



TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B)

Report No.: ECH-5H9002-050531

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S/C ECH-5H9002

P/O 9469200 OP

Customer: ECONOSTO NEDERLAND B.V.

Article: ECON 3PC DIN2999 BALL VALVE

Material: EN10213-4(1995)/1.4408

HeatTreatment: 1080 .AT QW / Solution Annealing and Quenched by water, 1hr

A) Chemical Analysis

B)Tensile test / Hardness / Charpy(Test Temp RT)

Spec		C %	Si %	Mn %	P %	S %	Ni %	Cr %	Mo %	Cu %	V %	N %	Rp 0.2 N/mm <sup>2</sup>	Rp 1.0 N/mm <sup>2</sup>	Tensile N/mm <sup>2</sup>	Elong- ation(%)	Reduct- -ion(%)	HB	Energy Charpy Impact (Joule)			
																			1	2	3	AVG
Size	Heat No	Piece	Article	Max	Min																	
DN8	C8D81	25	BODY	0.07	1.50	1.50	0.040	0.030	20.00	2.50	-	-	-	-	-	-	-	-	-	-	-	-
DN8	C8D98	25	CAP	0.04	1.35	1.14	0.032	0.023	18.74	2.32	-	-	236	274	532	43	-	166	168	165	167	167
DN8	E9CAV	25	CAP	0.05	1.00	1.10	0.031	0.021	18.12	2.22	-	-	240	284	524	40	-	158	168	165	169	167
DN15	A8D17	18	BODY	0.05	1.11	1.12	0.020	0.010	18.53	2.12	-	-	250	285	511	38	-	160	168	162	168	166
DN15	A8D95	32	BODY	0.03	0.74	0.65	0.029	0.012	18.73	2.37	-	-	229	269	567	41	-	160	166	164	169	166
DN15	C8D32	27	BODY	0.05	0.79	1.02	0.019	0.008	18.24	2.48	-	-	240	285	524	40	-	160	167	163	164	165
DN15	C8D51	16	BODY	0.05	0.83	1.24	0.032	0.029	18.43	2.21	-	-	231	247	517	34	-	165	167	168	166	167
DN15	C8D78	15	BODY	0.05	0.83	1.15	0.032	0.026	18.21	2.23	-	-	235	295	511	38	-	160	168	168	165	167
DN15	C8D81	19	BODY	0.03	1.31	1.15	0.032	0.024	18.78	2.28	-	-	224	285	501	42	-	162	178	176	177	177
DN15	C8D82	35	BODY	0.04	1.35	1.14	0.032	0.023	18.74	2.32	-	-	236	274	532	43	-	166	168	165	167	167
DN15	C8D99	38	BODY	0.03	1.33	1.16	0.031	0.026	18.73	2.30	-	-	230	281	534	43	-	170	168	164	167	166
DN15	C8D39	28	CAP	0.04	1.22	1.11	0.022	0.018	18.11	2.22	-	-	254	287	522	40	-	160	168	167	164	166
DN15	C8D59	27	CAP	0.05	1.29	1.26	0.032	0.023	18.25	2.26	-	-	225	302	532	42	-	164	168	169	167	168
DN15	C8D66	24	CAP	0.05	0.83	1.16	0.027	0.025	18.36	2.40	-	-	238	295	536	34	-	162	177	176	176	176
DN15	C8D71	21	CAP	0.05	1.24	1.14	0.035	0.025	18.41	2.30	-	-	238	291	520	38	-	161	171	170	176	172
DN15	C8D71	21	CAP	0.04	1.11	1.12	0.028	0.019	18.21	2.02	-	-	240	284	542	35	-	160	168	167	168	168

C) Dimensional check and NDT

Testing Item	Details	Result
Visual inspection & dimensional check	TV Standard	OK
Surface crack inspection (PT)	N/A	
Radiographic examination (RT)	N/A	
I.K. Intergranular corrosion testing (ASTM A 262-98)	N/A	

D) Remarks:

Delivery Condition : Pickled and Passivated

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/05/31

Works inspector

*T. M. Liao*





TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B)

Report No.: ECH-5H9002-050601

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S/C ECH-5H9002

P/O 9469200 OP

Customer: ECONOSTO NEDERLAND B.V.

Article: ECON 3PC DIN2999 BALL VALVE

Material: EN10213-4(1995)/1.4408

HeatTreatment: 1080 , AT QW / Solution Annealing and Quenched by water, 1hr

A) Chemical Analysis

B) Tensile test / Hardness / Charpy(Test Temp RT)

Spec		Min		C %	Si %	Mn %	P %	S %	Ni %	Cr %	Mo %	Cu %	V %	N %	Rp 0.2		Rp 1.0		Tensile	Elong- ation(%)	Reduct- ion(%)	HB	Energy Charpy Impact (Joule)			
		Heat No	Piece	Article	Max										N/mm <sup>2</sup>	N/mm <sup>2</sup>	N/mm <sup>2</sup>	N/mm <sup>2</sup>					1	2	3	AVG
Size	DN15	C8D74	20	CAP	0.07	1.50	0.040	0.030	12.00	20.00	2.50	-	-	-	-	-	-	-	640	-	-	-	-	-	-	-
	DN15	C8D74	20	CAP	0.05	0.98	1.12	0.035	10.12	18.24	2.23	-	-	-	-	253	289	521	40	-	-	160	165	164	169	166
	DN15	C8D87	20	CAP	0.04	1.14	1.11	0.022	10.11	18.11	2.22	-	-	-	-	238	275	511	38	-	-	170	168	165	167	167
	DN15	C8D87	100	CAP	0.04	1.14	1.11	0.022	10.11	18.11	2.22	-	-	-	-	238	275	511	38	-	-	170	168	165	167	167
	DN15	C8D97	100	CAP	0.05	0.98	1.11	0.033	10.12	18.21	2.21	-	-	-	-	244	284	505	39	-	-	165	168	169	167	168
	DN15	N8929	19	CAP	0.05	0.88	1.02	0.030	9.13	18.30	2.25	-	-	-	-	245	325	515	42	-	-	165	188	189	187	188
	DN15	N8993	23	CAP	0.05	0.87	0.80	0.032	9.27	18.34	2.21	-	-	-	-	290	330	515	43	-	-	167	194	185	188	189
	DN15	W8109	18	CAP	0.04	0.56	0.81	0.025	10.20	18.74	2.24	-	-	-	-	287	323	530	36	-	-	156	172	171	172	172
	DN20	A8B37	7	BODY	0.04	0.83	0.95	0.021	10.12	18.13	2.40	-	-	-	-	221	247	511	39	-	-	162	161	162	165	163
	DN20	A8B78	10	BODY	0.06	0.85	0.89	0.024	10.25	19.95	2.30	-	-	-	-	237	269	507	40	-	-	162	169	164	163	165
	DN20	C8D05	8	BODY	0.05	1.24	1.12	0.034	10.24	18.32	2.20	-	-	-	-	236	262	542	45	-	-	164	165	169	167	167
	DN20	C8D82	18	BODY	0.03	1.33	1.16	0.031	10.23	18.73	2.30	-	-	-	-	230	281	534	43	-	-	170	168	164	167	166
	DN20	C8D83	32	BODY	0.02	1.22	1.11	0.022	10.11	18.45	2.22	-	-	-	-	240	278	524	40	-	-	160	168	167	169	168
	DN20	8BJ1	8	CAP	0.06	0.88	1.43	0.028	11.24	19.04	2.14	-	-	-	-	223	250	535	40	-	-	165	170	172	171	171
	DN20	B4ND	10	CAP	0.05	1.02	0.85	0.019	11.11	18.78	2.03	-	-	-	-	244	271	536	40	-	-	169	185	187	188	187
	DN20	C8D38	10	CAP	0.05	1.30	1.26	0.031	10.24	18.26	2.24	-	-	-	-	236	268	529	41	-	-	169	172	175	176	174

C) Dimensional check and NDT

Testing Item	Details	Result
Visual inspection & dimensional check	TV Standard	OK
Surface crack inspection (PT)	N/A	
Radiographic examination (RT)	N/A	
I.K. Intergranular corrosion testing (ASTM A 262-98)	N/A	

D) Remarks:

Delivery Condition:

Pickled and Passivated

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/06/01

Works inspector

*K-M. Liao*





TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B)

Report No.: ECH-5H9002-050601

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S/C ECH-5H9002

P/O 9469200 OP

Customer: ECONOSTO NEDERLAND B.V.

Article: ECON 3PC DIN2999 BALL VALVE

Material: EN10213-4(1995)/1.4408

HeatTreatment: 1080 , AT QW / Solution Annealing and Quenched by water, 1hr

A) Chemical Analysis

B) Tensile test / Hardness / Charpy(Test Temp RT)

Spec				C %	Si %	Mn %	P %	S %	Ni %	Cr %	Mo %	Cu %	V %	N %	Rp 0.2		Tensile	Elong-	Reduct-	HB	Energy Charpy Impact (Joule)					
															N/mm <sup>2</sup>	Rp 1.0					N/mm <sup>2</sup>	ation(%)	tion(%)	1	2	3
Size	Heat No	Piece	Article	Max	Min																					
DN20	C8D66	9	CAP	0.07	1.50	1.50	0.040	0.030	12.00	20.00	2.50	-	-	-	-	185	210	440	30	-	-	-	-	-	-	60
DN20	C8D66	58	CAP	0.05	1.24	1.14	0.035	0.025	10.21	18.41	2.30	-	-	-	-	238	291	520	38	-	161	171	170	176	172	-
DN20	C8D95	7	CAP	0.05	1.24	1.14	0.035	0.025	10.21	18.41	2.30	-	-	-	-	238	291	520	38	-	161	171	170	176	172	-
DN20	E6307	6	CAP	0.04	0.82	1.14	0.021	0.024	10.12	18.12	2.18	-	-	-	-	258	298	524	38	-	155	168	169	164	167	-
DN20	E6307	6	CAP	0.05	1.20	0.89	0.029	0.023	11.09	19.55	2.03	-	-	-	-	255	282	520	36	-	169	175	177	176	176	-
DN20	E8AYV	42	CAP	0.05	0.91	0.91	0.020	0.010	9.27	18.57	2.26	-	-	-	-	336	376	578	35	-	152	135	138	138	137	-
DN25	A8B78	7	BODY	0.06	0.85	0.89	0.024	0.009	10.25	19.95	2.30	-	-	-	-	237	269	507	40	-	162	169	164	163	165	-
DN25	A8D92	10	BODY	0.03	0.70	0.76	0.037	0.012	9.63	18.82	2.25	-	-	-	-	254	295	521	38	-	154	165	169	167	167	-
DN25	A8D93	8	BODY	0.03	0.70	0.80	0.038	0.013	9.66	19.12	2.24	-	-	-	-	239	282	518	39	-	157	168	166	164	166	-
DN25	C8D58	12	BODY	0.05	0.83	1.16	0.030	0.025	10.20	18.39	2.24	-	-	-	-	237	282	532	35	-	162	176	174	175	175	-
DN25	C8D59	15	BODY	0.05	0.83	1.16	0.027	0.025	10.12	18.36	2.40	-	-	-	-	238	295	536	34	-	162	177	176	176	176	-
DN25	C8D64	10	BODY	0.05	1.24	1.12	0.034	0.020	10.24	18.32	2.20	-	-	-	-	225	277	515	42	-	160	178	178	171	176	-
DN25	C8D65	13	BODY	0.05	1.25	1.14	0.032	0.021	10.22	18.23	2.32	-	-	-	-	235	275	541	42	-	162	175	174	172	174	-
DN25	C8D79	13	BODY	0.03	1.33	1.14	0.026	0.021	10.32	18.78	2.24	-	-	-	-	231	275	542	41	-	165	175	174	173	174	-
DN25	C8E01	16	BODY	0.05	1.02	0.94	0.021	0.018	10.21	18.21	2.12	-	-	-	-	238	284	518	40	-	160	168	169	167	168	-
DN25	C8E05	21	BODY	0.05	1.11	0.99	0.023	0.019	10.23	18.12	2.24	-	-	-	-	245	264	521	39	-	162	168	165	166	166	-

C) Dimensional check and NDT

Testing Item	Details	Result
Visual inspection & dimensional check	TV Standard	OK
Surface crack inspection (PT)	N/A	
Radiographic examination (RT)	N/A	
I.K. Intergranular corrosion testing (ASTM A 262-98)	N/A	

D) Remarks:

Delivery Condition :

Pickled and Passivated

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/06/01

Works inspector

*Handwritten signature*





P/O 9469200 OP

Article: ECON 3PC DIN2999 BALL VALVE

Heat Treatment: 1080, AT QW / Solution Annealing and Quenched by water, 1hr

B) Tensile test / Hardness / Charpy (Test Temp RT)

[illegible]

### C) Dimensional check and NDT

Testing Item	Details	Result
Visual inspection & dimensional check	TV Standard	OK
Surface crack inspection (PT)	N/A	
Radiographic examination (RT)	N/A	
K. Intergranular corrosion testing (ASTM A 262-98)	N/A	

D) Remarks:

**Delivery Condition :**

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/05/31

Works inspector

FD-11. 6-00.





TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B)	Report No.: ECH-5H9002-050531	Page: 4/6
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Customer: ECONOSTO NEDERLAND B.V.	Valve Type: ECON	Date: 2005/05/31
Specification: EN12516-1(2000)	P/I NO: ECH-5H9002	Order No.: 9469200 OP
Material: EN10213-4(1995)/1.4408		

Content of Delivery

Leak and Pressure Test according to DIN EN12266-1(2003)									
Item No	No of Piece	Article	Size	Class	Trim (Ball/Stem/Seat)	Shell test (Water)	Seat test (Water)	Seat test (Air)	Test Result
1	25	ECON 3PC DIN2999 BALL VALVE	DN8	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
2	50	ECON 3PC DIN2999 BALL VALVE	DN15	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
3	100	ECON 3PC DIN2999 BALL VALVE	DN15	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
4	50	ECON 3PC DIN2999 BALL VALVE	DN15	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
5	50	ECON 3PC DIN2999 BALL VALVE	DN20	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
6	25	ECON 3PC DIN2999 BALL VALVE	DN20	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
7	50	ECON 3PC DIN2999 BALL VALVE	DN25	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
8	50	ECON 3PC DIN2999 BALL VALVE	DN25	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
9	25	ECON 3PC DIN2999 BALL VALVE	DN25	PN63		94.5Bar 15SEC	N/A	6Bar 15SEC	Shell Acceptable Seat-Water N/A Seat-Air Acceptable
10									

Test Results

Test Item	According	Result
Check of Calculation and safety Requirements acc. to	EN12516-1	Acceptable
Visual and functional tests	TV STD	Acceptable
NDE, material certificates (see material certificate, as annex)	N/A	N/A
Annexes/ 1)Material certificates of pressure parts 2)Material list of other parts		

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/05/31

Works inspector

*T-M. Liao*





TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B) Report No.: ECH-5A9902-050111

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S/C ECH-5A9902

P/O 94606240P

Customer: ECONOSTO NEDERLAND B.V.

Article: ECON 3PC BUTT WELD BALL VALVE

Material: EN10213-4(1995)/1.4408

HeatTreatment: 1080 ,AT QW / Solution Annealing and Quenched by water, 1hr

A) Chemical Analysis

B)Tensile test / Hardness / Charpy(Test Temp RT)

Size	Heat No	Piece	Spec	C %	Si %	Mn %	P %	S %	Ni %	Cr %	Mo %	Cu %	V %	N %	Rp 0.2 N/mm <sup>2</sup>	Rp 1.0 N/mm <sup>2</sup>	Tensile N/mm <sup>2</sup>	Elong- ation(%)	Reduct- -ion(%)	HB	Energy Charpy Impact (Joule)		
																					1	2	3
			Min																				
			Article Max																				
DN8	E8AW2	6	BODY	0.07	1.50	1.50	0.040	0.030	12.00	18.00	2.00	-	-	-	185	210	440	30	-	-	-	-	-
DN8	E8AX0	5	BODY	0.05	0.91	1.00	0.020	0.010	10.43	18.35	2.08	-	-	-	257	284	538	35	-	154	166	168	167
DN8	E8AXN	4	BODY	0.05	0.94	0.80	0.020	0.010	9.31	18.36	2.28	-	-	-	285	329	526	34	-	159	147	138	150
DN20	C8C32	21	BODY	0.05	0.93	0.98	0.020	0.010	9.19	18.58	2.37	-	-	-	267	330	552	34	-	159	150	147	148
DN20	C8C33	23	BODY	0.05	0.99	1.02	0.021	0.005	11.24	18.25	2.24	-	-	-	270	267	524	40	-	163	167	165	163
DN20	C8D54	26	BODY	0.06	0.89	1.30	0.038	0.028	11.22	19.24	2.27	-	-	-	241	268	572	35	-	171	162	164	169
DN20	N8837	68	BODY	0.05	0.83	1.15	0.028	0.025	10.20	18.34	2.16	-	-	-	238	292	532	36	-	163	169	165	167
DN25	C8C58	42	BODY	0.06	0.97	1.05	0.037	0.010	9.22	18.82	2.27	-	-	-	285	315	555	44	-	167	185	197	182
DN25	C8C59	44	BODY	0.04	1.37	1.25	0.032	0.025	10.22	18.75	2.25	-	-	-	218	289	531	43	-	162	162	164	163
DN25	C8D52	27	BODY	0.04	1.37	1.24	0.035	0.022	10.32	18.75	2.25	-	-	-	215	298	532	42	-	165	162	160	161
DN25	C8D53	30	BODY	0.05	0.85	1.16	0.029	0.025	10.14	18.31	2.21	-	-	-	241	298	512	35	-	162	164	167	165
DN25	C8D54	32	BODY	0.05	0.83	1.14	0.031	0.025	10.10	18.35	2.24	-	-	-	239	287	501	32	-	159	162	165	166
DN25	C8D55	36	BODY	0.05	0.83	1.15	0.028	0.025	10.20	18.34	2.16	-	-	-	238	292	532	36	-	163	169	165	167
DN25	E8CAM	39	BODY	0.05	0.85	1.15	0.030	0.025	10.11	18.26	2.25	-	-	-	236	294	527	37	-	164	167	163	164
				0.05	0.86	1.09	0.020	0.010	9.14	18.75	2.19	-	-	-	295	339	585	42	-	160	152	150	147

C) Dimensional check and NDT

Testing Item	Details	Result
Visual inspection & dimensional check	TV Standard	OK
Surface crack inspection (PT)	N/A	
Radiographic examination (RT)	N/A	
I.K.Intergranular corrosion testing (ASTM A 262-98)	N/A	

D) Remarks:

Delivery Condition :

Pickled and Passivated

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung Date: 2005/01/11

Works inspector

*T. M. Liao*





TAIWAN VALVE COMPANY LTD.  
3,24TH ROAD TAICHUNG INDUSTRIAL PARK TAICHUNG,R.O.C

Inspection Certificate(EN 10204-3.1B)	Report No.: ECH-5A9902-050111	Page: 2/7
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Customer: ECONOSTO NEDERLAND B.V.	Valve Type: ECON	Date: 2005/01/11
Specification: EN12516-1(2000)	P/I NO: ECH-5A9902	Order No.: 94606240P
Material: EN10213-4(1995)/1.4408		

Leak and Pressure Test according to DIN EN12266-1(2003)														
Item No	No of Piece	Article	Size	Class	Trim (Ball/Stem/Seat)	Shell test (Water)		Seat test (Water)		Seat test (Air)		Test Result		
						94.5Bar	15SEC	N/A	N/A	6Bar	15SEC	Shell	Seat-Water	Seat-Air
1	15	ECON 3PC BUTT WELD BALL VALVE	DN8	PN63								Acceptable	N/A	Acceptable
2	68	ECON 3PC BUTT WELD BALL VALVE	DN20	PN63								Acceptable	N/A	Acceptable
3	70	ECON 3PC BUTT WELD BALL VALVE	DN20	PN63								Acceptable	N/A	Acceptable
4	125	ECON 3PC BUTT WELD BALL VALVE	DN25	PN63								Acceptable	N/A	Acceptable
5	125	ECON 3PC BUTT WELD BALL VALVE	DN25	PN63								Acceptable	N/A	Acceptable
6														
7														
8														
9														
10														

Test Results		
Test Item		Result
Check of Calculation and safety Requirements acc. to		Acceptable
Visual and functional tests		Acceptable
NDE, material certificates (see material certificate, as annex)		N/A

- Annexes/ 1)Material certificates of pressure parts  
2)Material list of other parts

It is here by certified that above results are true and correct in every detail.

Place: Taiwan Taichung

Date: 2005/01/11

Works inspector

*H-M. Liao.*