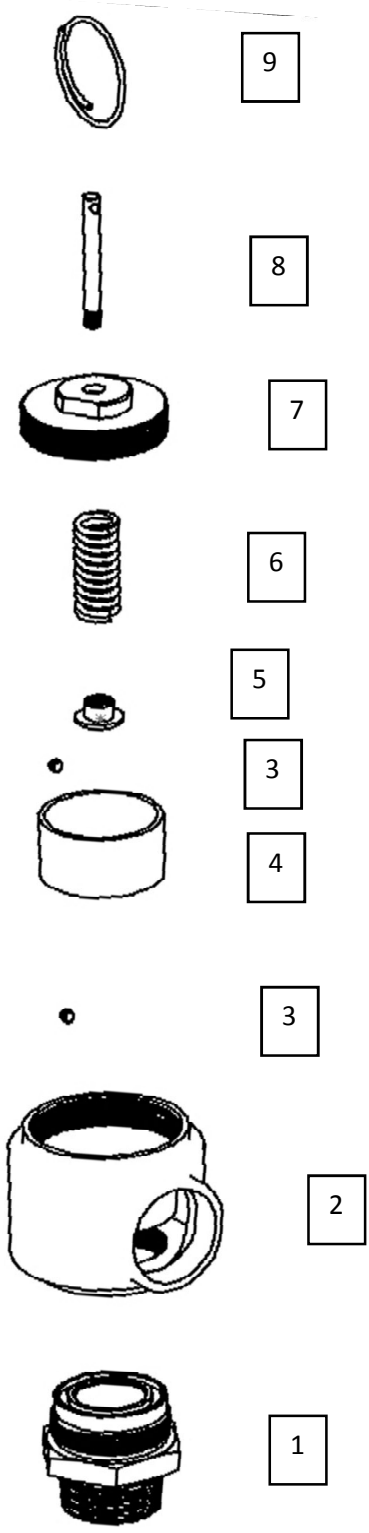
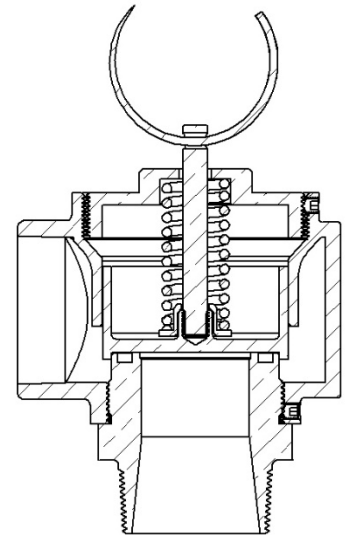
Visually inspect valve for signs of damage and corrosion. Raise pressure to 75 to 90 percent of the set pressure. Pull the ring or pin to open the valve. Release ring or pin and allow the valve to close.

REPAIR AND REPLACEMENT

Please contact the factory for repairs or replacement valves.

Parts List:

Item	Description	Quantity
1	INLET	1
2	BODY	2
3	SET SCREW	1
4	PISTON	1
5	SPRING GUIDE	1
6	SPRING	1
7	CAP	1
8	STEM	1
9	PULL RING	1



Troubleshooting:

SYMPTOM	PROBABLE CAUSE	REMEDY
Fails to open	Controlling pressure too low	Pull ring or pin to test
Fails to open	Mechanical obstruction, corrosion, or scale build-up	Remove Obstruction or Contact factory for repair or replacement
Leakage from outlet	Disk or seat damaged	Contact factory for repair or replacement
Fails to close	System pressure too high	Lower pressure to below 50% of set pressure to ensure valve closes.
Fails to close	Mechanical obstruction	Remove Obstruction or Contact factory for repair or replacement