



## Cryogenic Valves

### Válvulas Criogénicas

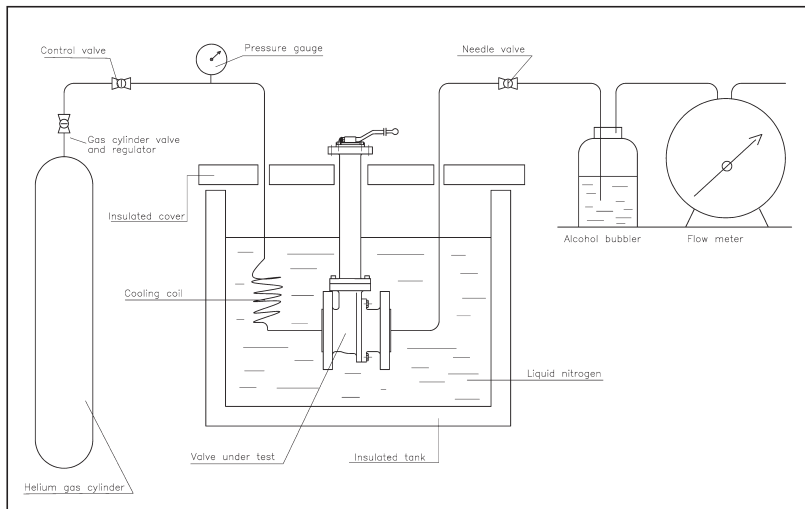


#### Construction/ Construcción

- Service-Temperature to  $-196\text{ }^{\circ}\text{C}$  / Temperatura de servicio hasta  $-196\text{ }^{\circ}\text{C}$ .
- Construction DIN PN 16/40 & ANSI 150 / 300 lbs/Construcción DIN PN 16/40 y ANSI 150/ 300 lbs.
- Construction floating and guided ball / Construcción bola flotante y guiada.
- Cavity pressure relief / Despresurización en la cámara cuerpo-bola.



**Certified by Lloyd's Register as per BS 6364**  
**Certificado por Lloyd's Register según BS 6364**



<b>Lloyd's Register</b>	
Project	Certificate Number: ISO 9001/3
Client: PEKOS FABRICACION, S.A.	Client: BILBAO
Client Order Number	Date: 6/11/2001
Approval Date: 17-10-2001	Order Status: COMPLETE
Final: 17-10-2001	

This certificate is issued to PEKOS FABRICACION S.A. to certify that the undersigned Survivors to Lloyd's Register, attended their work as customers (Peekos), on 17th October 2001, for the purpose of inspecting the undersigned material.

**Description:**  
Design: CRIOGENIC UNIDIRECTIONAL SPLIT BODY, FLOATING BALL VALVE  
DN: 80  
CLASS: PN 40  
Drawing ref.: 08040-190

**Scope of Inspection:**  
This valve underwent a leak test at an ambient temperature in compliance with API 598 Standard, seventh edition, October 1998 "Visual Inspection and Testing". After this test the valve underwent a leak test at  $-196\text{ }^{\circ}\text{C}$  in compliance with BS 6364 Standard issued on 4 September 1998 "Specification for valves for cryogenic service".

The following points were checked before carrying out the test:

- Identification of the valve.
- Acceptance of the instrumentation applied.
- The valve was fitted in a test bench and there was not outside strength.

The test data was recorded in attached to this Certificate and the results of the test was found satisfactory in compliance with the applicable Standards.

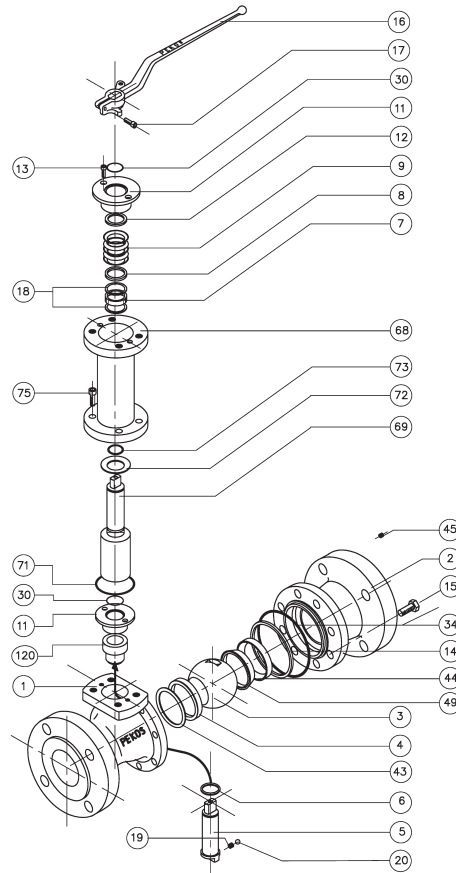
**CLÁUDIO ALVES**  
 SURVIVOR TO LLOYD'S REGISTER

2/3 (01/2001)

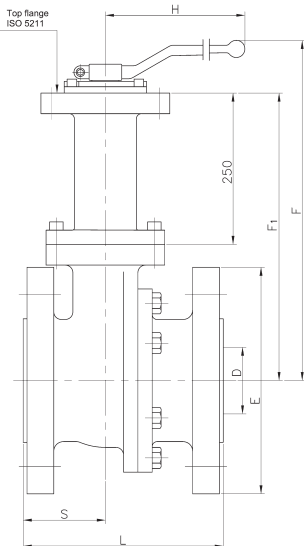
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### Materials / Materiales

ITEM	DENOMINACIÓN	DESCRIPCIÓN	CAN.	MATERIALS (DIN)	MATERIALS (ANSI)
1	Cuerpo 1	Body 1	1	1.4408	A351 CF 8M
2	Cuerpo 2	Body 2	1	1.4408	A351 CF 8M
3	Bola	Ball	1	1.4408	A351 CF 8M
4	Asiento	Seat	1	KEL F	KEL F
5	Eje	Stem	1	1.4401	AISI 316
6	Junta eje	Stem Seal	1	PTFE+GF	PTFE+GF
7	Estopada	Packing ring	2	Graphite	Graphite
8	Anillo prensa	Gland packing	1	1.4401	AISI 316
9	Arandela muelle	Spring washer	5	1.4310	AISI 301
11	Tapa	Cover	2	1.4408	AISI316
12	Anillo tapa	Cover ring	2	Graphite	Graphite
13	Tornillo tapa	Cover bolt	4	A4-70	A4-70
14	Junta cuerpo 1	Body seal 1	1	Graphite	Graphite
15	Tornillo cuerpo	Body bolt	-	A4-70	B8M
16	Maneta	Handle	1	Stainless steel	Stainless steel
17	Tornillo maneta	Handle bolt	1	8.8	8.8
18	Junta estopada	Thrust washer	1+1	PTFE+CG	PTFE+CG
19	Muelle	Spring	1	1.4319	AISI 302
20	Bola	Ball	1	1.4401	AISI 316
30	Anillo sujeción	Metalic ring	2	AISI 302	AISI 302
34	Junta cuerpo 2	Body seal 2	1	-	Graphite
43	Junta guía asiento	Seat seal	1	Graphite	Graphite
44	Anillo guía asiento	Ring seat	1	1.4401	AISI 316
45	Muelle asiento	Spring seat	-	Inconel X750	Inconel X750
49	Asiento cónico	Conical seat	1	KEL F	KEL F
68	Carcasa alargador	Extension	1	1.4401	AISI 316
69	Eje alargador	Extended stem	1	1.4401	AISI 316
71	Junta carcasa	Extended seal	1	Graphite	Graphite
72	Junta eje alarg.	Stem seal	1	PTFE+GF	PTFE+GF
73	Junta tórica eje	O ring stem	1	Nitrile	Nitrile
75	Tornillo carcasa	Extention bolt	4	A4-70	A4-70
120	Estopada 2	Packing ring 2	1	Graphite	Graphite



### Dimensions / Dimensiones



#### DIN

D = DN	15	20	25	32	40	50	65	80	100	150	200	250	300
H	185	185	185	185	293	293	293	350	350	-	-	-	-
F	350	352	360	365	380	387	400	437	451	-	-	-	-
F1	PN16 PN40	-	-	-	-	-	-	-	-	425	495	566	630
E	PN16 PN40	95	105	115	140	150	165	185	200	285	340	405	460
L	F1	130	150	160	180	200	230	290	310	235	300	375	450
	F4	115	120	125	130	140	150	170	180	350	-	-	-
	F5	-	-	-	-	-	-	-	-	350	350	400	450
S	PN16 PN40	47	49	55	52	53	63	76	81	165	200	225	250
										-	175	200	225
ISO 5211	F05	F05	F05	F05	F07	F07	F07	F10	F10	F12	F14	F16	F25

#### ANSI

DN	1/2"	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
D	15	20	20	40	50	80	100	150	200	250	300
H	185	185	185	293	293	350	350	-	-	-	-
F	350	352	360	380	387	437	451	-	-	-	-
F1	150lbs 300lbs	-	-	-	-	-	-	425	495	566	630
E	150lbs 300lbs	89	99	108	127	152	191	229	279	343	406
L	150lbs 300lbs	108	117	127	165	178	203	229	394	457	533
S	150lbs 300lbs	47	52	56	77	92	100	114	165	228	284
		64	76	70	78	90	141	152	202	251	284
ISO 5211	F05	F05	F05	F07	F07	F10	F10	F12	F14	F16	F25

### Breakway torques / Pares de maniobra\*

DN	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	10"	12"
	DN15	DN20	DN25	DN40	DN50	DN65	DN80	DN100	DN150	DN200	DN250	DN300
DIN	20	35	55	82	120	150	305	460	680	1100	1630	2360
ANSI 150	18	30	60	80	110	130	270	410	620	920	1420	2100
ANSI 300	28	48	90	115	165	195	405	610	920	1350	2110	3125

(\*): DIN: Breakway torques at differential pressure of 40 bars with helium at -196°C / Pares de maniobra a presión diferencial de 40 bars con Helio a -196°C.  
 (\*): ANSI: Breakway torques at differential pressure of 20 bars for 150 lbs and 50 bars for 300 lbs with helium at -196°C / Pares de maniobra a presiones diferenciales de 20 bars para 150 lbs y 50 bars para 300 lbs con Helio a -196°C.