



AMERICAN BUREAU OF SHIPPING

Customer Name	SKIPPER ELECTRONICS A/S	Purchase Order No.	77224
Attending Office	Oslo	Report Number	OS1984980
First Visit Date	06-May-2011	Last Visit Date	14-Jun-2011

Certification Of: Ship Side Valve, DN65 with Intermediate Flange
Quantity: One(1)
Manufacturer: SKIPPER ELECTRONICS A/S

Survey Location: Oslo, Norway

Equipment Data

Manufacturer Number(S. No.) Body 1H233G, Flange 1211
Model Number Ball Valve DB 1021 with intermediate flange DN 65
Vendor Tag Number 77224
Purchaser Name For Stock

Design Details

Design State Product Design Assessed
ABS Reviewing Organization London Engineering Department

Additional Data

ABS Stamping OS1984980
Valve Size 65
Valve Material Stainless Steel - High Strength Steel - NOT SPECIFIED - NOT SPECIFIED
Design Pressure 16 bar

This is to Certify that the undersigned surveyor(s) to this Bureau did, at the request of the customer, carry out the following survey and report as follows:

Pressure test of Two (2) Ball valves, PO 77224 Test press 6 Bar

Valve bodies 1H233G

Intermediate Flange 1211

See attached material certs for chemical and mechanical properties

Surveyor(s) to The American Bureau of Shipping Attending Surveyors

Acomb John L

Electronically Signed on 14-Jun-2011

Reviewed By
Laureys, Guy

Electronically Signed on 25-Jun-2011, Oslo Port

NOTE: This report evidences that the survey reported herein was carried out in compliance with one or more of the Rules, guides, standards or other criteria of the American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Report is a representation only that the vessel, structure, item or material equipment, machinery or any other item covered by this Report has been examined for compliance with, or has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping. The validity, applicability and interpretation of this report is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any notation made in the contemplation of this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.



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Telefax fra:

DREIE-SERVICE MEK. VERKSTED A/S

Dato: 24.03.11

Til firma: Skipper Electronic

Fax-nr.: 23 30 22 71

Att: Tore Lundell Olsen

Hei!

Oversender sertifikater på varer som ble levert til deg igår.

Gjelder bestilling 251962 - restlevering

30 stk. emner ihht. tegning DB-1021-rev-01 - Ø90 ch.nr. 520085 (2 sider)
" " " " " " " " - 15mm ch.nr. 253241 (1 side)
" " " " " " " " - 20mm ch.nr. T6H5 (1 side)

X

Gjelder bestilling 251967

30 stk. emner ihht. tegning DB-1031-rev-00 - 16mm ch.nr. 271680 (2 sider)
" " " " " " " " - Ø75 ch.m. 251971 (2 sider)

Totalt 8 sider sertifikater.

Med vennlig hilsen
DREIE-SERVICE MEK. VERKSTED A/S

Jorann

Industriveien 5, 1481 Hagan
Tlf.: 67 06 19 01
Fax: 67 08 07 24

Mail: haidi@dreie-service.no
Jorann@dreie-service.no
dag@dreie-service.no

Stål – Rustfritt – Syrefast – Plasma- og profilskjæring – alt i maskinering

Best 251962 tegn. DB-1021-rev-01

CERTIFICATE
DateNo. A/08-829662 Rev 00
2008-10-10 Page 1/2INSPECTION CERTIFICATE acc to
EN 10 204 S.1RUUKKI NORDE AS
300195
BOLNEVEIEN
NO-2020 SKEDAMOKORSETINSPECTION STAMP
QA-TUBE

Customer References.

S21196

Customer
order
2008-10-10

Sandvik References

Order No. Subs No. ASSMT Dispatch note
21196 04334/54
ASSMT No. C.Code
300-80024 30

125-00991 RUUKKI NORDE

Material description
STAINLESS HOT FINISHED HOLLOW BARSteel/material Designations
Sandvik AISI
SANNAC 316L TP316L/TP316AFNOR
Z2CND17-12/26CND17-11W.nr
1.4404/1.4401DIN
X 2 CRN1017 13 2/X 5 CRN1017 12 2
CONT. SEE BELOWSteel making process
Electric furnaceTechnical requirements
DIN 17456, DIN 17458 TC1, NFA 49-S17
FED 97/23/EC EN 10216-5 TC1
NACE MR0175/ISO 15156-3:2003

EXTENT OF DELIVERY

It	Product designation	Heat	Lot	Pieces	Kg
01	THB-SANNAC316L-90-63 90.00 X 12.50	520085	37936	1	165.0

Total 1 165.0

Steel/material Designations CONT.

EN no
1.4401/1.4404

TEST RESULTS

Chemical composition (weight%)

Heat	C	Si	Mn	P	S	Cr	Ni	Mo
520085	0.009	0.60	1.79	0.026	0.025	16.71	11.23	2.04

N
520085 0.045

Tensile test at room temperature

Lot	Yield strength		Tensile strength	Elongation
	MPa	MPa		
37936	Rp0.2 256	Rp1.0 316	Rm 563	A 52

Quality assurance - Per Eriksson/ QA-manager Tube & Pipe
NTC Service / Certificates

CERTIFICATE
DateNo. A/08-829662 Rev 00
2008-10-10 Page (2/2)**Hardness test**

Lot	Min HRB	Max HRB
37936	66.0	68.0

Following controls/tests have been satisfactorily performed:

- Ring expansion test
- PHI-test.
- Intergranular corrosion test acc. to EN ISO3651-2, Method A.
- Visual inspection and dimensional control.

Heat Treatment:

Solution annealed and quenched.

Marking:

SANDVIK TP316/316L EN 10216-5 TC1 SS 2348 WNR 1.4404 Z2CHD17-12 EN 1.4404 W 1.
4404/1.4401 C2 5 PK1 90.00 X 63.00 MS RT S20085 SS LOT 37936 *QA-TUBE*

Leak test:

The tubes are exclusively intended to be used after further machining.
The purchaser has approved that the leakage test is deferred to the finished component.

Approved acc. AD 2000-Merkblatt W0 and certified acc. to
Pressure Equipment Directive (97/23/EC) by
TUV NORD GmbH, notified body, reg.no. 0043.

The number of tests are based on the size of the manufacturing lot
before cutting to finished lengths.

The delivered products comply with the specifications and
requirements of the order.

The material is manufactured according to a Quality system,
approved and registered to ISO 9001.

The certificate is produced with EDP and valid without signature.



九強實業股份有限公司
YEUN CHYANG INDUSTRIAL CO., LTD.

HYEUN CHYANG INDUSTRIAL CO., LTD.
地址：彰化縣溪湖鄉舊厝村中山路四二七號
電話：+886-4-3895616 傳真：+886-4-3893770
P.O. Box 4, Hengshu Rd. Shahu, Shiang-Shiang Twp., Tainan, ROC.

地址：彰化縣溪湖鄉舊厝村中山路四段270號
電話：+886-4-8899666 傳真：+886-4-8899770
No. 270 Sec. 4 Juehsia Rd., Shihuo Township, Taichung, R.O.C.

地址：彰化縣溪湖鄉舊厝村中山路四段270號
電話：+886-4-8899586 傳真：+886-4-8899770
No.270Sec.4Jungshiao Rd.Sihsueh ShiangCampus Taichung T.O.C.

地址：彰化縣溪湖鄉舊厝村中山路四段270號
電話：+886-4-8899586 傳真：+886-4-8899770
No.270Sec.4Jungshiao Rd.Sihsueh ShiangCampus Taichung T.O.C.

Beet. 25/962 eqn. DB-1021-rev-01

Inspection Certificate

報 國 志

130 9001 : 2000
NO. 01 100 056298

ISO 9001 : 2000
NO. 01 100 036298

YC-1100320 01 298090056-1 HILL TEST CERTIFICATE

CRONISTEEL AS

Date (日期) OCT/08/2009

Contract No. (訂造號碼) 5809										Invoice No. (發票號碼)									
Description (產品名稱) PRIME HOT ROLLED STAINLESS STEEL PLATE										Specification (規格) ASTM A240/480									
										Type (牌號) AISI 316L									
Item No./ Packing No.		Size (產品尺寸)		Quantity (數量)										Heat No. (爐號)		Hydrostatic Test (水壓測試)		Finish (表面處理)	
				Pcs															
1		20.000mm X 1500.0mm X 3000mm		3		2174.00KG								157971				NO.1	
2		20.000mm X 1500.0mm X 3000mm		1		727.00KG								157505				NO.1	
2		20.000mm X 1500.0mm X 3000mm		2		1454.00KG								157971				NO.1	
X 3		15.000mm X 1500.0mm X 3000mm		3		1607.00KG								253241				NO.1	
Chemical Composition (化學成份)																			
Item No./ Packing No.		C (碳)	Cr (鉻)	Mn (錳)	P (磷)	S (硫)	Ni (鎳)	Cr (鉻)	Mo (鉬)	N (氮)	Cu (銅)	Tensile Test (抗拉強度)		Yield T.S. (屈服強度)		Elongation (伸長率) %		Reduction of Area (斷面收縮率) %	
Max. (上限)		0.030	0.750	2.000	0.045	0.030	14.00	18.00	3.000	0.100		N/mm2		N/mm2					
Min. (下限)							10.00	16.00	2.000			170		485		40		1040	
1		0.020	0.640	0.870	0.028	0.002	10.10	16.46	2.040	0.015		291		593		50.00		80.00	
2		0.022	0.650	0.870	0.036	0.005	10.02	16.25	2.120	0.013		298		588		49.00		79.00	
2		0.020	0.640	0.870	0.028	0.002	10.10	16.46	2.010	0.015		291		593		50.00		80.00	
3		0.014	0.650	0.640	0.032	0.002	10.01	16.32	2.020	0.016		272		541		49.00		78.00	
Solution Heat Treatment (固溶處理) 1040																			
Tempering Treatment (回火處理) 1050																			
Remarks (附註)										This certificate complies to 3.1/EN 10204:2004.									
LC NO. ILU415558										DATE OF ISSUE: 090903									
Works Inspector																			
MQ78										MQ84									
JIAN YI QING										JIAN YI QING									
We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with the requirements of the above sample specification.																			

ACERHON, S.A.

FINCA EL DUFO
DE BAZILIA
P.O. BOX 1000
1000, 1341 - 1000 00 00
1000, 1341 - 1000 00 00
1000, 1341 - 1000 00 00
1000, 1341 - 1000 00 00
1000, 1341 - 1000 00 00



Optimal system of management
in services and quality

Abnahmeprüfzeugnis INSPECTION CERTIFICATE

ACCORDING TO EN 10204 3.1
NACH

Prüf-Nr. 73 2010 76617 70001 E
Inspection No.

Zeichnungsbildung von TUV nach DIN 11811 Teil 1
Letter of approval from TUV dated 25-5-05
Last revision of the drawing is valid until the next revision is issued.
The drawing is valid until the next revision is issued.
The drawing is valid until the next revision is issued.

Hersteller - Customer

Auftrag Nr. - Our order n°

Bestellung Nr. - Your order n°

Prüfgegenstand - Article

Werkstoff Nr. und Lieferzustand - Material n° and Condition of delivery

GLEICH PLATE

LAGEPLATE

Werkstoff - Normen Standard - Grade of Material

Werkstoff - Grade

Erzeugnisgruppe - Manufacturing Process
A=ALU Verfahren- ALU Process

Zustand - Condition

A1-20

Herstellung - Manufacturing Process

Anforderungen - Technical requirements

Stempel des Sachverständigen - Inspector's stamp

EN 10204-TRIP WELD-VERSCHWEISUNG WELDING JOINT EN 10204-3

Zeichen des Lieferanten - Brand of the manufacturer



Form Nr. Form N°	Stückzahl Quantity	Abmessung - Dimensione mm	Schmelze Nr. Heat N°	Probe Nr. Test N°
5	4	20.000 x 1.600,00 x 3.000,00	T6H5	01T6H5
6	4	20.000 x 1.600,00 x 3.000,00	T6H5	02T6H5
7	4	20.000 x 1.600,00 x 3.000,00	T6H5	03T6H5

Chemische Analyse - Chemical Composition (%)

Schmelze Nr. Heat N°	C	CR	MN	MO	N	NI	P	S	SI
Anforderungen Requirements	0,030	18,500	2,000	2,500	0,110	10,000	0,045	0,015	1,000
T6H5	0,018	18,762	1,212	2,048	0,036	10,089	0,032	0,001	0,330

Mechanische Eigenschaften - Mechanical Properties

Pr. Temp/T. Temp. 20° C

Probe Nr. Test N°	Prob.-Lage Pos. of test	Abmessungen des Prüfobjekts Dim. of specimen	Rm N/mm²	Rp 0,2 N/mm²	Rp 1,0 N/mm²	A5 %
Anforderungen Requirements		Breite x Dicke Width x Thickness	520,00	220,00	260,00	65,00
01T6H5	CT	45,000 x 20,00	671,23	269,24	327,12	69,81

Bezeichnung und Maßeangaben wurden durchgeführt: O.B.
Dimensions and Measurements performed: O.B.

Der Werkstoff ist beständig gegen intermetallische Korrosion gemäß EN 10204-3
The material is resistant to intermetallic corrosion according to EN 10204-3

Spektralanalytische Untersuchung: O.B.
Spectrometric analysis: O.B.

Wärmebehandlung: Glühen bei 1050 - 1100 °C
Heat treatment: Annealing at 1050 - 1100 °C

Heat treatment:
and Annealing with oil
cooling rate.

Die Lieferung besteht aus der Bezeichnung
The delivery is in accordance with the order

WERKSACHVERSTÄNDIGER
WORKS EXPERT
A. Hübner

per A. Hübner

February 7 SEPTEMBRE 2010

Beat. 25/962 typ. DB-1021-rev-01