NAF-Trunnball ball valves Fk 41.66(1)GB

DN 150 - 800, Size 6” - 32”
PN 10 - 40, ANSI Class 150 - 300
07.12

Primary characteristics

NAF-Trunnball is a trunnion ball valve with full-bore. It is designed to give a smooth and even control even at high dp and demanding media. Due to its tightness in both directions it is excellent for use as control valve, on/off control valve or shut-off valve. The valve is journalled with 2 large trunnions which gives lower torque for controlling the valve.

The valve has:

- a trunnion mounted ball which gives a smooth control.
- a low torque for controlling the valve.
- an easy-to-service arrangement, due to the off-center joint face of the valve body, which allows for easy replacement of the ball and seals, without the need for removing the stem and actuator.
- Spring loaded seats are in continuous contact with the ball surface. Tight in both directions with low dp.
- sturdy, blowout-proof rigidly journalled stem and a drive arrangement between the ball and stem that transmits torque smoothly.
- Pre-load self adjustable double stem packing. (V-rings and O-ring).
- metal-to-metal Alloy 6 seat rings or soft, enclosed carbon reinforced PTFE seat rings.
- the NAF standard for mounting the actuator, which simplifies installation and results in a compact valve/actuator unit.

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

Applications

NAF-Trunnball can be used both as a control valve and as on/off or shut-off valve.
The valve represents a concrete result of our product philosophy which is focused on functionality, high quality and low life cycle costs, and is based on concentrating our range to a limited number of valve types, but all of them suitable for a wide variety of applications.

The excellent characteristics of NAF-Trunnball are particularly beneficial under the most arduous operating conditions in the process industry, where difficult media and demanding pressure conditions make severe demands on the design, materials and performance.

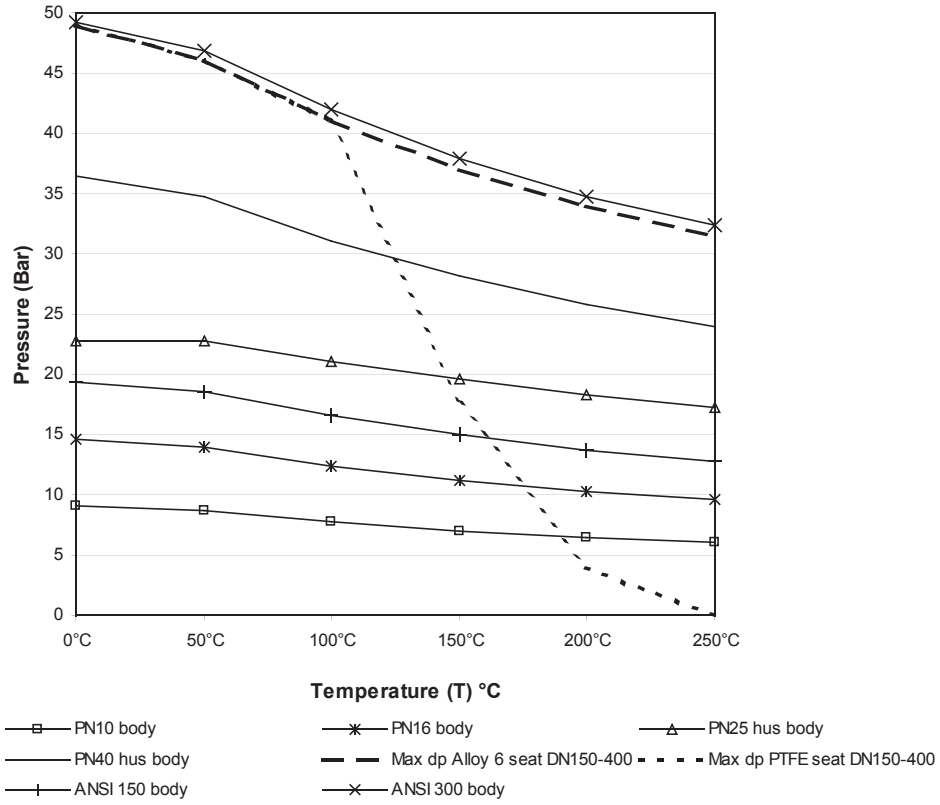
Technical specification

Material:	Stainless steel
Size range:	DN 150—800 (6”—32”)
Pressure ratings:	PN 10—40 ANSI Class 150—300
Face-to face lengths:	PN 10-16 DN 150-600: EN 558-1 series 12 (SSG 1042) ANSI 150 Size 6”-24”: ANSI B 16.10 Class 150 long PN 25—40 DN 150-500: EN 558-1 series 4 (SSG 1043) ANSI 300: ANSI B 16.10 Class 300 short Size 6”—12” Class 300 long Size 14”—20”
Installation method:	Flanges acc. to DIN or ANSI B 16.5
Temperature range:	Max 250°C, see graph on page 2
Test pressure:	1,5xPN with valve open 1,1xPN with valve closed
Sealing class:	PTFE seats. Testing medium is water. ISO 5208 -2 Rate A DIN 3230 BN Leckrate 1 Metal seats IEC 534-4 Class V ANSI / FCI70-2

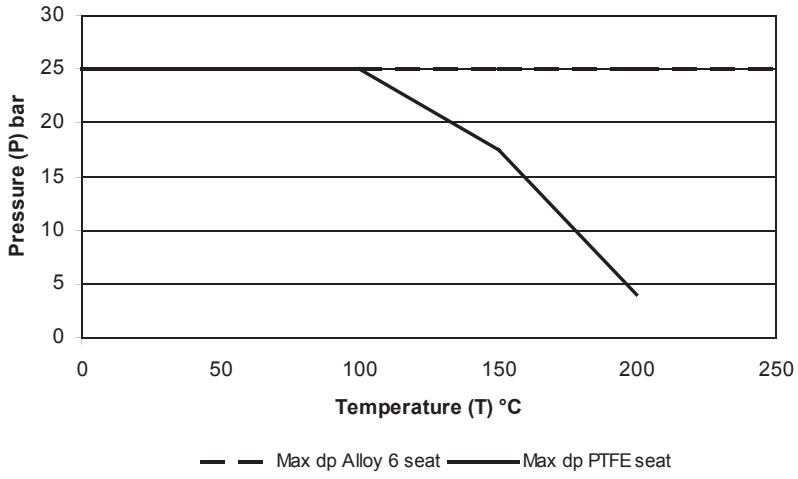
Working pressure, differential pressure and temperature

The maximum working pressure and temperature in the body depends on pressure class according to respectively flange standards. For EN1092-1:2001 see diagram 1. The differential pressure when the valve (DN 450-800) is closed is 25 bar. The stem gland with EPDM O-ring can be used for temperatures up to 200°C. For higher temperatures, contact NAF.

Max working pressure and max dp DN 150-400 (size 6”-16”) (Diagram 1)



Max dp DN 450-800 (size 18”-32”) (Diagram 2)



Flow capacities and characteristics (Table 1)

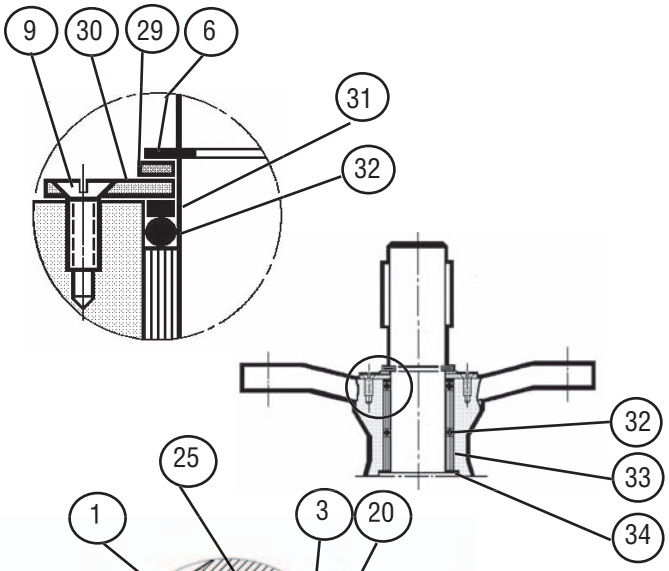
DN	K_v at an opening angle of															
	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
150	7	24	38	58	84	113	149	193	254	334	430	565	775	1111	1637	2250
200	12	43	67	103	149	200	265	343	451	594	765	1005	1377	1975	2910	4000
250	19	67	105	160	233	313	441	535	705	929	1195	1570	2150	3086	4547	6250
300	27	97	151	231	335	450	596	771	1015	1337	1721	2261	3098	4444	6548	9000
350	37	132	205	315	456	613	811	1049	1381	1820	2343	3078	4217	6048	8912	12250
400	48	172	268	411	596	800	1059	1370	1804	2377	3060	4020	5508	7900	11640	16000
450	61	218	339	520	756	1013	1340	1734	2283	3009	3873	5088	6971	9998	14732	20250
500	75	269	419	642	931	1250	1654	2141	2819	3714	4781	6281	8606	12344	18188	25000
600	108	387	603	924	1341	1800	2382	3083	4059	5349	6885	9045	12393	17775	26190	36000
700	147	527	821	1258	1825	2450	3243	4196	5525	7280	9371	12311	16868	24194	35648	49000
800	192	688	1072	1643	2384	3200	4235	5480	7216	9509	12240	16080	22032	31600	46560	64000

$C_v = 1{,}16 \times K_v$

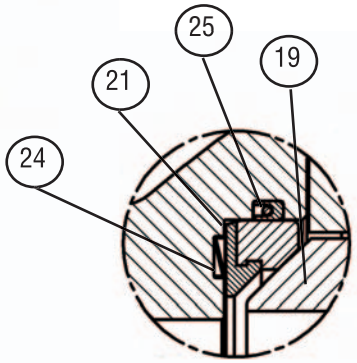
Material specification (Table 2)

Item	Qty	Part	Material
1	1	Body	EN 1.4408/CF8M
2	1	Body	EN 1.4408/CF8M
3	1	Ball	EN 1.4408/CF8M/Hcr
4	2	Seat ring	Alloy 6
5	1	Stem assembly	EN 1.4460
6	1	Circlip	Spring steel
7	1	Backing ring	PTFE
8	1	Upper lid	EN 1.4436
9	4	Screw	A4
11	1	Packing box	PTFE/PTFE+25%C
12	1	Bushing	PTFE +EN 1.4401
13	1	Anti-friction washer	EN 1.4436
14	1	Seal ring	PTFE
15	10	Bolt	A4-80
16	12	Nut	A4
17	2	Bolt	A4-80
18	2	Key	A4
19	1	Ball	EN 1.4408/CF8M
20	1	Ball	Alloy 6
21	2	Seat ring	EN 1.4436/PTFE+25%C
22	1	Bearing	PTFE +EN 1.4401
23	2	Bearing cage	EN 1.4470
24	2	Spring	ASTM A316
25	2	Sealing ring	PTFE+15%Graphite
26	1	O-ring	FPM
28	1	Spring	ASTM A316
29	1	Backing ring	Spring steel
30	1	Washer	A4
31	1	Backing ring	PTFE
32	2	O-ring	EPDM
33	2	Bushing	PTFE carbon reinforced
34	1	Washer	PTFE carbon reinforced

DN 450-800 (size 18”-32”)

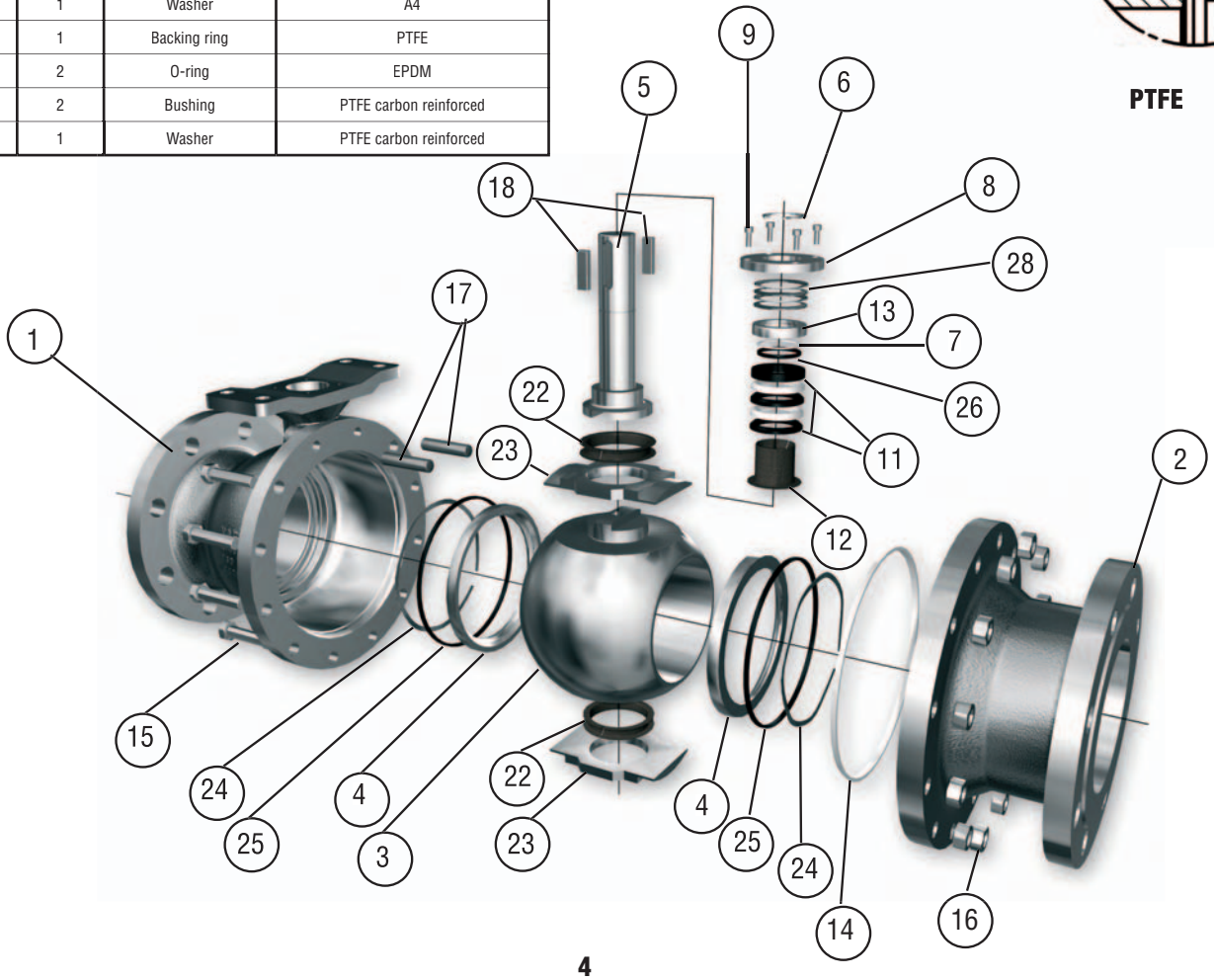


Alloy 6



PTFE

DN 150-400 (size 6”-16”)



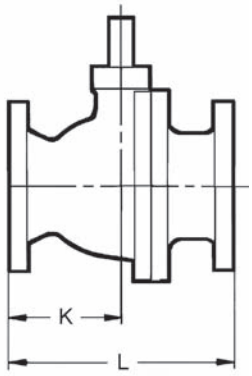
Operating torque Nm (Table 3)

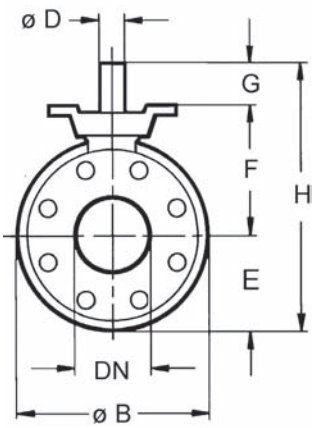
DN	Size	Differential pressure bar								
		5	10	15	20	25	30	35	40	50
150	6”	290	490	690	890	1090	1290	1490	1690	2090
200	8”	640	1100	1550	2000	2460	2920	3380	3830	4740
250	10”	900	1560	2230	2900	3560	4200	4890	5550	6880
300	12”	1280	2230	3160	4100	5050	5990	6940	7870	9750
350	14”	2450	4250	6020	7800	9600	11400	13200	14950	18530
400	16”	3900	6730	9560	12400	15200	18100	20900	23700	29400
450	18”	2500	4300	6500	7900	9700	-	-	-	-
500	20”	4000	6300	9600	11800	14500	-	-	-	-
600	24”	14700	25500	36400	47100	57900	-	-	-	-
700	28”	21200	36800	52200	67800	83300	-	-	-	-
800	32”	22100	38000	53900	69800	85700	-	-	-	-

Operating torque

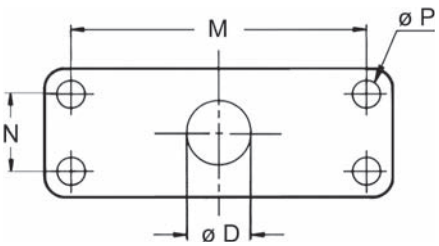
The minimum design differential pressure for selecting the actuator is 5 bar. The specified torques in the table above are for clean media. For steam and with Stellite seat rings increases the required torque with factor 1.5. If the media contains solids, if it is a suspension, etc., consult NAF.

Dimension and mass





Valve stem



PN 10 (Table 4)

DN	Size	B	D	E	F	G	H	K	L	M	N	P	Mass kg
150	6”	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)
200	8”	452	40	226	268	80	574	229	457	214	60	18	152
250	10”	528	50	264	321	93	678	267	533	214	60	18	263
300	12”	622	50	311	415	93	819	305	610	214	60	33	355
350	14”	688	80	344	467	149	960	343	686	277	115	33	479
400	16”	767	80	384	518	149	1051	381	762	277	115	33	627
450	18”	827	80	414	542	149	1105	432	864	277	115	33	850
500	20”	936	80	468	596	149	1213	457	914	277	115	33	1190
600	24”	1300	100	650	820	190	1660	534	1067	*	*	*	3000
700	28”	1400	120	700	870	241	1811	622	1244	*	*	*	3900
800	32”	1450	130	725	920	241	1886	686	1372	*	*	*	4700

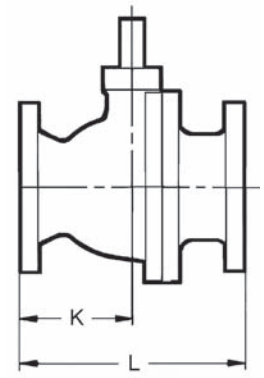
1) Choose PN 16

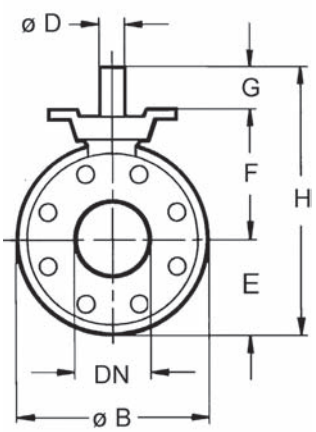
PN 16/ANSI 150 (Table 5)

DN	Size	B	D	E	F	G	H	K	L	M	N	P	Mass kg
150	6”	336	40	168	218	80	466	197	394	214	60	18	100
200	8”	452	40	226	268	80	574	229	457	214	60	18	155
250	10”	528	50	264	321	93	678	267	533	214	60	18	269
300	12”	622	70	311	379	131	821	305	610	277	115	33	373
350	14”	688	80	344	467	149	960	343	686	277	115	33	494
400	16”	767	80	384	518	149	1051	381	762	277	115	33	648
450	18”	827	80	414	542	149	1105	432	864	277	115	33	886
500	20”	936	80	468	596	149	1213	457	914	277	115	33	1246
600	24”	1300	110	650	820	190	1660	534	1067	*	*	*	3000
700	28”	1400	120	700	870	241	1811	622	1244	*	*	*	3900
800	32”	1450	130	725	920	241	1886	686	1372	*	*	*	4700

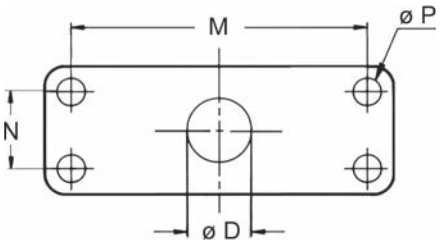
* Contact NAF

Dimension and mass





Valve stem



PN 25 (Table 6)

DN	Size	B	D	E	F	G	H	K	L	M	N	P	Mass kg
150	6”	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)	1)
200	8”	452	50	226	268	93	587	251	502	214	60	18	172
250	10”	528	50	264	321	93	678	284	568	214	60	18	288
300	12”	622	70	311	379	131	821	324	648	277	115	33	391
350	14”	688	80	344	467	149	960	381	762	277	115	33	561
400	16”	767	80	384	518	149	1051	419	838	277	115	33	725
450	18”	827	80	414	542	149	1105	457	914	277	115	33	852
500	20”	936	80	468	596	149	1213	496	991	277	115	33	1317
600	24”	1300	110	650	820	190	1660	534	1067	*	*	*	3000
700	28”	1400	120	700	870	241	1811	622	1244	*	*	*	3900
800	32”	1450	130	725	920	241	1886	686	1372	*	*	*	4700

1) Choose PN 40

PN 40/ANSI 300 (Table 7)

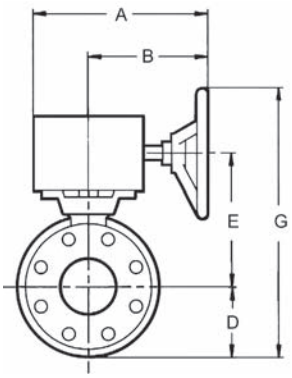
DN	Size	B	D	E	F	G	H	K PN 40	L PN 40	K ANSI 300	L ANSI 300	M	N	P	Mass kg PN 40	Mass kg ANSI 300
150	6”	336	40	168	218	80	466	202	403	202	403	214	60	18	106	116
200	8”	452	50	226	268	93	587	251	502	210	419	214	60	18	182	176
250	10”	528	60	264	321	111	696	284	568	229	457	214	60	18	307	298
300	12”	622	70	311	379	131	821	324	648	251	502	277	115	33	421	397
350	14”	688	90	344	467	172	983	381	762	381	762	277	115	33	596	599
400	16”	767	100	384	518	190	1092	419	838	419	838	277	115	33	785	773
450	18”	827	80	414	542	149	1105	457	914	457	912	277	115	33	990	1054
500	20”	936	80	468	596	149	1213	496	991	496	991	277	115	33	1373	1456
600	24”	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
700	28”	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
800	32”	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

* Contact NAF

Actuators

NAF-Trunnball is available with hand levers or with pneumatic or electric actuators and accessories.
Use the following tables for selecting the hand levers and standard pneumatic actuators. (For clean media)

If other pneumatic or electric actuators are required, consult your NAF representative.



NAF-Trunnball with handgears acc. to FK 70.76

PN 10 (8982EF-……) (Table 8)

Valve		Max Dp bar	Handlever	Dimensions in mm					Mass kg
DN	Size			A	B	D	E	G	
150	6”	-	Choose PN16	-	-	-	-	-	-
200	8”	10	791051-33040	416	291	226	318	744	169
250	10”	10	791051-33050	416	291	264	386	850	280
300	12”	10	791051-43050	507	337	311	470	1031	387
350	14”	10	791051-55080	591	421	344	562	1106	517
400	16”	8	791051-55080	591	421	384	613	1197	665
400	16”	10	791051-65080	697	487	384	617	1301	695
450	18”	10	791051-55080	591	421	414	637	1251	890
500	20”	8	791051-55080	591	421	468	691	1359	1230
500	20”	10	791051-65080	697	487	468	695	1463	1260
600	24”	-	C	-	-	-	-	-	-
700	28”	-	C	-	-	-	-	-	-
800	32”	-	C	-	-	-	-	-	-

PN16/ANSI 150 (8983EF-…/8984EF-…) (Table 9)

Valve		Max Dp bar	Handlever	Dimensions in mm					Mass kg
DN	Size			A	B	D	E	G	
150	6”	20	791051-33040	416	291	168	268	636	117
200	8”	16	791051-33040	416	291	226	318	744	172
200	8”	20	791051-43040	507	337	226	323	799	193
250	10”	12	791051-33050	416	291	264	386	850	286
250	10”	20	791051-43050	507	337	264	376	890	301
300	12”	20	791051-55070	591	421	311	459	970	411
350	14”	15	791051-55080	591	421	344	562	1106	532
350	14”	20	791051-65080	697	487	344	566	1210	561
400	16”	18	791051-65080	697	487	384	617	1301	715
400	16”	20	791051-75080	747	537	384	617	1301	730
450	18”	15	791051-55080	591	421	414	637	1251	924
450	18”	20	791051-65080	697	487	414	641	1355	953
500	20”	8	791051-55080	591	421	468	691	1359	1285
500	20”	18	791051-65080	697	487	468	695	1463	1315
500	20”	20	791051-75080	747	537	468	695	1463	1330
600	24”	-	C	-	-	-	-	-	-
700	28”	-	C	-	-	-	-	-	-
800	32”	-	C	-	-	-	-	-	-

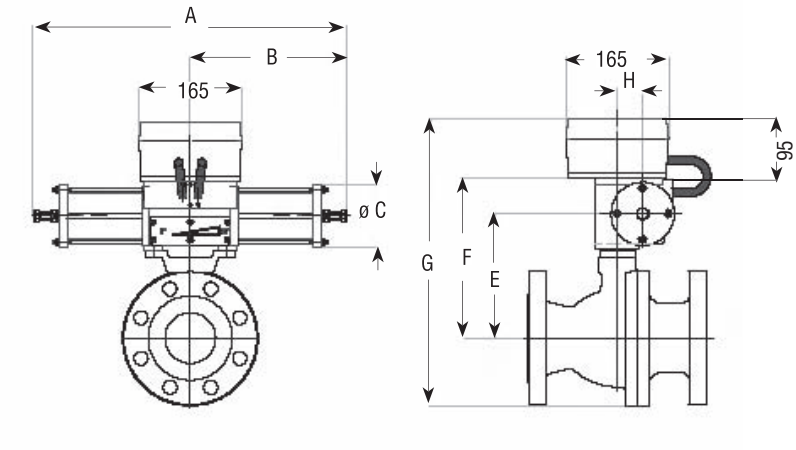
PN25 (8985EF-……) (Table 10)

Valve		Max. Dp bar	Handlever	Dimensions in mm					Mass kg
DN	Size			A	B	D	E	G	
150	6”	-	Choose PN40						
200	8”	16	791051-33050	416	291	226	333	759	189
200	8”	25	791051-43050	507	337	226	323	799	204
250	10”	12	791051-33050	416	291	264	386	850	305
250	10”	25	791051-43050	507	337	264	376	890	320
300	12”	25	791051-55070	591	421	311	459	970	430
350	14”	15	791051-55080	591	421	344	562	1106	600
350	14”	25	791051-65080	697	487	344	566	1210	630
400	16”	18	791051-65080	697	487	384	617	1301	792
400	16”	25	791051-75080	747	537	384	617	1301	806
450	18”	15	791051-55080	591	421	414	637	1251	890
450	18”	25	791051-65080	697	487	414	641	1355	919
500	20”	8	791051-55080	591	421	468	691	1359	1355
500	20”	18	791051-65080	697	487	468	695	1463	1385
500	20”	25	791051-75080	747	537	468	695	1463	1400
600	24”	-	C	-	-	-	-	-	-
700	28”	-	C	-	-	-	-	-	-
800	32”	-	C	-	-	-	-	-	-

PN40/ANSI 300 (8986EF-…./8987EF-….) (Table 11)

Valve		Max. Dp bar	Handlever	Dimensions mm					Mass kg PN40	Mass kg ANSI300
DN	Size			A	B	D	E	G		
150	6”	40	791051-33040	416	291	168	268	636	123	133
150	6”	50	791051-43040	507	337	168	273	691	138	148
200	8”	16	791051-33050	416	291	226	333	759	199	193
200	8”	40	791051-43050	507	337	226	323	799	214	208
200	8”	50	791051-53050	591	421	226	323	749	220	214
250	10”	25	791051-43060	507	337	264	376	890	340	331
250	10”	50	791051-53060	591	421	264	376	840	345	336
300	12”	30	791051-55070	591	421	311	459	970	459	435
300	12”	50	791051-65070	697	487	311	468	1079	488	464
350	14”	30	791051-65090	697	487	344	591	1235	665	668
350	14”	40	791051-75090	747	537	344	591	1235	680	683
350	14”	50	791051-85090	848	593	344	550	1244	790	793
400	16”	18	791051-65100	697	487	384	657	1341	852	840
400	16”	25	791051-75100	747	537	384	657	1341	870	858
400 *	16”	40	791051-85100	848	593	384	628	1362	980	968
450	18”	15	791051-55080	591	421	414	637	1251	1030	1094
450	18”	25	791051-65080	697	487	414	641	1355	1060	1124
500	20”	8	791051-55080	591	421	468	691	1359	1415	1498
500	20”	18	791051-65080	697	487	468	695	1463	1440	1523
500	20”	25	791051-75080	747	537	468	695	1463	1455	1538
600	24”	-	C	-	-	-	-	-	-	-
700	28”	-	C	-	-	-	-	-	-	-
800	32”	-	C	-	-	-	-	-	-	-

* If handgears in larger size are needed, contact NAF.



NAF 791290/791390

NAF-Trunnball with double acting pneumatic actuator

PN 10 (8982EF-….) (Table 12)

The stated dP values in the following tables apply for clean media type water. For other media contact NAF, see also page 5.

Valve		Max. Dp bar at supply of			Double acting actuator	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Välj PN16	-	-	-	-	-	-	-	-
200	8”	-	6	8	791290-2240	700	350	145	343	414	735	63	171
200	8”	9	10	10	791290-3140	820	410	200	368	460	781	75	183
250	10”	6	8	10	791290-3150	820	410	200	421	514	873	75	294
250	10”	10	10	10	791290-3250	820	410	200	421	514	873	75	294
300	12”	-	5	6	791290-3150	820	410	200	515	607	1013	75	386
300	12”	9	10	10	791290-3250	820	410	200	515	607	1013	75	386
350	14”	9	10	10	791390-4280	1110	555	260	631	736	1175	100	526
400	16”	-	6	8	791390-4280	1110	555	260	682	787	1266	100	674
400	16”	10	10	10	791390-5180	1680	840	395	700	846	1325	150	849
450	18”	8	10	10	791390-4280	1110	555	260	706	811	1320	100	897
500	20”	-	6	8	791390-4280	1110	555	260	760	865	1428	100	1237
500	20”	10	10	10	791390-5180	1680	840	395	778	924	1487	150	1412
600 *	24”	-	5	7	791390-5200	1680	840	395	1002	1148	1893	150	3225
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

* If actuators in larger size are needed contact NAF
C Contact NAF

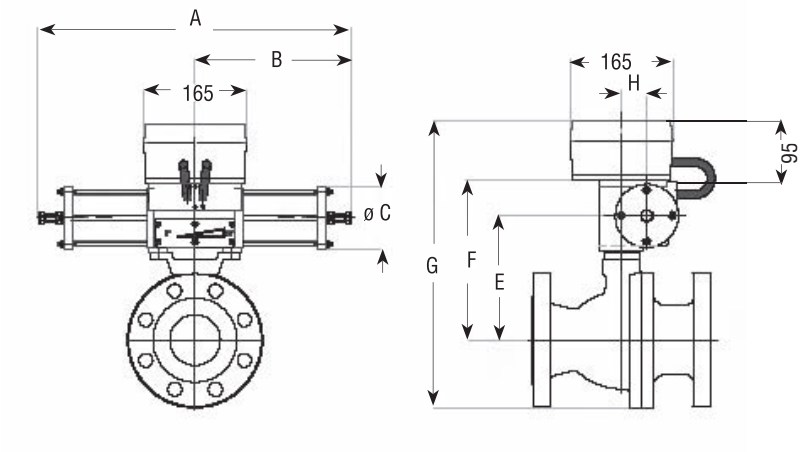
PN 16/ANSI 150 (8983EF-..../8984EF-....) (Table 13)

Valve		Max. Dp bar at supply of			Double acting actuator	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	5	8	9	791290-2140	700	350	145	293	364	627	63	119
150	6”	14	16	20	791290-2240	700	350	145	293	364	627	63	119
150	6”	20	20	20	791290-3140	820	410	200	318	410	673	75	131
200	8”	-	6	8	791290-2240	700	350	145	343	418	739	63	174
200	8”	9	12	15	791290-3140	820	410	200	368	460	781	75	186
200	8”	20	20	20	791290-3240	820	410	200	368	460	781	75	186
250	10”	6	8	10	791290-3150	820	410	200	421	514	873	75	300
250	10”	14	17	20	791290-3250	820	410	200	421	514	873	75	300
250	10”	20	20	20	791390-4250	1110	555	260	449	554	913	100	316
300	12”	8	11	14	791390-4170	1110	555	260	507	612	1018	100	420
300	12”	19	20	20	791390-4270	1110	555	260	507	612	1018	100	420
350	14”	9	12	14	791390-4280	1110	555	260	631	736	1175	100	541
350	14”	20	20	20	791390-5180	1680	840	395	649	795	1234	150	716
400	16”	-	6	8	791390-4280	1110	555	260	682	787	1266	100	695
400	16”	12	15	18	791390-5180	1680	840	395	700	846	1325	150	870
400	16”	20	20	20	791390-5280	1680	840	395	700	846	1325	150	870
450	18”	8	11	14	791390-4280	1110	555	260	706	811	1320	100	933
450	18”	19	20	20	791390-5180	1680	840	395	724	870	1379	150	1108
500	20”	-	6	8	791390-4280	1110	555	260	760	865	1428	100	1293
500	20”	11	15	20	791390-5180	1680	840	395	778	924	1487	150	1268
500	20”	20	20	20	791390-5280	1680	840	395	778	924	1487	150	1268
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

PN 25 (8985EF-....) (Table 14)

Valve		Max. Dp bar at supply of			Double acting actuator	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Choose PN40	-	-	-	-	-	-	-	-
200	8”	9	12	15	791290-3150	820	410	200	368	460	781	75	203
200	8”	20	25	25	791290-3250	820	410	200	368	460	781	75	203
250	10”	6	8	10	791290-3150	820	410	200	421	514	873	75	319
250	10”	14	17	20	791290-3250	820	410	200	421	514	873	75	319
250	10”	25	25	25	791390-4250	1110	555	260	449	554	913	100	335
300	12”	8	11	14	791390-4170	1110	555	260	507	612	1018	100	438
300	12”	19	24	25	791390-4270	1110	555	260	507	612	1018	100	438
300	12”	25	25	25	791390-5170	1680	840	395	561	707	1113	150	613
350	14”	9	12	14	791390-4280	1110	555	260	631	736	1175	100	608
350	14”	20	25	25	791390-5180	1680	840	395	649	795	1234	150	783
400	16”	4	6	8	791390-4280	1110	555	260	682	787	1266	100	772
400	16”	12	15	18	791390-5180	1680	840	395	700	846	1325	150	947
400	16”	25	25	25	791390-5280	1680	840	395	700	846	1325	150	947
450	18”	8	11	14	791390-4280	1110	555	260	706	811	1320	100	899
450	18”	19	25	25	791390-5180	1680	840	395	724	870	1379	150	1074
450	18”	25	25	25	791390-5280	1680	840	395	724	870	1379	150	1074
500	20”	4	6	8	791390-4280	1110	555	260	760	865	1428	100	1364
500	20”	11	15	20	791390-5180	1680	840	395	778	924	1487	150	1539
500	20”	25	25	25	791390-5280	1680	840	395	778	924	1487	150	1539
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

C Contact NAF



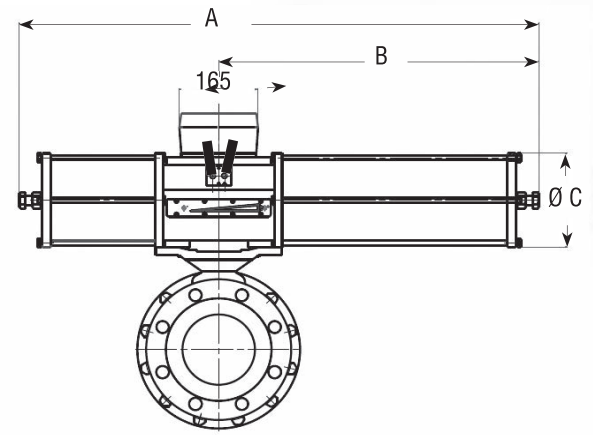
NAF 791290/791390

NAF-Trunnball with double acting pneumatic actuator (cont.)

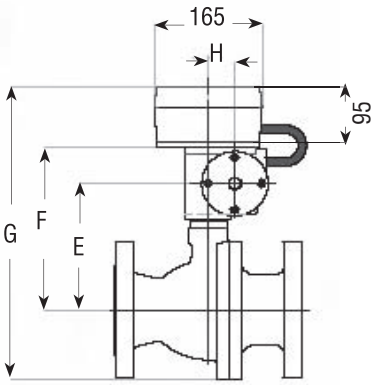
PN40/ANSI 300 (8986EF-…/8987EF-…) (Table 15)

Valve		Max. Dp bar at supply of			Double acting actuator	Dimensions in mm							Mass kg PN40	Mass kg ANSI300
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H		
150	6”	5	8	9	791290-2140	700	350	145	293	364	627	63	125	135
150	6”	14	16	16	791290-2240	700	350	145	293	364	627	63	125	135
150	6”	18	30	36	791290-3140	820	410	200	318	410	673	75	137	147
150	6”	49	50	50	791290-3240	820	410	200	318	410	673	75	137	147
200	8”	9	12	15	791290-3150	820	410	200	368	460	781	75	213	207
200	8”	20	25	30	791290-3250	820	410	200	368	460	781	75	213	207
200	8”	41	50	50	791290-4250	1110	555	260	396	501	822	100	229	223
250	10”	13	16	20	791390-4160	1110	555	260	449	554	913	100	354	345
250	10”	29	36	43	791390-4260	1110	555	260	449	554	913	100	354	345
250	10”	50	50	50	791390-5160	1680	840	395	503	649	1008	150	529	520
300	12”	8	11	14	791390-4170	1110	555	260	507	612	1018	100	468	444
300	12”	19	24	30	791390-4270	1110	555	260	507	612	1018	100	468	444
300	12”	40	50	50	791390-5170	1680	840	395	561	707	1113	150	643	619
350	14”	20	26	31	791390-5190	1680	840	395	649	795	1234	150	818	821
350	14”	42	50	50	791390-5290	1680	840	395	649	795	1234	150	818	821
400	16”	12	15	18	791390-5100	1680	840	395	778	924	1487	150	1007	995
400 *	16”	26	33	40	791390-5200	1680	840	395	778	924	1487	150	1007	995
450	18”	8	11	14	791390-4280	1110	555	260	706	811	1320	100	1037	1101
450	18”	19	25	25	791390-5180	1680	840	395	724	870	1379	150	1212	1276
450	18”	25	25	25	791390-5280	1680	840	395	724	870	1379	150	1212	1276
500	20”	4	6	8	791390-4280	1110	555	260	760	865	1428	100	1429	1503
500	20”	11	15	20	791390-510	1680	840	395	778	924	1487	150	1595	1678
500	20”	25	25	25	791390-5280	1680	840	395	778	924	1487	150	1595	1678

* If actuators in larger size are needed contact NAF
C Contact NAF



NAF791292/791392



The stated dP values in the following tables apply for clean media type water. For other media contact NAF, see also page 5.

NAF-Trunnball with single acting pneumatic actuator (spring to close)

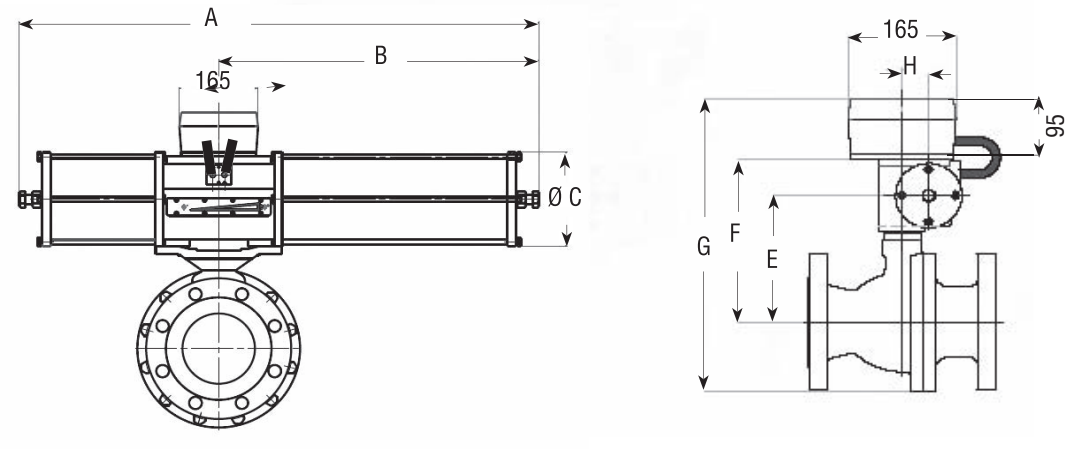
PN 10 (8982EF-……) (Table 16)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to close)	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Choose PN16								
200	8”	9	10	10	791292-3240	1050	640	200	368	460	781	75	197
250	10”	6	10	10	791292-3250	1050	640	200	421	513	872	75	308
300	12”	-	6	6	791292-3250	1050	640	200	515	607	1013	75	400
300	12”	10	10	10	791392-4250	1520	965	260	543	648	1054	100	457
350	14”	-	6	6	791392-4280	1520	965	260	631	736	1175	100	581
350	14”	10	10	10	791392-5280	2210	1370	395	649	795	1234	150	967
400	16”	10	10	10	791392-5280	2210	1370	395	700	846	1325	150	1114
450	18”	-	6	6	791392-4280	1520	965	260	706	811	1320	100	952
450	18”	10	10	10	791392-5280	2210	1370	395	724	870	1379	150	1337
500	20”	10	10	10	791392-5280	2210	1370	395	778	924	1487	150	1677
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

PN 16/ANSI 150 (8983EF-…./8984EF-….) (Table 17)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to close)	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	6	10	10	791292-2240	890	540	145	293	364	627	63	125
150	6”	20	20	20	791292-3240	1050	640	200	318	410	673	75	145
200	8”	9	15	15	791292-3240	1050	640	200	368	460	781	75	202
200	8”	20	20	20	791392-4240	1520	965	260	396	501	822	100	257
250	10”	5	10	10	791292-3250	1050	640	200	421	513	872	75	314
250	10”	15	20	20	791392-4250	1520	965	260	449	554	913	100	371
300	12”	10	15	15	791392-4270	1520	965	260	543	648	1054	100	475
300	12”	20	20	20	791392-5270	2210	1370	395	561	707	1113	150	860
350	14”	-	6	6	791392-4280	1520	965	260	631	736	1175	100	596
350	14”	20	20	20	791392-5280	2210	1370	395	649	795	1234	150	981
400	16”	12	20	20	791392-5280	2210	1370	395	700	846	1325	150	1135
450	18”	-	6	6	791392-4280	1520	965	260	706	811	1320	100	988
450	18”	20	20	20	791392-5280	2210	1370	395	724	870	1379	150	1373
500	20”	14	20	20	791392-5280	2210	1370	395	778	924	1487	150	1733
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

C Contact NAF



NAF791292/791392

NAF-Trunnball with single acting pneumatic actuator (spring to close)

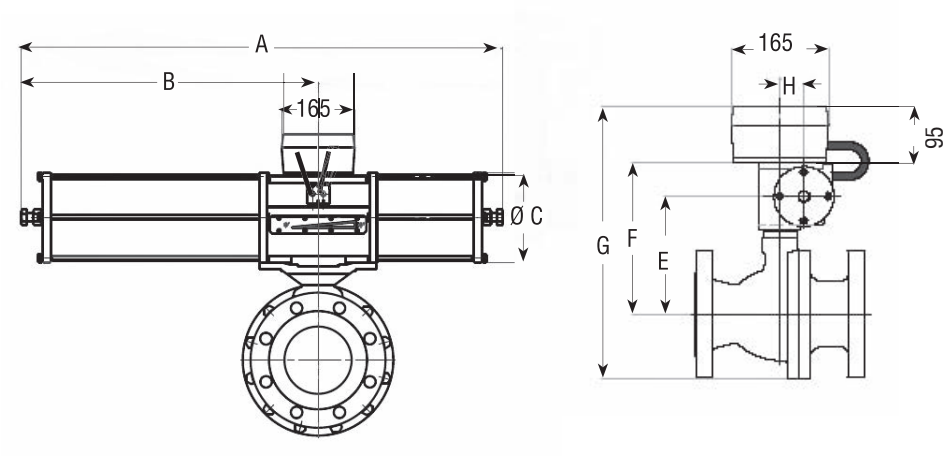
PN 25 (8985EF-……) (Table 18)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to close)	Dimensions in mm							Mass kg
DN	Sise	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Choose PN40								
200	8”	9	15	15	791292-3250	1050	640	200	368	460	781	75	219
200	8”	23	25	25	791392-4250	1520	965	260	396	501	822	100	274
250	10”	5	10	10	791292-3250	1050	640	200	421	513	872	75	333
250	10”	15	22	22	791392-4250	1520	965	260	449	554	913	100	390
300	12”	10	15	15	791392-4270	1520	965	260	543	648	1054	100	493
300	12”	25	25	25	791392-5270	2210	1370	395	561	707	1113	150	878
350	14”	-	6	6	791392-4280	1520	965	260	631	736	1175	100	663
350	14”	22	25	25	791392-5280	2210	1370	395	649	795	1234	150	1048
400 *	16”	12	21	21	791392-5280	2210	1370	395	700	846	1325	150	1212
450	18”	-	6	6	791392-4280	1520	965	260	706	811	1320	100	954
450	18”	21	25	25	791392-5280	2210	1370	395	724	870	1379	150	1339
500 *	20”	14	22	22	791392-5280	2210	1370	395	778	924	1487	150	1804
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

PN 40/ ANSI 300 (8986EF-…./8987EF-….) (Table 19)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to close)	Dimensions in mm							Mass kg PN40	Mass kg ANSI 300
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H		
150	6”	6	10	10	791292-2240	890	540	145	293	364	627	63	131	141
150	6”	25	38	38	791292-3240	1050	640	200	318	410	673	75	151	161
150	6”	50	50	50	791392-4240	1520	965	260	346	451	714	100	208	218
200	8”	9	15	15	791292-3250	1050	640	200	368	460	781	75	227	221
200 *	8”	23	34	34	791392-4250	1520	965	260	396	501	822	100	284	278
250	10”	15	22	22	791392-4260	1520	965	260	449	554	913	100	409	400
250	10”	50	50	50	791392-5260	2210	1370	395	503	649	1008	150	794	785
300	12”	10	15	15	791392-4270	1520	965	260	543	648	1054	100	523	499
300	12”	50	50	50	791392-5270	2210	1370	395	561	707	1113	150	908	884
350 *	14”	22	35	35	791392-5290	2210	1370	395	649	795	1234	150	1083	1086
400 *	16”	12	21	21	791392-5200	2210	1370	395	700	846	1325	150	1272	1260
450	18”	-	6	6	791392-4280	1520	965	260	706	811	1320	100	1092	1156
450	18”	21	25	25	791392-5280	2210	1370	395	724	870	1379	150	1477	1541
500 *	20”	14	22	22	791392-5280	2210	1370	395	778	924	1487	150	1860	1943
600	24”	-	-	-	C	-	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-	-

* If actuators in larger size are required contact NAF
C Contact NAF



NAF791294/791394

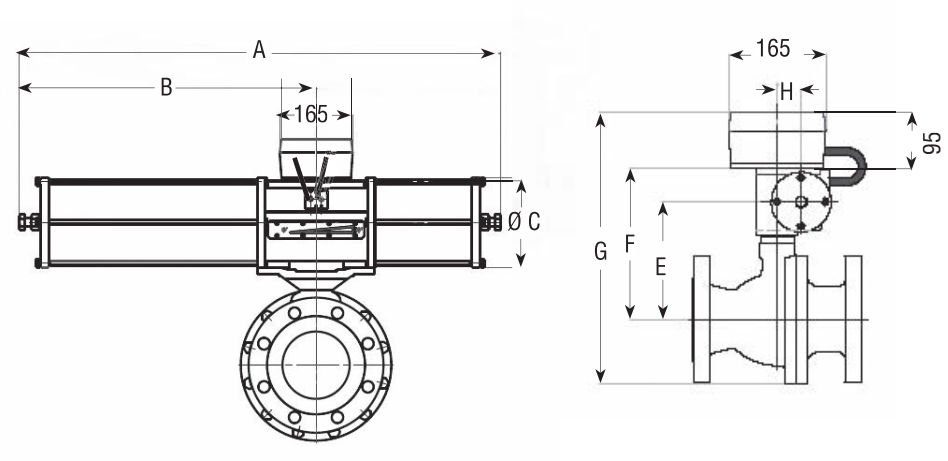
The stated dP values in the following tables apply for clean media type water. For other media contact NAF, see also page 5.

NAF-Trunnball with single acting pneumatic actuator (spring to open)

PN 10 (8982EF-……) (Table 20)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to open)	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Choose PN16								
200	8”	-	10	10	791294-3240	1050	640	200	368	460	781	75	197
200	8”	10	10	10	791394-4240	1520	965	260	396	501	822	100	254
250	10”	-	8	10	791294-3250	1050	640	200	421	513	872	75	308
250	10”	7	10	10	791394-4250	1520	965	260	396	501	822	100	365
300	12”	-	5	6	791294-3250	1050	640	200	515	607	1013	75	400
300	12”	5	10	10	791394-4250	1520	965	260	543	648	1054	100	457
350	14”	-	5	7	791394-4280	1520	965	260	631	736	1175	100	581
350	14”	10	10	10	791394-5280	2210	1370	395	649	795	1234	150	967
400	16”	7	10	10	791394-5280	2210	1370	395	700	846	1325	150	1114
450	18”	-	5	7	791394-4280	1520	965	260	706	811	1320	100	952
450	18”	10	10	10	791394-5280	2210	1370	395	724	870	1379	150	1337
500	20”	7	10	10	791394-5280	2210	1370	395	778	924	1487	150	1677
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

C Contact NAF



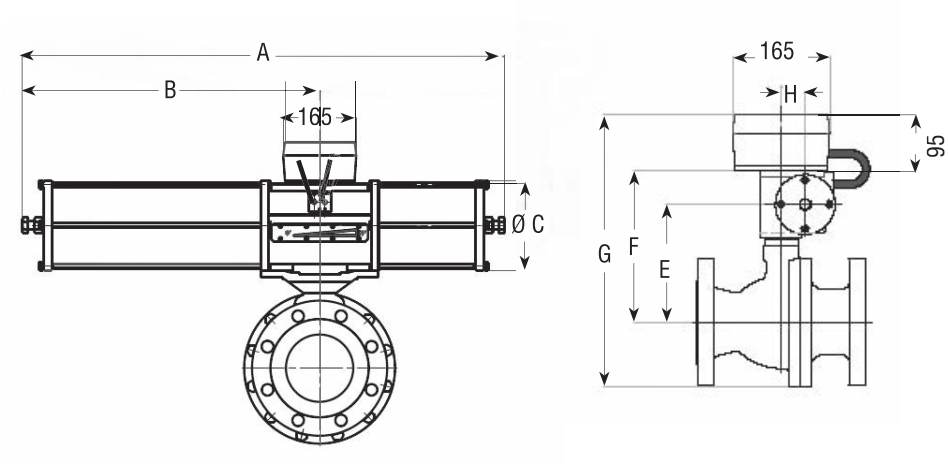
NAF791294/791394

NAF-Trunnball with single acting pneumatic actuator (spring to open)

PN 16/ANSI 150 (8983EF-..../8984EF-....) (Table 21)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to open)	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	8	10	791294-2240	890	540	145	293	364	627	63	125
150	6”	11	20	20	791294-3240	1050	640	200	318	410	673	75	145
150	6”	20	20	20	791394-4240	1520	965	260	346	451	714	100	202
200	8”	-	13	16	791294-3240	1050	640	200	368	460	781	75	202
200	8”	11	20	20	791394-4240	1520	965	260	396	501	822	100	257
250	10”	-	8	11	791294-3250	1050	640	200	421	513	872	75	314
250	10”	7	20	20	791394-4250	1520	965	260	449	554	913	100	371
300	12”	5	14	16	791394-4270	1520	965	260	543	648	1054	100	475
300	12”	20	20	20	791394-5270	2210	1370	395	561	707	1113	150	860
350	14”	-	5	7	791394-4280	1520	965	260	631	736	1175	100	596
350	14”	12	20	20	791394-5280	2210	1370	395	649	795	1234	150	981
400 *	16”	7	19	23	791394-5280	2210	1370	395	700	846	1325	150	1135
450	18”	-	5	7	791394-4280	1520	965	260	706	811	1320	100	988
450	18”	12	20	20	791394-5280	2210	1370	395	724	870	1379	150	1373
500	20”	7	20	20	791394-5280	2210	1370	395	778	924	1487	150	1733
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

* If actuators in larger size are needed contact NAF
C Contact NAF

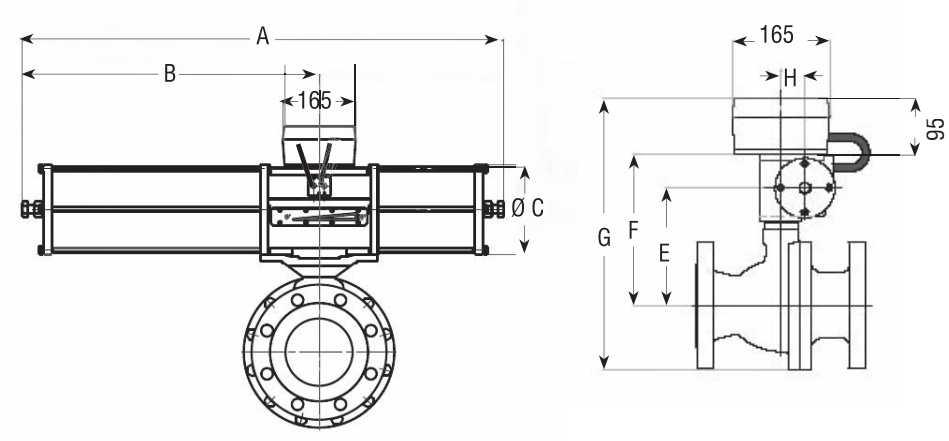


NAF791294/791394

PN 25 (8985EF-……) (Table 22)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to open)	Dimensions in mm							Mass kg
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H	
150	6”	-	-	-	Choose PN40								
200	8”	11	25	25	791394-4250	1520	965	260	346	451	714	100	219
250	10”	-	8	11	791294-3250	1050	640	200	368	460	781	75	333
250 *	10”	7	21	25	791394-4250	1520	965	260	396	501	822	100	390
300	12”	5	14	16	791394-4270	1520	965	260	543	648	1054	100	493
300	12”	25	25	25	791394-5270	2210	1370	395	561	707	1113	150	878
350	14”	-	5	7	791394-4280	1520	965	260	631	736	1175	100	663
350	14”	12	25	25	791394-5280	2210	1370	395	649	795	1234	150	1048
400 *	16”	7	19	23	791394-5280	2210	1370	395	700	846	1325	150	1212
450	18”	-	5	7	791394-4280	1520	965	260	706	811	1320	100	954
450	18”	12	25	25	791394-5280	2210	1370	395	724	870	1379	150	1339
500 *	20”	7	20	24	791394-5280	2210	1370	395	778	924	1487	150	1804
600	24”	-	-	-	C	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-

* If actuators in larger size are needed contact NAF
C Contact NAF



NAF791294/791394

NAF-Trunnball with single acting pneumatic actuator (spring to open)

PN 40/ANSI 300 (8986EF-..../8987EF-....) (Table 23)

Valve		Max. Dp bar at supply of			Single acting actuator (spring to open)	Dimensions in mm							Mass kg PN40	Mass kg ANSI 300
DN	Size	4 bar	5 bar	6 bar		A	B	C	E	F	G	H		
150	6”	-	8	10	791294-2240	890	540	145	293	364	627	63	131	141
150	6”	11	33	40	791294-3240	1050	640	200	318	410	673	75	151	161
150	6”	30	50	50	791394-4240	1520	965	260	346	451	714	100	208	218
200 *	8”	11	31	36	791394-4250	1520	965	260	346	451	714	100	284	278
250	10”	7	21	25	791394-4260	1520	965	260	396	501	822	100	409	400
250	10”	37	50	50	791394-5260	2210	1370	395	503	649	1008	150	794	785
300	12”	5	14	16	791394-4270	1520	965	260	543	648	1054	100	523	499
300	12”	25	50	50	791394-5270	2210	1370	395	561	707	1113	150	908	884
350 *	14”	12	32	37	791394-5290	2210	1370	395	649	795	1234	150	1083	1086
400 *	16”	7	19	23	791394-5200	2210	1370	395	700	846	1325	150	1272	1260
450	18”	-	5	7	791394-4280	1520	965	260	706	811	1320	100	1092	1156
450	18”	12	25	25	791394-5280	2210	1370	395	724	870	1379	150	1477	1541
500 *	20”	7	20	24	791394-5280	2210	1370	395	778	924	1487	150	1860	1943
600	24”	-	-	-	C	-	-	-	-	-	-	-	-	-
700	28”	-	-	-	C	-	-	-	-	-	-	-	-	-
800	32”	-	-	-	C	-	-	-	-	-	-	-	-	-

* If actuators in larger size are needed contact NAF
C Contact NAF

Accessories
NAF´s pneumatic actuators, see data sheet Fk74.59 can be equipped with a large number of accessories.
The following are included in NAF´s standard programme and are suitable for direct mounting to NAF pneumatic actuators.

Valve positioner
Pneumatic and electro-pneumatic valve positioner, see data sheet Fk41.82. Intelligent valve positioner, see data sheet Fk 41.85.

Solenoid valves
See data sheet Fk79.17.

Electrical position indication
See data sheet Fk79.10.

Terminal box
The actuator can be equipped with a junction box (part No. 349 20 930) of cast aluminium containing terminal blocks for connecting the solenoid valve and position sensors.

Product code NAF-Trunnball

Example:

	89	**8**	**2**	**E**	**F**	-	**0200**	-	**B**	**A**	**B**	**A**	**D**	**A**	**(DN 150-400, size 6”-16”)**
Code	1	2	3	4	5		6		7	8	9	10	11	12	
	89	**8**	**2**	**9**	**5**	-	**0450**								**(DN 450-800, size 18”-32”)**
	1	2	3	13	14		6								

1. Valve type
- **89** Trunnion mounted ball valve

2. Material (Body)
- **8** EN 1.4408 / CF8M

3. Pressure class

2	PN 10	(DN 200 - 800) [1]
3	PN 16	(DN 150 - 800)
4	ANSI Class 150	(Size 6” - 32”)
5	PN 25	(DN 200 - 800)[2]
6	PN 40	(DN 150 - 800)
7	ANSI Class 300	(Size 6” - 32”)

4. Stem journalling
- **E** Metaloplast bearing, max 250°C

5. Connection
- **F** Flanged

6. Dimension

DIN		ANSI	
	DN		**Storlek**
0150	150	**0006**	6”
0200	200	**0008**	8”
0250	250	**0010**	10”
0300	300	**0012**	12”
0350	350	**0014**	14”
0400	400	**0016**	16”
0450	450	**0018**	18”
0500	500	**0020**	20”
0600	600	**0024**	24”
0700	700	**0028**	28”
0800	800	**0032**	32”

7. Seat
- **A** PTFE, max 200°C
- **B** Alloy 6

8 Ball material
- **A** EN 1.4408/CF8M

9. Ball coating
- **A** None
- **B** Chrome
- **C** Chem Nickel
- **D** Alloy 6

10. Seat sealing
- **A** PTFE

11. Stem sealing DN 150-400 (Size 6”-16”)
- **D** PSD CL™

12. Stem material
- **A** EN 1.4460

13. Stem sealing DN 450-800 (Size 18”-32”)
- **9** O-ring EPDM, max 200°C

14. Sealing material DN 450-800 (Size 18”-32”)

	Ball	**Seatring**
5	EN 1.4408/CF8M Hard chrome plated	Alloy 6
6	EN 1.4408/CF8M	PTFE
7	Alloy 6	Alloy 6

1) DN 150 has the same flange dimension in PN 10 and PN 16. Choose PN 16.
2) DN 150 has the same flange dimension in PN 25 and PN 40. Choose PN 40.

NAF AB
SE-581 87 Linköping

Telephone +46 13 31 61 00
Fax +46 13 13 60 54
e-mail info@naf.se
Website: www.naf.se

ISO 9001 Certified