

Primary characteristics

NAF-HP globe valves are made of drop forged steel, and the following properties are some of the distinguishing features of this valve type:

- Pressure absorbing threaded joint between body and yoke, with gland bolts to secure it
- Conical sealing surfaces made of Alloy 6 on disc and seat
- Box packing made of expanding graphite to ensure minimum maintenance
- Easy to remove for servicing and preventive maintenance

CE-marked according to Pressure Equipment Directive (PED 97/23/EG) module H, category III.

Design

NAF-HP globe valves are made of both carbon steel and alloy steel. The valve body has a threaded yoke which is secured to the body by means of gland bolts running through between the yoke and gland support in the valve body. The valve type has a rising stem and handwheel. The sealing surfaces in the seat and disc are conical and coated with Alloy 6. The valve disc is attached to the stem and can be moved. This valve type cannot have new packing fitted while pressurised.

These globe valves have a straight profile and welding ends.

Applications

NAF-HP globe valves in accordance with this catalogue sheet are designed for shutdown and for media which will not damage materials included. A few examples – steam, water, air and oil.

Selection table (Table 1)

NAF-No	PN	DN	Material		Max. temp °C
			Carbon steel	Alloy steel	
447841	64/100	15-50	SA105N (EN1.0460)	-	400
447843			-	SA182-F12 (13CrMo4.4)	530
447845			-	SA182-F22 (10CrMo9.10)	550
447917	160/250	15-50	SA105N (EN1.0460)	-	400
447919			-	SA182-F12 (13CrMo4.4)	530
447921			-	SA182-F22 (10CrMo9.10)	550
447941	400	15-50	SA105N (EN1.0460)	-	400
447945			-	SA182-F22 (10CrMo9.10)	550
447981	640	15-50	SA105N (EN1.0460)	-	400
447989			-	SA182-F22 (10CrMo9.10)	550



Technical specification

Material:	Carbon steel or alloy steel
Dimension:	DN 15—50
Pressure class:	PN 64/100, 160/250, 400 and 640
Face-to-face:	See table Page 3
Connections:	Welding ends
Temperature range:	Up to 550°C, see table page 3
Test pressure:	Open valve 1.5 x PN Closed valve 1.1xPN

Connections

As per dimensional drawing on page 2.

Ordering sample

When placing an order, specify the NAF no. and DN as shown in the following example: NAF 447941, DN 25, globe valve

Accessories

This valve type can be supplied with electrical or mechanical position indication, pneumatic or electric actuator, a locking device for open-closed position. See page 3.

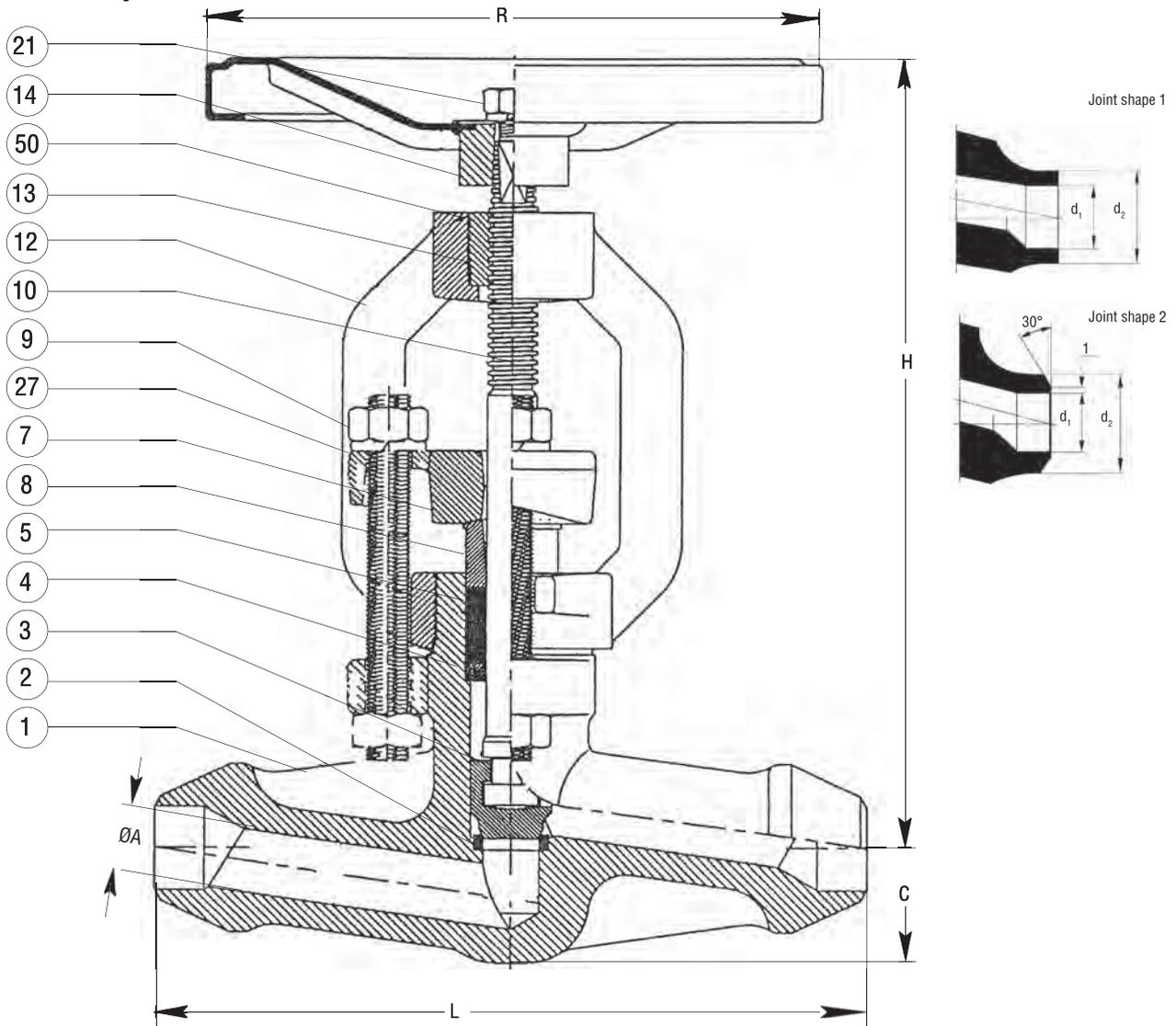
Capacity (Table 2)

DN	Resistance factor Z	Kv value
15	19	2
20	10	5
25	16	6,2
32	7,5	14,7
40	12	18,5
50	16	24,5

The resistance factors given apply to fully open valves.
Kv values are stated in m³/h at a pressure drop of 1 bar over the valve
There is the following link between Kv and Cv:
Kv = 0.86 x Cv Cv = 1.16 x Kv.



Material specification



Material specification (Table 3)

Pos	Part	Material		
		NAF 447841, 447941 NAF 447917, 447981	NAF 447843 NAF 447919	NAF 447845, 447945 NAF 447921, 447989
1	Body	SA105N (EN1.0460)	SA182-F12 (13CrMo4.4)	SA182-F22 (10CrMo9.10)
2	Seat	Alloy 6	Alloy 6	Alloy 6
3*	Disc	Alloy 6	Alloy 6	Alloy 6
4	Washer	Stainless steel W 1.4301	Stainless steel W 1.4301	Stainless steel W 1.4301
5*	Stem packing	Graphite	Graphite	Graphite
7	Gland flange	SA105N (EN1.0460)	SA105N (EN1.0460)	SA105N (EN1.0460)
8	Gland	Stainless steel AISI 304	Stainless steel AISI 304	Stainless steel AISI 304
9	Gland bolt Nut	ASTM A193 B7 ASTM A194 2H	ASTM A193 B7 ASTM A194 2H	ASTM A193 B7 ASTM A194 2H
10	Stem	17Cr 1 Mo W 1.4122	17Cr 1 Mo W 1.4122	17Cr 1 Mo W 1.4122
12	Yoke	SA105N (EN1.0460)	SA105N (EN1.0460)	SA105N (EN1.0460)
13	Stem nut	Al. bronze	Al. bronze	Al. bronze
14	Handwheel	Steel	Steel	Steel
21	Nut	Steel	Steel	Steel
27	Spring washer	Steel	Steel	Steel
50	Pin	Tempered steel	Tempered steel	Tempered steel

* Recommended spares

Dimensions and mass (Table 4)

NAF-No	PN	DN	Joint shape	d ¹	d ²	L	H**	ø A	ø B	C	R	Mass, kg	
447841	64/100	15	1	17	22	210	220	11	11	25	150	3,8	
447843		20	1	22	28	230	278	16	18	38	200	7,4	
447845		25	1	28	34	230	278	20	18	38	200	7,4	
		32	2	36	43	300	455	30	36	72	350	31	
		40	2	42	49	300	455	30	36	72	350	31	
		50	2	52	61	300	455	40	36	72	350	31	
447917	160/250	15	2	14	22	210	220	11	11	25	150	3,8	
447919		20	2	19	28	230	278	16	18	38	200	7,4	
447921		25	2	24	34	230	278	20	18	38	200	7,4	
		32	2	31	43	300	455	30	36	72	350	31	
		40	2	36	49	300	455	30	36	72	350	31	
		50	2	44	61	300	455	40	36	72	350	31	
447941	400	15	2	17	28	210	220	11	11	25	150	3,8	
447945		20	2	22	34	230	278	16	18	38	200	7,4	
		25	2	28	44	230	278	20	18	38	200	7,4	
		40	2	39	61	300	455	30	36	72	350	31	
		50	2	49	77	300	455	40	36	72	350	31	
447981	640	15	Joint shape and welding ends specified in connection with order				210	278	11	11	25	150	3,8
447989		20					230	278	16	18	38	200	7,4
		25					230	278	20	18	38	200	7,4
		40					300	455	30	36	72	350	31
		50					300	455	40	36	72	350	31

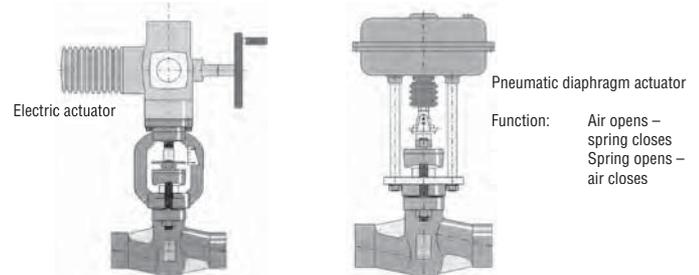
Dimensions in mm ** Open valve

Working pressure and temperature (Table 5)

NAF-No	PN	Max. temperature °C															
		20	150	200	250	300	350	400	425	450	475	500	510	520	530	540	550
		Max. Pressure bar (e)															
447841	64/100	100	90	80	70	60	56	50	-	-	-	-	-	-	-	-	
447917	160/250	250	250	200	175	150	140	125	-	-	-	-	-	-	-	-	
447941	400	400	360	320	280	240	225	200	-	-	-	-	-	-	-	-	
447981	640	640	576	512	448	384	360	320	-	-	-	-	-	-	-	-	
447843	64/100	100	100	100	100	100	95	91	89	87	82	74	62	49	38	-	
447845	64/100	100	100	100	100	100	95	91	89	87	82	74	62	49	38	29	
447919	160/250	250	250	250	250	250	238	227	223	217	206	184	154	124	97	-	
447921	160/250	250	250	250	250	250	238	227	223	217	206	184	154	124	108	95	
447945	400	400	400	400	400	400	380	364	356	348	330	295	250	198	174	151	
447989	640	640	640	640	640	640	608	582	570	557	528	472	400	317	278	241	

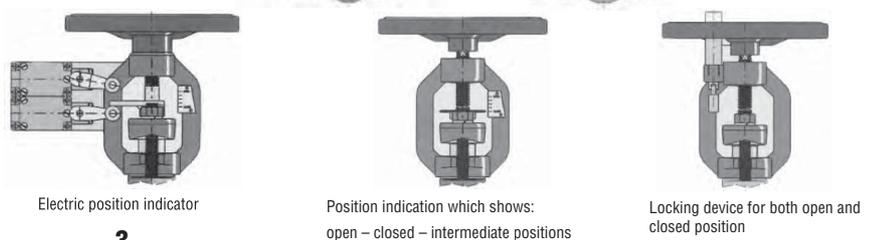
Variants

Version with control disc, as stop check valve and check valve (See Fk 20.722, 33.721 and 30.721). All versions are also available in ANSI standard format. The valves are also available in stainless steel. The check valves and stop check valves are also available in PN 400 and PN 640. Valve arrangement for drainage and blow-off, see Fk 20.723. Contact NAF for further information.



Labelling

The valves are marked with the NAF No., PN, DN, material, part no. and an arrow indicating the direction of flow.



Installation and maintenance instruction

Installation

Fit the valve so that it is not subject to abnormal forces from pipelines or the like. The valve may be fitted in any position. However, with the stem vertical and pointing upwards is preferable.

Welding in

Before welding in, check that the pipe system is free of contaminants. After welding in, the pipe must be flushed clear of welding sparks, scale, etc.

During welding in, the valve must be in the open position. Welding in must take place under the observance of applicable technical welding rules and practice.

Inspection and dismantling

1. Before removing the valve, check that the system is not pressurised.
2. Unscrew the gland nuts from the gland bolts. Then remove the gland bolts.
3. Open the valve fully by turning the handwheel counter-clockwise and thus forcing the loose back seal and box packing out of the stuffing box.
4. Undo the yoke by applying force in the counter-clockwise direction.
5. Unscrew the yoke from the valve body. Approx. 7 turns for DN 15, 10 turns for DN 20-25 and 17 turns for DN 32-50.
6. Lift the yoke out of the valve body together with all inner parts of the valve.
7. Remove the handwheel nut and turn the handwheel clockwise. The stem is then unscrewed from the yoke. Turn the handwheel until the stem and handwheel are separated from one another. Continue unscrewing the stem by taking hold of it underneath the yoke.
8. Remove the gland flange, gland, box packing and the loose back seal from the stem by holding it vertical against a solid base and keeping the threaded part downwards. Press the loose back seal.
9. Examine the inner parts and seat in the valve body. Clean them and renovate them if there are any scratches or patches of corrosion. Contact NAF for more detailed information on tools and how to lap the sealing surfaces.

Mounting

The valve is fitted in reverse order.

1. First, clean all inner parts using a solvent, then wipe them with a clean polishing rag.
2. Lubricate all threads using Molykote HCS or equivalent.
3. After fitting, check that the valve can be moved from Open to Closed position.
4. Pressurise the system and keep an eye on the box packing. Tighten the gland nuts carefully if the box leaks.

