

# VULCANISED CONCENTRIC BUTTERFLY VALVES

## LUG TYPE S640

Nominal diameter: DN40-DN1200 (1 1/2"~48")

DN1400~DN2000 (56"~80") other sizes on request

Flange connection: EN1092(PN6-10-16,PN25 up to DN400)

ASME B16.5(Class 150-300)

JIS B2239&2220(5K-10K-16K-30K)

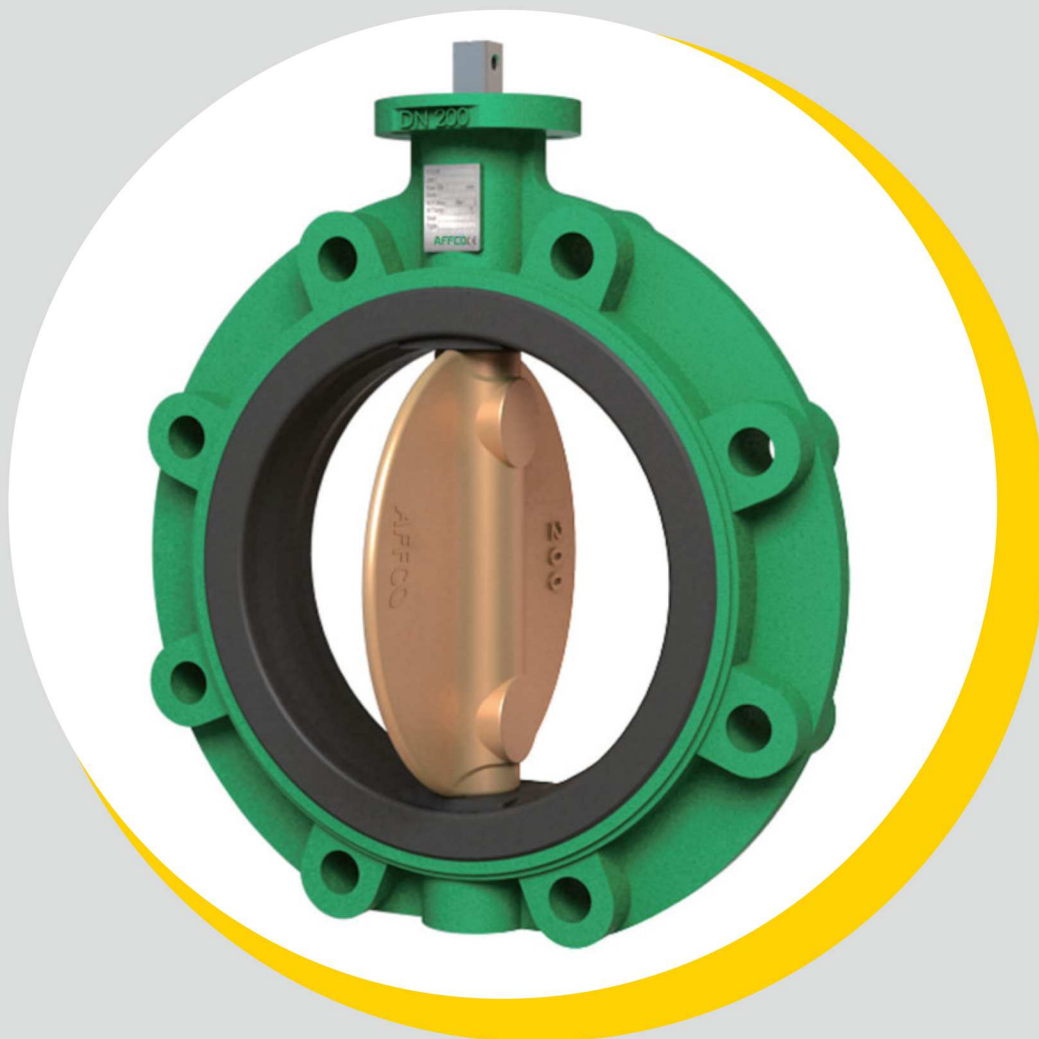
Temperature range: -23 to +200 °C

Face to face acc.: EN 558-1 row 20

Top flange acc.: EN ISO 5211

Vacuum to 1\*10<sup>-3</sup> Torr absolute

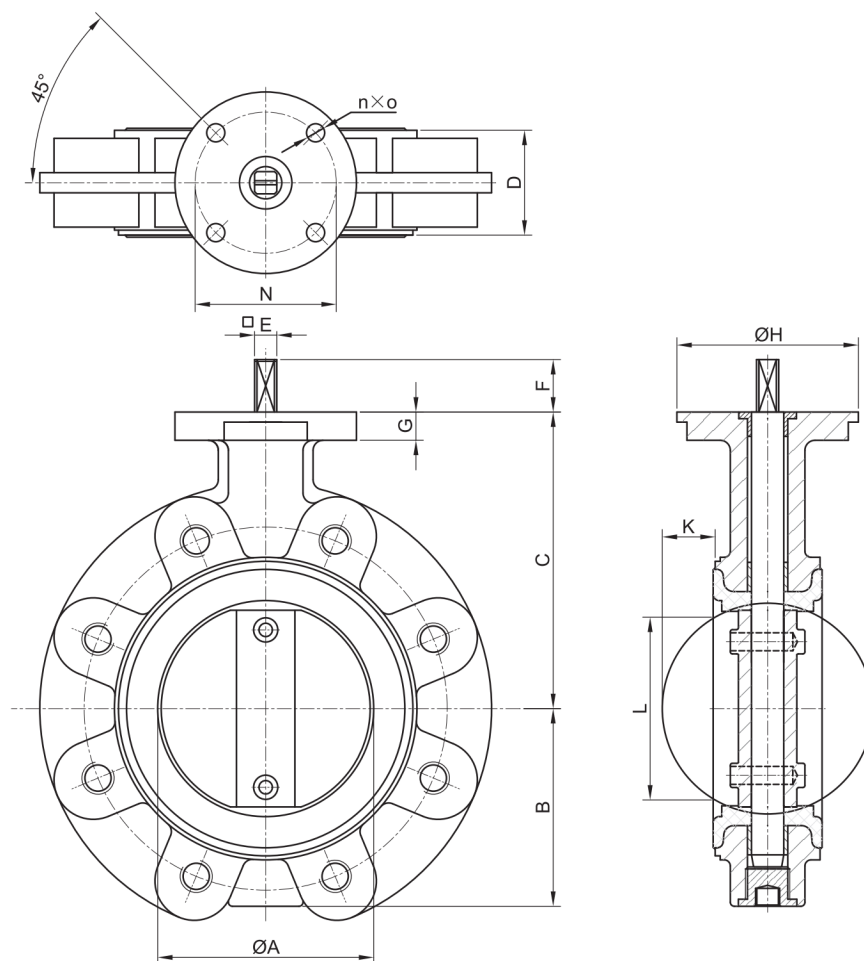
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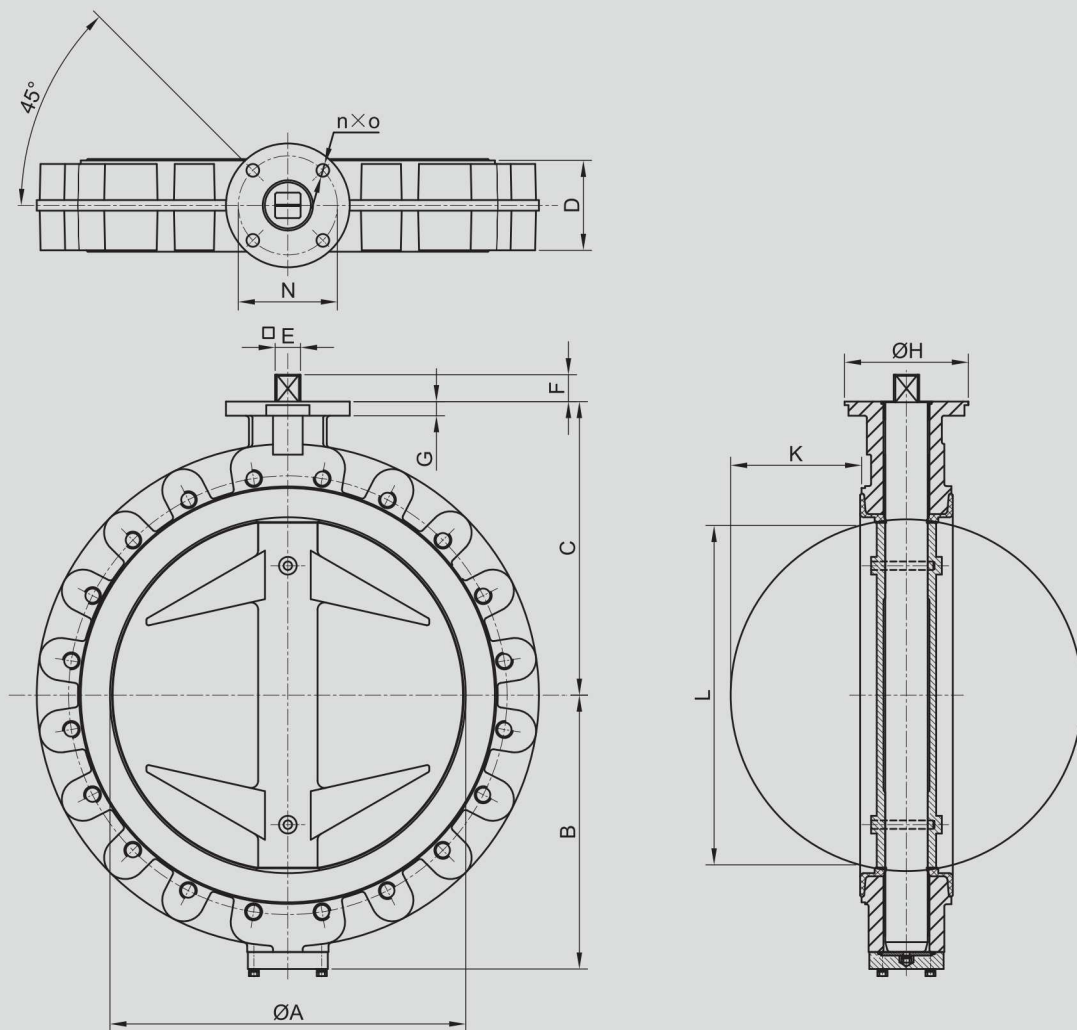


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DN	NPS	ΦA	E	F	B	C	ΦH	D	N(PCD) (ISO 5211)	n X Ø	G	L	K	Weight Appr.(KG)
40	1½"	40	11	25	61	113	90	33	Φ70(F07)	4XΦ9	12	23	3.5	4kg
50	2"	50	11	25	67	118	90	43	Φ70(F07)	4XΦ9	12	30	4.7	5.1kg
65	2½"	65	11	25	74	126	90	46	Φ70(F07)	4XΦ9	12	49	11	5.9kg
80	3"	80	11	25	82	133	90	46	Φ70(F07)	4XΦ9	14	68	18	8.1kg
100	4"	102	11	25	100	147	90	52	Φ70(F07)	4XΦ9	14	90	26	9.1kg
125	5"	125	14	28	120	160	90	56	Φ70(F07)	4XΦ9	14	114	35	10.4kg
150	6"	150	14	28	134	180	90	56	Φ70(F07)	4XΦ9	14	140	47	17kg
200	8"	200	17	28	159	204	90	60	Φ70(F07)	4XΦ9	14	192	70	21kg



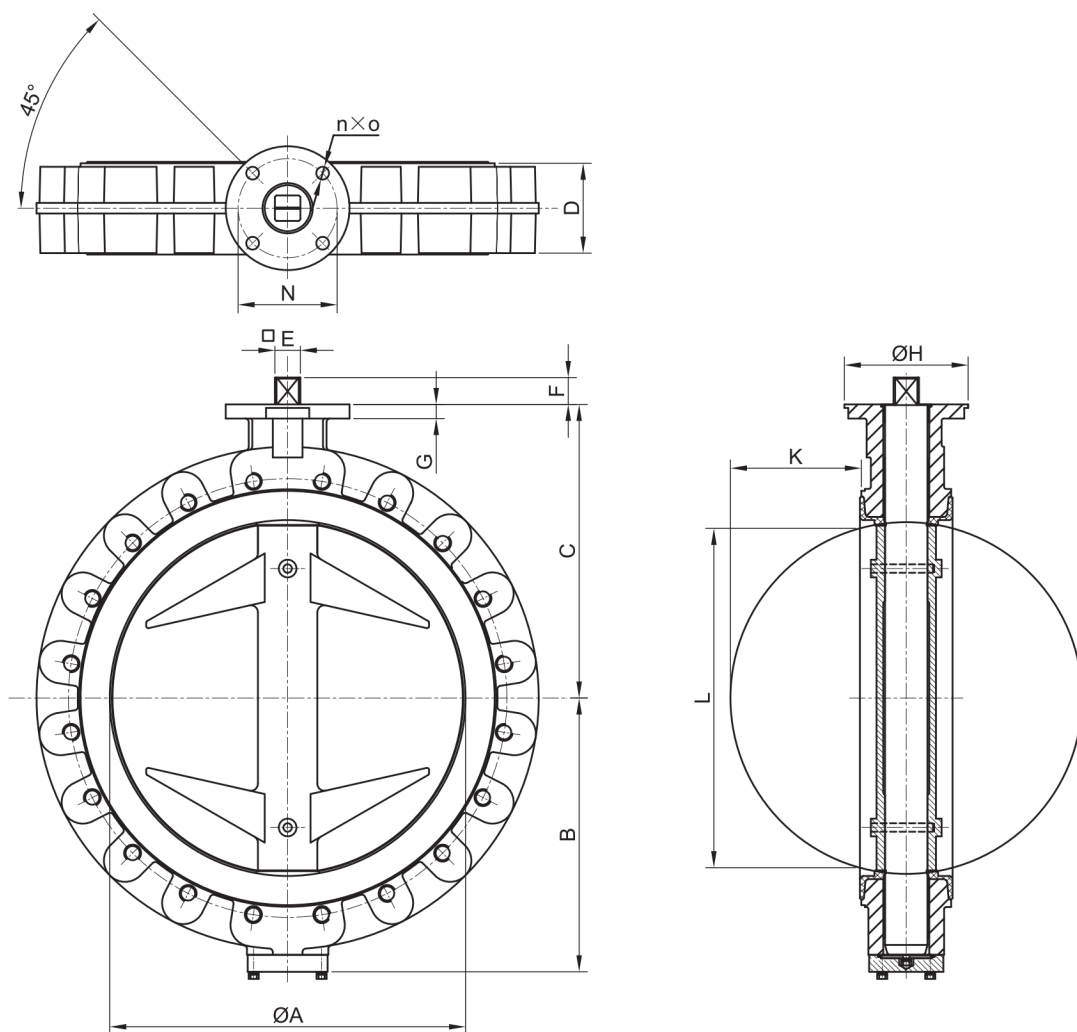


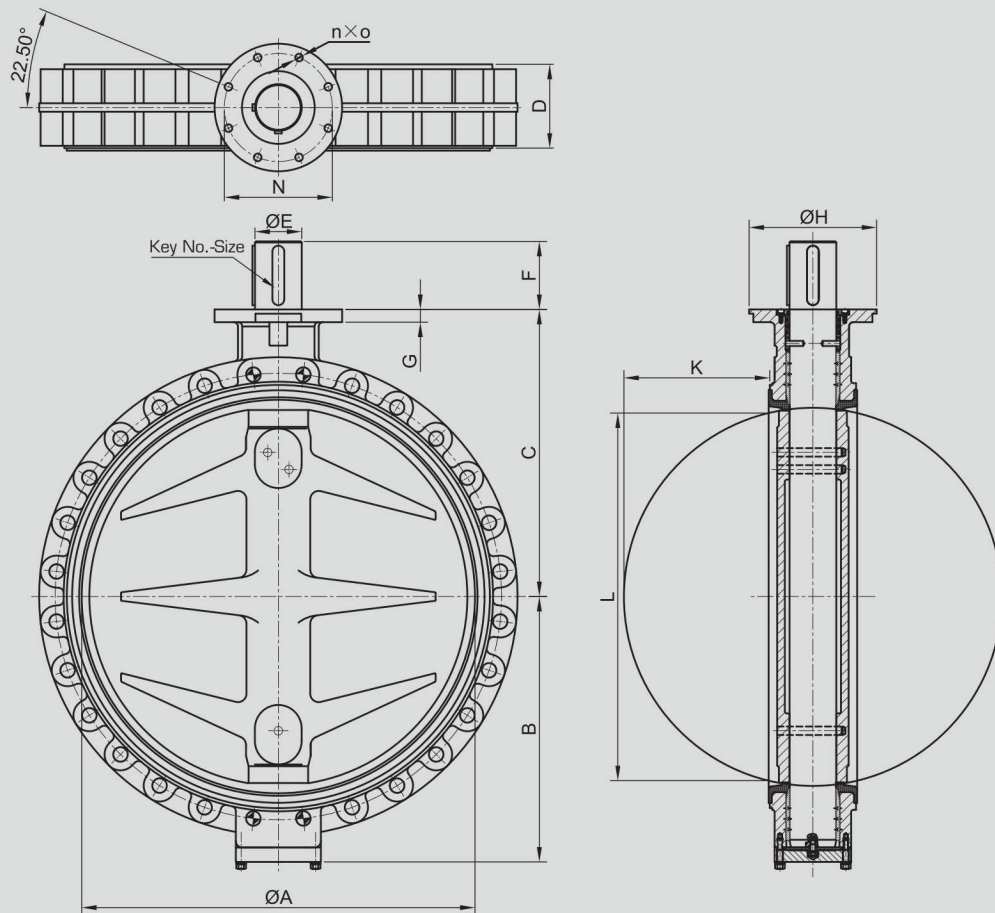
DN	NPS	ΦA	E	F	B	C	ΦH	D	N(PCD) (ISO 5211)	n X Ø	G	L	K	Weight Appr.(KG)
250	10"	250	22	30	195	245	125	68	Φ102(F10)	4XΦ11	15	243	91	39kg
300	12"	300	22	30	220	270	125	78	Φ102(F10)	4XΦ11	15	293	113	53kg
350	14"	336	27	29	282	315	150	78	Φ125(F12)	4XΦ14	20	327	129	63kg
400	16"	400	27	29	307	350	150	102	Φ125(F12)	4XΦ14	20	383	147	91kg

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450	18"	450	36	38	352	375	175	114	Φ140(F14)	4XΦ18	20	432	167	113kg
500	20"	500	36	38	387	415	175	127	Φ140(F14)	4XΦ18	20	481	185	163kg
550	22"	550	36	38	420	480	210	154	Φ140(F14)	4XΦ18	25	527	198	173kg
600	24"	600	46	48	452	465	210	154	Φ165(F16)	4XΦ22	25	581	223	249kg
650	26"	650	46	48	451	530	210	165	Φ165(F16)	4XΦ22	30	621	239	281kg





DN	NPS	ΦA	E	F	B	C	ΦH	D	N(PCD) (ISO 5211)	n X Ø	G	L	K	Weight Appr.(KG)
700	28"	700	70	110	489	555	210	165	165(F16)	4X 22	25	669	262	375kg
800	32"	800	80	120	549	620	300	190	254(F25)	8X 18	30	767	300	630kg
900	36"	900	90	120	614	675	300	203	254(F25)	8X 18	30	865	343	700kg
1000	40"	1000	90	120	664	740	300	216	254(F25)	8X 18	30	962	385	970kg
1100(PN-6)	44"	1100	90	120	756	800	350	254	298(F30)	8X 22	40	1042	410	1221kg
1100(PN-10)	44"	1100	105	120	756	800	350	254	298(F30)	8X 22	40	1042	410	1221kg
1100(PN-16)	44"	1100	105	120	756	800	350	254	298(F30)	8X 22	40	1042	410	1221kg
1100(ASA-150)	44"	1100	125	160	756	800	350	254	298(F30)	8X 22	40	1042	410	1221kg
1200(PN-6)	48"	1200	100	120	824	875	350	254	298(F30)	8X 22	40	1146	460	1417kg
1200(PN-10)	48"	1200	110	160	824	875	350	254	298(F30)	8X 22	40	1146	460	1417kg
1200(PN-16)	48"	1200	130	160	824	875	350	254	298(F30)	8X 22	40	1146	460	1417kg
1200(ASA-150)	48"	1200	130	160	824	875	350	254	298(F30)	8X 22	40	1146	460	1417kg

# MATERIALS

BODY	
Ductile Iron	JS1030 EN1563(GGG40 DIN1693)/60–40–18 ASTM A536/FCD450 JIS G5502/QT400–18 GB/T 12227
Carbon Steel	1.0619(GP240GH) EN10213/WCB ASTM A216/SCPH2 JIS G5151/ZG 250–485 GB/T 12229
Stainless Steel	1.4408 EN10213/CF8,CF8M,CF3,CF3M ASTM A351
Duplex	1.4470 EN10213 /Gr.4A ,5A,6A ASTM A890
Aluminium Bronze	AB2 BS1400/C95500,C95800 ASTM B148
Zinc Bronze	CuSn57ZnPb(RG5 DIN1705) EN1982/ CuSn7ZnPb(RG7 DIN1705) EN1982/ CuSn10Zn(RG10 DIN1705) EN1982

DISC	
Ductile Iron 300um Rilsan coated	JS1030 EN1563(GGG40 DIN1693)/Gr60–40–18 ASTM A536/FCD450 JIS G5502/QT400–18 GB/T 12227
Aluminium Bronze	AB2 BS1400/C95500,C95800 ASTM B148
Bronze	CuSn7ZnPb(RG7 DIN1705) EN1982/ CuSn7ZnPb(RG7 DIN1705) EN1982/ CuSn10Zn(RG10 DIN1705) EN1982
Stainless Steel	1.4408 EN10213/CF8,CF8M,CF3,CF3M ASTM A351
Duplex	1.4470 EN10213 /Gr.4A ,5A,6A ASTM A890
Monel	M35–1(Monel K400), M35–2(Monel K500) ASTM A494

SHAFT	
Stainless Steel	1.4122 EN10088–3/S.S 431,316,316L ASTM A276
Duplex	1.4462 EN10088–3/F51,F53,F55 ASTM A182
Monel(K500)	UNS N05500 ASTM B865
Aluminium Bronze	UNS C63000 ASTM B63000

LINERS	
NBR	Temp. –15~80°C
EPDM	Temp. –23~120°C
VITON	Temp. –15~200°C

Other materials are available on request.

# FLOW DATA

Kv value means the flow data when fluid passing through valve causing unit pressure loss.

Kv value is measured by water 20°C under 1 bar. Unit is m³/h

Q=Flow [m³/hr]

ρ =Specific gravity [kg/m³]

ρ 0=Specific gravity of water under normal conditions [ ρ 0=1000kg/m³ at 288k]

P1=Inlet pressure [bar]

P2=Outlet pressure [bar]

G=Relative specific gravity in relation to air [G= ρ / ρ air] under normal conditions

T1=Inlet temperature [K]

$$K_v(\text{liquids}) = Q \times \sqrt{\frac{\rho/\rho_0}{p_1 - p_2}}$$

$$K_v(\text{gas}) = \frac{Q}{457} \times \sqrt{\frac{G \times T_i}{(p_1 - p_2) \times p_1}}$$

KV VALVES TABLE BONDED LINER VALVES										
	0 °	10 °	20 °	30 °	40 °	50 °	60 °	70 °	80 °	90 °
DN40	0	0.2	0.6	2	9	22	36	56	81	110
DN50	0	0.4	0.9	3.4	14	35	57	88	126	172
DN65	0	0.6	1.4	5.1	21	53	86	132	189	258
DN80	0	1	1.9	7.8	31	78	128	197	283	388
DN100	0	1.7	3.5	14	55	138	228	352	504	690
DN125	0	2.7	5.3	22	86	216	355	549	786	1078
DN150	0	3.9	7.8	31	124	310	512	791	1133	1552
DN200	0	6.9	14	55	221	552	918	1407	2014	2759
DN250	0	10	22	86	345	862	1422	2198	3147	4310
DN300	0	15	31	124	497	1241	2048	3166	4531	6207
DN350	0	21	42	151	676	1513	2496	3858	5522	7565
DN400	0	27	55	200	883	2004	3307	5110	7316	10022
DN450	0	35	70	256	1117	2565	4231	6540	9360	12823
DN500	0	43	86	319	1379	3194	5270	8144	11658	15970
DN550	0	55	110	405	1765	4058	6696	10347	14789	20291
DN600	0	62	124	466	1986	4660	7688	11881	17054	23297
DN700	0	79	157	891	2528	6321	10429	16118	23071	31605
DN750	0	88	175	832	2812	7030	11600	17927	25661	35152
DN800	0	96	194	774	3096	7740	12771	19737	28251	38700
DN900	0	129	259	1038	4828	10380	17127	26469	37844	51901
DN1000	0	161	324	1295	5179	12948	21365	33018	47261	64742
DN1100	0	201	405	1619	6474	16185	26706	41273	59076	80928
DN1200	0	252	506	2023	8092	20231	33383	51591	73845	101159



# TORQUE FIGURES

TORQUE FIGURES IN NM-AFFCO VALVES										
▲ P (bar)	PN-6				PN-10					
Wp (bar)	2.5 bar wet	2.5 bar dry	6 bar wet	6 bar wet dry	2.5 bar wet	2.5 bar dry	6 bar wet	6 bar dry	10 bar wet	10 bar dry
DN40	—		—		—		—		—	—
DN50	—		—		—		—		—	—
DN65	—		—		—		—		—	—
DN80	—		—		—		—		—	—
DN100	—		—		—		—		—	—
DN125	—		—		—		—		—	—
DN150	—		—		—		—		—	—
DN200	—		—		—		—		—	—
DN250	110	138	140	175	160	200	190	238	220	275
DN300	170	213	210	263	220	275	260	325	300	375
DN350	200	250	250	313	260	325	330	413	390	488
DN400	300	375	380	475	460	575	540	675	640	800
DN450	410	513	510	638	630	788	750	938	850	1063
DN500	540	675	670	838	800	1000	900	1125	1100	1375
DN550	680	850	880	1100	1000	1250	1200	1500	1500	1875
DN600	910	1138	1100	1375	1330	1663	1520	1900	1805	2256
DN700	1500	1875	1900	2375	2250	2813	2650	3313	3050	3813
DN750	1800	2250	2200	2750	2500	3125	3100	3875	3500	4375
DN800	2100	2625	2800	3500	2920	3650	3420	4275	3920	4900
DN900	3300	4125	4100	5125	3880	4850	4780	5975	5500	6875
DN1000	3800	4750	4900	6125	5510	6888	6555	8194	7695	9619
DN1100	5050	6313	6700	8375	7500	9375	9200	11500	11900	14875
DN1200	5950	7438	7950	9938	9000	11250	11500	14375	13500	16875



TORQUE FIGURES IN NM-AFFCO VALVES												
▲ P (bar)	PN-16								PN-25			
Wp (bar)	2.5 bar wet	2.5 bar dry	6 bar wet	6 bar dry	10 bar wet	10 bar dry	16 bar wet	16 bar dry	20 bar wet	20 bar dry	25 bar wet	25 bar dry
DN40	7	9	8	10	9	11	10	13	12	15	15	23
DN50	7	9	8	10	10	13	11	14	15	19	20	30
DN65	8	10	9	11	12	15	15	19	20	25	25	38
DN80	13	16	15	19	19	24	21	26	30	38	43	65
DN100	18	23	23	29	28	35	35	44	50	63	62	93
DN125	29	36	32	40	38	48	48	60	80	100	110	165
DN150	55	69	65	81	75	94	85	106	135	169	180	270
DN200	110	138	125	156	150	188	175	219	210	263	245	368
DN250	210	263	240	300	270	338	330	413	450	563	620	930
DN300	290	363	340	425	390	488	460	575	650	813	850	1275
DN350	390	488	460	575	550	688	640	800	800	1000	1100	1650
DN400	670	838	760	950	860	1075	1000	1250	1550	1938	2000	3000
DN450	750	938	1000	1250	1200	1500	1400	1750	2000	2500	2500	3750
DN500	900	1125	1200	1500	1370	1713	1710	2138	2500	3125	3500	5250
DN550	1600	2000	1800	2250	2000	2500	2400	3000	—	—	—	—
DN600	2100	2625	2280	2850	2565	3206	2945	3681	—	—	—	—
DN700	3515	4394	3895	4869	4250	5313	4940	6175	—	—	—	—
DN750	4000	5000	4500	5625	4950	6188	5700	7125	—	—	—	—
DN800	4750	5938	5225	6531	5600	7000	6500	8125	—	—	—	—
DN900	5600	7000	6400	8000	7460	9325	8560	10700	—	—	—	—
DN1000	8360	10450	8800	11000	9690	12113	12350	15438	—	—	—	—
DN1100	11500	14375	13450	16813	15700	19625	18250	22813				
DN1200	14250	17813	15500	19380	18035	22544	21100	26375				

Note:

1. The above torque values (N.M.) have included necessary safety factor from its normal application.
2. In case of severe application, it's expected to contact AFFCO technical dept. for more datas.
3. The above torque values (N.M.) are based on wet-wet condition with pressure.
4. For Viton (FPM) liner, pls. take next higher WP