Directive 97/23/EC annex VII- Conformity declaration

Manufacturer: Unitech srl – Via Isorelle 61 F/D - Savignone - GE - I

Subject of declaration: TF type butterfly valves

Category: III Used procedure: module H DN: 40-1200

Design code: ASME B16.42 (ductile iron body) EN12516-1 (steel body)

Rating P/°T(1) : EN1563 JS1030 body EN1092.2 PN16 tab. 16

EN 1.0619 body EN12516-1 tab.3E0 B20

EN 1.4408 body EN12516-1 tab.14E0 B20

°Tmin= -10°C .

DN	max ΔP [MPa](1)
40-300	1.6
350-900	1
1000-1200	0.6

sede	T max [°C]
NBR	90
EPDM	120
SILICONE	190

sede	T max[°C]
FKM	180
PTFE	130

(1) **non shock pressure.**

Applied standards: EN 593 - ASTM A 536 - EN1563 -EN558 - EN12516 1/3 - EN1092 1/2 - EN12266

Notified body: TUV Italia (CE 0948) Certif: PED-0948-QSH-295-08

We hereby declare that design, manufacturing, materials and tests of the above items fully meet requirements of Directive 97/23/EC.

Savignone 10/09/09

Unitech srl

GSQ Manager

Ditective 94/9/EC
ATEX

Herebelow ATEX Standing Committee guideline stating that butterfly valves are not in scope of Directive:

ATEX GUIDELINES (SECOND EDITION)

GUIDELINES ON THE APPLICATION OF COUNCIL DIRECTIVE 94/9/EC OF 23 MARCH 1994 ON THE APPROXIMATION OF THE LAWS OF THE MEMBER STATES CONCERNING EQUIPMENT AND PROTECTIVE SYSTEMS INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES

July 2005 UPDATED August 2008

5 EQUIPMENT NOT IN THE SCOPE OF DIRECTIVE 94/9/EC

5.2 Examples for equipment not covered by Directive 94/9/EC

5.2.1 “Simple” products

The issue of **hand operated valves** has also been discussed. Given that these will move slowly, with no possibility of forming hot surfaces, as discussed in section 3.7.3 they **are not in scope of the directive**. Some designs incorporate polymeric parts, which could become charged, but this is no different from plastic pipes. Given that it is clear that the latter is outside of the scope of directive 94/9/EC it has been accepted that such valves do not fall within scope.

Some manufacturers have argued that their valves are specially adapted for ATEX, in that they have either selected more conductive polymers, or taken steps to ensure that no metal parts could become charged because they are unearthed. Other manufacturers state that all their valves meet this requirement simply by the way they are constructed, and they see no distinction from valves used to process non-flammable materials. To avoid confusion between those who claim correctly that their valves have no source of ignition, and are out of scope, and those who claim that they have done some very simple design change and wish to claim that their valves are now category 2 or even 1, **it has been agreed that valves having characteristics as described above are out of scope**. Nevertheless, as discussed in section 3.7.3, where potentially flammable atmospheres exists, users must always consider the electrostatic ignition risks.

Risk analysis on TF butterfly valves confirms that there is no risk of electrostatic ingnition

Note: in despite of the above guideline we are seldom required to issue a declaration of conformity, in our opinion completely useless and perhaps misleading. By this point of view and on the basis of the risk analysis we can however declare that TF type valves conforms to

CE Ex II 3 G D

Valves equipped with actuator

The reasons excluding manual valves can be applied even to actuated valves, provided actuators themselves meet Atex requirements. In fact stem spinning speed is much lower than the dangerous one recalled in the Directive

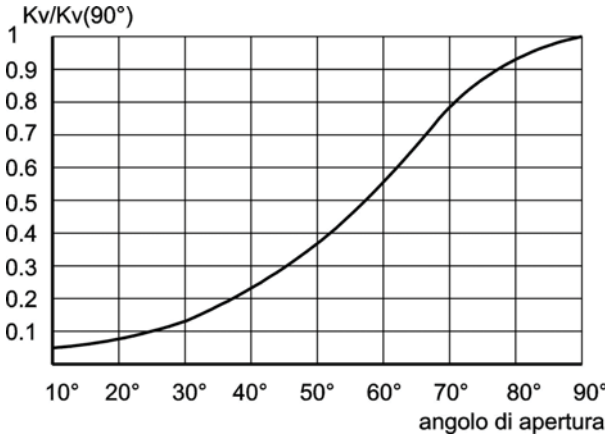
Please note that pneumatic actuators **UNITECH DB** conform to **ATEX II 3GD** in their standard design and can be supplied, on request, to **ATEX II 2 GD**.

Kv [m3/h] and torque [Nm]

DN	Kv [m^3/h]	torque (1) [Nm] Vs. pressure [bar] medium: water				
		EPDM/NBR seat			PTFE seat	
		3 bar	10 bar	16 bar	3 bar	6 bar
40	150	6	8	12	17	20
50	170	12	13	14	22	24
65	250	18	21	23	46	50
80	450	22	25	29	58	63
100	720	33	38	41	69	75
125	1150	62	74	81	86	94
150	1650	78	90	98	102	113
200	3100	138	169	184	215	230
250	4800	206	230	247	283	290
300	7300	301	298	357	425	450
350	8600	343	398	454		
400	11200	558	633	713		
450	15600	817	941	1064		
500	19000	1087	1191	1300		
600	26000	2002	2183	2362		
700	37000	3187	3427	3680		
800	52500	5086	6187	6705		
900	61000	6498	7142	7866		
1000	79000	8349	9189	10109		
1200	108000	9913	11845	13800		

(1) safety factor excluded

Kv % vs. opening angle

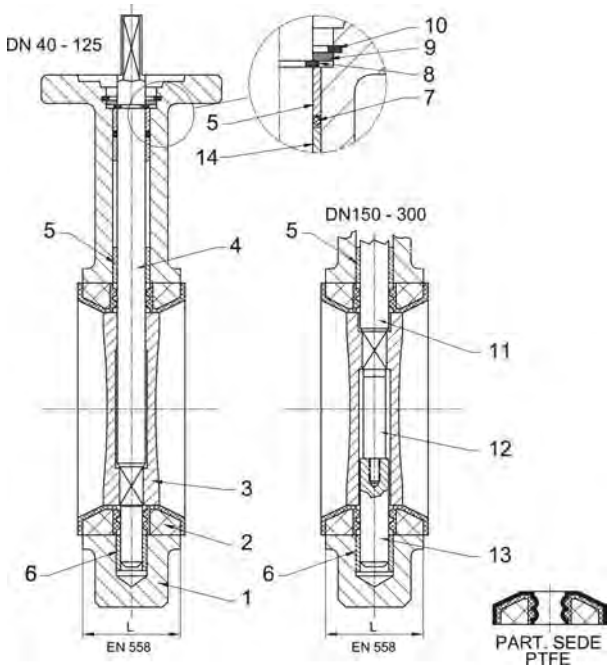


Kv formulas [m^3/h;bar]

Liquid	Gas
$Kv = Q(SG/\Delta P)^{1/2}$	$Kv = (Q/28.5)(SG/P_2 x\ \Delta P)^{1/2}$
$\Delta P = SG(Q/Kv)^2$	$\Delta P = (SG/P_2)[Q/(28.5xKv)]^2$
$Q = Kv(\Delta P/SG)^{1/2}$	$Q = 28.5xKv(P_2 x\ \Delta P/SG)^{1/2}$

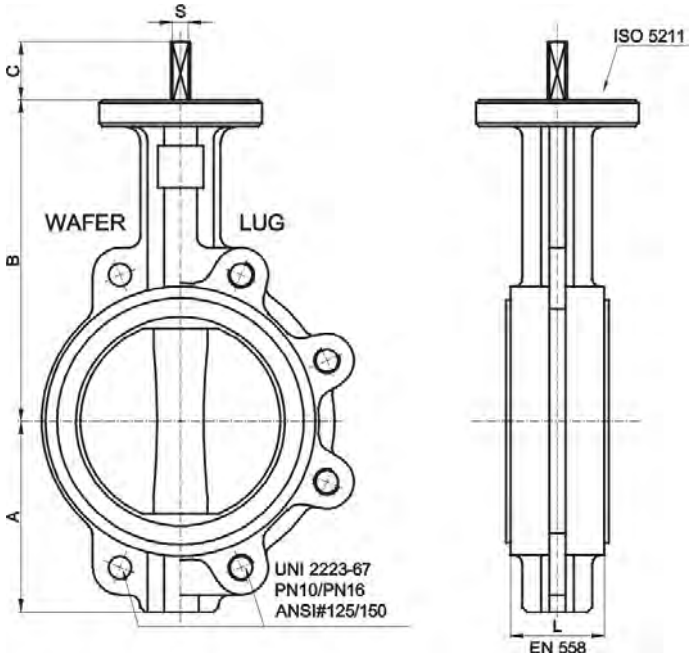
Where:
ΔP = diff.press.[bar] P_2=outlet press. [bar]
Q = flow [m^3/h] SG=specific gravity (H_2O=1)

PN10/16 ANSI 150
DN 40 – 300



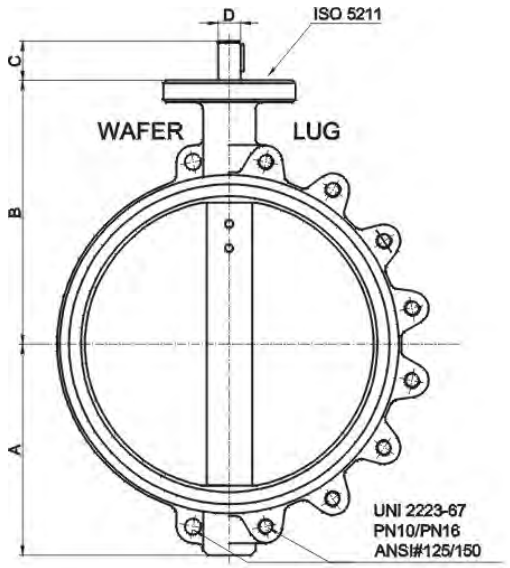
Parts list			
Pos	**Qty**	**Description**	**Material**
1	1	Body	EN JS1030 / EN 1.0619 EN 1.4408 Al-Bz 1982P32
2	1	Seat	EPDM / NBR / silicon FKM / PTFE Food grade EPDM
3	1	Disc	EN JS1030 / EN 1.0619 EN 1.4408 Al-Bz 1982P32
4	1	Stem	AISI 316 / AISI 416
5	2	Bushing	Bronze
6	1	Bushing	Bronze
7	1	O-ring	EPDM
8	1	Sieger ring	Steel
9	1	Washer	Bronze
10	1	Sieger ring	Steel
11	1	Upper stem	AISI 316 / AISI 416
12	1	Central stem	AISI 316 / AISI 416
13	1	Lower stem	AISI 316 / AISI 416
14	1	Bushing	Bronze

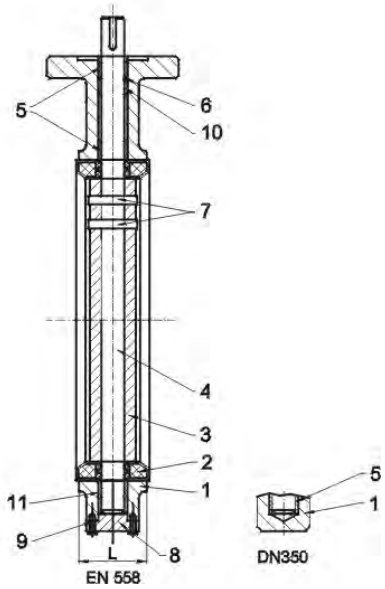
Dimensions [mm]								
DN	**A**	**B**	**C**	**S**	**L**	**ISO 5211**	**[kg]**	
							W	**L**
40	61	130	32	11	33	F05	1.7	2.5
50	82	161	32	11	43	F07	2.5	4
65	90	175	32	11	46	F07	3.5	5
80	96	181	32	11	46	F07	4	6
100	114	200	32	11	52	F07	5	8
125	133	213	32	14	56	F07	7	11
150	141	226	32	14	56	F07	9	13
200	174	260	32	17	60	F10	14	19
250	204	292	32	22	68	F10	20	30
300	241	337	32	22	78	F10	31.5	47



wafer/lug/doppiaflangia·splitbody·sedeinelastomero/ptfe·perfumi·highperformance

PN10/16 ANSI 150
DN 350-1200





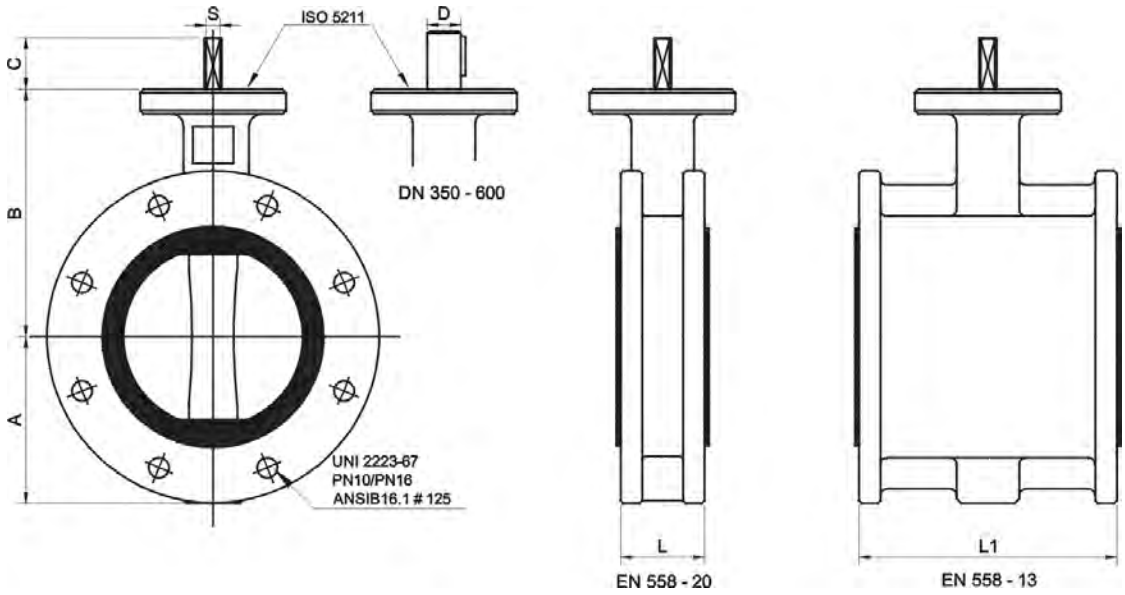
DN	max ΔP [MPa] (1)
350-900	1
1000-1200	0.6

(1) non shock pressure.

Dimensions [mm]								
DN	A	B	C	D	L	ISO 5211	PESO[kg]	
							W	L
350	267	368	45	32	92	F12	44	68
400	305	400	51	33	102	F12	71	98
450	327	422	51	38	114	F14	97	127
500	372	479	64	41	127	F14	117	190
600	460	562	72	51	154	F16	170	256
700	520	624	72	55	165	F25	215	296
800	591	672	83	55	190	F25	260	340
900	623	768	77	75	203	F25	365	480
1000	665	823	85	85	216	F25	470	620
1200	755	880	156	92	254	F30	680	850

Parts list			
Pos	**Qty**	**Description**	**Material**
1	1	Body	EN JS1030 EN 1.0619 / EN 1.4408 Al-Bz 1982P32
2	1	Seat	EPDM/NBR/siliconn FKM/PTFE food grade EPDM
3	1	Disc	EN JS1030 EN 1.0619 / EN 1.4408 Al-Bz 1982P32
4	1	Stem	AISI 316 / AISI 416
5	3	Bushing	Bronze
6	1	O-ring	EPDM
7	2	Pin	AISI 316
8	1	Plug	EN JS1030 EN 1.0619 / EN 1.4408 Al-Bz 1982P32
9	2	Screw	Steel
10	1	Bushing	Bronze
11	1	Bushing	Bronze

Double flanged (U type) PN10/16 ANSI 150



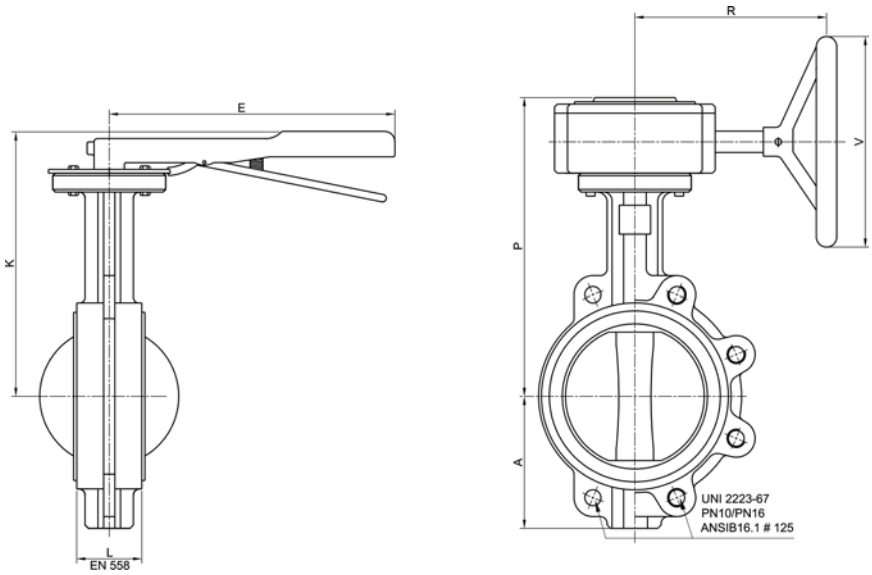
Note: for parts list and materials please refer to wafer - lug design

Dimensions [mm]								
DN	**A**	**B**	**C**	**S**	**D**	**L**	**L1**	**ISO 5211**
50	82	161	32	11		43	108	F07
65	90	175	32	11		46	112	F07
80	96	181	32	11		46	114	F07
100	114	200	32	11		52	127	F07
125	128	213	32	14		56	140	F07
150	149	226	32	14		56	140	F07
200	180	260	32	17		60	152	F10
250	205	292	32	22		68	165	F10
300	247	337	32	22		78	178	F10
350	267	368	45		32	92	190	F12
400	298	400	51		33	102	216	F12
450	318	422	51		38	114	222	F12
500	349	479	64		41	127	229	F14
600	410	562	71		51	154	267	F16

DN	max ΔP [MPa](1)
50 - 300	1.6
350 - 900	1
1000 - 1200	0.6

(1) non shock pressure

Manually operated valves



Dimensions [mm]							
DN	**A**	**L**	**K**	**E**	**P**	**R**	**V**
40	61	33	162	270	178	160	180
50	82	43	193	270	209	160	180
65	90	46	208	270	223	160	180
80	96	46	213	270	229	160	180
100	114	52	232	270	248	160	180
125	128	56	245	270	261	160	180
150	149	56	258	270	274	160	180
200	180	60	292	500	315	220	300
250	205	68	324	500	347	220	300
300	247	78	369	500	392	220	300
350	267	92			449	220	290
400	298	102			519	257	290
450	318	114			541	257	290
500	349	127			624	345	290
600	410	154			707	345	290

Optionals:
limit switches, lockable gears and handlevers, shaft extensions: plese refer to section 3 “quarter turn actuators”